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Canada North Environmental Services Limited Partnership

A First Nation Environmental Services Company

EASTERN ATHABASCA REGIONAL MONITORING PROGRAM 2015 TECHNICAL REPORT

Final Report

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EXECUTIVE SUMMARY

The Eastern Athabasca Regional Monitoring Program (EARMP) was established in 2011 under the Province of Saskatchewan's Boreal Watershed Initiative. The EARMP framework includes two sub-programs: a community program and a technical program. The community program was established to monitor the safety of traditionally-harvested country foods and the results of this program are presented in a separate report. The technical program, which is the focus of this report, was established to monitor long-term changes in the aquatic environment downstream of the intersection of watersheds within which uranium mines and mills operate. These areas are generally tens of kilometres downstream of any particular operation and are at locations that are subject to potential cumulative effects. Sampling components include water quality, sediment quality, fish chemistry, and benthic invertebrate community data from far far-field exposure locations (hereafter referred to as far-field exposure) and reference locations in northern Saskatchewan. The 2015 technical program was the first monitoring year to also include comparison to the initial baseline monitoring period data from 2011 and 2012.

Far-field exposure locations include two locations in Wollaston Lake (at each outlet: the Fond du Lac River and the Cochrane River), the outlet of Waterbury Lake, and Crackingstone Inlet of Lake Athabasca. Reference areas utilized for the program are not influenced by any upstream uranium mining and/or milling activities and include Cree Lake, Pasfield Lake, Ellis Bay of Lake Athabasca, Bobby's Lake[1], and RF-4[1] in Shallow Bay of Wollaston Lake. The focus of the program is on temporal comparisons, however, reference areas are included in this program to characterize natural background variability, which provides important context within which to consider any variations observed at the far-field exposure locations.

Both chemical and benthic invertebrate community endpoints were selected for assessment. Benthic invertebrate community endpoints included density, taxon richness, and biomass, as well as a multivariate assessment of community composition. Chemical endpoints included parameters identified as Constituents of Potential Concern (COPCs) in uranium mining and milling environmental assessment processes. The COPCs are summarized in the following table:

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[1] *Data collected from Bobby's Lake in 2009 and 2012 and RF-4 in 2008 and 2012 as part of separate sampling programs were utilized to standardize the EARMP sediment chemistry data for particle size. Other data collected from these additional reference lakes were also utilized, where available. This included water quality data from both lakes, benthic invertebrate community data from both lakes, and fish tissue chemistry data from Bobby's Lake.*

Constituents of Potential Concern	
Aluminum	*Organic Carbon*
*Ammonia**	*pH**
Arsenic	*Polonium-210*
Cadmium	*Radium-226*
Cobalt	*Selenium*
Copper	*Specific Conductivity**
Iron	*Total Hardness**
Lead	*Thorium-230*
Lead-210	*Uranium*
*Mercury***	*Vanadium*
Molybdenum	*Zinc*
Nickel	

**Included as supporting variables in water.*
***Mercury is not associated with the uranium mining and milling process, but it is a concern of the communities so it was included as a COPC for water and fish tissue.*

Water chemistry, sediment chemistry, benthic invertebrate community, and fish tissue chemistry endpoints were assessed against the baseline monitoring period data, available guidelines, and the reference range to establish if endpoints are currently within expected background levels of the region. The reference range is defined as the 2.5th and 97.5th percentiles of the reference area dataset or the 95% confidence interval. With few exceptions, endpoints were found to be similar to baseline, below guidelines, and/or within the reference range.

The EARMP technical program was established to monitor long-term changes in the aquatic environment far downstream of uranium mining and milling operations in the Eastern Athabasca region of northern Saskatchewan. The monitoring frequency established for the EARMP technical program following the baseline monitoring period was on an every three year basis. However, given the minimal variability observed between the 2015 and the baseline monitoring period results, along with the distance of the EARMP far-field sampling locations from the mine sites, the EARMP technical program will move to a monitoring cycle of every five years with the next field program to take place in 2020.

1.0 INTRODUCTION

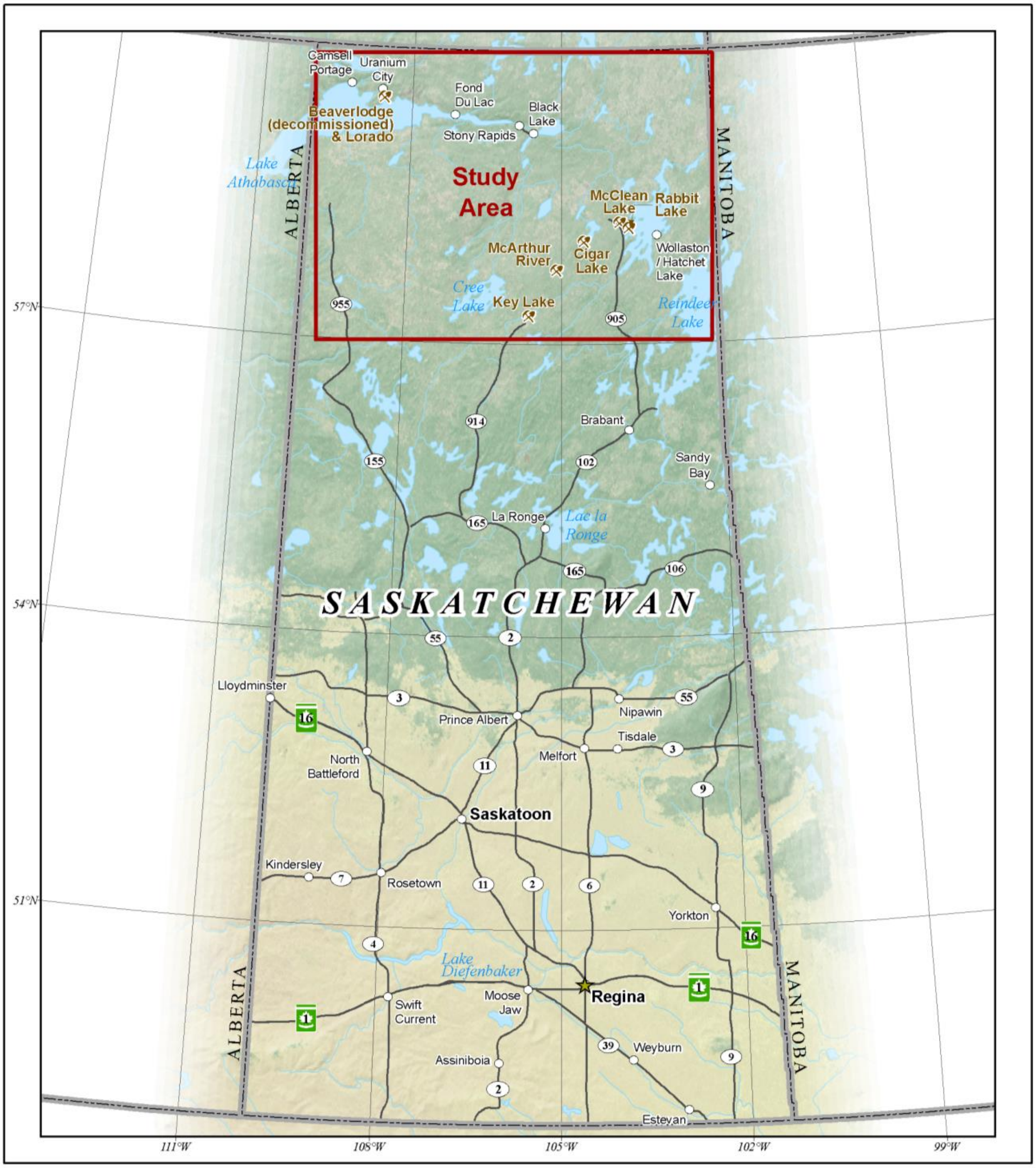
1.1 Background

The Eastern Athabasca Regional Monitoring Program (EARMP) was established in 2011 under the Province of Saskatchewan’s Boreal Watershed Initiative with additional financial contributions from Cameco Corporation (Cameco) and AREVA Resources Canada Inc. (AREVA). One of the primary goals of the Boreal Watershed Initiative is to assess the ecological integrity of Saskatchewan’s northern watersheds to address potential environmental concerns and to identify sustainable management practices in the region. The EARMP was designed to provide long-term environmental information and to identify potential cumulative impacts downstream of uranium mining and milling operations in the Eastern Athabasca region of northern Saskatchewan (Figure 1).

Cumulative effects are defined as impacts on the environment that result from the incremental impact of an action when added to other past, present, and foreseeable future actions (Joint Panel 1992). Cumulative effects might occur when similar projects overlap spatially, such as when two watersheds exposed to mining activities converge. Cumulative effects may also occur temporally due to the potential long-range transport of contaminants over extended periods of time. The EARMP was designed to assess both potential spatial and temporal cumulative effects of uranium mining and milling activities.

Numerous environmental monitoring programs are currently conducted at uranium mining and milling operations that are regulated by Environment and Climate Change Canada (ECCC; Metal Mining Effluent Regulations (MMER)), the Saskatchewan Ministry of Environment (MOE), and the Canadian Nuclear Safety Commission (CNSC). These monitoring programs are completed in the vicinity of each mining and milling operation. In addition, regional sampling occurs through the Athabasca Working Group (AWG) Environmental Monitoring Program. The EARMP is intended to complement, rather than overlap, the information gathered by the above-mentioned monitoring programs and to provide a framework for the evaluation of potential cumulative effects in northern Saskatchewan.

The EARMP framework includes two sub-programs: a community program and a technical program. The community program, which is the subject of a separate report, was established to monitor the safety of traditionally-harvested country foods. The



EARMP STUDY AREA
EASTERN ATHABASCA
REGIONAL MONITORING PROGRAM
2012 TECHNICAL REPORT

Map Sources:
NA Atlas 1:10M; Geopolitical 1:100K;
SRN 2009; ESRI StreetMap™ 2008;
SK Geological Atlas; Natural Earth 1:10M
Refer to text for full details & disclaimer.

Created by: ED; Reviewed by: RF, CR, KW

Date: 06 / Dec / 2013
NAD 1983 UTM Zone 13N

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Figure
1

Figure 1
Study location.

technical program, which is the subject of the current report, was established to monitor potential long-term changes in the aquatic environment far-field downstream of uranium mining and milling operations in the Eastern Athabasca region. The objective of this document is to discuss the study design and results of the EARMP technical program.

1.1.1 Communities in the Region

There are seven communities in the region, including Black Lake, Fond du Lac Denesuline First Nation, Stony Rapids, Wollaston Lake, Hatchet Lake Denesuline First Nation, Camsell Portage, and Uranium City. Figure 2 shows the community locations in relation to the uranium mining and milling operations.

1.1.2 Uranium Mining and Milling Operations in the Region

There are five active uranium mines and/or mills in the Eastern Athabasca region. These include Key Lake, McArthur River, McClean Lake, Rabbit Lake, and Cigar Lake. In addition, the decommissioned Eldorado and Lorado uranium mining and/or milling operations, as well as a number of abandoned uranium mines, are located within the region near the community of Uranium City. The locations of these uranium mining and milling operations are presented in Figure 2. As per the licensing and approval requirements for uranium mining and milling operations in Saskatchewan, each site completes extensive monitoring in their local study areas. This includes monitoring of the air, soil, aquatic environment, and terrestrial environment. Detailed results of the environmental monitoring programs completed at each site are available in the most recent Environmental Performance reports (EPRs; formerly Status of Environment (SOE) report). These reports provide a regular update to regulatory agencies on the results of the various monitoring programs and supplementary studies completed in each study area and also include an assessment of the current environmental conditions as compared to those predicted in each sites' most recent Environmental Assessment (EA). The most recent reports/documents include:

- Status of the Environment Report for the Cigar Lake Project 1998 to 2010 (SENES 2012);
- Key Lake Operation Environmental Performance Report 2010 to 2014 (EcoMetrix 2015a);

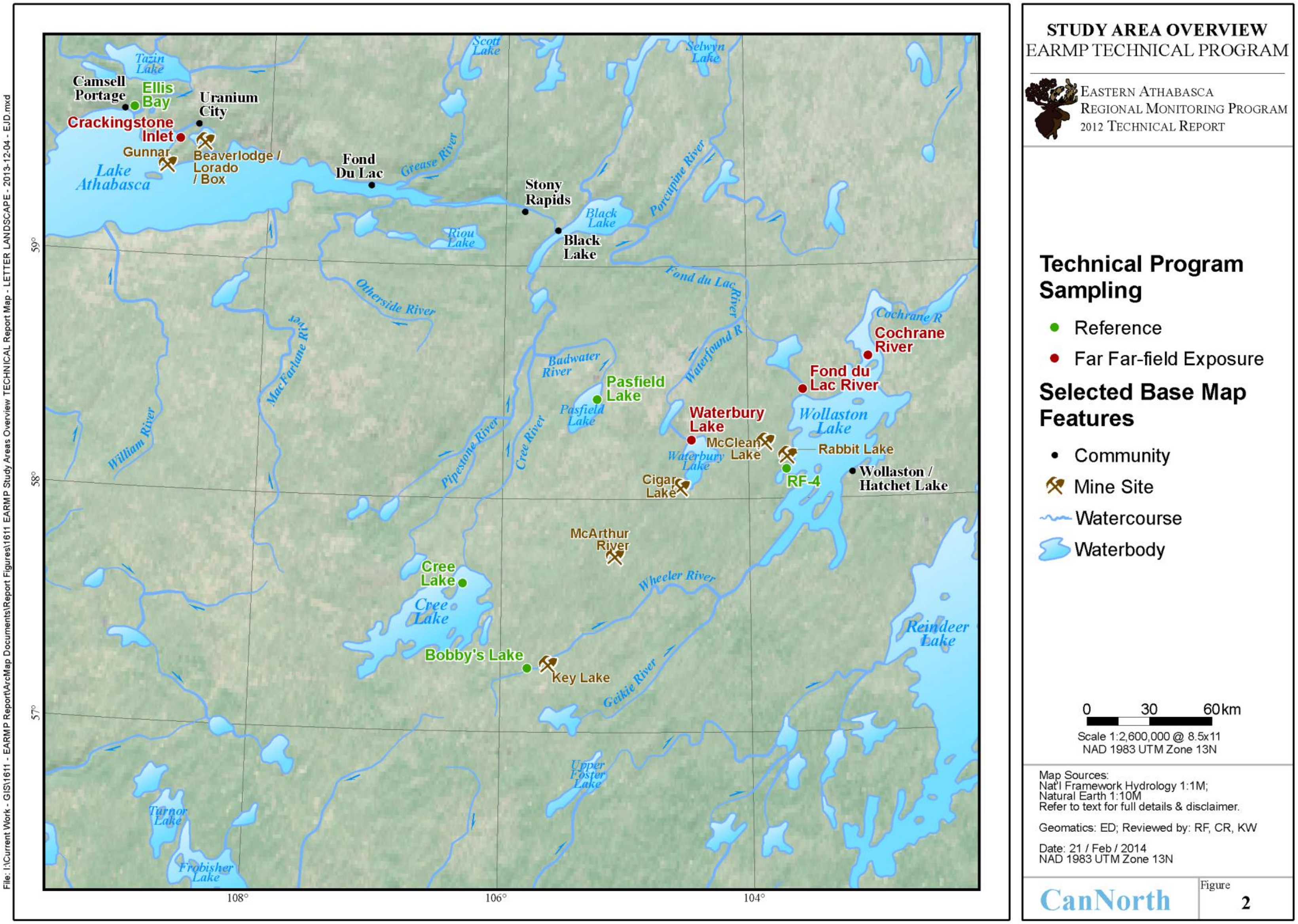

Figure 2
Study area overview.

- McArthur River Operation Status of the Environment Report 2010 to 2014 (EcoMetrix 2015b);
- McClean Lake Operation Technical Information Document Environmental Performance Report Volume 1 (AREVA 2016a);
- McClean Lake Operation Technical Information Document Environmental Performance Report Volume 2 (AREVA 2016b); and,
- Rabbit Lake Operation Environmental Performance Report 2010 to 2014 (Arcadis 2015).

1.1.2.1 Key Lake

Cameco's Key Lake Operation is located in north-central Saskatchewan approximately 570 km north of Saskatoon. The Key Lake Operation lies within the Waterfound River drainage area, which is a tributary of the Fond du Lac River. The Fond du Lac River discharges to the Slave River via Lake Athabasca and ultimately discharges to the Beaufort Sea via the Mackenzie River.

Mining at the Key Lake Operation began in 1982 with open pit mining of the Gaertner orebody followed by open pit mining of the Deilmann orebody beginning in 1986. Once stockpiles from the Deilmann orebody were consumed in late 1999, the mill began processing ore from the McArthur River Operation. The Key Lake Operation has two treated effluent receiving environments: the David Creek drainage and the McDonald Lake drainage, both of which are tributaries of the Wheeler River.

1.1.2.2 McArthur River

The McArthur River Operation is located approximately 80 km north of the Key Lake Operation and is managed and operated by Cameco. Similar to the Key Lake Operation, it is located within the Waterfound River drainage area.

McArthur River has been operational since 1999 and is currently the world's largest, high-grade uranium deposit. The operation includes underground mining, processing systems, an ore handling system, and camp infrastructure. Specialized mining equipment is used to extract the high-grade uranium ore and mineralized wastes are blended with high-grade ore to produce a slurry, which is trucked to the Key Lake Operation for processing. Treated mine water is released to the Read Creek watershed. Read Creek flows east into Little Yalowega followed by Yalowega Lake, the Whitford River, and Waterbury Lake.

1.1.2.3 McClean Lake

The McClean Lake Operation is located approximately 15 km west of Wollaston Lake in northeastern Saskatchewan approximately 350 km north of La Ronge. AREVA is the majority owner and operator of the McClean Lake Operation. The McClean Lake Operation lies within both the Collins Creek and Moffatt Creek watersheds.

Uranium mineralization was first discovered in the McClean Lake region in early 1979, with mining of uranium ore beginning in 1996 and processing of the ore into yellowcake product beginning in 1999. The McClean Lake Operation consists of several ore bodies, a milling operation, permanent camp, and various supporting facilities. Treated effluent from the McClean Lake Operation is discharged into the Sink/Vulture treated effluent management system, which provides for the controlled discharge of treated effluent into the east basin of McClean Lake, which flows into Collins Creek and ultimately discharges to Collins Bay of Wollaston Lake.

1.1.2.4 Rabbit Lake

The Rabbit Lake Operation, owned and operated by Cameco, is the longest-operating uranium production facility in Saskatchewan (since 1975). It is located on the west side of Wollaston Lake approximately 350 km north of La Ronge.

The Rabbit Lake Operation includes the Eagle Point underground mine, Rabbit Lake mill, four mined-out open pit mines, including the original Rabbit Lake pit, which is being used as the Rabbit Lake In-Pit Tailings Management Facility, the Rabbit Lake Above Ground Tailings Management Facility, overburden stockpiles, waste rock stockpiles, effluent treatment facilities, and camp infrastructure. In 2016, the Rabbit Lake Operation transitioned to care and maintenance. Treated effluent from the Operation is released into Horseshoe Creek. Horseshoe Creek flows approximately 9 km from the point of effluent release, via Unknown Pond and Horseshoe Pond, and discharges into Hidden Bay of Wollaston Lake.

1.1.2.5 Cigar Lake

The Cigar Lake Operation is located approximately 80 km west of Wollaston Lake and 40 km inside the eastern margin of the Athabasca Basin region of northern Saskatchewan. The project is currently managed and operated by Cameco. The Operation is situated near the southern shore of Waterbury Lake, between the watersheds of two principal inflowing tributaries, the Whitford River to the southeast and the Thin River to the northwest. Waterbury Lake flows into the Waterfound River, which in turn flows into the Fond du Lac River downstream of Hatchet Lake.

The initial discovery of the Cigar Lake uranium deposit occurred in May 1981. Following the acquisition of the construction license in December 2004, underground construction activities commenced. Treated effluent was discharged into a muskeg area that flows into Aline Lake between 1988 and 2013. Aline Lake discharges into the south end of Seru Bay of Waterbury Lake through Aline Creek. Since August 7th, 2013, treated effluent has been released directly into Seru Bay of Waterbury Lake.

1.1.2.6 Other Properties

The decommissioned Eldorado uranium mining and milling operation is located approximately 8 km east of Uranium City northeast of Beaverlodge Lake in northern Saskatchewan. The mine operated for almost 30 years between 1953 and 1982. Decommissioning of the site occurred from 1983 to 1985 and transition phase monitoring continues today. Upon its inception as a publicly traded company, Cameco was assigned responsibility for the managing and reclamation of the decommissioned site. Post-decommissioning activities include the ongoing monitoring and maintenance of the site, regular water quality monitoring at stations within the area, and a variety of special investigations to assess specific environmental concerns.

In addition, Beaverlodge Lake is the receiving environment for the discharges from at least nine other abandoned uranium mine sites and one former uranium mill tailings area (the Lorado Uranium Mining Ltd. mill site), which are managed by the Saskatchewan Research Council (SRC). SRC is managing Project CLEANS, which is also responsible for the assessment and reclamation of the Gunnar uranium mine and mill site and over 30 abandoned satellite mines in the Uranium City area.

Water flows from Beaverlodge Lake into Martin Lake, Cinch Lake, and then into the Crackingstone River, which flows southwest and eventually discharges into Crackingstone Inlet of Lake Athabasca.

1.2 EARMP Technical Program

1.2.1 Technical Program Objectives

The EARMP technical monitoring program objectives are:

1. To establish long-term monitoring stations at far-field exposure and reference locations;
2. To monitor for temporal changes in water quality, sediment quality, benthic invertebrate community, and fish chemistry over the long-term; and,
3. To communicate monitoring results to stakeholders, through public media and stakeholder meetings.

Water, sediment, and fish tissue chemistry were selected to monitor for potential changes in Constituents of Potential Concern (COPCs). Benthic invertebrate communities were assessed as an indicator of the condition of fish habitat (EC 2012).

1.2.2 Technical Program Study Area

The EARMP technical program focused on establishing four far-field exposure areas as well as reference areas, in the Eastern Athabasca region. Far-field exposure locations include two locations in Wollaston Lake (at each outlet), the outlet of Waterbury Lake, and Crackingstone Inlet (historically exposed) of Lake Athabasca (Figure 2). The far-field exposure locations are situated in depositional areas further afield than each operations' local study area as a supplement to the extensive monitoring already completed by each mine and/or mill site. In addition, the far-field exposure areas are positioned where watersheds downstream of uranium site overlap. Reference areas utilized for the program are not influenced by any current or historic upstream uranium mining and/or milling activities.

1.2.2.1 Wollaston Lake and the Cochrane River

Wollaston Lake is a distinctive lake in that it has two drainage systems. The primary outlet of Wollaston Lake is the Cochrane River, which flows out the northeast end of the lake and into Reindeer Lake, before draining into the Churchill River system and out to Hudson Bay. The outflow of Wollaston Lake to the Cochrane River and was sampled as a far-field exposure area as it is located downstream of treated effluent release from the McClean Lake, Rabbit Lake, and Key Lake operations.

1.2.2.2 Wollaston Lake and the Fond du Lac River

Wollaston Lake’s secondary outlet flows into the Fond du Lac River at Cunning Bay, located approximately 25 km from Collins Bay on the west side of Wollaston Lake. The Fond du Lac River then flows northwest and eventually discharges into Lake Athabasca, which in turn drains into the Slave River, and ultimately into the Mackenzie River. The outlet of Cunning Bay is located downstream of treated effluent release from the McClean Lake, Rabbit Lake, and Key Lake operations. Depositional habitat was not available to complete the sediment and benthic invertebrate community sampling in the immediate outlet area; therefore, sediment was collected downstream from Cunning Bay in a Fond du Lac River backwater area.

1.2.2.3 Waterbury Lake and the Waterfound River

The outlet of Waterbury Lake (near Kelly Bay) is located at the northwest end of Waterbury Lake approximately 25 km downstream from the Cigar Lake Operation. This location is also far-field downstream of the McArthur River Operation, which is located 75 km upstream of Waterbury Lake. Waterbury Lake then flows northeast through Theriau (Unknown) Lake, Durrant Lake, and the Waterfound River to join the Fond du Lac River at Waterfound Bay.

1.2.2.4 Lake Athabasca and the Crackingstone River

Beaverlodge Lake is the receiving environment for water exiting the Beaverlodge decommissioned site, as well as at least nine other abandoned uranium mine sites and one former uranium mill tailings area (Lorado) within the Beaverlodge Lake watershed. In addition, a number of small sites without tailings are located downstream of Martin Lake. Martin Lake is immediately downstream of Beaverlodge Lake and flows northwest into

Cinch Lake and continues west from Cinch Lake into the Crackingstone River, which flows southwest and empties into Crackingstone Inlet of Lake Athabasca. The Crackingstone Inlet of Lake Athabasca was the final far-field exposure area selected for the EARMP technical program.

1.2.2.5 Reference Areas

Reference areas are included in the EARMP technical program to characterize natural background variability. Understanding spatial and temporal variability of the natural background provides important context within which to consider the variations observed at the far-field exposure locations.

Three reference areas were established specifically for the EARMP technical program. These include Cree Lake, Pasfield Lake, and Ellis Bay of Lake Athabasca (Figure 2). As shown in Figure 2, the sampling location in Cree Lake was re-located in 2012 in an effort to minimize sediment particle size differences across sampling areas. However, it was still not completely possible to match particle size across all the sampling areas. Therefore, data available from two additional reference areas were included in the reference range dataset so that the reference area particle size data encompassed the particle size present in the exposure areas.

Data collected from Bobby's Lake in 2009 and 2012 and from a bay located at the south end of Wollaston Lake (subsequently referred to as RF-4) in 2008 and 2012 were utilized to standardize the EARMP sediment chemistry[2] data by particle size. These data were collected during monitoring programs conducted by uranium mining and milling operations (CanNorth 2009; CanNorth 2010; CanNorth 2013a; CanNorth 2013b). Water chemistry, benthic invertebrate community, and fish tissue chemistry data collected from these additional reference areas were also utilized where available. This included water quality data from both areas, benthic invertebrate community data from both areas, and fish tissue chemistry data from Bobby's Lake. It should be noted that data were collected from RF-4 during a winter sampling cycle, while the remaining EARMP data were collected on a fall sampling cycle. Both the fall and winter are periods of low emergence for benthic invertebrates; thus it was deemed acceptable to include the RF-4 data in the reference dataset.

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[2] No strong relationship between benthic invertebrate community endpoints and particle size occurred, therefore, the benthic invertebrate community data were not standardized by particle size (see Appendix A for further details).

1.3 Report Structure

This report is structured to provide a summary of the most important information in the main text with additional detailed analyses and background information provided in appendices. The main text consists of seven sections:

1.0 Introduction
2.0 Study Design Rationale
3.0 Surface Water Quality
4.0 Sediment Quality
5.0 Benthic Invertebrate Community
6.0 Fish Chemistry
7.0 Moving Forward

Section 2.0 provides a summary of the overall study design, including the data analysis approach used for the EARMP technical program, while sections 3.0 to 6.0 are stand-alone chapters, each including their specific objectives, sampling and data analysis methods, and results. Section 7.0 provides an overall summary of the 2015 results and ties it into the objectives of the EARMP technical program and discusses objectives of the EARMP technical program moving forward. Appendix A presents additional detailed results relating to the analysis of the 2015 data, while the raw data are presented in Appendix B.

2.0 STUDY DESIGN RATIONALE

The overall approach used for the EARMP technical monitoring program includes the assessment of both chemical and benthic invertebrate community endpoints over the long-term. The sampling and data analysis protocol was developed in consideration of the long-term monitoring aspect of this program.

The following design is based on the core elements of the EARMP technical program remaining relatively consistent over time. However, the program is also adaptive and may be refined in response to new information or changes associated with development in the region. Some things to consider are:

- Regional Development: The development of additional mining and milling operations in the region may influence the sampling locations.
- EARMP Technical Program results: Changes to the design of the EARMP technical program may occur based on results and conclusions from each monitoring cycle.

2.1 Sampling Components

The EARMP technical program focuses on four monitoring components: water quality, sediment quality, benthic invertebrate community, and fish tissue chemistry. All four of these components are monitored within uranium mine and/or mill site local study areas as a federal and provincial regulatory requirement (CNSC and MOE). Furthermore, the sampling methods associated with the monitoring components are relatively simple and reliable, have a long history of application, and will not likely change over the long-term duration of the EARMP.

Water and sediment quality data provide supporting information for the benthic invertebrate and fish components of the EARMP technical program. Furthermore, they provide an indication of the suitability of a waterbody to support aquatic life.

Benthic invertebrate community data provide an indication of the condition of fish habitat (EC 2012) and, due to the relatively short life span of benthic invertebrates, can provide an early warning of potential effects on fish communities or populations (Kilgour and Barton 1999). Numerous studies have established a link between benthic invertebrate community composition and the condition of fish communities (Matuszek 1978; Berkman et al. 1986; Elliott 1986; Boisclair and Leggett 1989; Morgan and Ringler 1994; Kilgour and Barton 1999). Thus, there is justification in using benthic invertebrate community data as a means of assessing potential effects on fish communities, particularly as an early warning tool (Kilgour et al. 2005).

Fish tissue chemistry data provide a means of monitoring the potential accumulation of COPCs identified in the water and/or sediment quality components of the EARMP technical program as well as potential accumulation through the food chain. The EARMP technical program targeted both predatory and bottom-feeding fish species for the chemical analysis of flesh and bone tissue. Both flesh and bone were assessed since different constituents may accumulate in different tissues at different rates. Predatory fish species targeted during the baseline assessment (2011 and 2012) included lake trout (*Salvelinus namaycush*) and northern pike (*Esox lucius*), and bottom-feeding species included longnose sucker (*Catostomus catostomus*), white sucker (*Catostomus commersonii*), and lake whitefish (*Coregonus clupeaformis*). The 2015 program targeted one predatory and one bottom-feeding species, lake trout and lake whitefish, respectively, although additional northern pike, longnose sucker, and white sucker data were collected from the reference areas to enhance the reference range as recommended following the last monitoring phase (CanNorth 2014).

2.2 Sampling Frequency

The EARMP technical program was established with an initial two-year baseline assessment (2011 and 2012) followed by monitoring phases to be completed every three years, with 2015 being the first monitoring phase following the baseline assessment. The intent of sampling for two consecutive years for the establishment of baseline conditions was to capture some of the natural temporal variability within the baseline dataset. It was also considered beneficial to monitor sediment, benthic invertebrate community, and fish tissue chemistry at a similar frequency to the schedule required by regulatory agencies (ECCC, CNSC, and MOE) of uranium mining and milling operations in the region. However, based on the results of the 2015 sampling program, sampling every five years is justified (CSA 2010), which is still within the range of sampling frequencies required by ECCC, CNSC, and MOE (three or six year monitoring frequencies).

Sampling of each component is conducted during one field program which is completed in late September and early October. Sampling is completed in the fall as it is a period of low emergence for benthic invertebrates. For national consistency, fall (as opposed to winter) is the preferred sampling season by ECCC (EC 2012) for benthic invertebrate communities, thus the EARMP technical program is consistent with regulatory requirements for benthic invertebrate community sampling at each operation.

2.3 Data Assessment Approach

The overall data assessment approach provided in this report is aimed at providing a general assessment of the far-field exposure areas relative to what is expected to occur in the region. The raw data have been provided for all sampling years so that alternative analyses can be completed by any interested party.

2.3.1 Chemical Endpoints

A full suite of parameters is assessed for each chemistry sample; however, this report focuses on a reduced list of parameters, consistent with the baseline monitoring report, which have been identified in uranium mining and milling environmental assessment process as COPCs. Table 1 summarizes the COPCs assessed for the EARMP technical program.

TABLE 1

Constituents of Potential Concern selected for the EARMP.

Constituents of Potential Concern	
Aluminum	Organic Carbon*
Ammonia*	pH*
Arsenic	Polonim-210
Cadmium	Radium-226
Cobalt	Selenium
Copper	Specific Conductivity*
Iron	Total Hardness*
Lead	Thorium-230
Lead-210	Uranium
Mercury**	Vanadium
Molybdenum	Zinc
Nickel	

*Collected as supporting information for water samples.
**Mercury is not associated with the uranium mining and milling process.

While mercury is included in Table 1 as a COPC based on community feedback, it is not associated with uranium mining and milling operations. Monitoring programs completed in each mine sites' local study area have repeatedly shown that mercury concentrations in the treated effluent are below laboratory method detection limits. Mercury occurs naturally in the environment and can be found at low levels in most soils and rocks. In northern Saskatchewan, natural deposits associated with lead, zinc, copper, silver, and gold are likely the cause of higher levels of mercury in fish in some lakes (SE 2011). Since mercury has been identified as a concern of community members in the Athabasca region, it has been included in the assessment.

When dealing with chemistry related endpoints, one important consideration is the laboratory method detection limits (MDLs). Metals and trace elements analysis for the EARMP technical program is completed by ICP-MS because it is a fast, multi-elemental technique with good detection limits. In addition, ICP-MS is an accepted methodology for the assessment of metals and trace elements in the MMER (EC 2012). For most elements, ICP-MS is able to achieve detection limits similar to or lower than Graphite Furnace AAS (Wolf 2005). It should be noted, however, that even with the use of ICP-MS, concentrations of many metals and trace elements in the EARMP sampling media are at levels below the MDLs. For values that are below the MDL, it is not possible to determine the actual concentration; therefore, all values are set equal to the MDL for computing averages and standard deviations. This is a conservative approach as the actual concentrations could be substantially lower than the MDL.

2.3.2 Benthic Invertebrate Community Endpoints

Benthic invertebrate community data are summarized using a number of univariate metrics, including density, taxon richness (at the lowest practical level), and biomass. Density and taxon richness were selected as comparison endpoints because large changes in these measures can only occur if substantial changes in community composition have occurred (Kilgour et al. 2004). Extreme high densities and low richness tend to co-occur with changes in water quality that negatively impact fish communities (Kilgour et al. 2005). Biomass was also assessed as a supporting endpoint and provides an indication of productivity in the waterbody. Additionally, as part of the 2015 analysis, multivariate assessments of the community composition were completed using non-metric multidimensional scaling (NMDS) of the Bray-Curtis dissimilarity matrix.

2.3.3 Comparison Criteria

To evaluate the technical program data during the baseline period, endpoints were compared to:

- Previous monitoring years;
- Available guidelines;
- The reference range; and,
- Available literature (in cases where no guidelines are available and endpoints were outside the reference range).

The above comparison criteria are used for each sampling component to establish if the endpoints are within the expected background levels for the region and within applicable guidelines. Data sources for the information used are further described below.

2.3.3.1 Guidelines

Federal, provincial, and literature-based guidelines are available for some COPCs in water, sediment, and fish tissue. The various guidelines are discussed below in context of the media assessed. Although multiple guidelines may be available for a given COPC, the data assessment focuses on the most locally relevant guideline available.

Water Quality

Both provincial and federal water quality guidelines are available for the protection of freshwater aquatic life. These include the Canadian water quality guidelines (CWQG; CCME 2016) and the Saskatchewan Environmental Quality Guidelines (SEQG, GS 2015). Since the SEQG are similar to the CWQG, and often cite the CWQG, the CWQG were taken as the primary source of information. For those parameters where the values depend on hardness, the hardness concentration from each location was used to establish the guideline. Table 2 summarizes the CWQG used for comparison to the EARMP technical program water quality data.

TABLE 2

Water quality guidelines used for the EARMP technical program.

COPC	Guideline
Aluminum	0.005-0.1[1]
Ammonia as nitrogen*	0.7-32.4[2]
Arsenic (µg/L)	5
Cadmium (µg/L)	0.04-0.05[3]
Copper	0.002[3]
Dissolved oxygen*	6.5- 9.5
Iron	0.3
Lead	0.001[3]
Lead-210 (Bq/L)	-
Mercury (µg/L)	0.026
Molybdenum	0.073
Nickel	0.025-0.035[3]
pH (pH units)*	6.5-9.0
Radium-226 (Bq/L)	-
Selenium	0.001
Uranium (µg/L)	15
Vanadium	0.120[4]
Zinc	0.03

All values in mg/L unless specified otherwise. All guidelines CWQG unless otherwise specified.
*Supporting variables
[1] Adjusted to pH of each waterbody.
[2] Adjusted according to water temperature and pH of each waterbody.
[3] Adjusted to water hardness in each waterbody.
[4] Federal water quality guideline for vanadium (ECCC 2016).

Sediment Quality

Various sediment quality guidelines are available for comparison. These include the Canadian sediment quality guidelines for the protection of aquatic life (CSQG; CCME 2016), the sediment quality guidelines recommended for the uranium mining and milling industry (Thompson et al 2005), the regional toxicity benchmark (Liber et al. 2011), and the sediment quality values (SQVs) for uranium operations in northern Saskatchewan (Burnett-Seidel and Liber 2013). The CCME interim sediment quality guideline (ISQG) represents the concentration below which there is unlikely to be any adverse biological effects (CCME 2016). The CCME probable effect level (PEL) is the guideline level above which adverse effects are expected to frequently occur (CCME 2016). The Lowest Effect Level (LEL) is the concentration below which harmful effects on benthic invertebrates are not expected (Thompson et al. 2005). The regional toxicity benchmarks are based on laboratory spiked sediment toxicity tests on *Hyallella azteca* and *Chironomus dilutus* to determine the acute and chronic toxicity of uranium, molybdenum, nickel, and arsenic (Liber et al. 2011).

The "No Effects" (NE2) and reference (REF) benchmarks were determined specifically for Saskatchewan waterbodies (Burnett-Seidel and Liber 2013), and respectively refer to exposed areas with no significant effect on benthic invertebrate abundance, richness, and evenness, and locations upstream of mining or milling activities or located within separate, but nearby, drainages.

In an effort to compare to the most applicable guidelines, the EARMP technical data was first compared to guidelines available for the region. For example, NE2 and REF values were prioritized because they were developed using data from northern Saskatchewan. In cases where local guidelines were not available, the other criteria were used. Table 3 summarizes the available sediment quality guidelines, with those used as the primary benchmark for comparison highlighted.

TABLE 3

Sediment quality guidelines used for the EARMP technical program.

COPC	CSQG[1]		LEL[2]	Regional Toxicity Benchmark[3]				SQVs[4]	
	ISQG	PEL		NOEC	LOEC	IC25	IC50	NE2	REF
Cadmium	0.6	35	-	-	-	-	-	-	-
Copper	35.7	197.0	22.2	-	-	-	-	-	-
Lead	35.0	91.3	36.7	-	-	-	-	-	-
Molybdenum	-	-	13.8	3589	-	-	-	245.0	22.6
Nickel	-	-	23.4	-	210	189	312	326.0	21.4
Selenium	-	-	1.9	-	-	-	-	29.7	3.6
Uranium	-	-	104.4	740	1819	694	1918	2296.0	96.7
Zinc	123.0	315.0	-	-	-	-	-	-	-
Lead-210			0.9						
Polonium-210			0.8						
Radium-226	-	-	0.6	-	-	-	-	-	-
Arsenic	5.9	17.0	9.8	-	39	174	342	522.0	20.8
Vanadium	-	-	35.2	-	-	-	-	-	-

All values in µg/g dry weight unless specified otherwise. Shaded values were used as the primary benchmark for comparison.

[1] Canadian Sediment Quality Guidelines for the protection of Aquatic Life (CCME 2016). ISQG = Interim Sediment Quality Guidelines, PEL = Probable Effects Level.

[2] LEL = Lowest Effect Level (Thompson et. al. 2005).

[3] NOEC = no-observed-effect concentration; LOEC = lowest-observed-effect concentration; IC25 and IC50 = inhibitory-concentrations for growth (Liber et al. 2011).

[4] SQVs = Sediment quality values. NE2 = No Effect; REF = Reference sediment value (Burnett-Seidel and Liber 2013).

Fish Tissue

Tissue-based draft effects guidelines are available for selenium concentrations in fish. Three guideline values have been presented in Table 4 to illustrate the range in concentrations expected to be protective of fish populations. Additionally, mercury in fish flesh was screened against the SE 2011 criteria of 0.5 µg/g (SE 2011).

TABLE 4

Selenium tissue-based effects guidelines used for the EARMP technical program.

Source or Tissue Residue	**Effects Concentration Toxicity Benchmark**
Egg-Ovary	15.1 µg/g (dw)[1]
Egg-Ovary	20 µg/g (dw)[2]
Whole Body	8.5 µg/g (dw)[1]
Fish Tissue-muscle	11.3 µg/g (dw)[1]

[1] U.S. EPA (2016).

[2] Deforest et al. 2011.

2.3.3.2 Reference Range

To establish the current condition of the far-field exposure areas as compared to the expected background conditions, the EARMP technical program endpoints were compared to the reference range. The reference range is defined as the normal range of variability in the reference areas (i.e., the 95% confidence interval or the 2.5th and 97.5th percentile of the reference area fitted distribution). In terms of the benthic invertebrate community data, changes in indices of benthic community composition outside of the normal range of variability in the reference areas often coincide with effects on fish communities (Yoder and Rankin 1995; Kilgour et al. 2005; Kilgour and Stanfield 2006).

2.3.4 Data Presentation

The EARMP technical data are presented in both summary tables and figures. Descriptive statistics are calculated for each endpoint and presented in tables with reference values and guidelines. A graphical presentation of the data is used to assess for levels above guidelines, levels outside of the reference range, and for changes over time. Two different graphical approaches were used, depending on the available data set.

An example graph is provided in Figure 3, which incorporates guidelines, the reference range, and temporal changes into a single image for each endpoint in each sampling component.

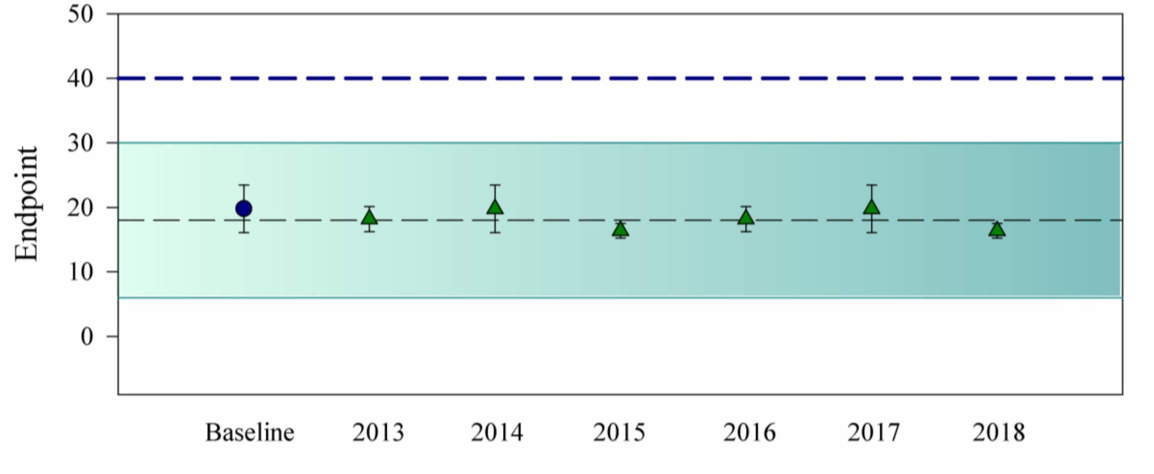

Figure 3
An example of the graphical presentation of water quality, sediment quality, and benthic invertebrate community data by endpoints.

The blue line represents a guideline concentration. The shaded area represents the reference range (2.5th and 97.5th percentiles), with the black line showing the regional reference 50th percentile. The average concentration in the far-field exposure area is shown as a circle for the baseline year and a triangle for those sampling years following the baseline data collection. The error bars represent one standard deviation. The above graph is a very useful visual tool for assessing the EARMP technical program data against the comparison criteria at a glance. It also allows for the qualitative assessment of increasing or decreasing concentrations of individual endpoints over time.

An additional approach can be used in the case of the fish chemistry data. Given that multiple species, multiple tissue types, and multiple COPCs are assessed, Principal Component Analysis (PCA) can be used as a means to evaluate fish tissue chemistry relative to the variations in tissue chemistry found at reference locations. PCA plots (e.g., Figure 4) can then be used to assess how chemically similar (or different) the fish samples are according to the distance between each specimens' position in the PCA plot (i.e., the greater the distance the greater the difference). Each axis in a PCA represents a combination of various COPC concentrations, and the eigenvectors for each COPC represent the amount and direction of "pull" each COPC has along each axis.

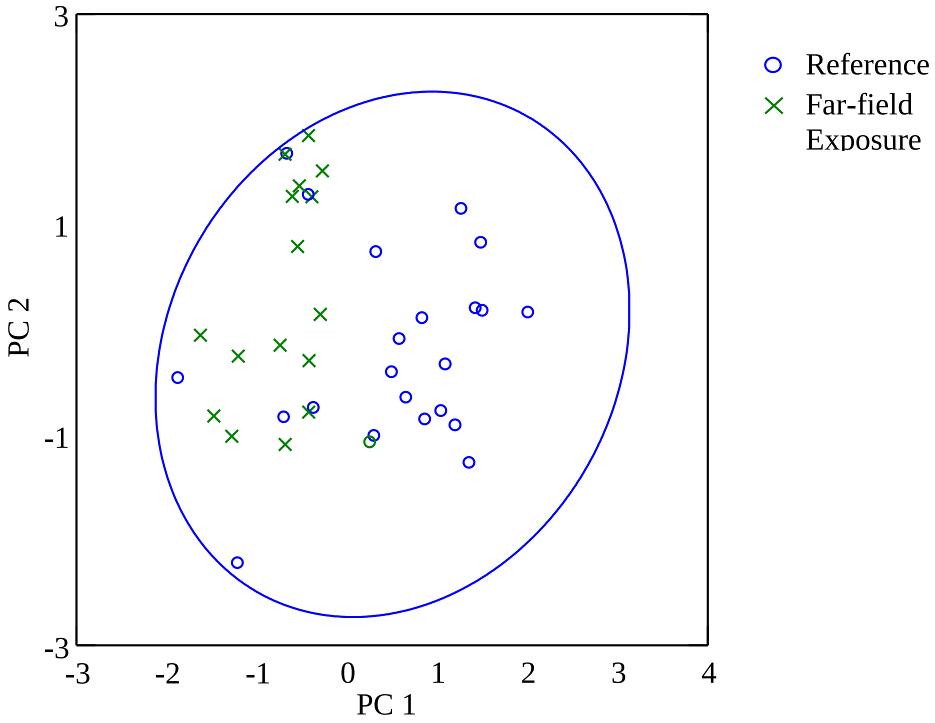

Figure 4
An example of the graphical presentation of fish tissue chemistry data using PCA.

The 95th percentile confidence ellipse of the reference area fish can be superimposed on the graph. The chemical profile of any far-field exposure fish that fall outside the ellipse could then be examined closer for specific COPCs that may exceed the reference range. PCA produces multidimensional results (e.g., four, five, or more axes in multidimensional space); the majority of variation is typically summarized in the first two axes. Plots including more than two axes (or dimensions) become increasingly abstract and difficult to interpret. Therefore, the focus of the results will be on first two principal components (PC1 and PC2); however, consideration will be given to all axes that explained ≥ 10% of the variation.

2.4 Reporting and Communication Plan

Following each monitoring phase, a report will be completed to assess the EARMP technical data. The report, along with the raw data, will be available for the public to download from the EARMP website at www.earmp.ca. In addition, any news related items (i.e. community visits, updates etc.) can be found on the news section of the website along with contact information.

In addition to the report, the results of the monitoring program are presented to the Eastern Athabasca communities at the Northern Saskatchewan Environmental Quality Committee (NSEQC) meeting in La Ronge annually. The NSEQC is composed of trusted and knowledgeable people each nominated by his/her community. They provide a bridge between northerners, governments, and the uranium mining industry. The NSEQC is not vested with regulatory responsibilities, but rather is structured to provide a forum that will ensure consideration of the concerns from northern communities. The NSEQC meetings provide an opportunity to receive feedback on the EARMP program from community members. Feedback on the program can also be provided through the EARMP website via email or telephone.

In 2015, the EARMP took the opportunity to visit all Athabasca communities to collect sample for the EARMP Community Program while also disseminating information about the project through print media and advertisements. EARMP also partnered with for its second straight year with the University of Saskatchewan’s Science Ambassador Program. The Science Ambassador Program pairs senior university science, engineering and health science students with rural and remote Indigenous community schools, to support creative and culturally-relevant science teaching and learning.

3.0 SURFACE WATER QUALITY

Water quality data are collected as part of the EARMP technical program to monitor potential changes over time and to provide supporting information for the sediment quality, benthic invertebrate community, and fish tissue chemistry components of the program. Limnological profiles and water chemistry samples were collected from one station in each far-field exposure area and in each reference area (Appendix A, Figure 1 to 7). The water quality sampling station was also co-located with one of the sediment and benthic invertebrate community replicate sampling stations in each area.

3.1 Sampling Methods

Limnological measurements of temperature, dissolved oxygen, specific conductance, and pH were collected *in situ* with a YSI multi-meter probe. Measurements were collected at 1.0-m depth intervals at each water quality sampling station. In addition, water transparency was measured using a black and white Secchi disc (20 cm diameter).

Water chemistry samples consisted of a composite water sample collected from 15 cm below the surface, mid-point of the water column, and 0.5 m above the bottom with a Kemmerer water sampler. Prior to field collections, sample bottles, preservative, and QA/QC trip blanks were obtained from SRC in Saskatoon (results presented in Appendix C). Detailed sample-specific information (e.g., date, location, GPS coordinates, and composite depths) were collected during sampling. Preserved samples were placed in coolers and transferred to a refrigerator for storage until submission to SRC for chemical analysis (refer to Section 2.3.1 for information on lab analysis).

3.2 Data Analysis

To provide supporting habitat information for the benthic invertebrate community and fish components of this program, limnological parameters are compared against the CWQG for the protection of freshwater aquatic life (CCME 2016) and between sampling areas.

Data analysis of the water chemistry information focuses on the concentration of COPCs from the far-field exposure areas as compared to levels observed during the baseline monitoring years, available CWQG, and the expected concentrations for the region (i.e., reference range). It is noted that baseline monitoring years included 2011 and 2012 and refer to the initial monitoring years for the program and not to pre-operational values. COPC concentrations were considered to be within the reference range if values were within the 2.5th and 97.5th percentile of the available reference data. Percentiles were calculated after fitting a curve to the cumulative distribution of the reference area data. COPC concentration distributions for water and other media were often best described by a 3, 4, or 5-parameter sigmoid curve of cumulative percent frequencies of the log-transformed concentrations, although in some instances a 2 or 3-parameter logarithmic curve[3] of cumulative percent frequencies of the non-transformed concentrations best describe the distributions

A graphical approach was used to assess the far-field exposure data against the baseline data set, available guidelines, and reference range. Only those COPCs that were measured above MDL in more than 50% of the samples in 2015 from a given far-field exposure area were included in the graphical presentation.

3.3 Results

3.3.1 Limnology

The limnology profiles are discussed in detail in Appendix A and the main points are summarized below.

TABLE 5

Average limnology measurements from the EARMP technical program study area, 2015.

Sampling Area	Date	Temp. (°C)	DO (mg/L)	Sp. Cond. (µS/cm)	pH	Secchi Depth (m)	Max. Depth (m)
Far-field Exposure							
Cochrane River	21-Sep-15	9.9	9.22	35.9	7.30	4.3	7.3
Crackingstone Inlet	24-Sep-15	10.9	10.46	77.1	7.45	5.4	7.1
Fond du Lac River	15-Sep-15	12.7	9.47	35.8	6.78	5.0	7.6
Waterbury Lake	17-Sep-15	11.7	7.88	25.4	6.96	5.3	7.1
Reference							
Cree Lake	24-Sep-15	10.1	10.28	21.3	7.04	6.0	7.8
Ellis Bay	28-Sep-15	9.7	10.20	71.1	7.55	5.3	6.6
Pasfield Lake	20-Sep-15	10.9	9.52	19.2	6.92	6.3	6.3

Temp. = temperature; DO = dissolved oxygen; Sp. Cond. = specific conductance.

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[3] Curve-fitting was performed using Sigmaplot 12.5, which finds the best-fitting curve by iterative parameterization of selected curve equations.

Profiles collected in the fall of 2015 varied little with depth (Appendix A); therefore, average measurements are presented in Table 5. Fall water temperatures ranged between 9.7°C and 12.7°C across all waterbodies. Mean dissolved oxygen concentrations were high in all waterbodies meeting the CWQG of 6.5 mg/L for most stages of aquatic life (CCME 2016). The mean dissolved oxygen concentrations in Crackingstone Inlet and the reference areas also met the CWQG for early life stages (9.5 mg/L; CCME 2016). Specific conductance was typical of northern oligotrophic waterbodies, with mean concentrations ranging between 19.2 µS/cm and 35.9 µS/cm in all areas except Lake Athabasca. Similar to the baseline monitoring period, specific conductance was higher in Lake Athabasca (Crackingstone Inlet and Ellis Bay), with mean concentrations ranging between 71.1 µS/cm and 77.1 µS/cm. The mean pH values met the CWQG (6.5 to 9.0) and were within the expected range for the region. Water transparency ranged from 4.3 m in the Cochrane River to 6.3 m in Pasfield Lake, which is similar to the range of transparencies observed in the baseline monitoring years.

3.3.2 Water Chemistry

A detailed assessment of the water chemistry data is presented in Appendix A. The raw water chemistry data are presented in Appendix B, Table 1. The following section summarizes the main findings of the 2015 sampling program.

The majority of the COPCs assessed in water quality samples collected from the far-field exposure areas in 2015 were at concentrations at or below the MDLs. This included concentrations/activities of cadmium, copper, lead, mercury, selenium, lead-210, polonium-210, radium-226, thorium-230, cobalt, and vanadium. Figure 5 and Figure 6 summarize the concentrations of the remaining seven COPCs in context of the baseline monitoring data, available guidelines, and the reference range. Note that no reference range is available for nickel, uranium, and arsenic due to the number of values below the MDL in the reference areas.

Of the seven COPCs measured above MDL in 2015, all were similar to baseline and below CWQG for the protection of freshwater aquatic life. Similar to the baseline monitoring period, molybdenum concentrations were slightly higher than the reference range in the Cochrane River, Fond du Lac River, and Waterbury Lake; however, levels remained well below the CWQG. In summary, all COPCs in the water in 2015 were in low concentrations and were below the guidelines or within the reference range.

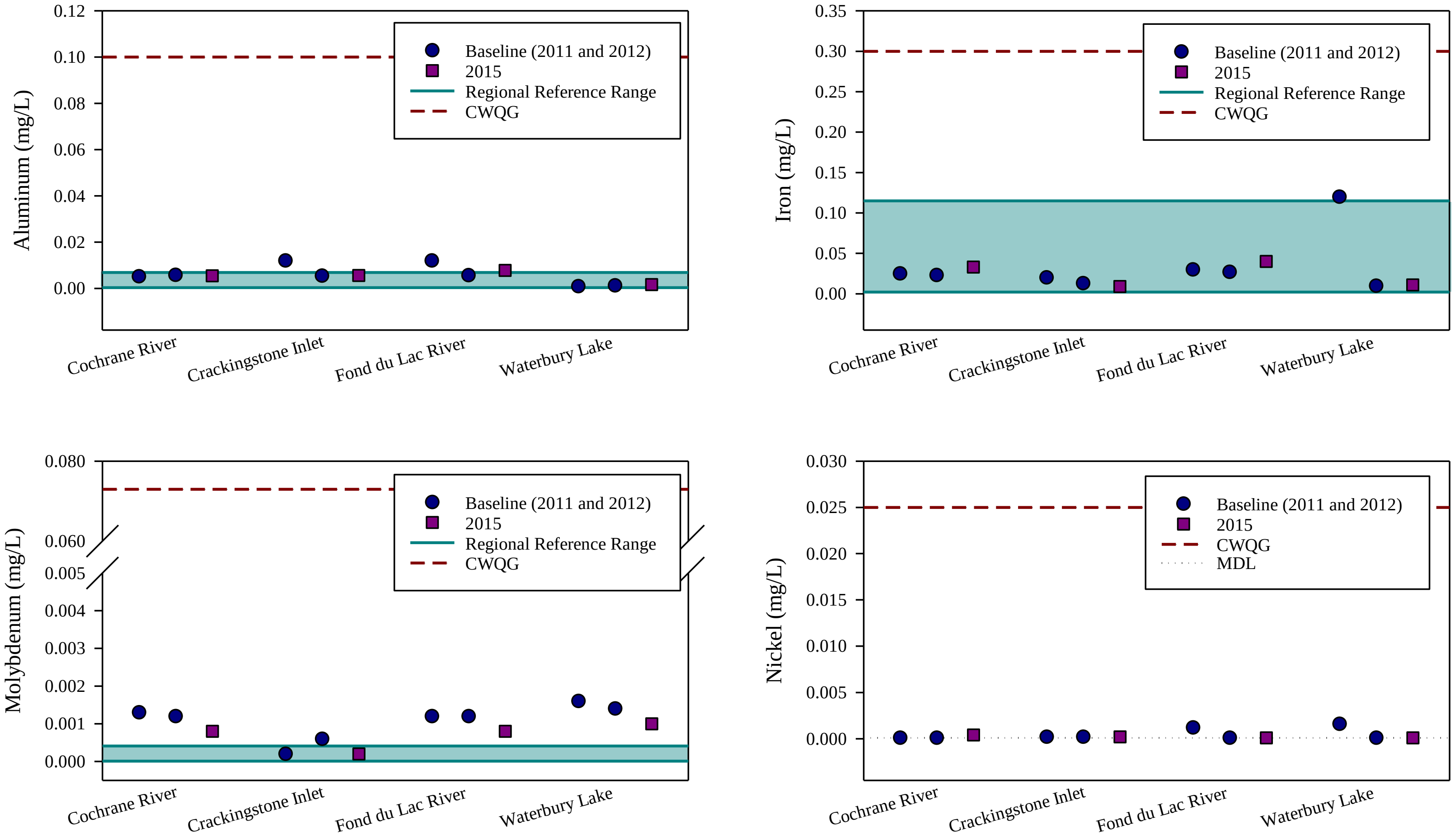

Figure 5
Aluminum, iron, molybdenum, and nickel concentrations in water in the EARMP technical program study area, 2011 to 2015.

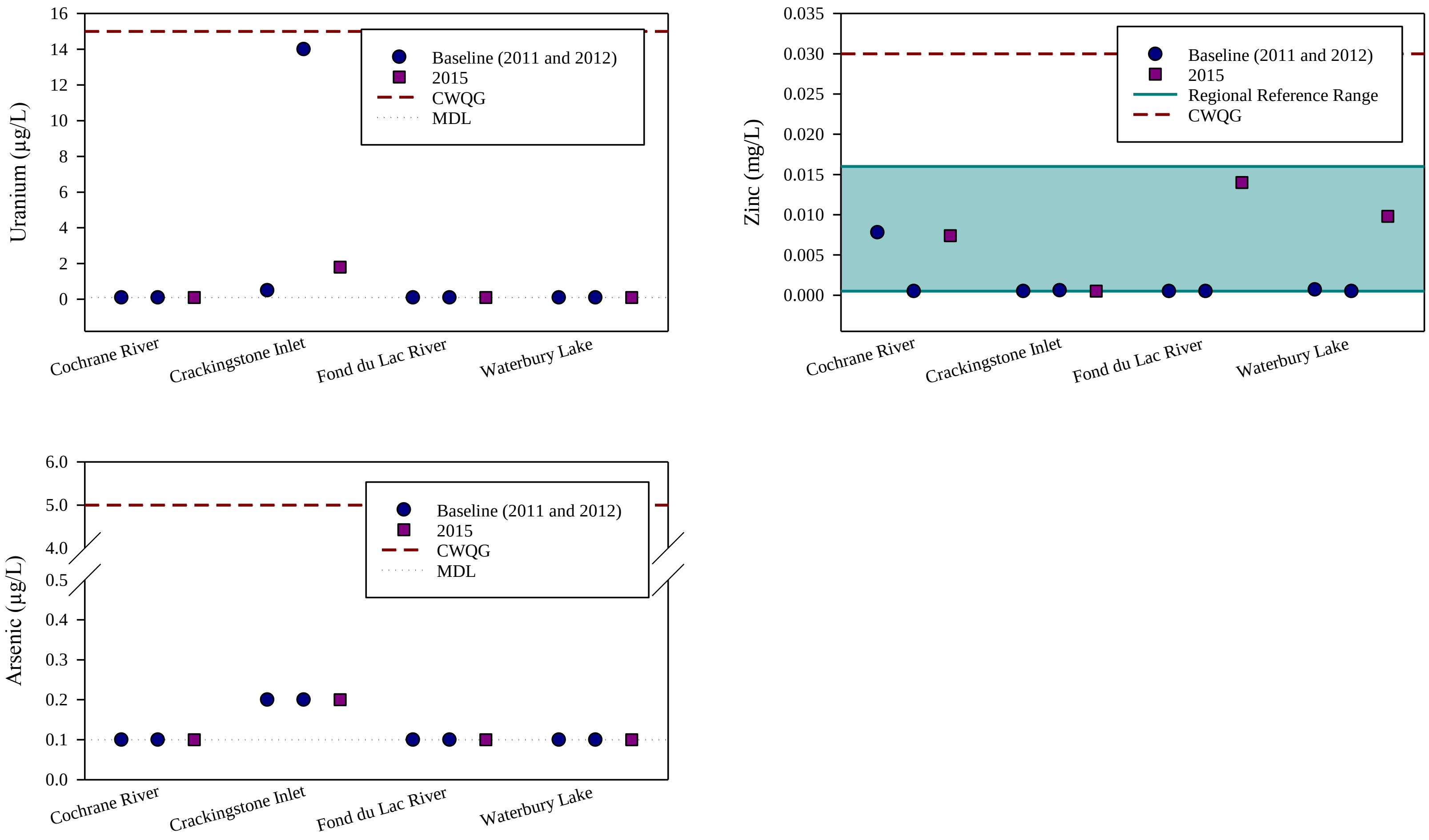

Figure 6
Uranium, zinc, and arsenic concentrations in water in the EARMP technical program study area, 2011 to 2015.

4.0 SEDIMENT QUALITY

Sediment quality (chemistry and particle size distribution) is an important aspect of aquatic ecosystems, as it can influence the quality of overlying waters and the benthic invertebrate community residing in the sediment. Sediment quality data are collected as part of the EARMP technical program to monitor for the potential accumulation of COPCs in the benthic environment and to assess for potential changes in COPCs over time. Sediment quality samples were collected from five replicate stations in each far-field exposure area and each reference area (Appendix A, Figure 1 to 7). The sediment quality sampling stations were co-located with the benthic invertebrate community sampling areas.

4.1 Sampling Methods

Sediment chemistry and sediment particle size samples were collected at five replicate stations per waterbody using a Tech-ops extruder corer at depths generally ranging from 6.0 m to 8.0 m. The location of each sediment sampling station was recorded using a hand held GPS unit and the sample collection depth was noted (Appendix D). A sediment profile description was recorded at each station and a photograph was also taken. Sediment core logs are provided in Appendix D.

Sediment cores collected for chemical analyses were divided into 0 cm to 2 cm, 2 cm to 4 cm, and 4 cm to 6 cm horizons and each horizon was a composite of two cores. Duplicate samples were collected from 10% of the stations for QA/QC purposes (see Appendix C for details). Particle size and total organic carbon (TOC) content was measured in the 0 cm to 2 cm and 0 cm to 5 cm horizon from each sediment and benthic invertebrate community replicate sampling station. Analysis of particle size from the same core submitted for chemical analysis was completed using laser diffraction whereas analysis of the 0 cm to 5 cm horizon was completed using the sieve/pipette method consistent with methods used during previous sampling years. It is anticipated that moving forward; laser diffraction will be the preferred method for particle size analysis given its highly repeatable results in comparison to the sieve/pipette method. Furthermore, the laser diffraction method is less likely to overestimate fine particles. An analysis of the the particle size method changes is detailed in Appendix A

All sediment samples were double bagged and frozen prior to submission to SRC for analysis. The 2 cm to 4 cm and 4 cm to 6 cm horizons were archived.

4.2 Data Analysis

Particle size composition and TOC content of the sediment were described to provide supporting information for interpretation of the sediment chemistry and benthic invertebrate community data. Lake sediments are an important indicator of past water quality and of long-term trends in surface water quality. An important factor influencing the transportation of constituents in the environment is particle size distribution of the sediment present. The concentrations of parameters in sediment tend to increase with decreasing particle size, due to an increase in surface area per unit mass (Muller and Tisue 1997). Sediment particle size is, therefore, also useful in predicting the transportation of bound constituents if there is a predicted change in water flow (Walling and Moorehead 1989).

Sediment chemistry data analysis focused on comparing COPC concentrations to baseline monitoring data, the most relevant sediment quality guidelines, and to expected background conditions (i.e., reference range). Various sediment quality guidelines are available (i.e., CCME 2016; Thompson et al. 2005; Burnett-Seidel and Liber 2013; see Section 2.3.3.1); however, analysis focused on comparing COPCs to the most locally relevant guideline (see Table 3 in Section 2.3.3.1).

The far-field exposure COPC concentrations were considered to be within the reference range if mean concentrations were within the upper and lower bounds of the reference range. The reference range is defined as the 2.5th (lower) and 97.5th (upper) percentiles based on the equation best-fitting the cumulative percent frequencies of COPC concentrations. A graphical approach was used to assess the far-field exposure data in the context of baseline monitoring data, the reference range, and available guidelines.

Since it was difficult to control for particle size between sampling areas, and because a significant relationship was identified between fine particle content and COPC concentrations (See Appendix A), the sediment chemistry data were standardized to the average fine particle content using regression analysis.

4.3 Results

4.3.1 Sediment Particle Size

Sediment particle size and TOC is summarized in Table 6 and detailed in Appendix A. The raw particle size data are provided in Appendix B, Table 2.

TABLE 6

Summary of the particle size and organic carbon content from the EARMP technical program study area, 2015.

Area	Year	Data	Clay	Silt	Fine Sand	Coarse Sand	Gravel	Organic Carbon
Cochrane River	2015 (0-2 cm)	Average	12.1	69.4	16.9	1.6	<0.1	7.6
		S.D.	2.5	5.0	7.5	1.3	-[1]	0.3
Crackingstone Inlet	2015 (0-2 cm)	Average	13.0	56.4	27.6	3.0	<0.1	1.9
		S.D.	2.8	5.9	6.6	1.7	-[1]	0.3
Fond du Lac River	2015 (0-2 cm)	Average	12.1	74.6	12.6	0.8	<0.1	9.3
		S.D.	1.1	3.2	3.6	0.7	-[1]	1.2
Waterbury Lake	2015 (0-2 cm)	Average	6.0	39.4	26.6	28.1	<0.1	3.6
		S.D.	1.4	9.0	7.2	6.2	-[1]	1.2
Cree Lake	2015 (0-2 cm)	Average	5.4	50.0	34.5	10.1	<0.1	3.7
		S.D.	0.6	14.5	9.5	5.5	-[1]	0.8
Ellis Bay	2015 (0-2 cm)	Average	18.3	57.4	20.7	3.5	<0.1	5.2
		S.D.	3.1	3.9	4.8	1.9	-[1]	0.7
Pasfield Lake	2015 (0-2 cm)	Average	3.1	38.5	16.5	41.9	<0.1	3.2
		S.D.	1.7	29.5	4.7	32.1	-[1]	3.1

All measures are in % volume except moisture and organic carbon that is % weight.

S.D.: standard deviation; Min: minimum; Max: maximum; <MDL: number of samples with reading less than the method detection limit (MDL); N: sample size.

For values measured at less than the method detection limit (MDL), all average and standard deviation computations were performed with values set at the MDL.

[1] When all values were less than the method detection limit (MDL), standard deviations were not computed.

As shown in Table 6, sediment particle size tended to vary between areas in terms of fine particle (clay + silt) content, although the range of fine particle content in the exposure areas was similar to the range observed in the reference areas. In the exposure areas, average fine particle content ranged from 45.4% in Waterbury Lake to 86.6% in the Cochrane River in 2015. At the 2015 references, average fine particle content ranged from 41.6% in Pasfield Lake to 75.7% in Ellis Bay. The fine particle content in Waterbury Lake was similar to that of Pasfield and Cree lakes, while the Fond du Lac, Cochrane River, and Crackingstone Inlet sampling areas were similar to those in Ellis Bay.

4.3.2 Sediment Chemistry

A detailed assessment of the sediment chemistry data is presented in Appendix A. The raw sediment chemistry data are presented in Appendix B, Tables 3 and 4. The following section summarizes the main findings of the 2015 sampling program.

As indicated above, sediment particle size varied between sampling areas and within some sampling areas. Furthermore, with few exceptions[4], a significant relationship was identified between the concentrations of COPCs in sediment and fine particle content in the EARMP study area. As a result, the sediment chemistry data were adjusted to the average fine particle content across all sampling areas (59.9%). A summary of the COPC concentrations, adjusted to fine particle content, in the context of available guidelines and the reference range is presented in Figure 7 to Figure 11.

In 2015, all COPC concentrations remained similar to concentrations observed during the baseline monitoring period or within the reference range. Similar to the baseline monitoring years, mean uranium and vanadium concentrations and the mean thorium-230 activity in Crackingstone Inlet were elevated above the reference range and levels found in other far-field exposure areas (Figure 10). Of the COPCs with available guidelines, all adjusted averages except vanadium in Crackingstone Inlet remained below even the most conservative guideline (see lowest guideline Table 3) as shown in Figure 7 to Figure 11. It is noted that vanadium concentrations in the water samples collected from Crackingstone Inlet were below the available water quality guidelines for the protection of aquatic life and further below the method detection limit.

Sediment chemistry un-adjusted for particle size differences were also compared to the primary benchmarks (Table 7). Un-adjusted cadmium concentrations in the Fond du Lac River marginally exceeded the available ISQG of 0.6 µg/g. In addition, unadjusted vanadium concentrations in both the Fond du Lac River and Crackingstone Inlet exceeded the LEL. Overall, these concentrations remained comparable to those observed in 2011 and 2012.

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[4] No significant relationship was identified in thorium-230 concentrations and fine particle content (see Appendix A).

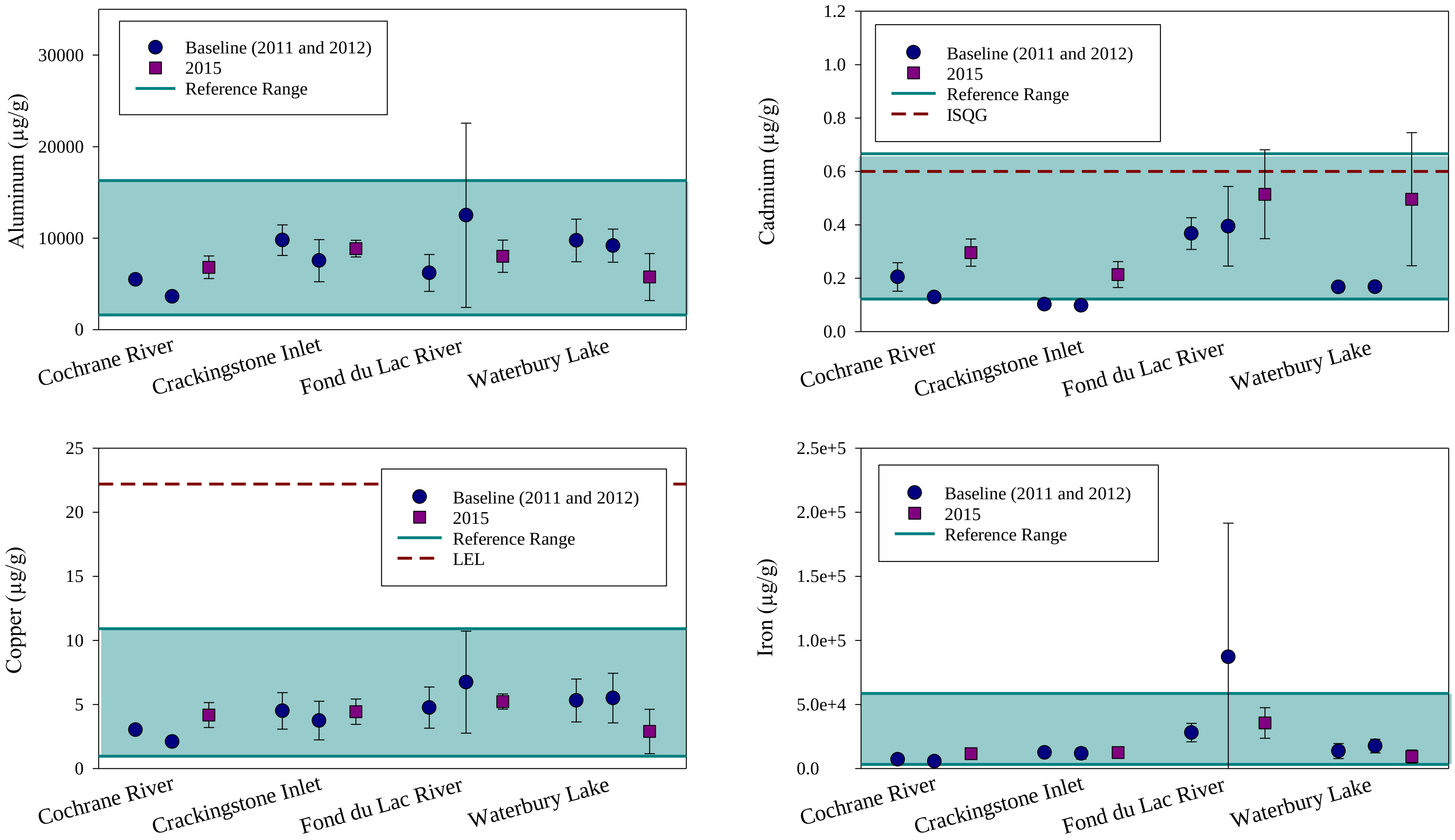

Figure 7
Aluminum, cadmium, copper, and iron in sediment, adjusted for particle size, from the EARMP technical program study area, 2011 to 2015.

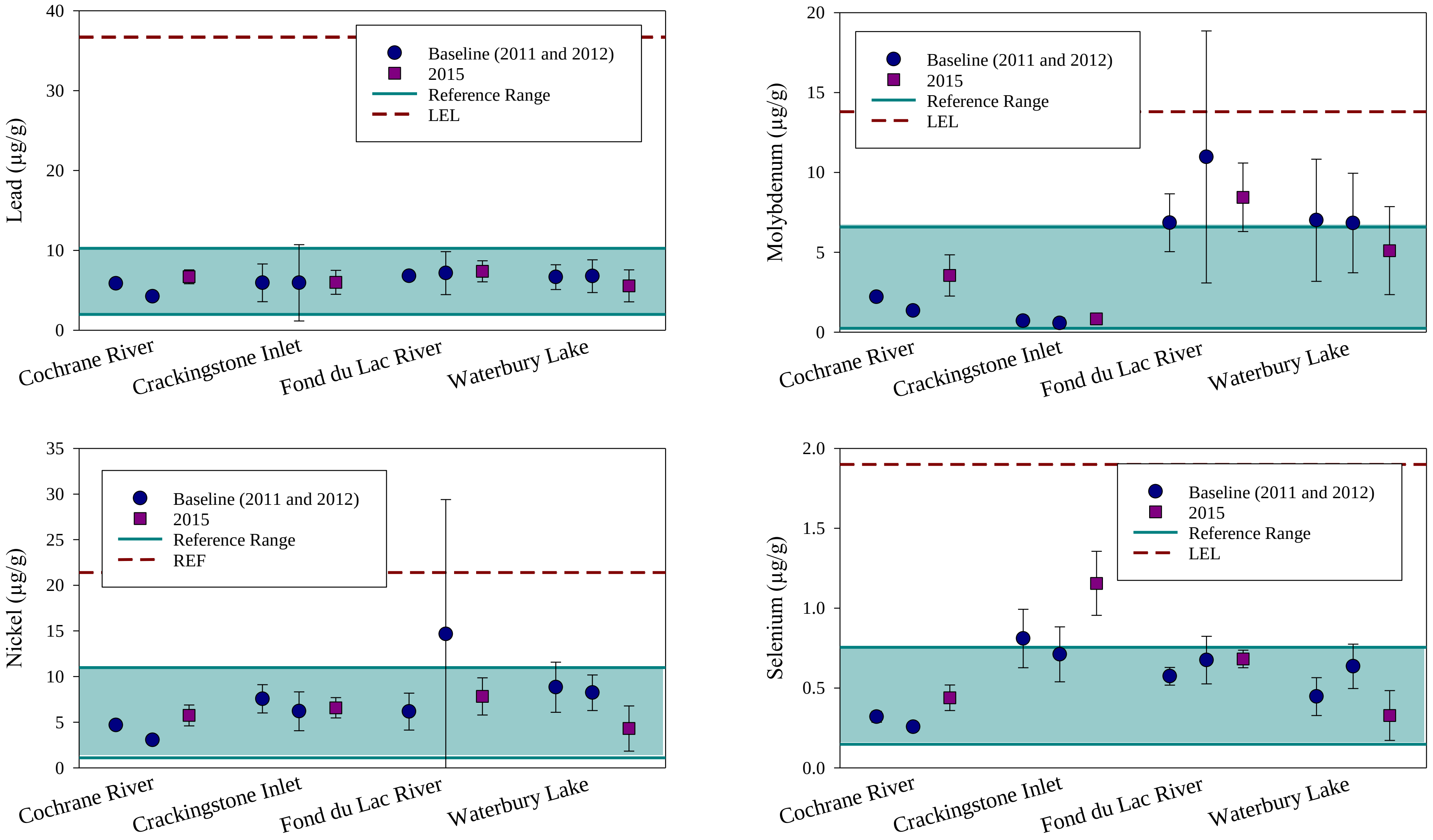

Figure 8
Lead, molybdenum, nickel, and selenium in sediment, adjusted for particle size, from the EARMP technical program study area, 2011 to 2015.

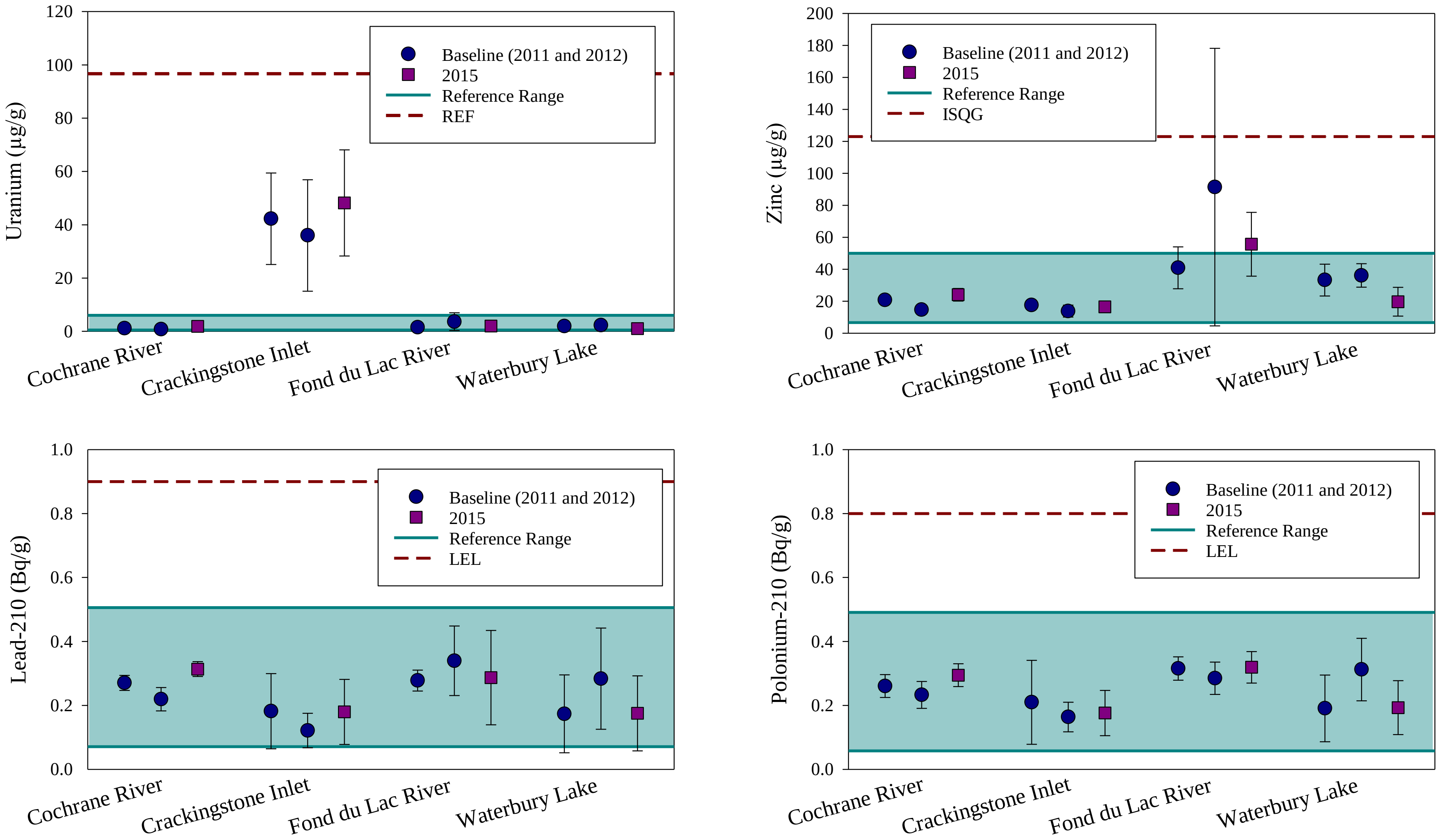

Figure 9
Uranium, zinc, lead-210, and polonium-210 in sediment, adjusted for particle size, from the EARMP technical program study area, 2011 to 2015.

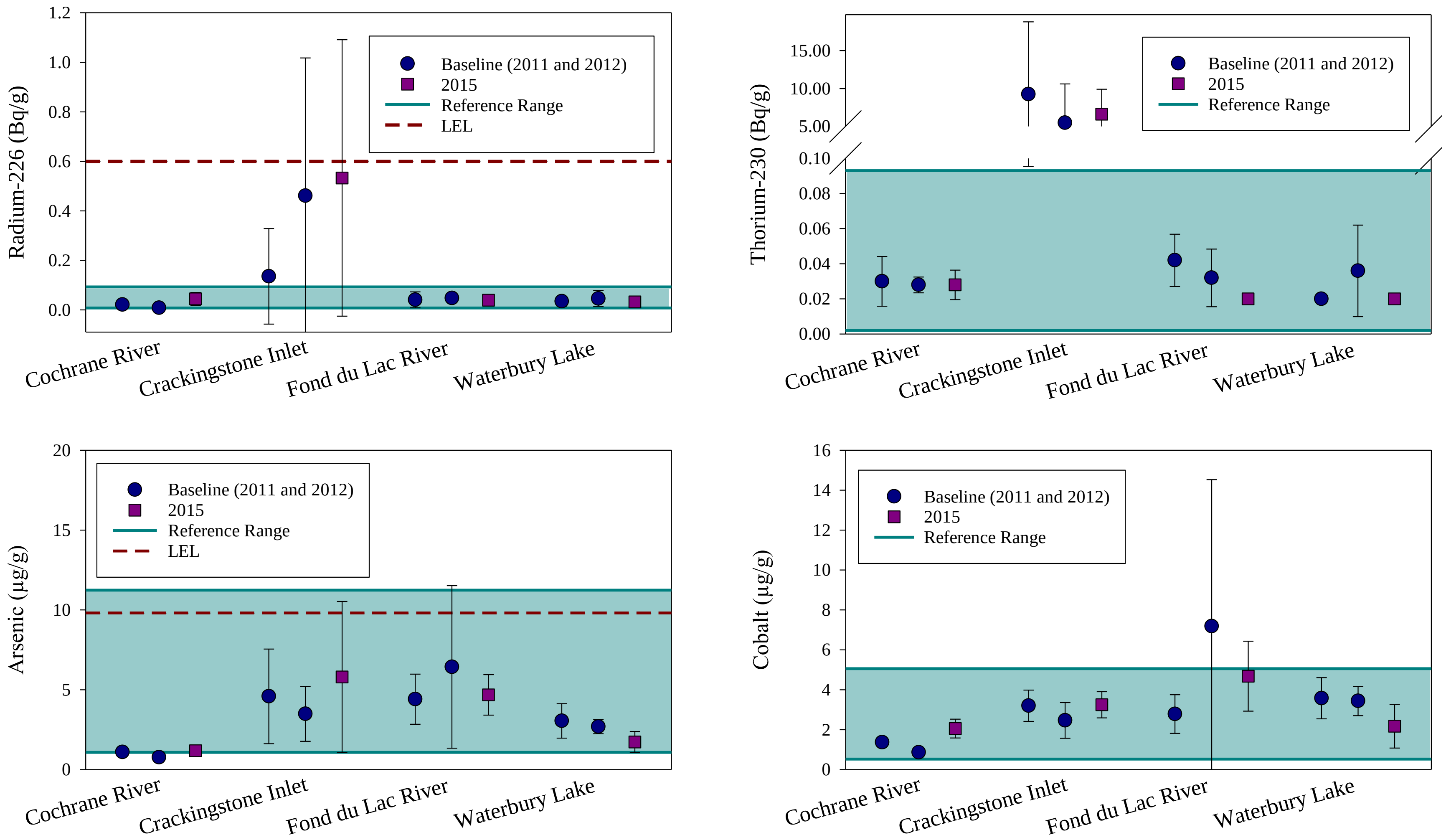

Figure 10

Radium-226, thorium-230, arsenic, and cobalt in sediment, adjusted for particle size, from the EARMP technical program study area, 2011 to 2015.

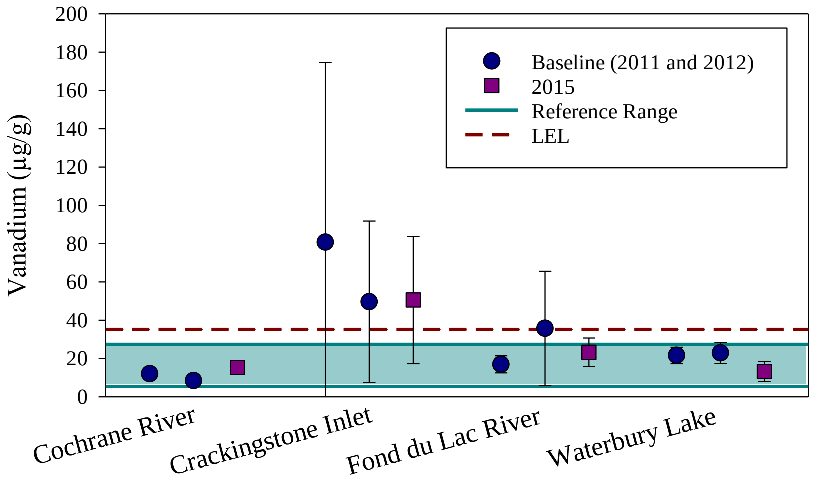

Figure 11
Vanadium in sediment, adjusted for particle size, from the EARMP technical program study area, 2011 to 2015.

TABLE 7

Mean un-adjusted COPC concentrations in sediment from the EARMP technical program study area in 2015 compared to the primary benchmark.

COPC	Far-field Exposure				Reference			Primary Benchmark
	Cochrane River	Cracking-stone Inlet	Fond du Lac River	Waterbury Lake	Cree Lake	Ellis Bay	Pasfield Lake	
Metals and Trace Elements								
Cadmium	0.4	0.2	0.7	0.4	0.4	0.4	0.5	0.6
Copper	7.7	5.9	11.4	1.6	1.2	19.8	1.7	22.2
Lead	9.4	7.0	11.2	4.2	3.3	9.2	5.0	36.7
Molybdenum	6.8	1.1	19.8	2.8	0.2	1.5	0.4	22.6; 245
Nickel	10.5	8.6	16.2	2.5	1.8	19.6	1.6	21.4; 326
Selenium	0.7	1.4	1.1	0.2	0.2	0.7	0.2	3.6; 297
Uranium	4.4	66.7	5.8	0.5	0.3	8.9	0.3	96.7; 2296
Zinc	37.8	20.5	96.2	13.3	9.8	45.6	12.7	123
Arsenic	1.8	6.6	7.9	1.2	0.8	4.2	1.0	20.8; 522
Vanadium	25.0	60.8	42.2	8.7	4.9	38.2	6.6	35.2
Radionuclides								
Lead-210	0.40	0.21	0.39	0.14	0.16	0.21	0.21	0.9
Polonium-210	0.37	0.20	0.43	0.15	0.17	0.20	0.20	0.8
Radium-226	0.06	0.59	0.06	0.03	0.01	0.10	0.02	0.6

Metals presented on a µg/g dry weight basis, radionuclides presented on a Bq/g dry weight basis.
Shaded values exceed the lowest available primary benchmark.
See Table 3 for full list of guidelines.

5.0 BENTHIC INVERTEBRATE COMMUNITY

Benthic invertebrate community data provide an indication of the quality of fish habitat, and because benthic invertebrates have a shorter life span than most fish species, effects on benthic invertebrate communities can provide an early indication of potential effects on fish communities or populations. Benthic invertebrate community samples were collected from five replicate stations in each far-field exposure area and each reference area and were co-located with the sediment quality sampling stations (Appendix A, Figure 1 to 7).

5.1 Sampling Methods

A composite sample of five Ekman dredges (0.052 m^2) was collected at each of the five replicate stations in the Cochrane River, Crackingstone Inlet, Fond du Lac River, Waterbury Lake, Cree Lake, Ellis Bay, and Pasfield Lake sampling areas. Reference data available for Bobby’s Lake and RF-4 were collected as part of separate programs, and therefore the sampling procedure varied slightly (CanNorth 2009; CanNorth 2010; CanNorth 2013a; CanNorth 2013b). The samples collected from Bobby's Lake in 2009 were composites of three large Ekman dredges (0.052 m^2), while in 2012, samples were composites of five large Ekman dredges (0.052 m^2). For RF-4, samples were composites of 10 small Ekman dredges (0.0225 m^2) in both 2008 and 2012. Data were assessed on a per m^2 basis to standardize the sampling area differences. For all areas and years, samples were concentrated through a 500 μm Nitex sieve and preserved in the field using 10% buffered formalin.

Preserved benthic invertebrate samples were sorted and keyed according to the latest methods (Appendix E) and taxonomic keys by a qualified taxonomist, Dr. Jack Zloty, a Professor Emeritus from the University of Calgary. Invertebrates were separated from other material, enumerated under a dissecting microscope, and identified to the lowest taxonomic level feasible (typically to genus or species). Wet weight mass of major invertebrate groups was measured using an analytical balance to a precision of 0.1 mg. A reference collection was retained by the taxonomist for all taxa identified from the samples. Sample sorting efficiency ranged between 97.4% and 98.0% (details presented in Appendix C).

5.2 Data Analysis

To prepare the data for community analysis, the taxa considered as non-benthic (Calanoida, Cyclopoida, and Daphnidae) were removed prior to calculation of the indices used for comparison. To assist in the interpretation of the benthic invertebrate results, the data are presented in several formats. For each station, benthic invertebrate density (the mean number of organisms/m^2), richness (the total and average number of taxa assessed at the lowest practical level), and biomass are reported. Similar to the sediment chemistry comparisons, all benthic invertebrate univariate endpoints were presented graphically in comparison to the reference range (2.5th and 97.5th percentile of the fitted distribution of reference data) and baseline (2011 and 2012) dataset.

In addition to the assessment of univariate endpoints, multivariate analysis of the community composition was completed through NMDS (based on the Bray-Curtis dissimilarity matrix), which depicts samples with more dissimilar communities as being further apart than samples with more similar communities. The far-field community composition was then compared to the 95% reference and baseline confidence ellipses. For the NMDS, data were Ln-transformed before analysis to reduce the potentially influence of taxa with very high abundances. The level of reliability of the two-dimensional NMDS plots was assessed in accordance with Clarke and Warwick (2001) as follows: stress <0.05: excellent representation of the dissimilarities; stress <0.10: good representation with no real prospect of being misleading; stress <0.20: potentially useful representation but not entirely reliable; stress: <0.30: close to a random distribution and likely misleading.

5.3 Results

A detailed assessment of the benthic invertebrate community data is presented in Appendix A and the raw data are presented in Appendix B, Tables 5 to 8. The following section summarizes the main findings of the 2015 sampling program. As discussed in Section 4.0, there was a high degree of variability in particle size composition between stations and study areas. Habitat factors such as particle size and TOC content can cause differences in benthic invertebrate community assemblages. However, as described in detail in Appendix A, no strong relationship between particle size and benthic invertebrate endpoints was established in the EARMP data. Furthermore, no community composition changes were found to correlate with particle size differences.

The benthic invertebrate community composition within the EARMP technical program study area included 93 taxa. Common taxa included Hirudinea (leeches), Oligochaeta (aquatic earthworms), Bivalvia (clams), Gastropoda (snails), Amphipoda (scuds), Cladocera (water fleas), Trichoptera larvae (caddisflies), and Chironomidae larvae (non-biting midges). Ephemeroptera nymphs (mayflies), Megaloptera larvae (fishflies), and Odonata nymphs (dragonflies) also occurred but generally only in a few samples. Chironomidae and various crustaceans were usually the numerically dominant groups.

Densities differed widely between samples, between years, and between waterbodies, ranging between 977 ± 252 organisms/m^2 to 35,324 ± 11,053 organisms/m^2. Except for Waterbury Lake, the 2015 densities in the far-field communities were within the reference range (Figure 12). The Waterbury Lake average density in 2015 was higher than the reference range, largely because *Micropsectra* sp., a chironomid, reached an average density of 29,050 organisms/m^2. Comparatively, the average density of this taxon was 15 organisms/m^2 in 2011 and was not observed in this lake in 2012. The density without *Micropsectra* sp. is within the reference range and similar to densities observed at the other far-field exposure areas. The Cochrane River community in 2015 was also a bit higher than in previous years, although this community's density remained within the reference range (Figure 12). Overall densities in Crackingstone Inlet and the Fond du Lac River did not differ substantially from baseline (Figure 12).

The average 2015 benthic invertebrate biomass for each of the four far-field exposure areas was within the reference range[5] (Figure 12). Like density, biomass in 2015 was higher in Cochrane River and in Waterbury Lake than in 2011 and 2012, but these differences were not as apparent as those for densities. A higher chironomid biomass in 2015 was the main contributor to these differences with baseline biomass.

Mean taxon richness ranged between a low of 10 ± 2 taxa observed in RF-4 in 2008 to a high of 23 ± 1 taxa observed in Ellis Bay in 2011. Far-field taxon richness ranged between an average of 11 ± 1 taxa observed in the Fond du Lac River (2015) to an average of 22 ± 3 taxa observed in Crackingstone Inlet. In all cases, the taxon richness at the far-field exposure areas was within the reference range, suggesting that richness falls within the expected range for the region (Figure 12).

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[5] Since benthic invertebrate biomass was not measured in RF-4, the reference range did not include biomass values from RF-4.

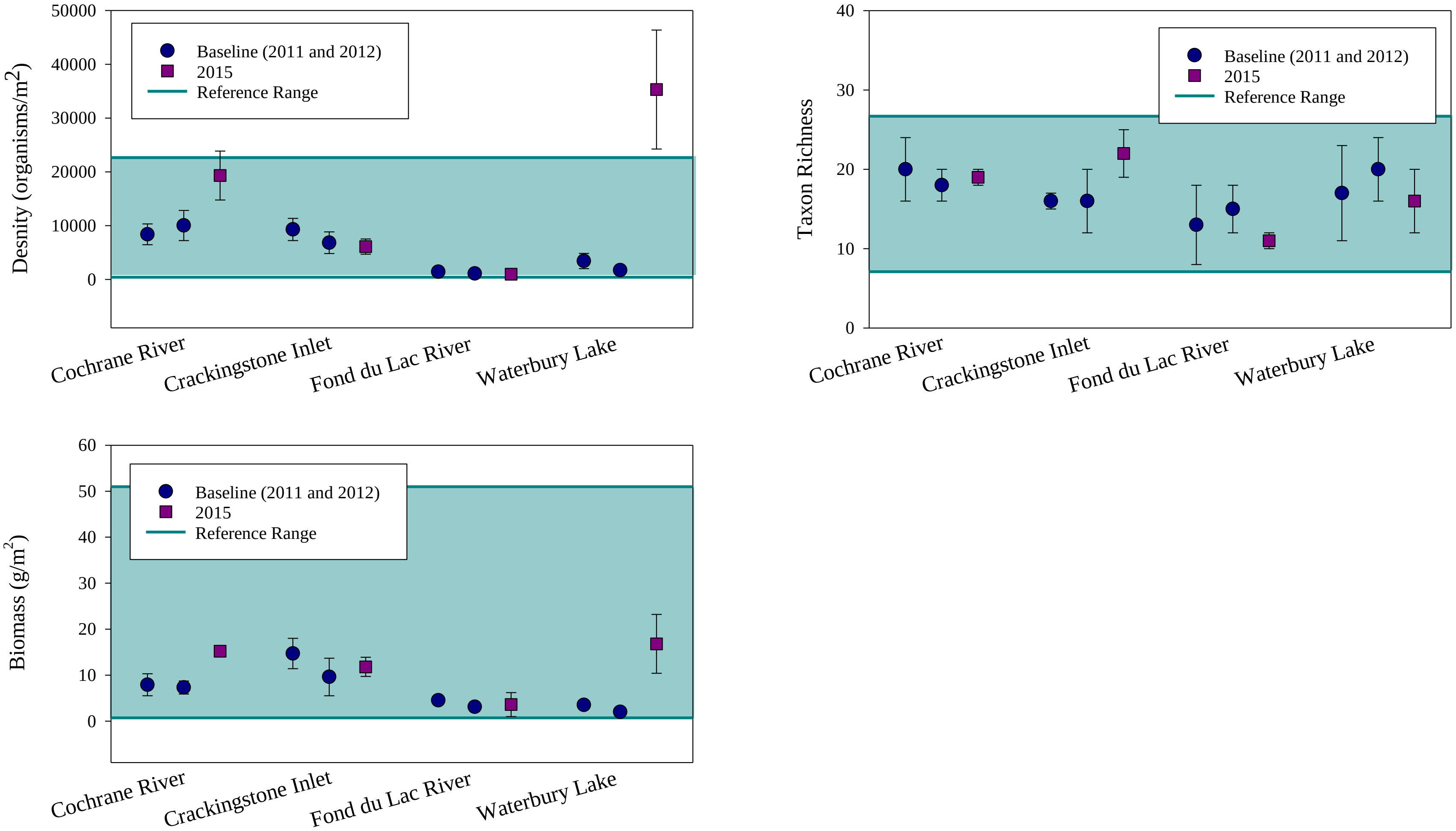
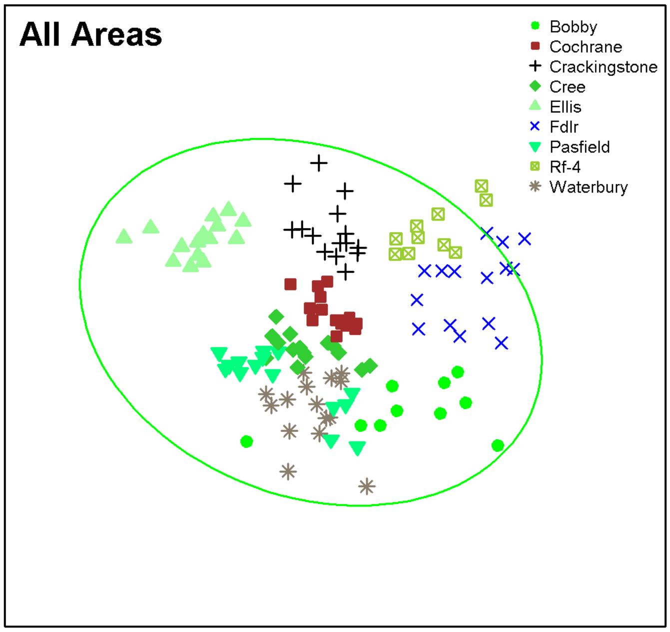


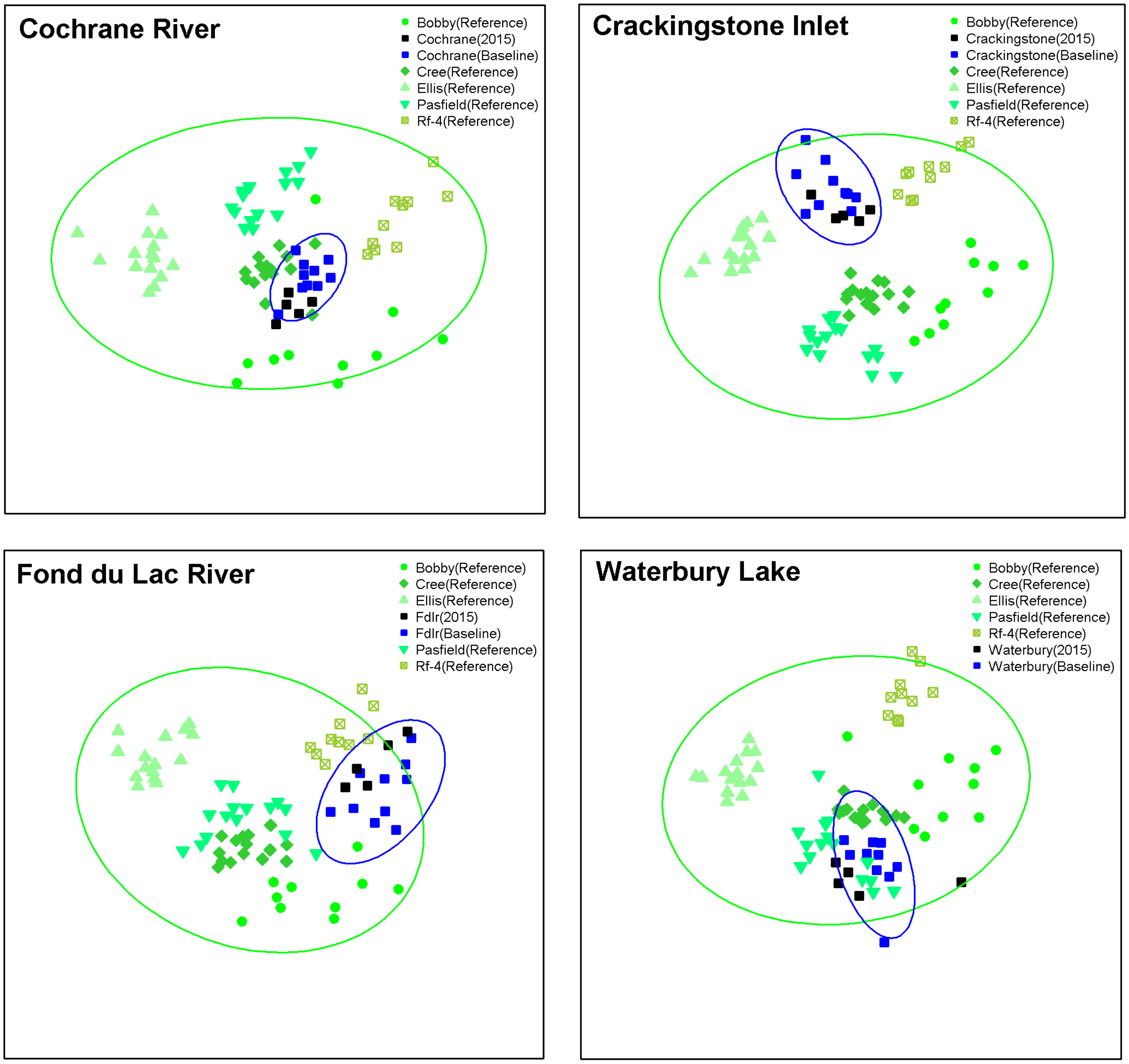
Figure 12
Benthic invertebrate community univariate endpoints in the EARMP technical program study area, 2011 to 2015.

Multivariate analysis of the benthic invertebrate community composition is depicted in Figure 13 and Figure 14. As shown, nearly all samples fall within the reference area 95% confidence ellipse (Figure 13). When each far-field area is compared to its baseline dataset, few samples fall outside of the baseline 95% confidence ellipse (Figure 14). All but one of the five samples from Cochrane River in 2015 were within the 2011 and 2012 baseline ellipse for this area. The Crackingstone Inlet benthic invertebrate community samples from 2015 were all within the baseline ellipse for this area. Similarly, the Fond du Lac River community in 2015 was similar to its baseline community. Finally, four of the five Waterbury Lake samples in 2015 were within the baseline ellipse, indicating that the community has changed little since baseline.



Note: 95% reference area confidence ellipse shown in green.

Figure 13
NMDS of benthic invertebrate communities from the EARMP technical program study area from 2011, 2012, and 2015.



Note: 95% reference area confidence ellipse shown in green.
95% baseline confidence ellipse shown in blue.

Figure 14
NMDS of benthic invertebrate communities from the far-field areas in 2015 relative to reference and their respective baseline communities.

6.0 FISH CHEMISTRY

Fish tissue chemistry data provides a means of monitoring the potential accumulation of COPCs in biological tissue. Both flesh and bone were assessed since different constituents may accumulate in different tissues at different rates. Samples were collected from both predatory (northern pike and lake trout) and bottom-feeding (longnose sucker, white sucker, and lake whitefish) fish species during the baseline monitoring period (2011 and 2012). In 2015, sampling focused on one predatory and one bottom-feeding species that occurred in all of the sampling areas, lake trout and lake whitefish. This included the assessment of five samples from each species from each sampling location. Sample sizes were achieved in all waterbodies except Pasfield Lake, where four instead of five lake whitefish were retained due to time constraints related to the sampling program. Additionally, as recommended in the previous monitoring report (CanNorth 2014), additional northern pike, longnose sucker, and white sucker were collected from the reference areas to improve the overall reference range for these species, should future sample expand to include these species again. Sampling locations are shown in detail in Appendix A, Figure 1 to 7.

6.1 Sampling Methods

The fish captured for chemistry were collected under the authority of Special Collection Permits issued by the MOE in La Ronge and Meadow Lake. It is noted that during the fish collections, every effort was made to reduce incidental fish mortality.

Methods used to capture fish in 2015 included mainly short-length gill nets and angling, although in some cases half-standard gang gill nets were utilized. The short-length gill nets used were 10 m long and 1.8 m high with 7.6 cm mesh (stretch measure). Generally between 3 and 10 panels were connected to increase fish catch success. A half standard gang gill net consists of six panels, each 22.85 m long and 1.8 m deep, ranging from 3.8 cm to 14.0 cm stretched mesh size. Angling was performed using casting rods and commercial spinning spoons. Fishing effort for this method was measured in person-minutes of angling. Each angling or gill net deployment location was recorded with a hand held GPS unit. On several occasions, however, overnight net sets were utilized due to poor catch success.

All fish captured were identified to species, measured (fork length) to the nearest 1 mm, weighed to the nearest 20 g, sexed, and spawning condition was recorded (if this was possible to determine). In addition, a visual external health assessment was completed for each fish. For all fish retained for chemical analyses, the stomach contents were described. Ageing structures (otoliths for lake trout and lake whitefish, cleithra for northern pike, and fin rays for white and longnose sucker) were removed and submitted to North Shore Environmental Services for ageing analysis. The fish were submitted to SRC for chemical analysis of the flesh and bone. Some samples consisted of a composite of two or more fish in order to provide sufficient sample material to reach desired MDLs.

6.2 Data Analysis

Similar to the water, sediment, and benthic invertebrate analyses, fish chemistry results from the far-field exposure areas were compared to the reference range and available guidelines. However, given the multiple species, multiple tissue types, and number of COPCs assessed, Principal Component Analysis (PCA) was used to assess the fish chemistry results. Before analysis, the potential effect of fish age upon COPC concentrations was tested by regression analysis. COPC concentrations that were significantly related to fish age were corrected for differences in age for each specimen using the regression slope. This included:

- mercury in lake trout flesh;
- copper, mercury, and zinc in lake whitefish flesh;
- copper and mercury in lake trout bone; and
- aluminum, mercury, uranium, and zinc in lake whitefish bone.

The main focus of the results was on two-axis (two-dimensional) scatterplots of the PCA results. PCA plots synthesize how chemically similar (or different) the fish samples are according to the distance between each dot representing a sample on the PCA plot (i.e., the greater the distance, the greater the difference). Each axis represents a combination of various COPC concentrations, and the eigenvectors for each COPC represent the amount and direction of “pull” each COPC has along each axis. Although PCA produces multidimensional results (e.g., four, five, or more axes in multidimensional space), plots including more than two axes (or dimensions) become increasingly abstract and difficult to interpret. Therefore, the focus of the results is on the first two principal components

(PC1 and PC2); however, consideration was given to all axes that explained ≥ 10% of the variation in the data.

PCA was carried out using only those COPCs that were measured above the MDL in more than 50% of the samples in at least one waterbody in at least one sampling year. Correlations of ≥|0.6| between COPC concentrations and PCA axis scores were considered to indicate a strong degree of correlation. PCA scores were computed only for axes with eigenvalues of ≥1.0 or that accounted for ≥10% of the variation in the data. Variations in PCA scores for far-field area fish tissue from 2015 were compared to the 95% confidence ellipse around the reference scores as well as the 95% confidence ellipse around its corresponding baseline data. Data points falling outside this ellipse were assessed further to determine if any COPCs were outside the expected range for the region. For cases where a COPC correlated by more than |0.6| with PC3 or PC4 axis scores, data were assessed graphically against the reference range similar to the presentation used in previous sections.

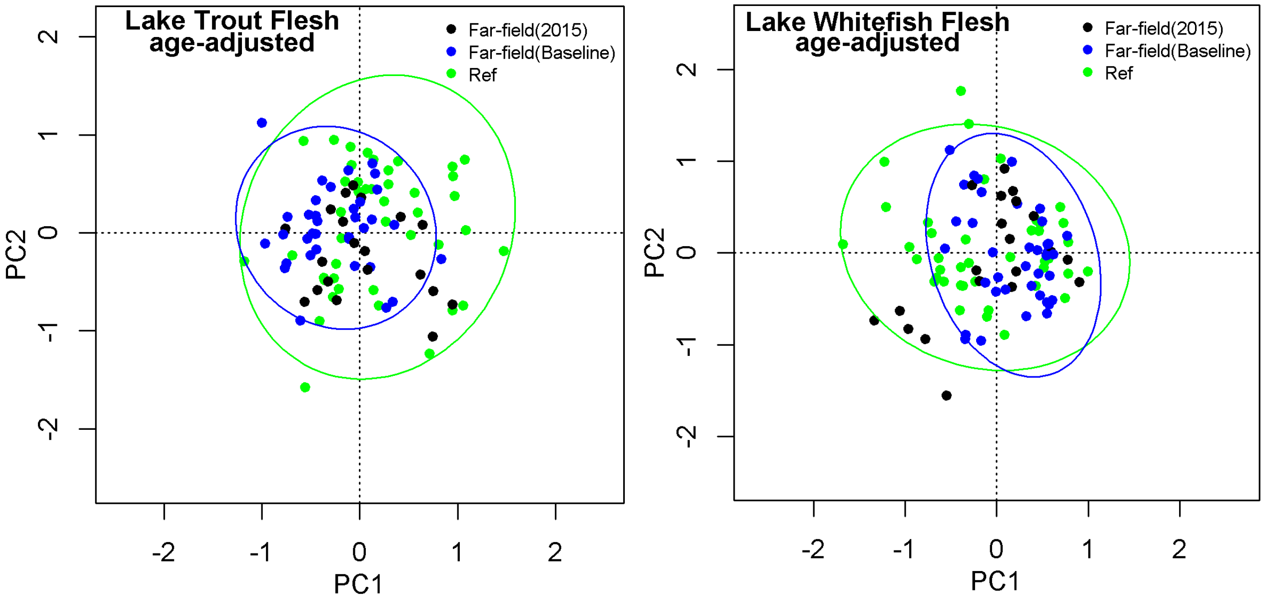
Mercury and selenium concentrations in fish flesh from the far-field exposure areas were also assessed relative to the guidelines presented in Section 2.3.3.1 and presented graphically. Mercury was compared to the 0.5 µg/g guideline (SE 2011) and selenium was compared to the U.S. EPA muscle tissue criteria (11.3 µg/g (dw); U.S. EPA 2016) converted to a wet weight basis using the average percent moisture of lake trout and lake whitefish in the EARMP dataset.

6.3 Results

The 2015 fish sampling program resulted in the capture of 452 fish from 7 species including burbot (*Lota lota*), longnose sucker, lake trout, lake whitefish, northern pike, walleye (*Sander vitreus*), and white sucker. A detailed assessment of the fish chemistry data is presented in Appendix A and the raw data, including fish capture statistics, are presented in Appendix B, Tables 9 to 28. The following section summarizes the main findings of the 2015 fish chemistry sampling program.

6.3.1 Fish Flesh

Of the 18 COPCs assessed in fish flesh, 8 were consistently measured at or below the MDL in more than 50% of the samples in both lake trout and lake whitefish. These included aluminum, cadmium, molybdenum, nickel, uranium, lead-210, thorium-230, and vanadium. PCA was completed separately for each species using the remaining 10 COPCs, with the exception of radium-226 and cobalt, which were only included for lake whitefish. Results are summarized in Figure 15, and as illustrated, most COPCs in the far-field exposure areas were within the 95% confidence ellipse of the reference areas.

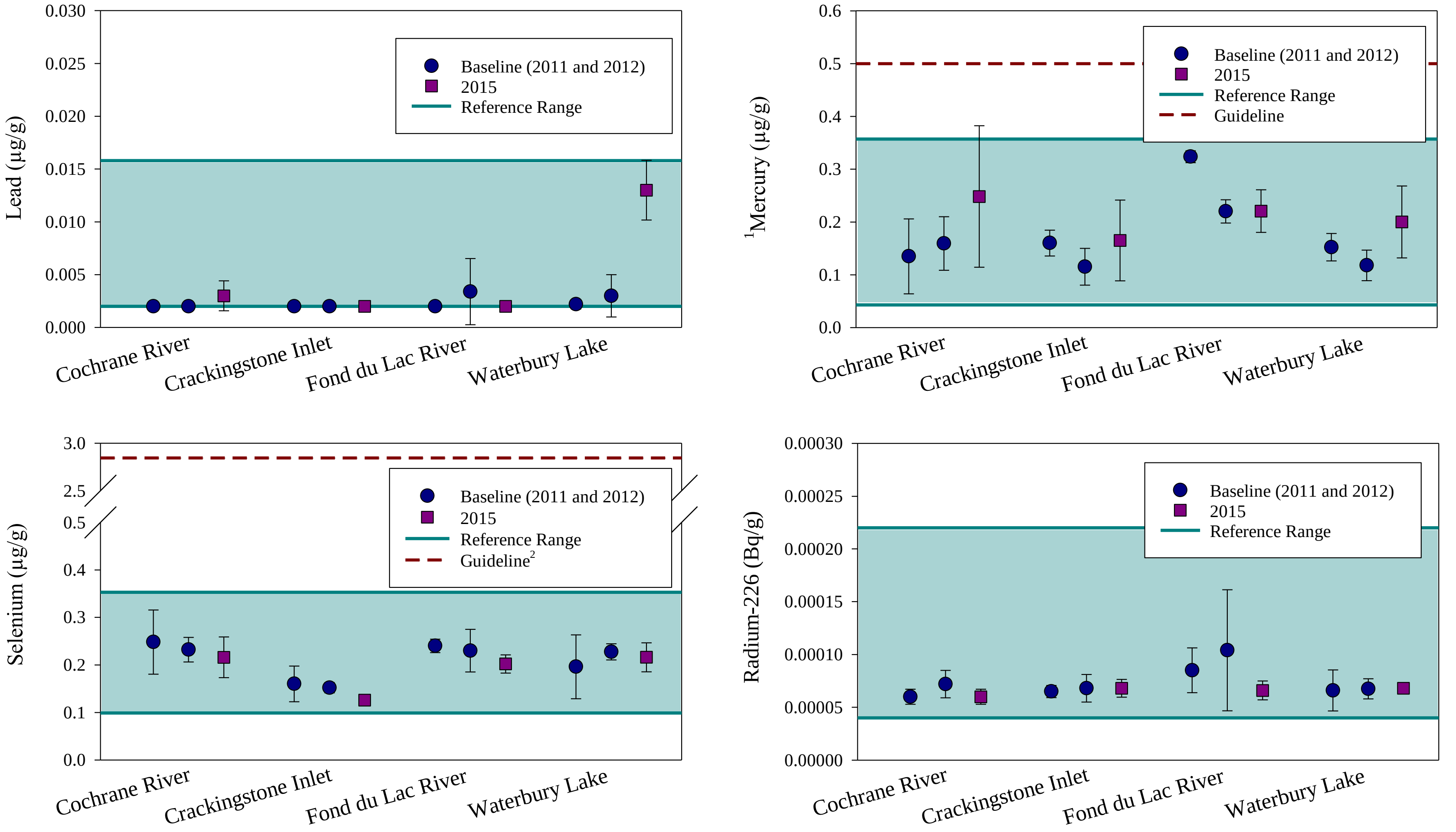


Note: 95% reference area confidence ellipse shown in green.
95% baseline confidence ellipse shown in blue

Figure 15
Fish flesh PCA results for axes 1 and 2 for the EARMP technical program study area, 2011 to 2015.

For lake trout flesh, all but one sample from the far-field exposure areas fell within the 95% confidence ellipse of the reference areas indicating lake trout from the far-field exposure areas contained chemical profiles within the expected range for the region (Figure 15). The 2015 far-field exposure samples were also generally within the far-field exposure baseline 95% confidence ellipse. Three samples were outside that ellipse, but were within the reference ellipse.

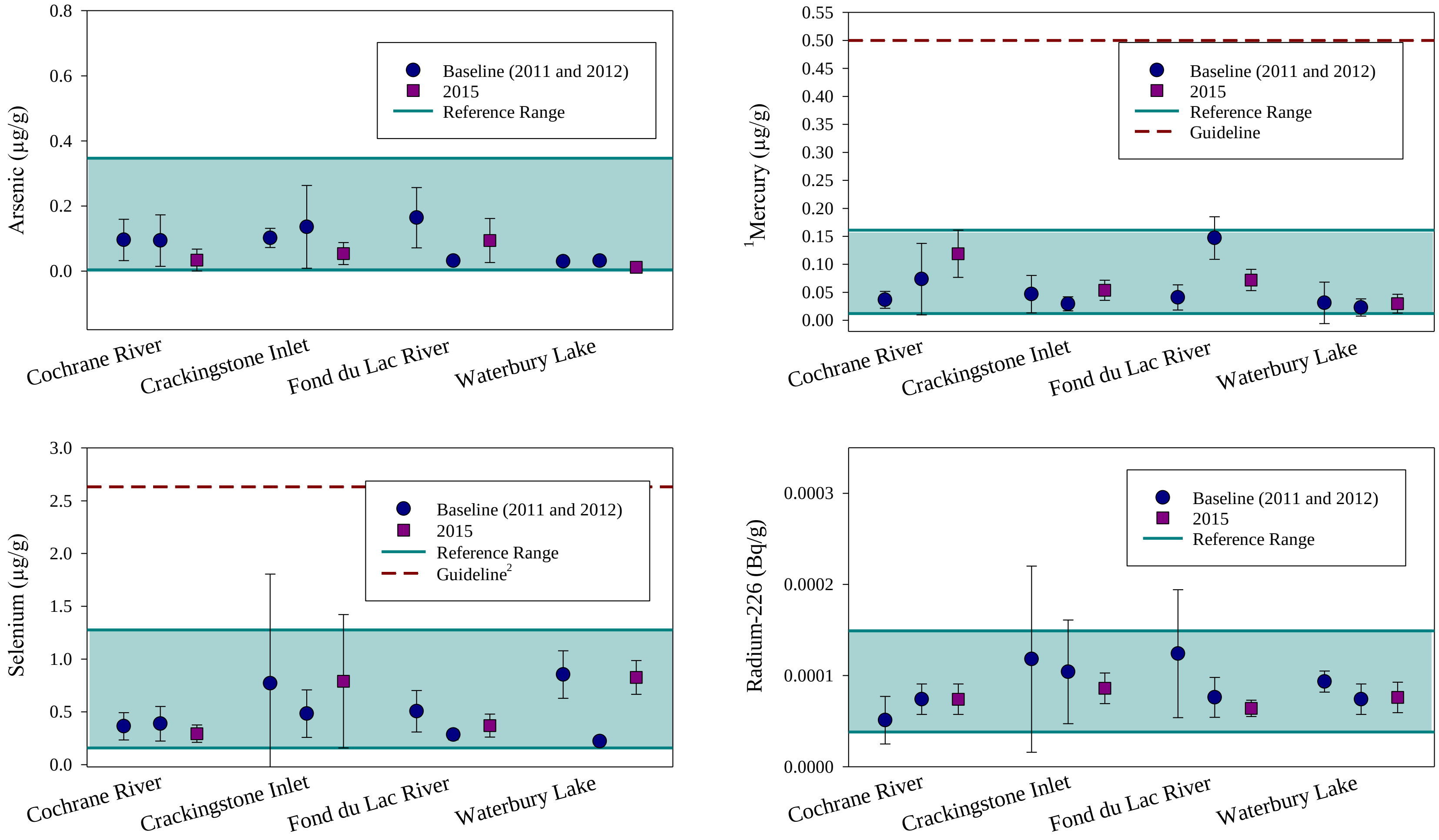
The third axis and fourth axes (i.e., PC3 and PC4, not plotted) also explained more than 10% of the overall variation and correlated strongly with lead and mercury concentrations and radium-226 activity levels, respectively. These results, as well as those for selenium,



[1] Adjusted for age.

[2] Converted to wet weight basis based on average percent moisture of lake trout (74.82%).

Figure 16
Lake trout flesh concentrations of mercury, selenium, and of COPCs strongly correlated to the third or fourth PCA axis, in the EARMP technical program study area, 2011 to 2015.



[1] Adjusted for age.

[2] Converted to wet weight basis based on average percent moisture of lake whitefish (76.7%).

Figure 17

Lake whitefish flesh concentrations of mercury, selenium, and of COPCs strongly correlated to the third or fourth PCA axis, in the EARMP technical program study area, 2011 to 2015.

were separately compared to baseline concentrations, to available guidelines, and to the reference range (Figure 16). Average concentrations from all four far-field exposure areas fell within the reference ranges and selenium and mercury were below the available fish tissue criteria. Average lead concentrations from Waterbury Lake were higher in 2015 as compared to the 2011 and 2012 baseline monitoring years; however, they remained within the reference range for the region. It is noted that lead concentrations were near to the MDL. Values within five times the MDL can have up to 100% uncertainty, thus the slightly higher lead concentrations observed in 2015 are not considered a concern at this time. No other COPC levels differed from those observed during the baseline monitoring years (Figure 16).

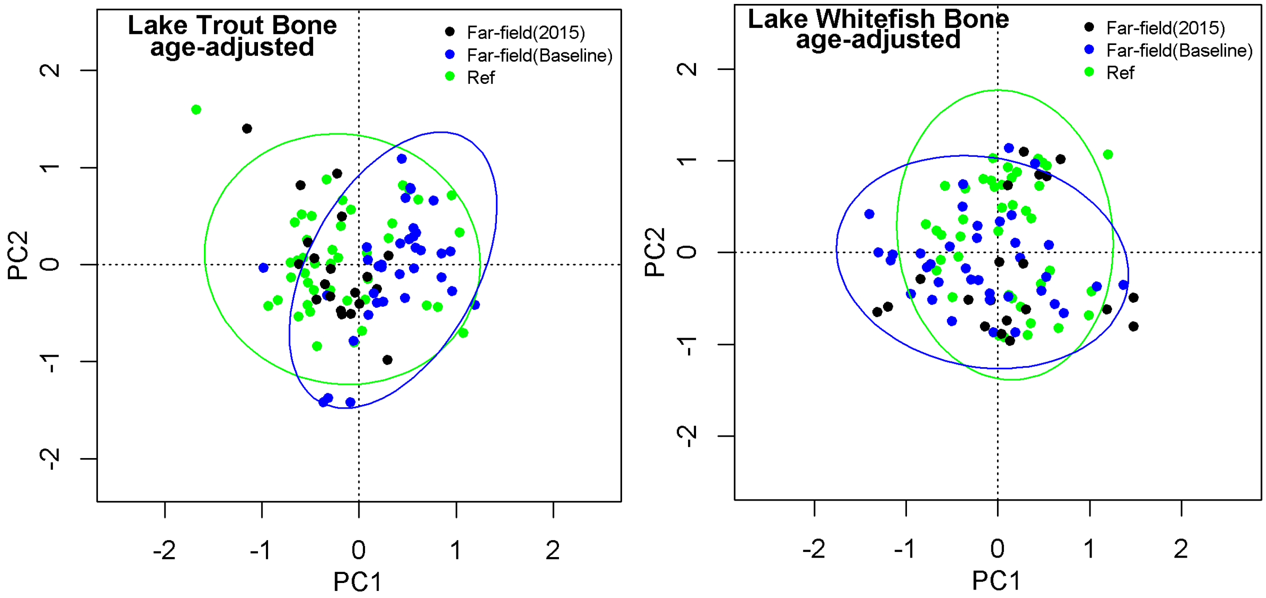
Lake whitefish from the far-field exposure areas contained chemical profiles within the expected range for the region. However, as shown in Figure 15, two of the far-field lake whitefish fell outside the 95% confidence ellipse of the reference areas. Further analysis revealed that this was largely attributed to slightly higher lead concentrations as compared to the other samples (Appendix B, Table 14). These exceedances were minor, with values within five times the MDL. These same two samples, as well as the remaining three samples from Waterbury Lake in 2015 were outside the baseline 95% confidence ellipse, again, attributed to the slightly higher lead levels observed in these samples.

Similar to the lake trout flesh analysis, the third and fourth PCA axes also explained more than 10% of the overall variation and correlated strongly with mercury and arsenic as well as radium-226 activity levels, respectively. These results, as well as those for selenium, were compared with the available guidelines and the reference range (Figure 17). Average levels of all four COPCs in lake whitefish flesh were within the reference range, similar to baseline values, and mercury and selenium concentrations were below the fish tissue criteria in all four far-field exposure areas.

6.3.2 Fish Bone

Of the 18 COPCs assessed in fish bone, cadmium, molybdenum, lead-210, and thorium-230 were less than or equal to the MDL in more than 50% of the samples across all species. Additionally, iron, uranium, polonium-210, radium-226, and vanadium levels were less than or equal to the MDL in more than 50% of the lake trout samples.

In lake trout bone, nine COPCs were included in the PCA. As shown in Figure 18, all but four far-field exposure lake trout bone samples fell within the 95% confidence ellipse of the reference areas. This was a result of one sample from the Crackingstone Inlet (LT02 from 2015) containing slightly higher copper, iron, and zinc, and three samples from the Cochrane River (LT01, LT04, and LT05 from 2011) containing lower copper concentrations as compared to the reference areas. These differences were, however, marginal, and all but one sample was within the baseline confidence ellipse (Figure 18). No COPC was strongly correlated with the third axis (correlations of <|0.6|). Aluminum was strongly correlated with the fourth axis. Aluminum was therefore compared to the reference range separately. As shown in Figure 19, concentrations of this COPC were within the reference range and similar to baseline and all four far-field exposure areas.



Note: 95% reference area confidence ellipse shown in green.
95% baseline confidence ellipse shown in blue.

Figure 18
Fish bone PCA results for axes 1 and 2 for the EARMP technical program study area, 2011 to 2015.

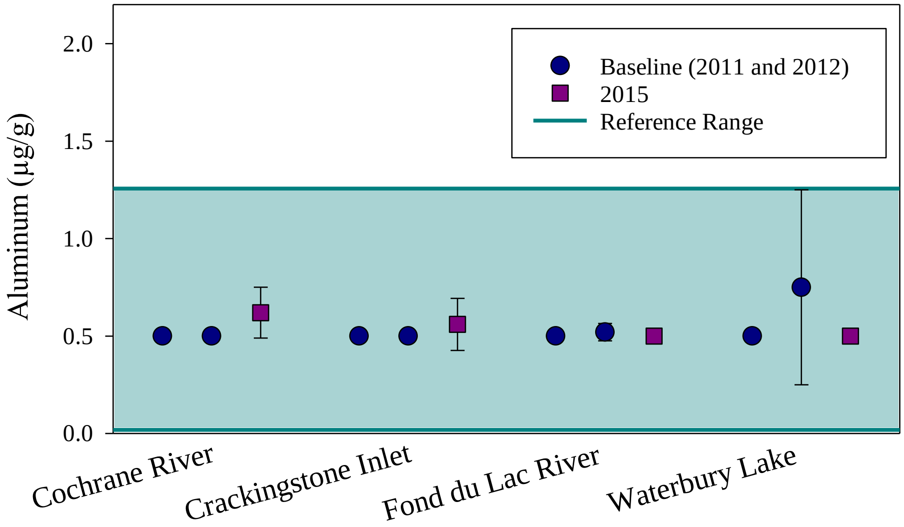


Figure 19
Lake trout bone COPCs strongly correlated to the fourth PCA axis, in the EARMP technical program study area, 2011 to 2015.

In lake whitefish bone, 14 COPCs were included in the PCA. Most lake whitefish bone samples from the far-field exposure areas were within the 95% confidence ellipse of the reference areas (Figure 18). The four far-field exposure samples outside the reference ellipse on the right side of the plot were from Crackingstone Inlet in 2011 (LW09) and 2015 (LW01, LW02, and LW06). These were characterized by a combination of higher selenium, uranium, and vanadium concentrations as compared to other samples (Appendix B, Table 21). Samples outside the reference ellipse on the left side of the plot included samples from both Cochrane River (2012, LW02 from net SP3-1; 2015, LW03 and LW08) and Waterbury Lake (2012, LW01, LW07, and LW08). All six of these samples were mainly characterized by having lower aluminum, iron, and selenium levels as compared to other samples (Appendix B, Tables 20 and 23). In terms of temporal differences, two of the 2015 Crackingstone Inlet fish fell outside the baseline ellipse on the right of the plot because of higher selenium, uranium, and vanadium levels. Additionally, two of the 2015 samples from Waterbury Lake also were outside the baseline elipse, these two fish being characterized by having lower uranium and arsenic levels than most other fish (Appendix B, Table 23). Although the third PCA axis explained more than 10% of the variation, no COPC correlated strongly with this axis. With the exception of the three Crackingstone Inlet lake whitefish that contained higher selenium, uranium, and vanadium concentrations, far-field lake whitefish bone chemistry profiles are generally considered to be similar to reference lake whitefish with little variation from the baseline monitoring period.

7.0 MOVING FORWARD

In 2011 and 2012, long-term monitoring stations at far-field exposure and regional reference locations were established from which water quality, sediment quality, benthic invertebrate community, and fish tissue chemistry data were collected. The same sampling locations as the first monitoring phase were revisited in 2015 to assess for any temporal variation. Water, sediment, benthic invertebrate, and fish tissue endpoints were assessed against the baseline monitoring period results, the reference range, and available guidelines to establish if these endpoints are currently within expected background levels of the region. With few exceptions, the endpoints were found to have changed little from the baseline monitoring period, remaining within the reference range and/or below guidelines. Two exceptions included increased density of benthic invertebrates in Waterbury Lake and two lake whitefish bone samples from Crackingstone Inlet containing chemical profiles slightly different from the reference and baseline ranges.

Given that benthic invertebrate communities, certain species of chironomids in particular, are known to go through population density cycles and given that the taxon richness and biomass in Waterbury Lake remained comparable to the reference range, the increased density in Waterbury Lake is not considered a cause for concern. In terms of the two lake whitefish bone samples from Crackingstone Inlet, the chemical profile differences were largely attributed to a combination of higher selenium, uranium, and vanadium concentrations as compared to reference and baseline. While slightly elevated in 2015, uranium values were only marginally higher than those observed during the baseline monitoring period. Further, selenium concentrations in the flesh samples from these fish were well below fish tissue criteria and therefore the levels in bone are not considered a concern.

The EARMP technical program was established to monitor long-term changes in the aquatic environment far downstream of uranium mining and milling operations in the Eastern Athabasca region of northern Saskatchewan. The monitoring frequency established for the EARMP technical program following the baseline monitoring period was on a basis of once every three years, similar to EMP requirements for sampling at the near-field exposure areas of mine sites. A five year monitoring cycle is considered sufficient for assessment of waterbodies with low sedimentation rates, such as those that occur in the Athabasca basin (Chapman 1996). It also falls within the range of the monitoring cycle length for EEM biological monitoring programs (every three or six years; EC 2012) and the monitoring schedule length outlined for EMPs (every three or six years, depending on the component and the mine site).

Given that little variability was observed between the results from 2015 and the baseline monitoring period, along with the distance of the EARMP far-field sampling locations from the mine sites, the EARMP technical program will move to a monitoring cycle of once every five years, with the next program taking place in the fall of 2020 (CSA 2010).

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APPENDICES

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APPENDIX A

DETAILED DATA ANALYSIS

APPENDIX A: DETAILED DATA ANALYSIS

1.0 WATER QUALITY

Water quality data are collected as part of the EARMP technical program to monitor potential changes over time and to provide supporting information for the sediment quality, benthic invertebrate community, and fish tissue chemistry components of the program. The 2011 and 2012 EARMP technical program data were collected to establish a baseline to which future monitoring phases could be compared; 2015 represents the first monitoring year compared to the baseline dataset. The water quality sampling locations were co-located with the sediment/benthic invertebrate community sampling areas (Appendix A, Figure 1 to 7). The following section provides a detailed data analysis of the 2015 water quality sampling program.

To provide supporting habitat information for the benthic invertebrate community and fish components of this program, limnological profiles are discussed in terms of the Canadian Water Quality Guidelines (CWQG) for the protection of freshwater aquatic life (CCME 2016) and in terms of differences between sampling areas. Data analysis of the water chemistry information focuses on the concentration of Constituents of Potential Concern (COPCs) from the far-field exposure areas in 2015 as compared to, baseline monitoring data (2011 and 2012), available CWQG, and the expected concentrations for the region (i.e., reference range). The 95% reference range for each COPC was obtained by computing the 2.5th and 97.5th percentiles (i.e., the lower and upper limits of the reference data 95% range) based on the equation best-fitting the cumulative percent frequencies of COPC concentrations. COPC concentration distributions for water and other media were often best described by a 3, 4, or 5-parameter sigmoid curve of cumulative percent frequencies of the log-transformed concentrations, although in some instances a 2 or 3-parameter logarithmic curve[1] of cumulative percent frequencies of the non-transformed concentrations best describe the distributions.

1.1 Limnology

The limnology profiles collected from the 2015 EARMP technical program study area are detailed in Appendix A, Table 1 along with the baseline dataset. Maximum station depths

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[1] Curve-fitting was performed using Sigmaplot 12.5, which finds the best-fitting curve by iterative parameterization of selected curve equations.

across all waterbodies and years ranged between 6.4 m and 8.0 m, except for the Bobby's Lake reference area, where maximum depths were 5.5 m in 2009 and 4.0 m in 2012. In 2015, Secchi disk readings ranged from 4.3 m to 6.8 m, similar to the baseline range of 4.1 m to 6.7 m in comparable waterbodies.

Similar to the baseline assessment, temperature and specific conductance varied little with depth during the fall 2015 sampling program and specific conductance was typical of northern oligotrophic waterbodies. Specific conductance was slightly higher in Lake Athabasca, measuring between 70.5 µS/cm and 80.9 µS/cm, as compared to the other waterbodies where specific conductance ranged from 19.2 µS/cm to 36.0 µS/cm. This is consistent with the measurements observed during the 2011 and 2012 baseline monitoring period. Dissolved oxygen concentrations remained above the 6.5 mg/L CWQG for other life stages of cold water biota at all sampling depths. The pH values in the EARMP technical program study area ranged from slightly acidic to slightly basic. In 2015, all but one measurement (surface pH in the Fond du Lac River of 6.45) met the CWQG range of between 6.5 and 9.0 (Appendix A, Table 1).

1.2 Water Chemistry

A summary of the water chemistry results since 2011 is provided in Appendix A, Table 2 to 4 along with available guidelines. Detailed raw data are provided in Appendix B, Table 1. Detailed QA/QC of the 2015 results are presented in Appendix C.

In 2015, concentrations of most COPCs were very low, and in the case of 11 of the 18 COPCs (cadmium, copper, lead, mercury, selenium, lead-210, polonium-210, radium-226, thorium-230, cobalt, and vanadium), all far-field exposure values were at or below the method detection limit (MDL; Appendix A, Table 4). The remaining seven COPCs are presented graphically in Appendix A, Figure 8 against the reference range and available guidelines. Among these, the 2015 aluminum, iron and zinc concentrations in all four far-field exposure areas were similar to baseline concentrations, within the reference range, and below available guidelines. Similar to baseline, the 2015 molybdenum concentrations were slightly higher than the reference range in the Cochrane River, Fond du Lac River, and Waterbury Lake; however, levels remained well below the CWQG. Nickel, uranium, and arsenic concentrations were all below CWQG and mostly at or near laboratory test detection limits. Uranium concentrations in the

Crackingstone Inlet remained higher than other sampling areas, but similar to those observed during the baseline monitoring years.

In summary, all COPCs in the water in 2015 were in low concentrations and were below the guidelines or within the reference range.

2.0 SEDIMENT QUALITY

Sediment quality data are collected as part of the EARMP technical program to monitor for the potential accumulation of COPCs in the benthic environment and to assess for potential changes in COPCs over time. Sediment quality samples were collected from five replicate stations in each far-field exposure area and each reference area in 2015 (Appendix A, Figure 1 to 7). The sediment quality sampling stations were co-located with the benthic invertebrate community sampling areas.

Sediment particle size composition and total organic carbon (TOC) content are described to provide supporting information for the sediment chemistry data as well as the benthic invertebrate community data. Sediment chemistry data analysis focused on comparing COPC concentrations in 2015 to the baseline monitoring data, to relevant sediment quality guidelines, and to expected background conditions (i.e., reference range). Various sediment quality guidelines are available (i.e., CCME 2016; Thompson et al. 2005; Burnett-Seidel and Liber 2013); however, analysis focused on comparing COPCs to the most locally available guideline (see Section 2.3.3.1 of the Main Document for further discussion of available guidelines). Similar to the water quality reference range, the 95% reference range for each sediment COPC was obtained by computing the 2.5th and 97.5th percentiles (i.e., the lower and upper limits of the reference data 95% range) based on the equation best-fitting the cumulative percent frequencies of COPC concentrations.

2.1 Sediment Particle Size

Particle size and TOC content was measured in the 0 cm to 2 cm and 0 cm to 5 cm horizon from each sediment and benthic invertebrate community replicate sampling station (Appendix A, Table 5 and 6). Analysis of particle size from the same core submitted for chemical analysis was completed using laser diffraction whereas analysis of the 0 cm to 5 cm horizon was completed using the sieve/pipette method consistent with methods used during previous sampling years. It is anticipated that moving forward, laser diffraction will be the preferred method for particle size analysis given its highly repeatable results and greater accuracy compared to the sieve/pipette method.

A comparison of the results from both methods indicates that the sieve-pipette data overestimate fine particles when a large portion of the sample consists of fine particles and underestimate fines when a larger portion of the sample consists of sand (Appendix B, Table 2). To further assess these differences, the sieve-pipette and laser diffraction results for 2015 were compared to each other and with the baseline 2011 and 2012 results to determine: 1) how the results of the two methods differed within 2015, 2) how the 2015 sieve-pipette results differed from the baseline 2011 and 2012 results, and 3) how the 2015 laser diffraction method results differed from the sieve-pipette results from 2011 and 2012. These comparisons were performed using a principal component analysis (PCA) for each study area (Cochrane River, Crackingstone Inlet, Fond du Lac River, Waterbury Lake, Cree Lake, Ellis Bay, and Pasfield Lake) individually and for all seven of these areas combined. Each of these analyses were performed on clay, silt, fine sand, and coarse sand contents concomitantly[2].

The results of these PCAs are shown in Appendix A, Figure 9. For each area, the PCA results depicting particle size contents for each sample are shown on the left panel and the ordination biplots, showing the direction and the amount of pull that each particle category has on the PCA results are shown on the right panel (Appendix A, Figure 9). For interpreting the graphs, each of the 2015 sieve-pipette and laser diffraction results are linked together via lines from their centroids[3]. Additionally, the 95% confidence ellipse of the combined 2011 and 2012 baseline data is shown in green for each area.

These two-dimensional PCA (PC1 and PC2) graphs (Appendix A, Figure 9) explained between 82% and 98% (depending on areas) of all differences in clay, silt, fine sand, and coarse sand contents between all samples, all years, and all methods. This means that these two-dimensional graphs are excellent representations of particle size contents for each area.

The inspection of these results reveals that except for Ellis Bay, the majority of the 2015 sieve-pipette results were similar to those of 2011 and 2012 (within the 95% confidence intervals). This means that the 2015 samples did not have a significantly different particle

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[2] Gravel could not be included because over 90% of the results were < MDL.

[3] Centroid = average of PC1 and average of PC2).

size composition from the samples collected in 2011 and 2012. However, with the exceptions of the Fond du Lac River and the Cree Lake results, most of the 2015 laser diffraction results were outside the 95% confidence ellipses of the 2011 and 2012 data and were not closely interspersed with the 2015 sieve-pipette results.

Because the 2015 sieve-pipette results were similar to the 2011 and 2012 results which indicates overall no year differences in particle size composition, the differences between the 2015 laser diffraction results and the 2011 and 2012 results cannot follow from year effects. Therefore, the differences observed between the 2015 laser diffraction results and the 2011 and 2012 sieve-pipette results are mainly due to methodological differences in 2015. Additionally, the PCA completed on all samples and all areas shows that most of the 2015 laser diffraction results clustered in the quadrant representing mainly silt, with smaller numbers of samples clustering in the fine sand quadrant. The sieve-pipette results were more clussed in the coarse sand and clay quadrants.

The 2015 particle size data used in the analyses below are those based on the laser diffraction method rather than the sieve-pipette method given it is the preferred method for particle size analysis moving forward and given it is more accurate. Sediment particle size data utilized in this report are summarized in Appendix A, Table 5 and detailed in Appendix B, Table 3.

Gravel content was generally similar in all areas, usually present in only small amounts or less than the MDL (Appendix B, Table 3). Other particle sizes varied more widely between areas, notably in terms of fine particle content (clay + silt). However, the range of fine particle contents between the far-field exposure areas was similar to the range in the reference areas. In the exposure areas, average fine particle content ranged from 45.4% in Waterbury Lake to 86.6% in the Cochrane River in 2015 (Appendix A, Table 5). In the references, average fine particle content ranged from 41.6% in Pasfield Lake in 2012 to 75.7% in Ellis Bay in 2012 (Appendix A, Table 5). The fine particle content in Waterbury Lake was similar to that of Pasfield and Cree lakes, while Fond du Lac, Cochrane River, and Crackingstone Inlet sampling areas were similar to those in Ellis Bay.

It is noted that similar to previous monitoring years, the fine particle size content varied between areas as well as within areas. For example, fine particle content varied from 8.2% to 80.2% in Pasfield Lake. Since the concentrations of COPCs in sediment increase with decreasing particle size due to an increase in surface area per unit mass (Muller and Tisue 1997); as in previous years, the particle size data were utilized to correct the chemistry data to a standard particle size (see Section 2.2 below).

2.2 Sediment Chemistry

A summary of the EARMP technical program sediment chemistry results (un-adjusted to particle size) is presented in Appendix A, Table 7 along with the available guidelines. Detailed raw data are presented in Appendix B, Table 4. Detailed QA/QC are presented in Appendix C. Core log sheets are provided in Appendix D.

As a result of particle size differences between some of the far-field exposure areas and the reference areas (refer to Section 2.1), the potential relationship between COPC concentrations and fine particle content was investigated via regression analysis. With the exception of thorium-230, all COPC concentrations significantly increased with increasing fine particle content (Appendix A, Table 8). Therefore, aside from thorium-230, sediment chemistry data were standardized to the overall average fine particle size content across all waterbodies (59.9%). An example of the typical relationship between fine particle content and COPC levels is shown in Appendix A, Figure 10.

Adjusted COPC concentrations in the far-field exposure areas are shown in Appendix A, Figure 11 where they are compared to the relevant guidelines, adjusted reference ranges, and the 2011 and 2012 baseline concentrations. For thorium-230, which was not correlated to fine particle content, the unadjusted results are presented.

In 2015, average concentrations of 11 of the 17 COPCs assessed in the EARMP technical program study area were within the reference range. This included average concentrations of aluminum, cadmium, copper, iron, lead, nickel, selenium, lead-210, polonium-210, arsenic, and cobalt (Appendix A, Figure 11). Exceptions to this included molybdenum (Fond du Lac River), uranium (Crackingstone Inlet), zinc (Fond du Lac River), radium-226 (Crackingstone Inlet), thorium-230 (Crackingstone Inlet), and vanadium (Crackingstone Inlet). Of the COPCs with available guidelines, all adjusted averages except vanadium in Crackingstone Inlet remained below even the most conservative guidelines. It is noted that unadjusted molybdenum concentrations exceeded the lowest available guideline in the Fond du Lac River in 2015; however, levels remained comparable to baseline monitoring years and less than the REF of 22.6 µg/g (Appendix

A, Table 7). In addition, unadjusted vanadium concentrations in both the Fond du Lac River and Crackingstone Inlet exceeded the LEL, but remained comparable to baseline monitoring years (Appendix A, Table 7).

There are no available guidelines for thorium-230 in sediment. Similar to the baseline monitoring years, the thorium-230 activity in Crackingstone Inlet was notably higher than the reference range and the other far-field exposure areas (Appendix A, Figure 11). The average thorium-230 activity in Crackingstone Inlet was 6.62 Bq/g in 2015 as compared to an upper bound of 0.093 Bq/g in the reference areas. Levels did remain within the range of mean concentrations measured in 2011 and 2012 (9.26 Bq/g and 5.50 Bq/g, respectively). Similar to the baseline monitoring years, Station 4 had notably higher thorium-230 activity levels (12 Bq/g) compared to the other stations sampled in the Crackingstone Inlet (Appendix B, Table 4).

3.0 BENTHIC INVERTEBRATE COMMUNITIES

Benthic invertebrate community data provide an indication of the quality of fish habitat, and because benthic invertebrates have a shorter life span than most fish species, effects on benthic invertebrate communities can provide an early indication of potential effects on fish communities or populations. Benthic invertebrate community samples were collected from five replicate stations in each far-field exposure area and each reference area co-located with the sediment quality sampling stations in 2015, as well as during the 2011 and 2012 baseline period (Appendix A, Figure 1 to 7).

The following section describes the 2015 benthic invertebrate communities in the far-field exposure areas compared to the reference areas and compared to the baseline period. Both univariate and multivariate approaches were used to analyze the benthic invertebrate communities. Similar to the sediment chemistry comparisons, benthic invertebrate univariate community indices (total density, taxon richness, and total biomass) were presented graphically in comparison to the reference range and baseline indices. Non-metric multi-dimensional scaling (NMDS) was used to compare the benthic invertebrate community compositions between far-field exposure areas and the references and to the baseline communities. NMDS allows depicting in two-dimensional space the summary of all density dissimilarities of each taxon across all samples, with more dissimilar samples being plotted relatively further apart from each other than more similar samples. In addition, the 95% confidence ellipses for the reference areas and for the far-field exposure baseline data were plotted on the NMDSs to allow comparison. For the NMDS, data were Ln-transformed before analysis to reduce the potentially influence of taxa with very high abundances so as to generate results representative of also less abundant taxa within the communities. The level of reliability of the two-dimensional NMDS plots was assessed in accordance with Clarke and Warwick (2001): stress <0.05: excellent representation of the dissimilarities; stress <0.10: good representation with no real prospect of being misleading; stress <0.20: potentially useful representation but not entirely reliable; stress: <0.30: close to a random distribution and likely misleading.

3.1 Potential Particle Size Effects

Because of the potential effect of particle size on benthic invertebrate communities, the relationship between the two was visually inspected using scatter plots for each of density, biomass, and taxon richness. The relationship between these univariate indices and particle size contents was insubstantial, and consequently, these indices did not need to be adjusted for differences in fine particle content of the study areas.

For the NMDS, particle size did not correlate well with the multivariate patterns observed in benthic invertebrate communities. In addition, multivariate correspondence analysis (CA)[4] was performed with and without the removal of potentially corresponding particle size patterns. The differences between the two CAs were insubstantial, which further supported that the benthic invertebrate community results were not substantially affected by particle size differences across areas.

3.2 Community Composition Overview

A total of 93 benthic invertebrate taxa (identified at the lowest practical level of taxonomic resolution) occurred in the study areas (Appendix B, Tables 5 to 7).

Common taxa included Hirudinea (leeches), Oligochaeta (aquatic earthworms), Bivalvia (clams), Gastropoda (snails), Amphipoda (scuds), Cladocera (water fleas), Trichoptera larvae (caddisflies), and Chironomidae larvae (non-biting midges). Ephemeroptera nymphs (mayflies), Megaloptera larvae (fishflies), and Odonata nymphs (dragonflies) also occurred but generally only in a few samples. Chironomidae and various crustaceans

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[4] A parametric equivalent of an NMDS.

were usually the numerically dominant groups. In terms of biomass, amphipods and chironomids tended to be the dominant taxa in most samples, although Other Taxa dominated the sample biomass in some samples (Appendix B, Table 8).

3.3 Community Univariate Endpoints

A summary of the benthic invertebrate community univariate endpoints (density, taxon richness, and biomass) is presented in Appendix A, Table 9. Detailed taxonomic enumeration is presented in Appendix B, Tables 5 to 7, and detailed biomass is presented in Appendix B, Table 8.

3.3.1 Densities

Densities differed widely between samples, between years, and between waterbodies (Appendix A, Table 9). Except for Waterbury Lake, the 2015 far-field communities were within the reference range (Appendix A, Figure 12). The Waterbury Lake average density in 2015 was substantially higher than the reference range, largely because *Micropsectra* sp., a chironomid, reached an average density of 29,050 organisms/m^2 (Appendix B, Table 7). Comparatively, the average density of this taxon was 15 organisms/m^2 in 2011 (Appendix B, Table 5) and was not observed in this lake in 2012 (0 organisms/m^2; Appendix B, Table 6). Even without the inclusion of *Micropsectra* sp., total density was higher in 2015 relative to previous years in Waterbury Lake, with 6,274 organisms/m^2 on average, compared to 3,435 organisms/m^2 and 1,730 organisms/m^2 in 2011 and 2012, respectively. However, the density without *Micropsectra* sp. is within the reference range and similar to densities observed at the other far-field exposure areas. It is unclear why this taxon was so abundant in Crackingstone Inlet in 2015. Given insect communities naturally go through cycles of population density changes and given taxon richness is not adversely affected (see below) the density increase is not a cause for concern.

The Cochrane River community in 2015 was also a bit higher than in previous years, although this community's density remained within the reference range (Appendix A, Figure 12). In this case, *Corynocera* sp., also a chironomid, was present in high numbers that year (13,408 organisms/m^2, on average; Appendix B, Table 7). Overall densities in Crackingstone Inlet and the Fond du Lac River did not differ substantially from their respective baseline values in 2015 (Appendix A, Figure 12).

3.3.2 Biomass

Biomass also differed widely between samples, years, and waterbodies (Appendix A, Table 9). The average 2015 benthic invertebrate biomass for each of the four far-field exposure areas was within the reference range[5] (Appendix A, Figure 12). Like density, biomass in 2015 was higher in Cochrane River and in Waterbury Lake than in 2011 and 2012, but these differences were not as marked as those for densities. A higher Chironomidae biomass in 2015 was the main contributor to these differences with baseline biomass (Appendix B, Table 8).

3.3.3 Taxon Richness

Taxon richness varied little as compared to density and biomass (Appendix A, Table 9). Average taxon richness in all four far-field exposure areas in 2015 was within the reference range and differed little from baseline values (Appendix A, Figure 12).

3.4 Community Multivariate Analysis

To assess differences in community composition, a multivariate analysis was completed on the 2011 to 2015 dataset. The far-field exposure area communities were addressed in two manners, first by plotting dissimilarities[6] across all communities in all areas regardless of years to compare all far-field exposure areas with all reference communities (Appendix A, Figure 13), and second, by plotting the community dissimilarities to specifically delimit baseline community composition for each far-field area (Appendix A, Figure 14). The NMDS on all communities is the result of the density dissimilarities of 93 distinct taxa across 125 samples. The NMDSs for the comparisons with baseline communities use a smaller subset of those samples because only one far-field exposure is included at a time.

3.4.1 Reference Community Comparisons

The benthic invertebrate community patterns, regardless of years, are depicted in Appendix A, Figure 13. The multi-dimensional stress of this ordination was 0.21,

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[5] Since benthic invertebrate biomass was not measured in RF-4, the reference range did not include biomass values from RF-4.

[6] Note: 100% - Dissimilarity (%) = Similarity (%).

suggesting that while the two-dimensional plot usefully describes the data; some of the higher-dimensional patterns may be not as well represented.

Samples within a given study area tended to be close together regardless of years, suggesting each area's benthic invertebrate community samples were comparatively similar to each other and between years. The Pasfield Lake reference community was the main exception, with 5 samples segregating together a little further from the remaining 10.

In addition to the overall within-area community similarity, each area tended to be separate from all others, with comparatively little to no overlap between areas, although no areas were so distinct as being at a substantial distance from all others. This suggests that the between-area community dissimilarities were greater than the within-area dissimilarities, and that overall, all areas contained somewhat dissimilar communities, regardless of being a reference or far-field area. Nearly all far-field exposure samples were within the reference area 95% confidence ellipse. Thus the community dissimilarities between each far-field area and the reference areas were within the reference range. Minor exceptions included two samples from the RF-4 reference area and three samples from the Fond du Lac River far-field exposure area which were marginally outside the 95% confidence ellipse of the references. These Fond du Lac River community samples do not pose particular concern for that community, however, they lie very near the 95% confidence ellipse as well as near the RF-4 reference community samples that also lie outside the reference ellipse by a similar amount.

3.4.2 Baseline Comparisons

The reference area and the Cochrane River community data (without the other far-field exposure area data) were plotted again with the emphasis on comparison to the Cochrane River baseline communities (Appendix A, Figure 14). The stress of this NMDS plot was 0.20, similar to that for all communities (see above, 0.21). All but one of the five samples from 2015 were within the 2011 and 2012 baseline ellipse for this area, meaning that the 2015 benthic invertebrate community at the Cochrane River sampling area was overall not substantially dissimilar from what was observed in 2011 and 2012.

The Crackingstone Inlet benthic invertebrate community samples from 2015 were all within the baseline ellipse for this area (Appendix A, Figure 14). Similarly, the Fond du

Lac River community in 2015 was similar to its baseline community (Appendix A, Figure 14). The stress for both of these NMDS plots was 0.19, similar to the stress observed for the previous plots.

Finally, the four of the five Waterbury Lake samples in 2015 were within the baseline ellipse (Appendix A, Figure 14), meaning that the community there changed little since baseline. Stress for this plot was 0.19.

3.5 Summary

In 2015, the Cochrane River, Crackingstone Inlet, and Fond du Lac River benthic invertebrate communities did not substantially differ from baseline community descriptors in terms of density, biomass, taxon richness, or multivariate dissimilarity. These three communities were also within reference ranges. The benthic invertebrate community density at Waterbury Lake was notably higher in 2015 than during baseline and exceeded the reference range, mainly because of high numbers of chironomids. Other community descriptors did not substantially differ from baseline and were within the reference ranges.

4.0 FISH

Fish tissue chemistry data provide a means of monitoring the potential accumulation of COPCs in biological tissue. Two species were used in 2015 to monitor chemistry, lake trout (*Salvelinus namaycush*) and lake whitefish (*Coregonus clupeaformis*)[7]. The following section characterizes the 2015 fish chemistry data from the far-field exposure areas and relates the COPC concentrations to those found in reference areas, to those obtained during the baseline period, and to available guidelines.

The detailed fish capture data are provided in Appendix B, Table 9, and basic descriptive statistics on the length, weight, and age of fish kept for chemical analyses are provided in Appendix B, Table 10. The detailed flesh chemistry results are presented in Appendix B, Tables 11 to 18, followed with the flesh chemistry descriptive statistics in Appendix B,

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[7] Northern pike (*Esox lucius*), longnose sucker (*Catostomus catostomus*), and white sucker (*C. commersoni*) reference samples were also collected in 2015. Updated PCAs and reference ranges for these species are provided in Appendix B as an addendum to the 2011-2012 report (CanNorth 2014), but are not addressed herein because no new 2015 far-field exposure information was collected for these species.

Table 19. The detailed bone chemistry results are presented in Appendix B, Tables 20 to 27, while the bone chemistry descriptive statistics are presented in Appendix B, Table 28.

4.1 Fish Collection Results

In each of Cochrane River, Crackingstone Inlet, Fond du Lac River, Waterbury Lake, Cree Lake, and Ellis Bay, five lake trout and five lake whitefish samples were collected for chemical analysis. In Pasfield Lake, five lake trout and four lake whitefish samples were collected. Samples were usually composed of a single specimen, except for some lake whitefish samples that required using two or more specimens because of their small size (Appendix B, Table 9).

Unlike other media, the reference ranges for lake trout and lake whitefish chemistry included no data from Bobby's Lake and no data RF-4. Bobby's Lake and RF-4 reference areas which were sampled as part of other studies (CanNorth 2009; CanNorth 2010; CanNorth 2013a; CanNorth 2013b) which did not include lake trout and lake whitefish data.

4.2 Fish Chemistry

Similar to the analyses of the other components in the EARMP technical program, fish chemistry data from the far-field exposure areas were compared to reference ranges. However, given that multiple COPCs were assessed in two tissues of two species, Principal Component Analysis (PCA) was used to simplify and summarize the fish chemistry results. This was a simpler approach than focussing on each COPC separately in each far-field exposure area for each species and tissue using univariate statistics such as ANOVA (18 COPCs x 2 tissues x 2 species x 4 far-field exposure areas = up to 288 comparisons). Only COPCs that measured above the MDL in more than 50% of the samples in at least one far-field exposure area from one sampling period were included in the analyses (Appendix A, Table 10). Before analysis, the potential effect of fish age upon COPC concentrations was tested by regression analysis. COPC concentrations that were significantly related to fish age were corrected for differences in age for each specimen using the regression slope. COPCs that were significantly correlated with age are detailed in Appendix A, Table 11.

The main focus of the results was on two-axis (two-dimensional) scatterplots of the PCA results. PCA plots synthesize how chemically similar (or different) the fish samples are according to the distance between each samples position on the PCA plot (i.e., the greater the distance the greater the difference). Each axis represents a combination of various COPC concentrations, and the eigenvectors for each COPC represent the amount and direction of "pull" each COPC has along each axis. Although PCA produces multidimensional results (e.g., four, five, or more axes in multidimensional space), plots including more than two axes (or dimensions) become increasingly abstract and difficult to interpret.

The first two components (PC1 and PC2) expressed between 38% and 47% of all the variability in sample chemistry (Appendix A, Table 11). Because of the additional complexity of the results associated to PC3 and PC4, and because PC3 and PC4 usually explained ≤15% of the variability in sample chemistry, more emphasis will be put on the PC1 and PC2 results than on higher PCs.

Correlations of ≥|0.6| between COPC concentrations and PCA axis scores were considered to indicate a strong degree of correlation. PCA scores were computed only for axes with eigenvalues of ≥1.0 or that accounted for ≥10% of the variation in the data. Variations in PCA scores for far-field exposure area fish tissue were compared to the 95% confidence ellipse around the reference scores. Data points falling outside this ellipse were assessed further to determine if any COPCs were outside the expected range for the region. For cases where a COPC correlated by more than |0.6| with PC3 or PC4 axis scores, data were assessed graphically against the reference range similar to the presentation used in previous sections.

Mercury and selenium concentrations in fish flesh from the far-field exposure areas were also assessed relative to available guidelines using the graphical approach presented in the water, sediment, and benthic invertebrate community sections. Mercury concentrations in flesh were compared to the 0.5 µg/g guideline (SE 2011) and selenium was compared to the U.S. EPA criterion for muscle tissue (11.3 µg/g (dw); U.S. EPA 2016) converted to a wet weight basis using the average percent moisture of lake trout and lake whitefish samples collected from this study. No guidelines were available for fish bone chemistry, for either mercury, selenium, or other COPCs. Thus, unlike in flesh, bone mercury and selenium concentrations were not plotted separately in relation to their respective reference ranges unless they had a strong gradient with the third or fourth PCA axes.

4.2.1 Fish Flesh

Of the 18 COPCs assessed in fish flesh, 8 were consistently at or below the MDL in more than 50% of the samples in both lake trout and lake whitefish. (Appendix A, Table 10). These included aluminum, cadmium, molybdenum, nickel, uranium, lead-210, thorium-230, and vanadium and these COPC are not addressed further.

The remaining 10 COPCs were therefore the focus of the analyses, namely copper, iron, lead, mercury, selenium, zinc, polonium-210, radium-226, arsenic, and cobalt. However, radium-226 and cobalt were included in the analyses for only lake whitefish because these two COPCs were less than the MDL in the majority of lake trout samples. Correlations, eigenvalues, and the proportion of the variation explained by each PCA axis for each species are presented in Appendix A, Table 11. As seen in greater details below, the PCA results demonstrated that most COPCs were in low concentrations in the far-field exposure areas and were within the 95% confidence ellipse of the reference areas. In addition, those COPCs with available guidelines (i.e., selenium and mercury) were found at levels below those guidelines in all fish flesh samples.

4.2.1.1 Lake Trout Flesh

The PCA results are summarized graphically in Appendix A, Figure 15. Although only the first two axes are depicted in the figure, the first four axes each explained >10% of the total variation in COPC concentrations, with the first two axes together explaining 47% of the total variation (Appendix A, Table 11). Eight COPCs were included in the lake trout flesh PCA. The first PCA axis (PC1, the x-axis) reflected mainly copper, iron, and zinc concentrations, these three COPCs increasing to the right of the plot (positive values ≥0.6), with otherwise no COPCs strongly increasing to the left of the plot (all negative values >-0.6). The second axis (PC2, the y-axis) reflected increasing concentrations of selenium to the top of the plot and increasing concentrations of arsenic to the bottom of the plot. Overall, as seen in Appendix A, Figure 15, all but one lake trout flesh samples from the far-field exposure areas fell within the 95% confidence ellipse of the reference areas (green ellipse). This indicates that copper, iron, selenium, zinc, and arsenic concentrations in the far-field exposure areas were overall within the ranges of values expected for reference areas. The exception was one lake trout from Cochrane River captured in 2011 (LT4) that had a combination of low iron and a high selenium levels (Appendix B, Table 11) that resulted in this sample being located marginally outside the reference range ellipse. The 2015 far-field exposure samples were also generally within the far-field exposure baseline 95% confidence ellipse (blue ellipse). Three samples were outside that ellipse, but were within the reference ellipse. These three samples were therefore not atypical.

The third axis (i.e., the third dimension, or PC3, not plotted for simplicity) represented mainly differences in lead and mercury concentrations between samples, and the fourth axis (not plotted) represented mainly raddium-226 activity levels (Appendix A, Table 11). These results as well as those for selenium were separately compared with both the available guidelines and the reference range (Appendix A, Figure 16). These COPCs' levels in lake trout flesh from all four far-field exposure areas fell within the reference ranges and below the available fish tissue criteria. Overall, the 2015 lake trout flesh chemistry in the far-field exposure areas was similar to reference fish chemistry and did not substantially differ from baseline chemistry results.

4.2.1.2 Lake Whitefish Flesh

In lake whitefish flesh, 10 COPCs were included in the PCA (Appendix A, Table 11). The first four axes each explained >10% of the total variation in COPC concentrations, the first two explaining 39% of the variation. The first axis corresponded to increasing levels of iron, lead, zinc, and polonium-210 to the left of x-axis while the y-axis represented mainly increasing copper levels to the top of the plot. As seen in Appendix A, Figure 15, all but two lake whitefish flesh samples from the far-field exposure areas fell within the 95% confidence ellipse of the references. These two samples were from Waterbury Lake in 2015 (one sample being the composite of LW02 and LW05, the other sample being LW14), and were characterized by higher lead concentrations than the other samples (Appendix B, Table 14). These exceedances were minor, with levels measuring less than five times the MDL. These same two samples, as well as the remaining three samples from Waterbury Lake in 2015, were also outside the baseline range.

The third PCA axis mainly represented mercury and arsenic levels, while the fourth axis represented mainly radium-226 activity levels (Appendix A, Table 11). These results, as well as those for selenium, are compared with both the available guidelines and the reference range below (Appendix A, Figure 17). Average levels of all four COPCs in lake whitefish flesh were within the reference range, and mercury and selenium concentrations were additionally below the fish tissue criteria in all four far-field exposure areas.

Aside from two Waterbury Lake samples in 2015 that marginally exceeded the reference ellipse, the lake whitefish flesh chemistry in the far-field exposure areas was similar to reference fish chemistry and did not substantially change since the baseline measurements.

4.2.2 Fish Bone

The fish bone chemistry results were analyzed in the same manner as the fish flesh results. While many of the 18 COPCs were also in low concentrations in both species (Appendix B, Tables 20 to 27), in lake whitefish, more bone COPCs were in concentrations above the MDL than what was observed for flesh (Appendix A, Table 10).

COPCs that were less or equal to the MDL in 50% or more of the samples in both species included cadmium, molybdenum, lead-210, and thorium-230 (Appendix A, Table 10). In lake trout, lead, uranium, polonium-210, radium-226, and vanadium were also less or equal to the MDL in 50% or more of the samples. The COPC list included in the PCA as well as correlations, eigenvalues, and the proportion of the variation explained by each PCA axis for each species are presented in Appendix A, Table 11.

4.2.2.1 Lake Trout Bone

For lake trout bone chemistry analysis, nine COPCs were included in the PCA (Appendix A, Table 11). The first four axes each explained > 10% of the total variation in COPC concentrations, among which the first two explained 47% of the variation. The first axis reflected increasing iron, nickel, selenium, and cobalt concentrations to the left of the plot and increasing arsenic levels to the right of the plot. The second axis reflected increasing concentrations of copper and zinc to the top of the plot with increasing mercury levels to the bottom of the plot. Most the far-field exposure samples were within the 95% confidence ellipse of the references (Appendix A, Figure 15). Four exceptions occurred: one sample from Crackingstone Inlet in 2015 (LT02) was located in the top-left area of the plot because of a combination of higher copper, iron, and zinc than other samples (Appendix B, Table 21), and three samples from Cochrane River in 2011 (LT01, LT04, and LT05) were located at the bottom-centre of the plot because of notably low copper levels relative to other samples (Appendix B, Table 20). These differences were, however, marginal. The 2015 samples, aside from that specimen from Crackingstone Inlet, were also usually within the baseline confidence ellipse.

No COPC was strongly correlated with the third axis (correlations of < |0.6|). Aluminum was strongly correlated with the fourth axis. Aluminum was therefore compared to the reference range separately, and this COPC was within the reference range (Appendix A, Figure 18).

Thus, the 2015 lake trout bone chemistry in the far-field exposure areas was similar to reference fish chemistry and differed little from baseline conditions.

4.2.2.2 Lake Whitefish Bone

In lake whitefish bone, 14 COPCs were included in the PCA. Only the first three axes explained >10% of the variation in COPC concentrations, the first two of which explained together 38% of the variation (Appendix A, Table 11). The first axis corresponded to increasing levels of nickel, cobalt, and vanadium to the right of the plot, with no COPCs strongly increasing to the left of the plot. The second axis represented increasing activity levels of polonium-210 to the top of the plot, and increasing concentrations of uranium and arsenic to the bottom of the plot. No COPC had a strong gradient along the third PCA axis (all values <|0.6|), and therefore, no COPCs were plotted separately in relation to their specific reference range.

Although most lake whitefish bone samples from the far-field exposure areas were within the 95% confidence ellipse of the references, 10 samples were outside the reference ellipse (Appendix A, Figure 15). The four far-field exposure samples outside the reference ellipse on the right side of the plot were from Crackingstone Inlet in 2011 (LW09) and 2015 (LW01, LW02, LW06). These were characterized by higher selenium, uranium, and vanadium concentrations than other samples (Appendix B, Table 21). Samples outside the reference ellipse on the left side of the plot included samples from both Cochrane River (2012, LW02 from net SP3-1; 2015, LW03 and LW08) and Waterbury Lake (2012, LW01, LW07, and LW08). All six of these samples were mainly characterized by having lower aluminum, iron, and selenium levels than other samples (Appendix B, Tables 20 and 23). In terms of temporal difference, two of the 2015

Crackingstone Inlet fish fell outside the baseline ellipse on the right of the plot because of higher selenium, uranium, and vanadium levels. Additionally, two of the 2015 samples from Waterbury Lake, namely LW14 and LW15, also exceeded the baseline, these two fish being characterized by having lower uranium and arsenic levels than most other fish (Appendix B, Table 23).

Aside a few specimens from Crackingstone Inlet with higher selenium, uranium, and vanadium levels, the lake whitefish bone chemistry in the far-field exposure areas was generally similar to reference lake whitefish chemistry. The far-field exposure specimens also generally differed little between 2015 and the baseline.

4.3 Summary

Overall, lake trout and lake whitefish flesh and bone COPC levels were low, within the reference ranges, and below the available guidelines. A few specimens were outside the reference range for certain COPCs, but those were exceptions and their exceedances over the reference ranges were usually marginal. More instances of exceedances over the reference ranges occurred in bone than in flesh, these instances also being few and marginal. No substantial differences between 2015 and baseline chemistry occurred in either species or tissues compared to the 2011 and 2012 baseline results.

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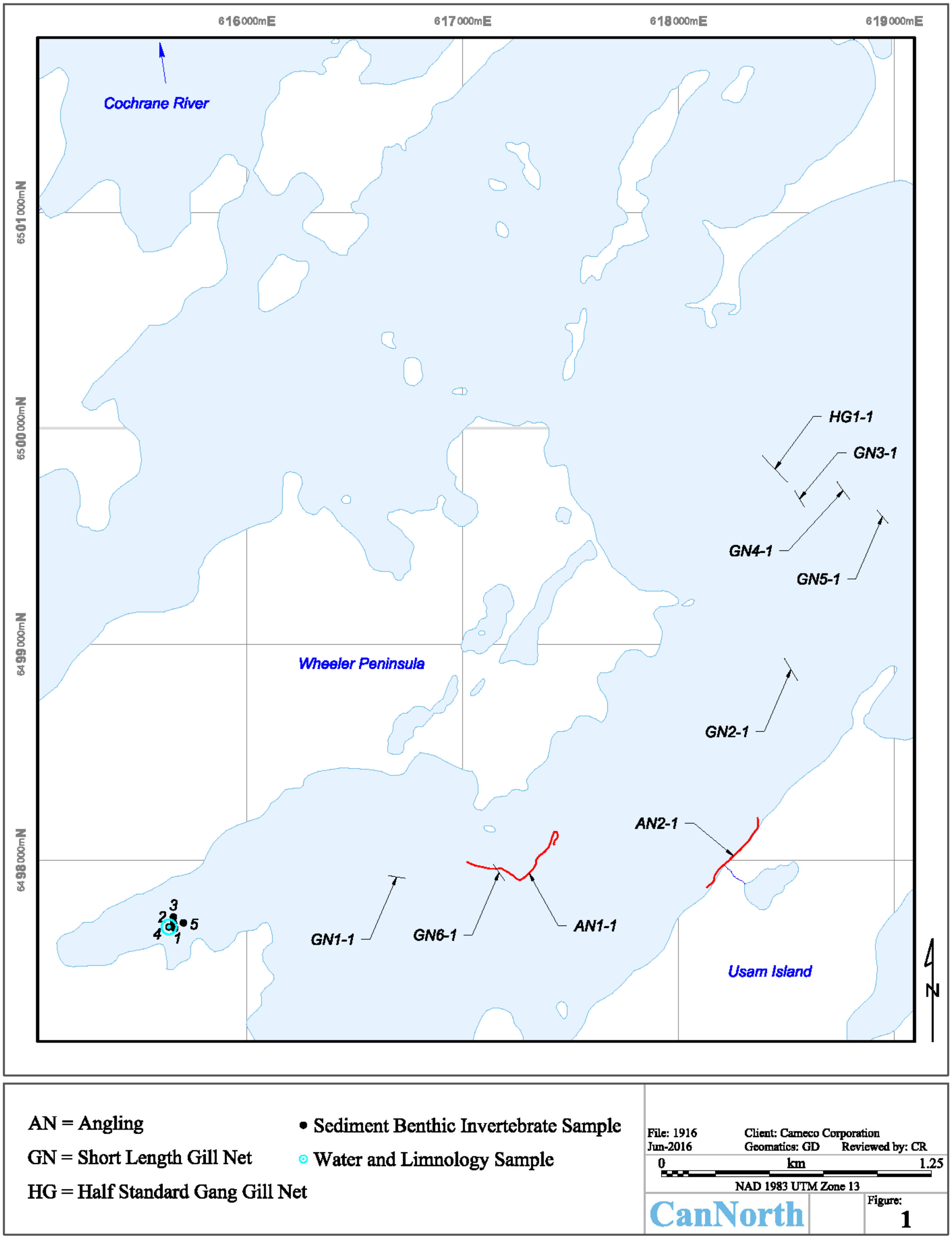
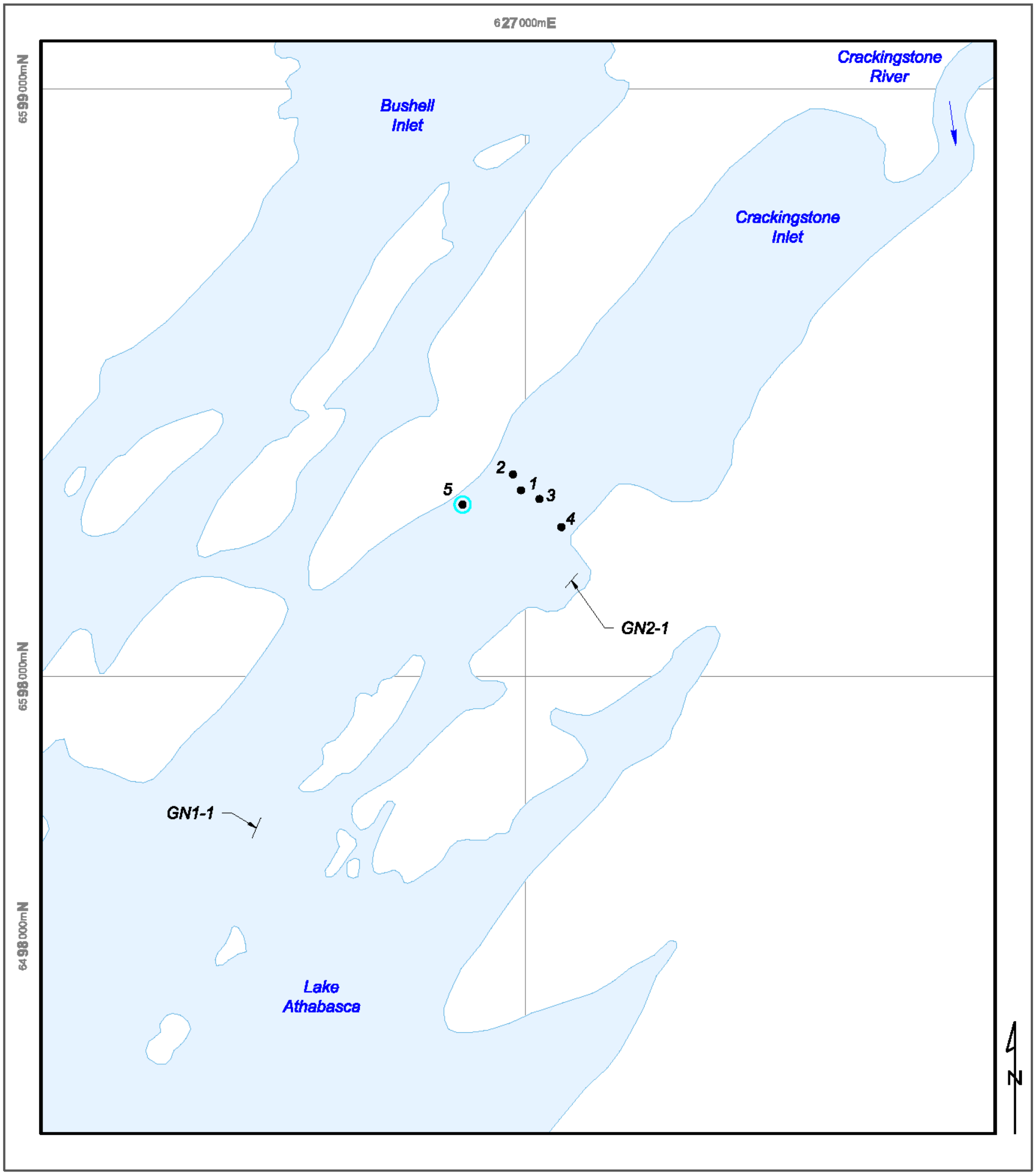


Appendix A, Figure 1

Detailed sampling locations in the Cochrane River for the EARMP technical program, 2015.

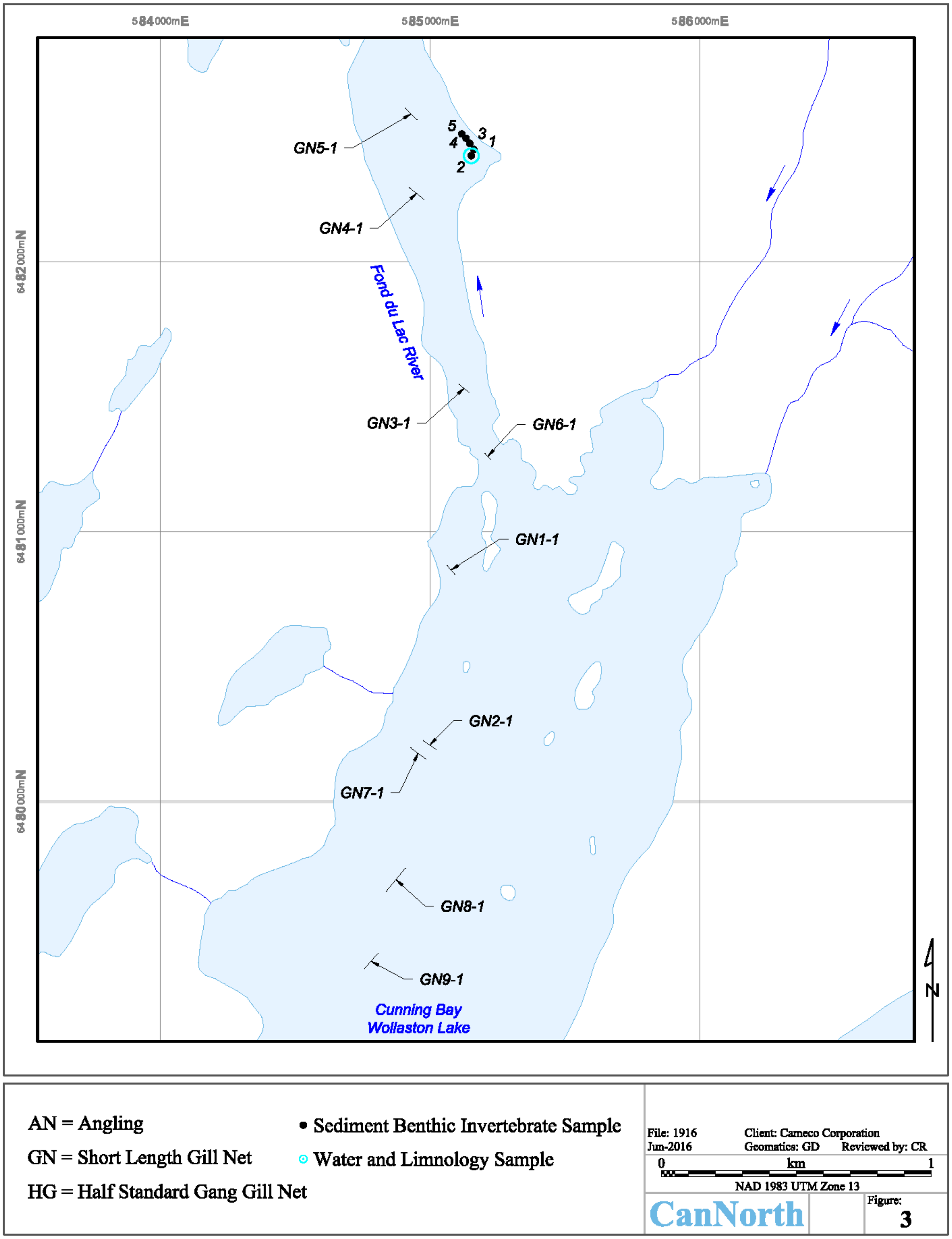


AN = Angling
GN = Short Length Gill Net
HG = Half Standard Gang Gill Net

● Sediment Benthic Invertebrate Sample
◎ Water and Limnology Sample

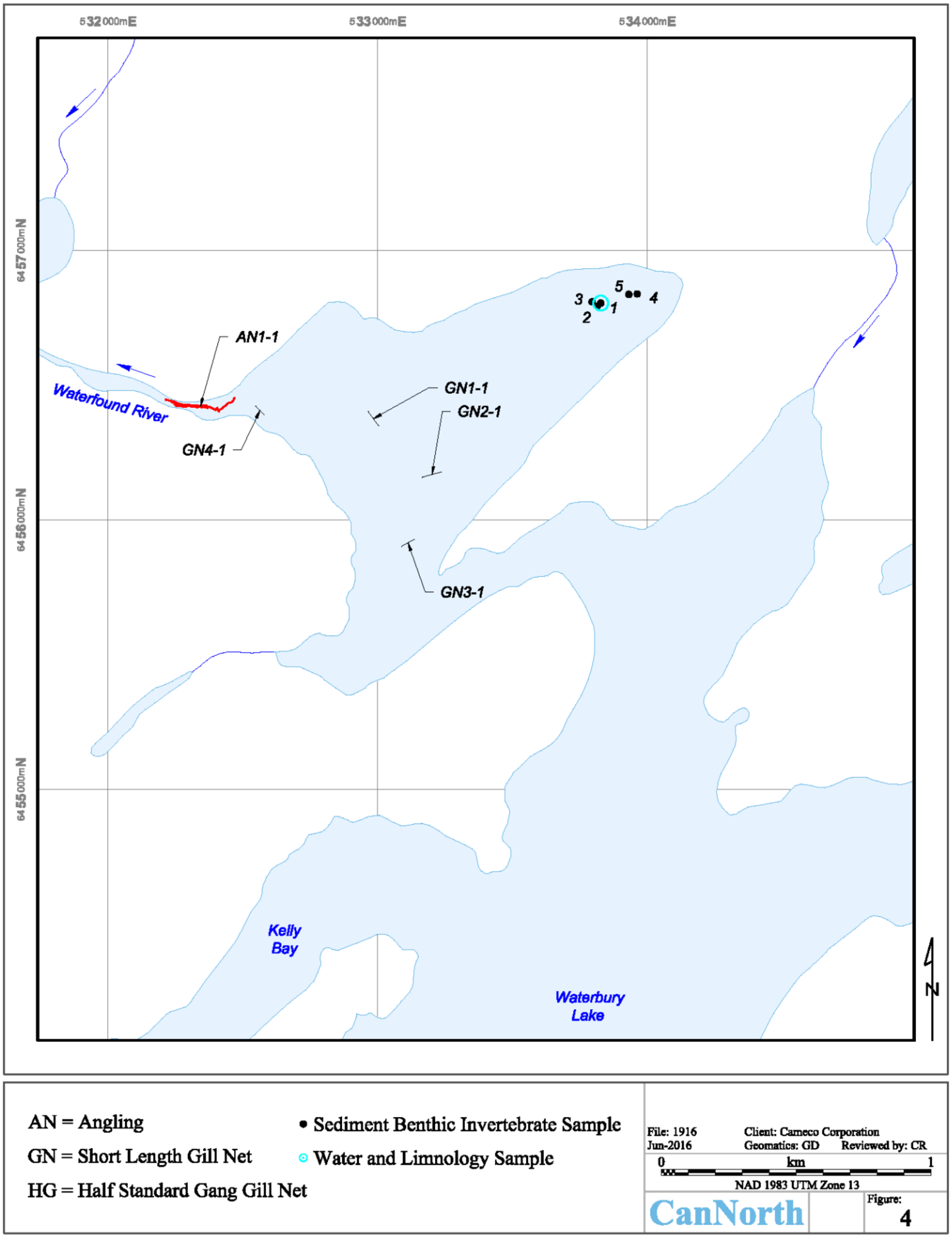
File: 1916
Jun-2016
Client: Cameco Corporation
Geomatics: GD
Reviewed by: CR
0 metres 500
NAD 1983 UTM Zone 12
CanNorth
Figure: 2

Appendix A, Figure 2
Detailed sampling locations in Crackingstone Inlet of Lake Athabasca for the EARMP technical program, 2015.

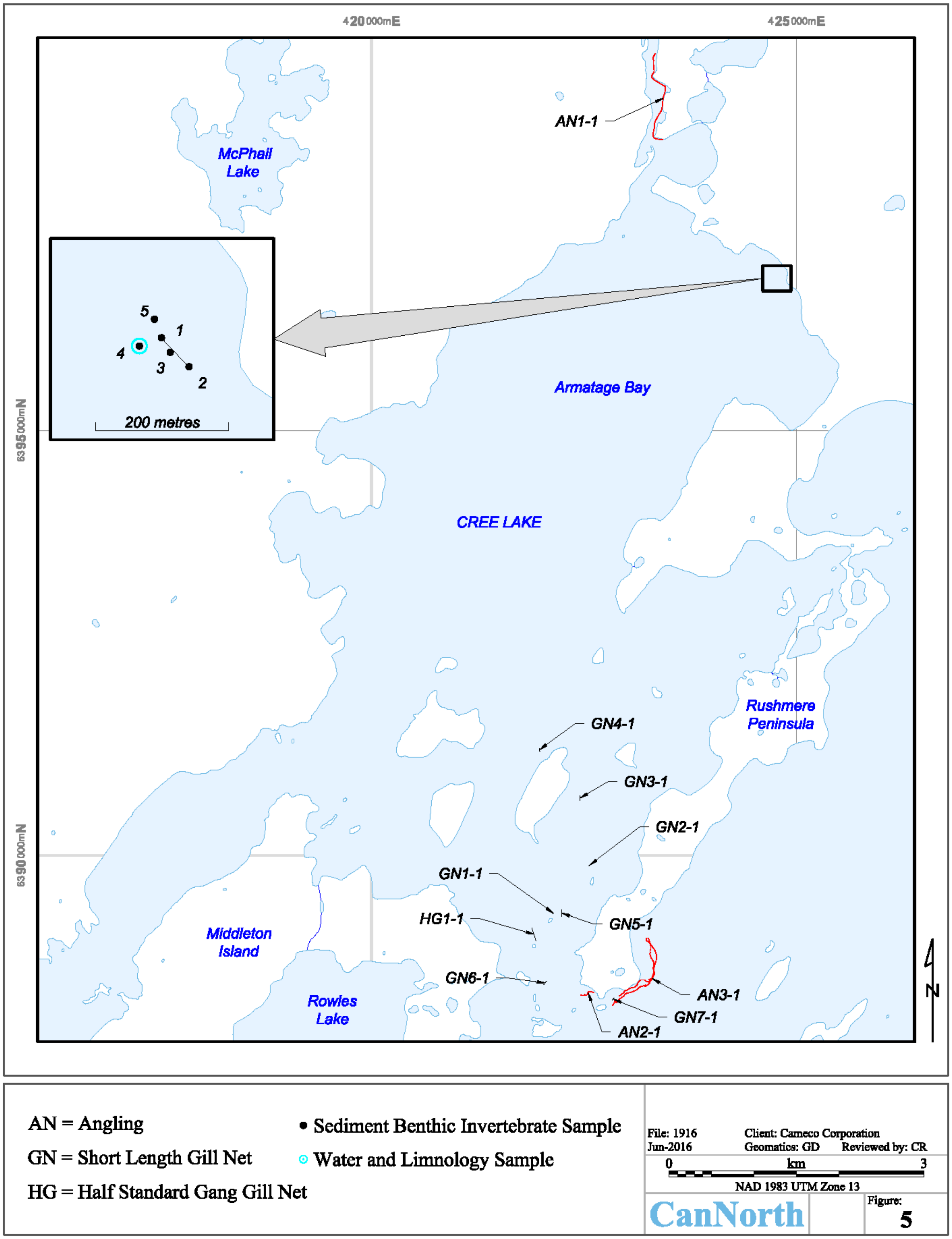


Appendix A, Figure 3

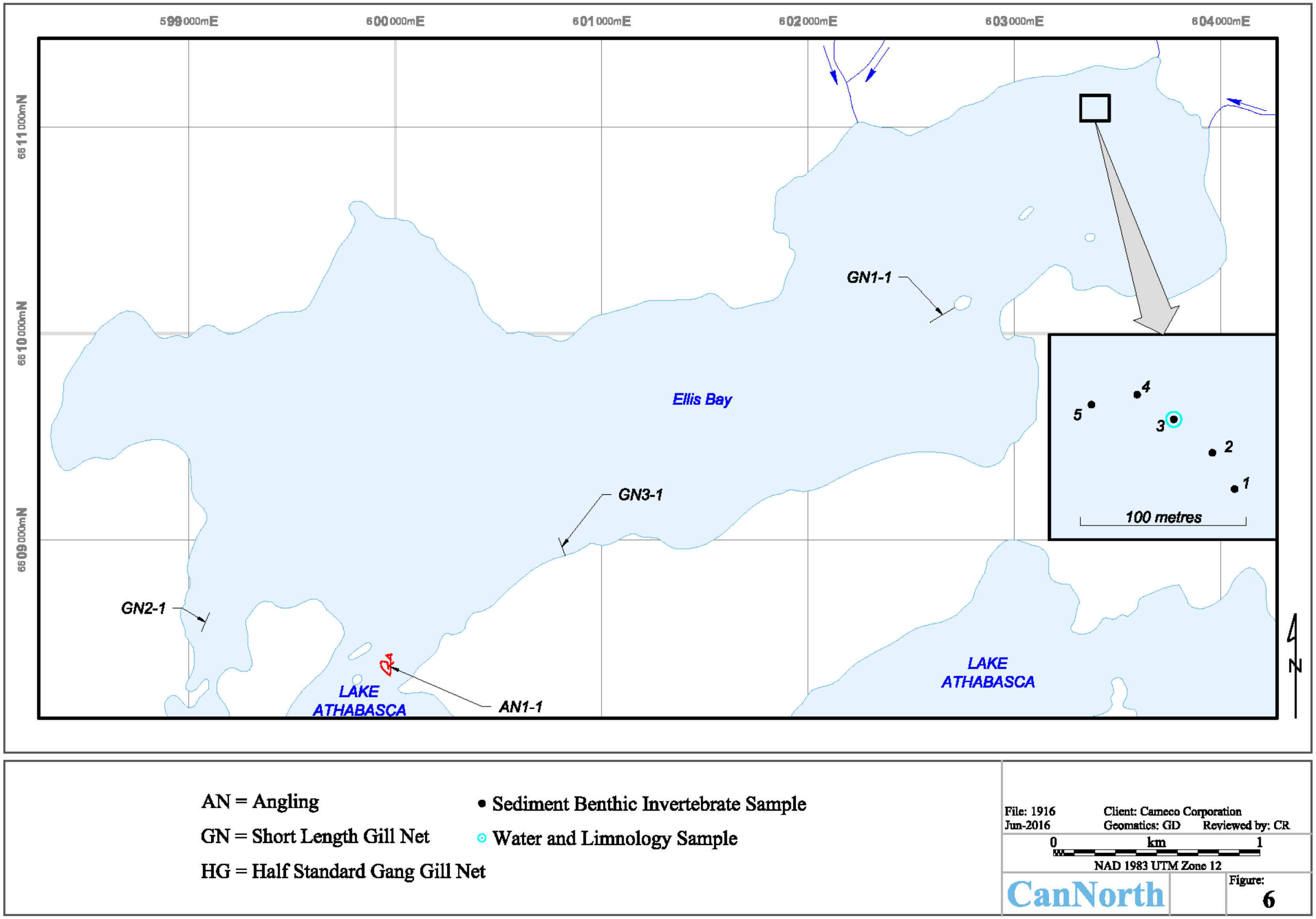
Detailed sampling locations in the Fond du Lac River for the EARMP technical program, 2015.



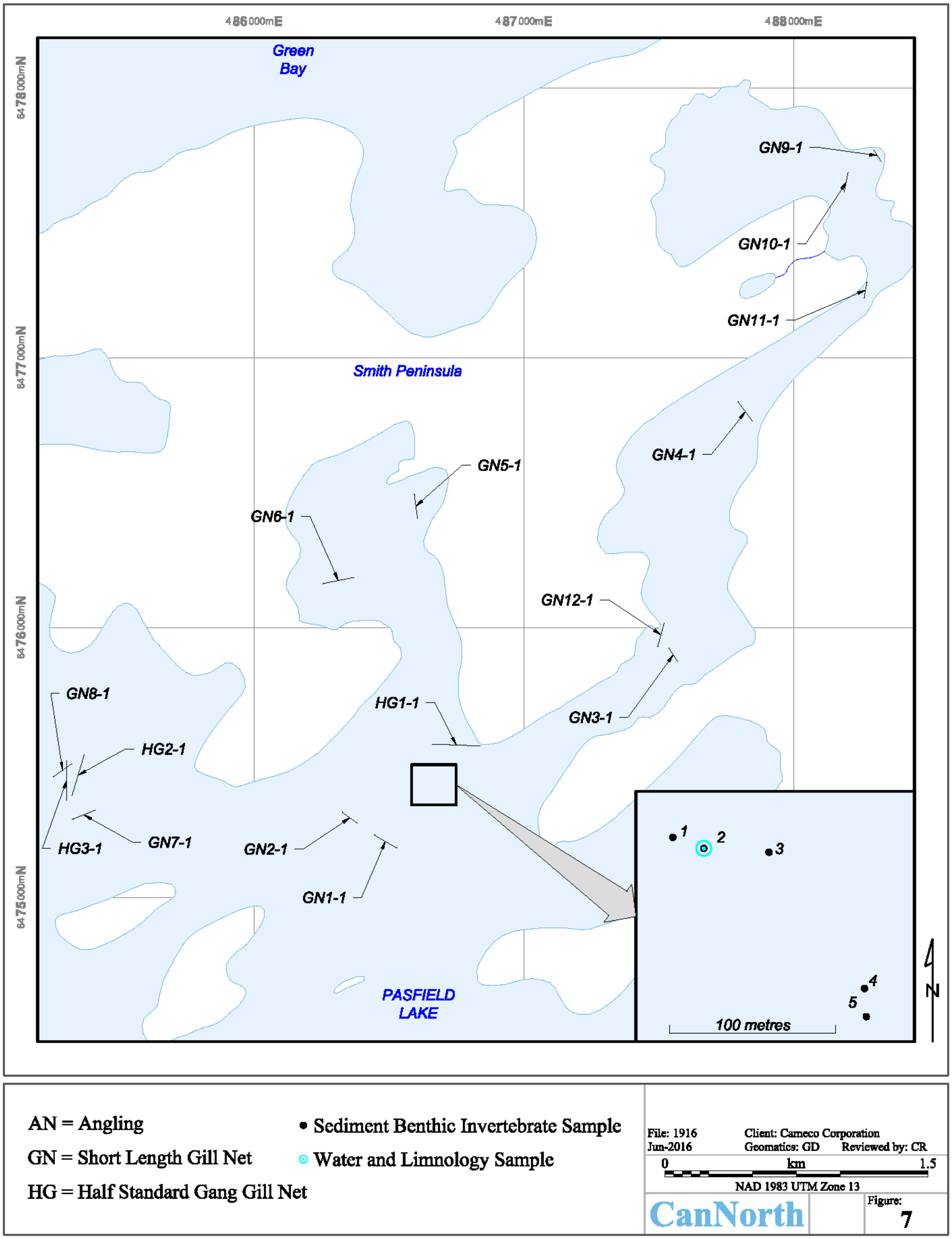
Appendix A, Figure 4
Detailed sampling locations in Waterbury Lake for the EARMP technical program, 2015.



Appendix A, Figure 5
Detailed sampling locations in Cree Lake for the EARMP technical program, 2015.

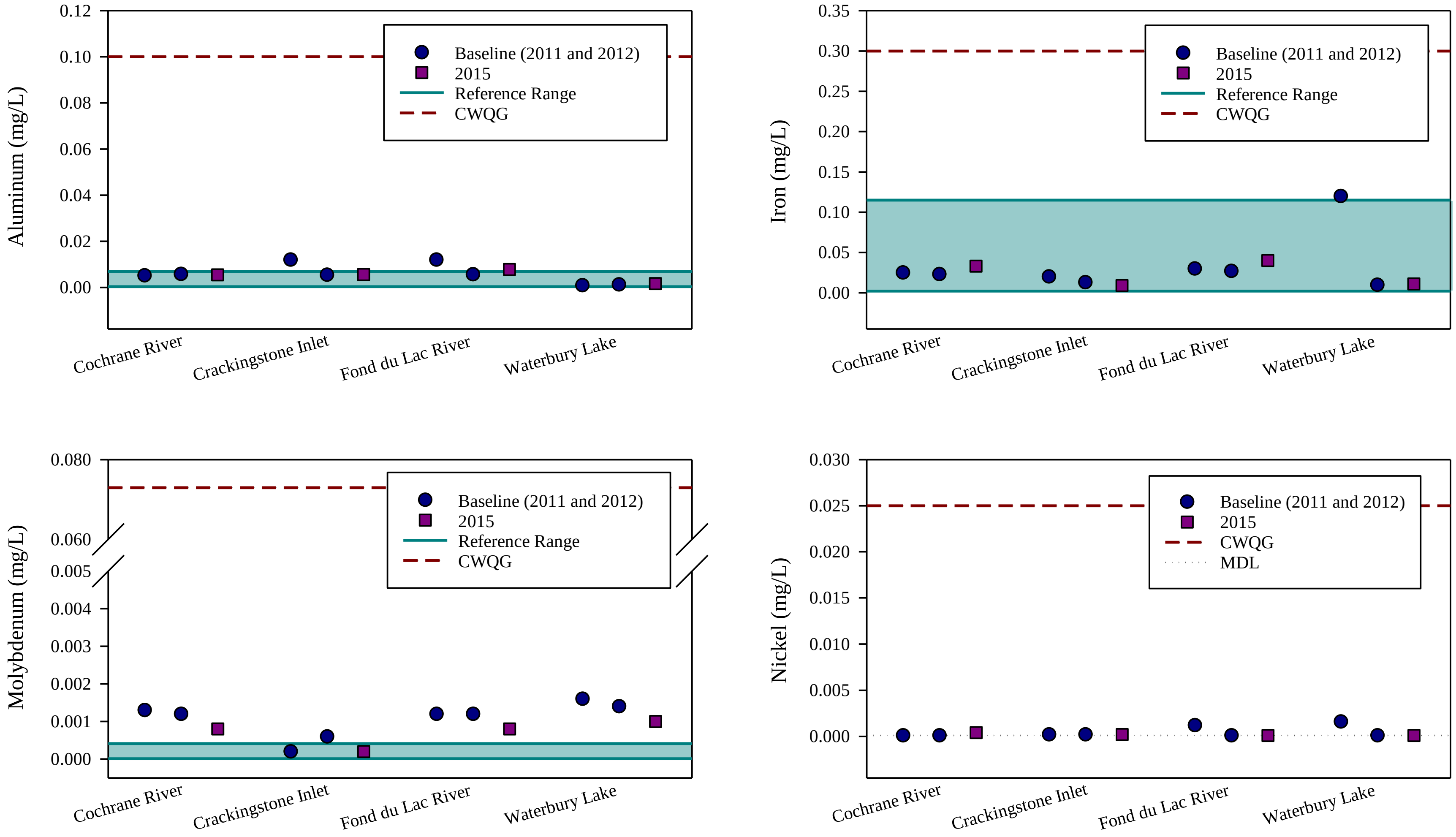


Appendix A, Figure 6
Detailed sampling locations in Ellis Bay of Lake Athabasca for the EARMP technical program, 2015.

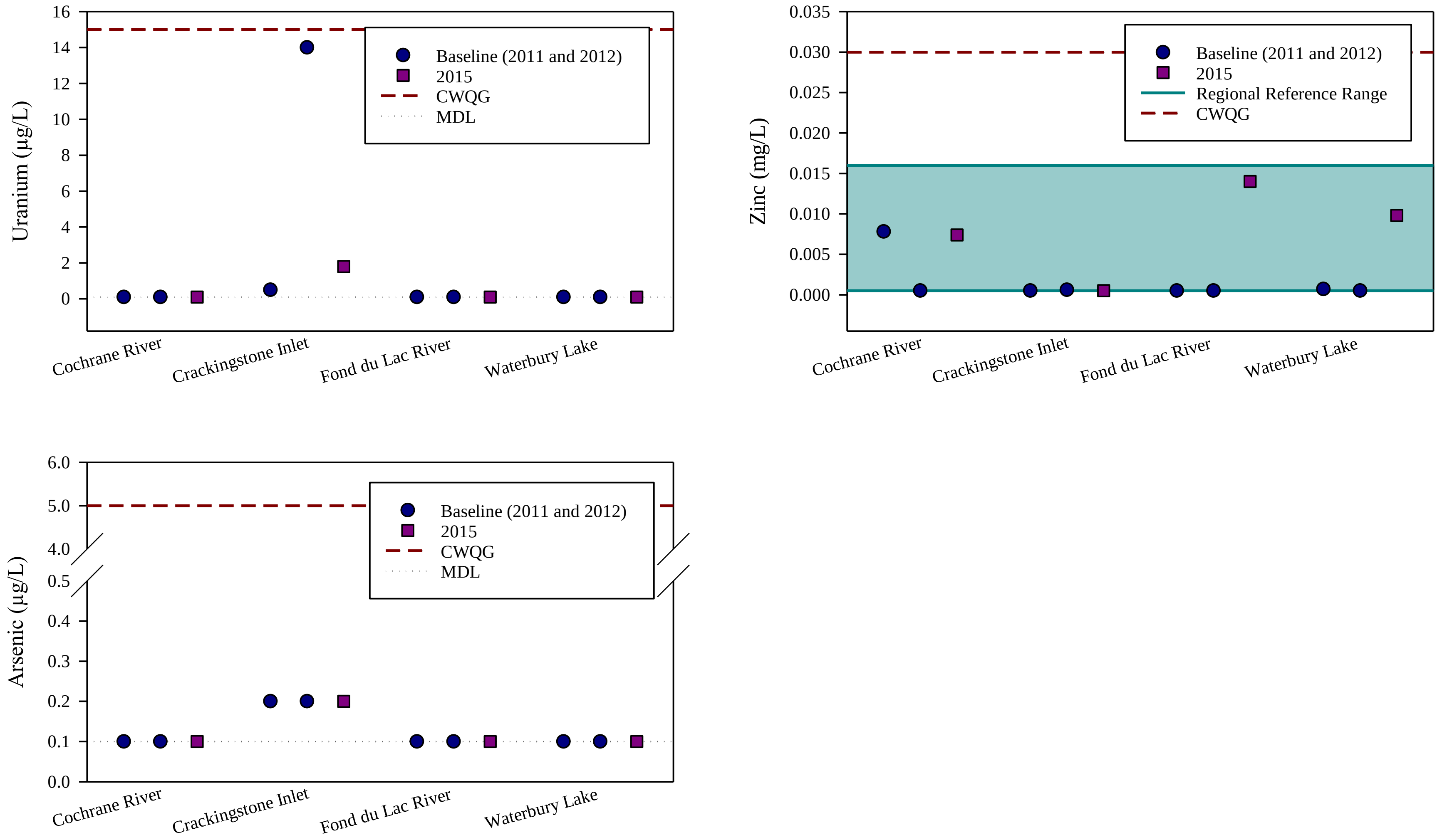


Appendix A, Figure 7

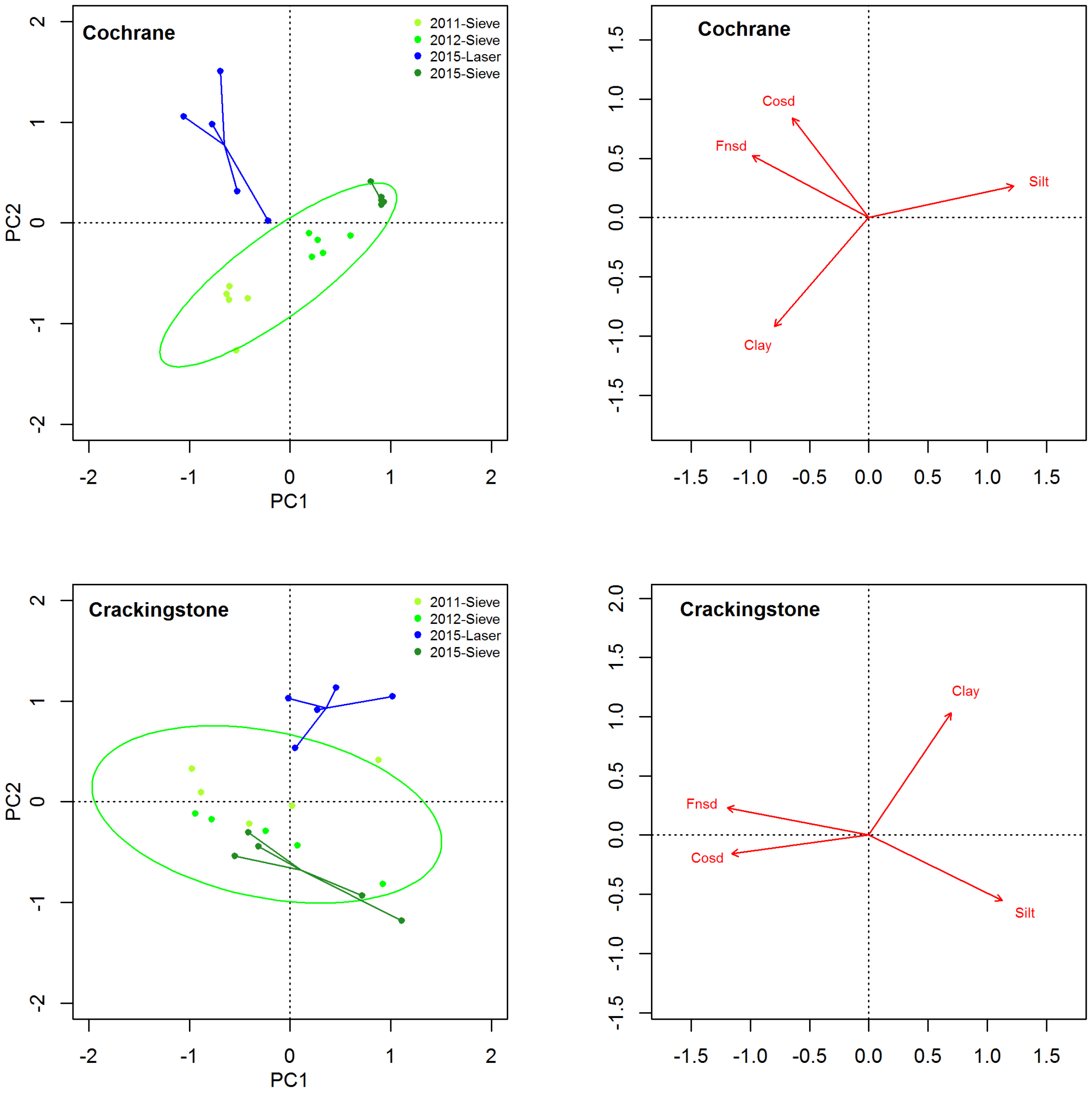
Detailed sampling locations in Pasfield Lake for the EARMP technical program, 2015.



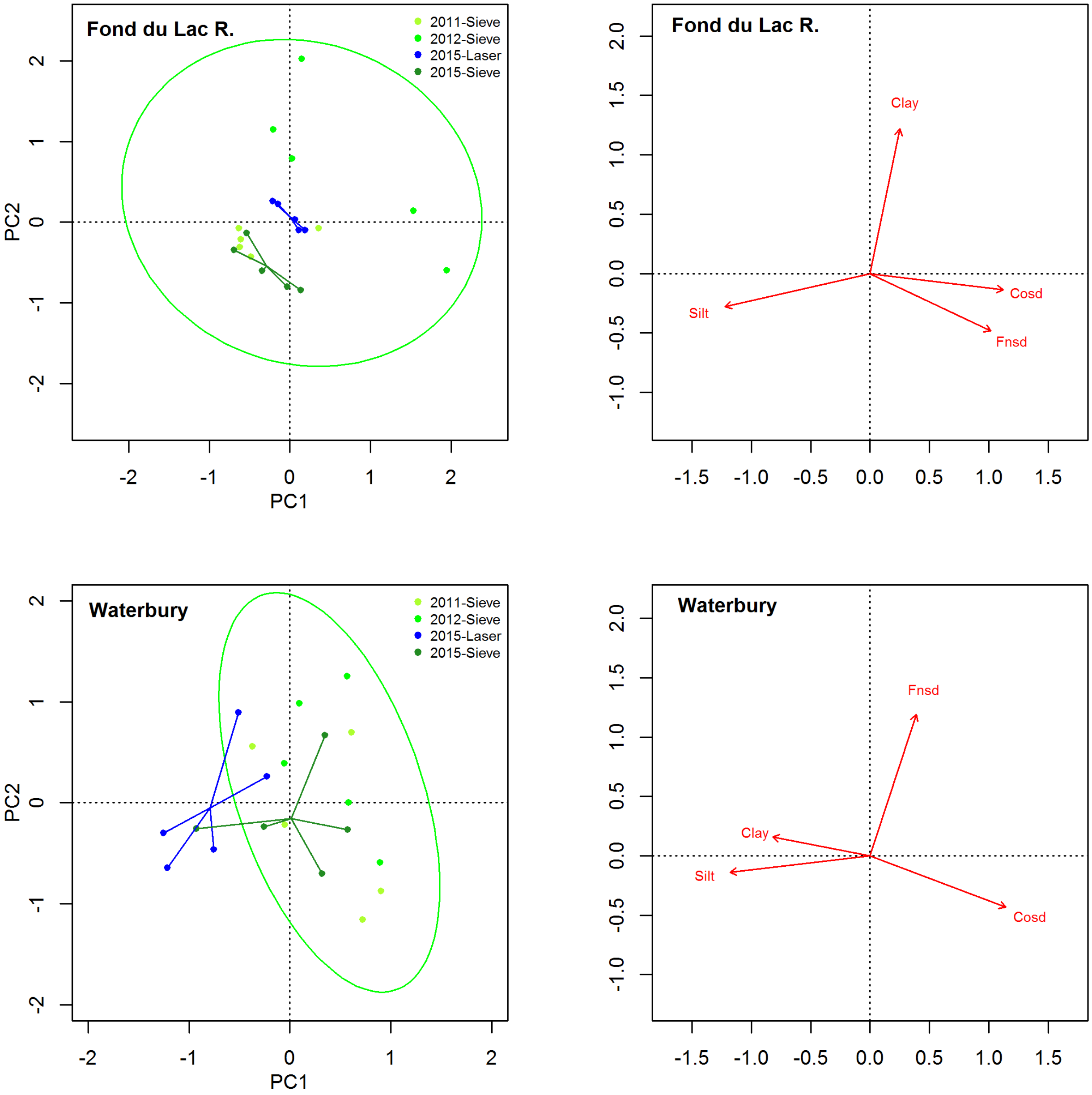
Appendix A, Figure 8
COPCs in water in the EARMP technical program study area, 2011 to 2015.



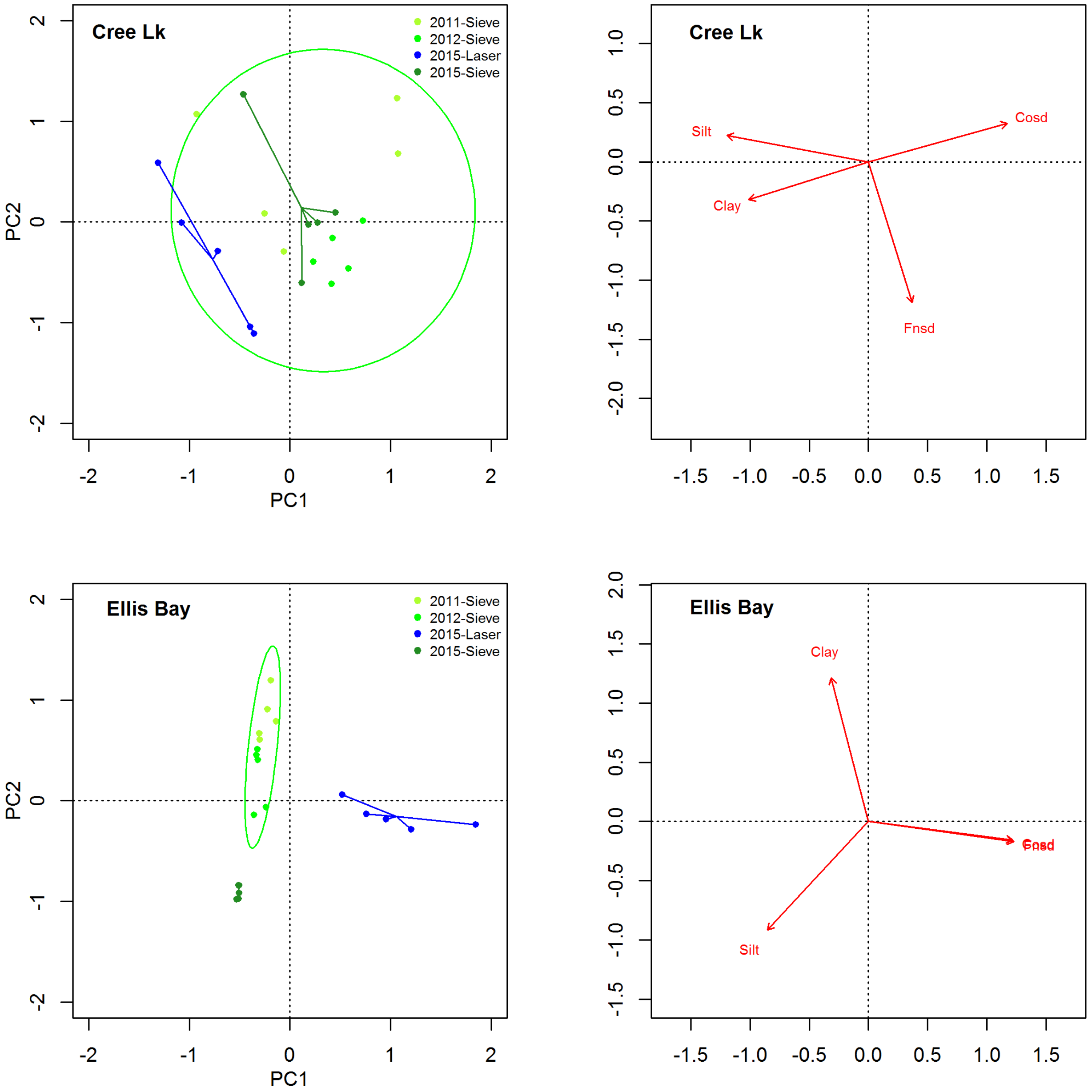
Appendix A, Figure 8 (Cont'd)
COPCs in water in the EARMP technical program study area, 2011 to 2015.



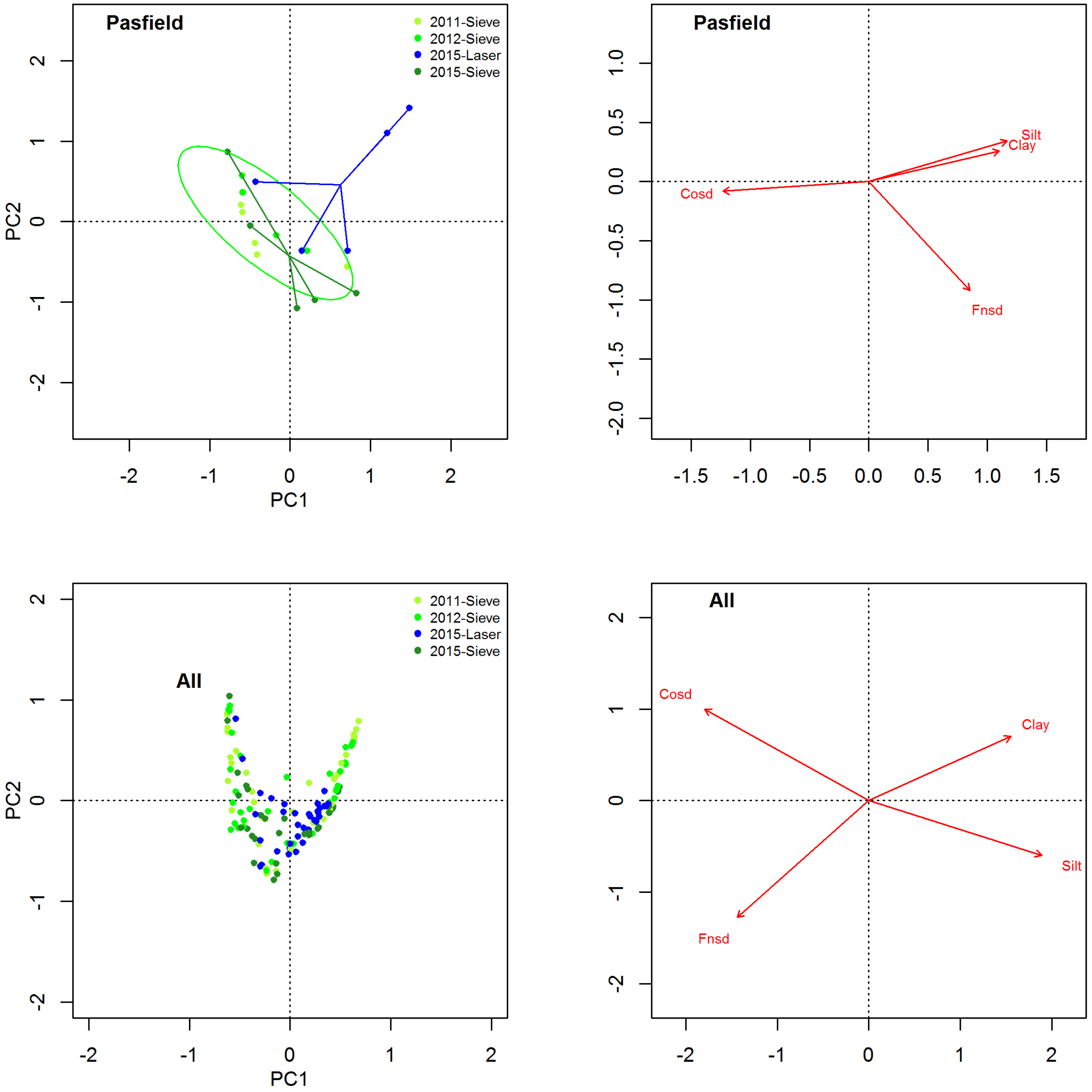
Appendix A, Figure 9
Sediment particle size PCA results for the EARMP technical program study area, 2011 to 2015.



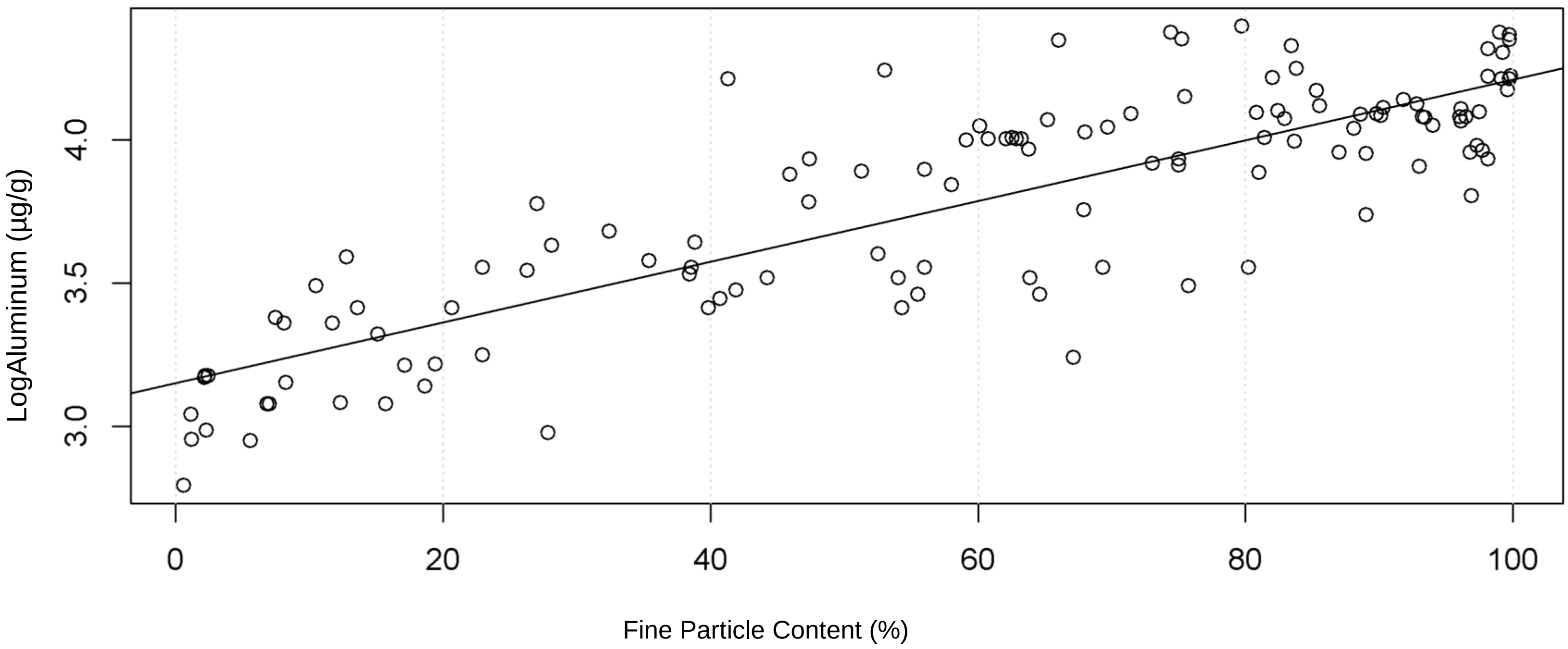
Appendix A, Figure 9 (Cont'd)
Sediment particle size PCA results for the EARMP technical program study area, 2011 to 2015.



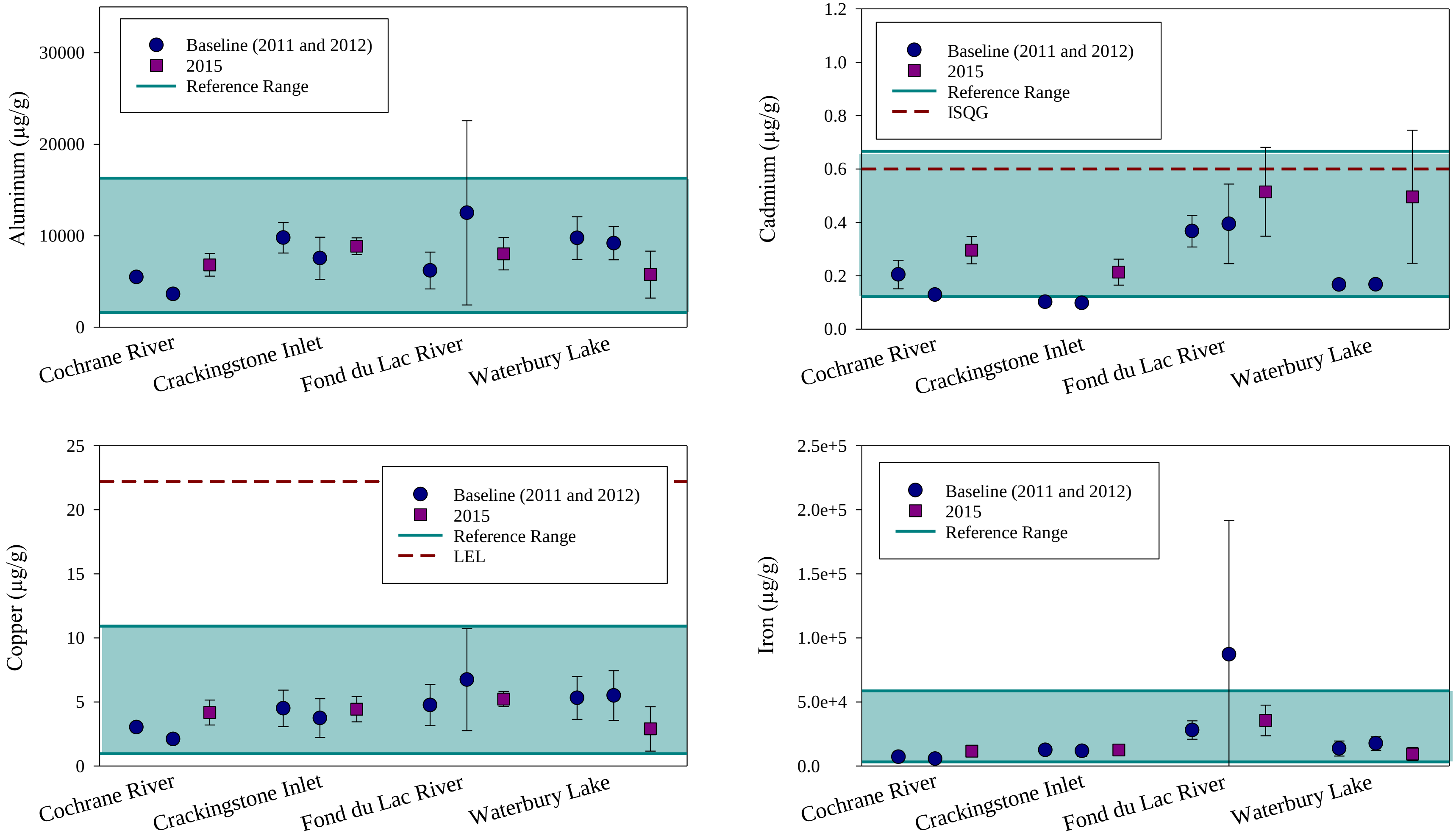
Appendix A, Figure 9 (Cont'd)
Sediment particle size PCA results for the EARMP technical program study area, 2011 to 2015.



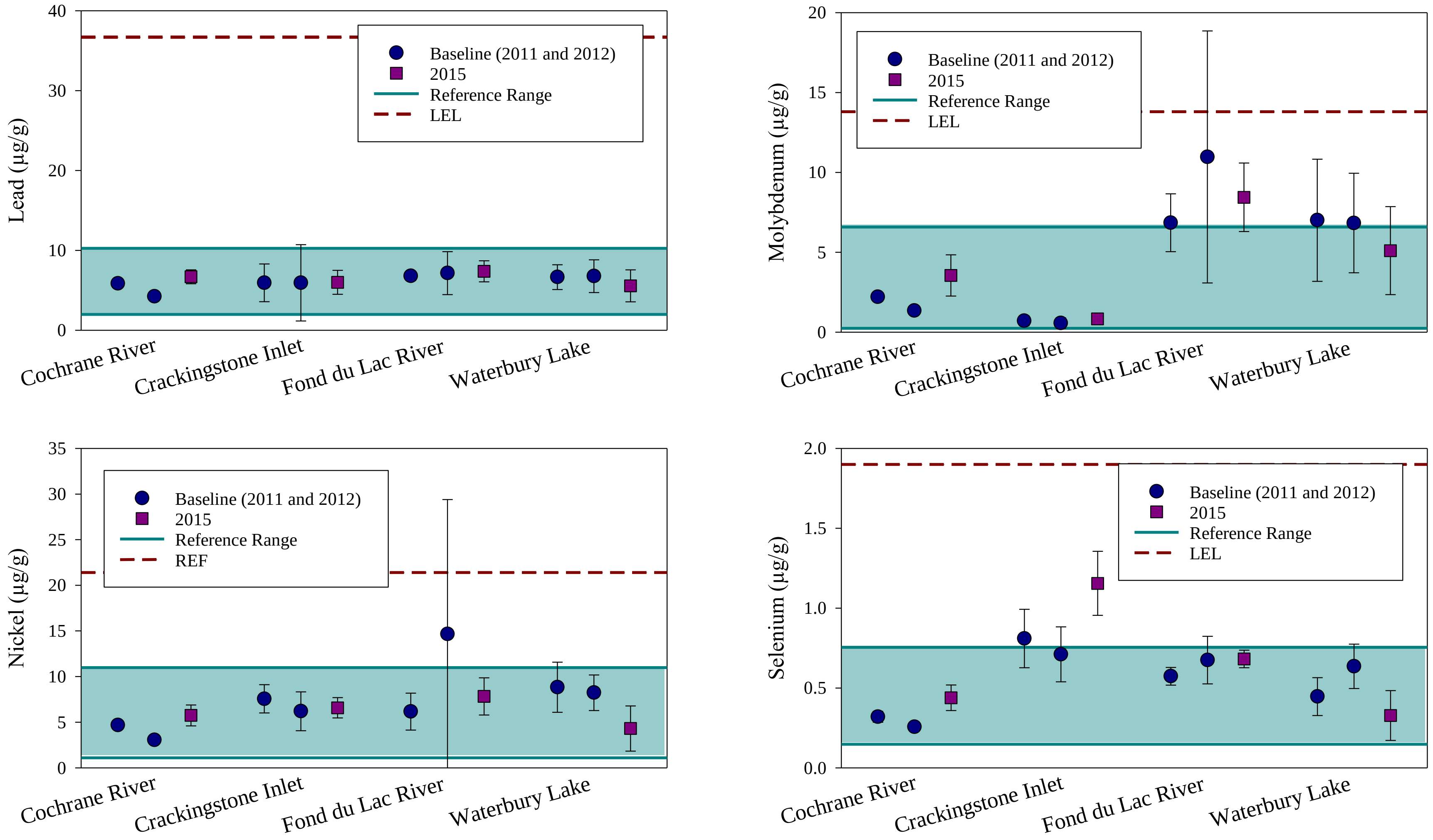
Appendix A, Figure 9 (Cont'd)
Sediment particle size PCA results for the EARMP technical program study area, 2011 to 2015.



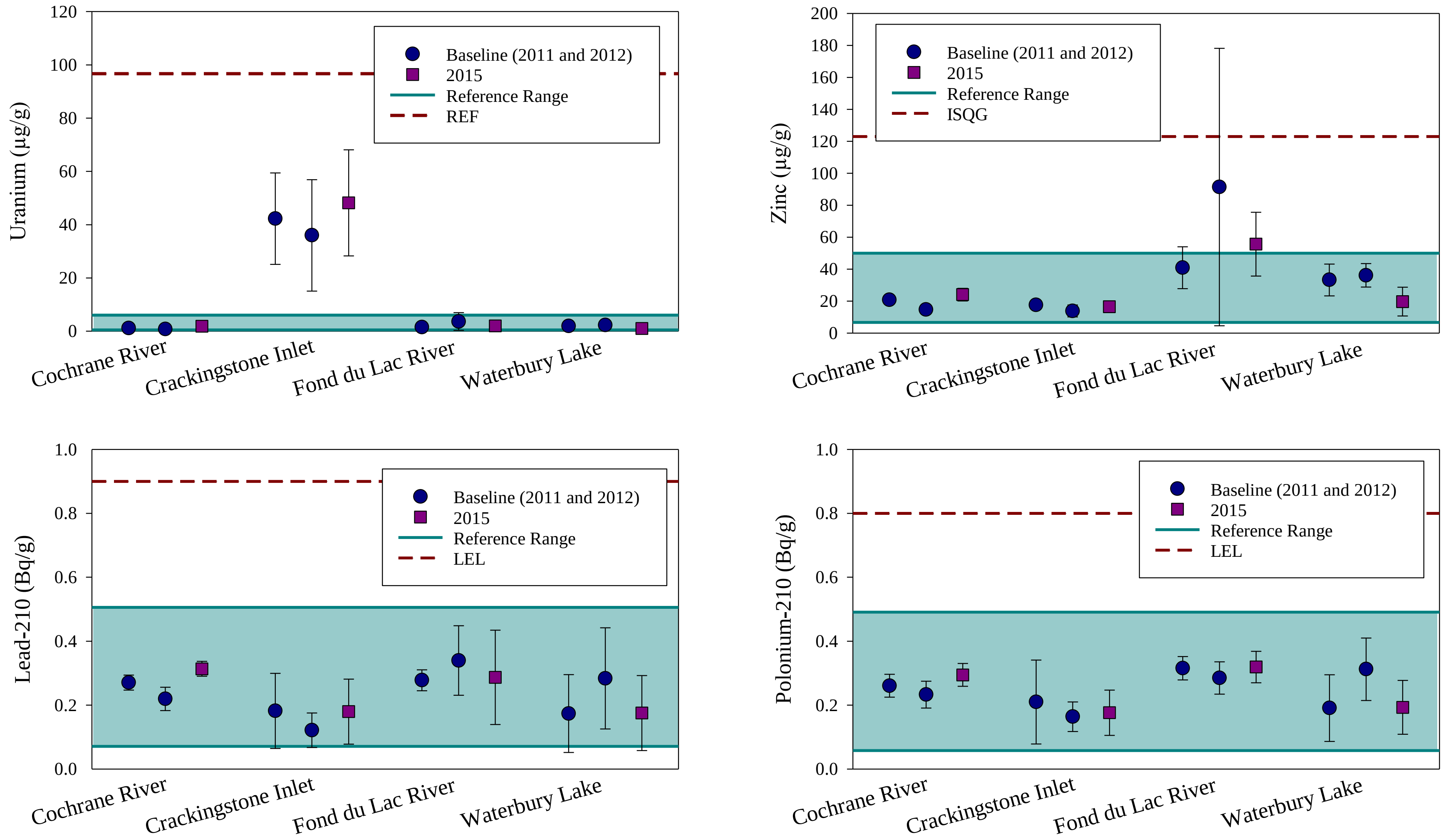
Appendix A, Figure 10
Typical relationship between COPC concentration and fine particle content in the EARMP technical program study area.



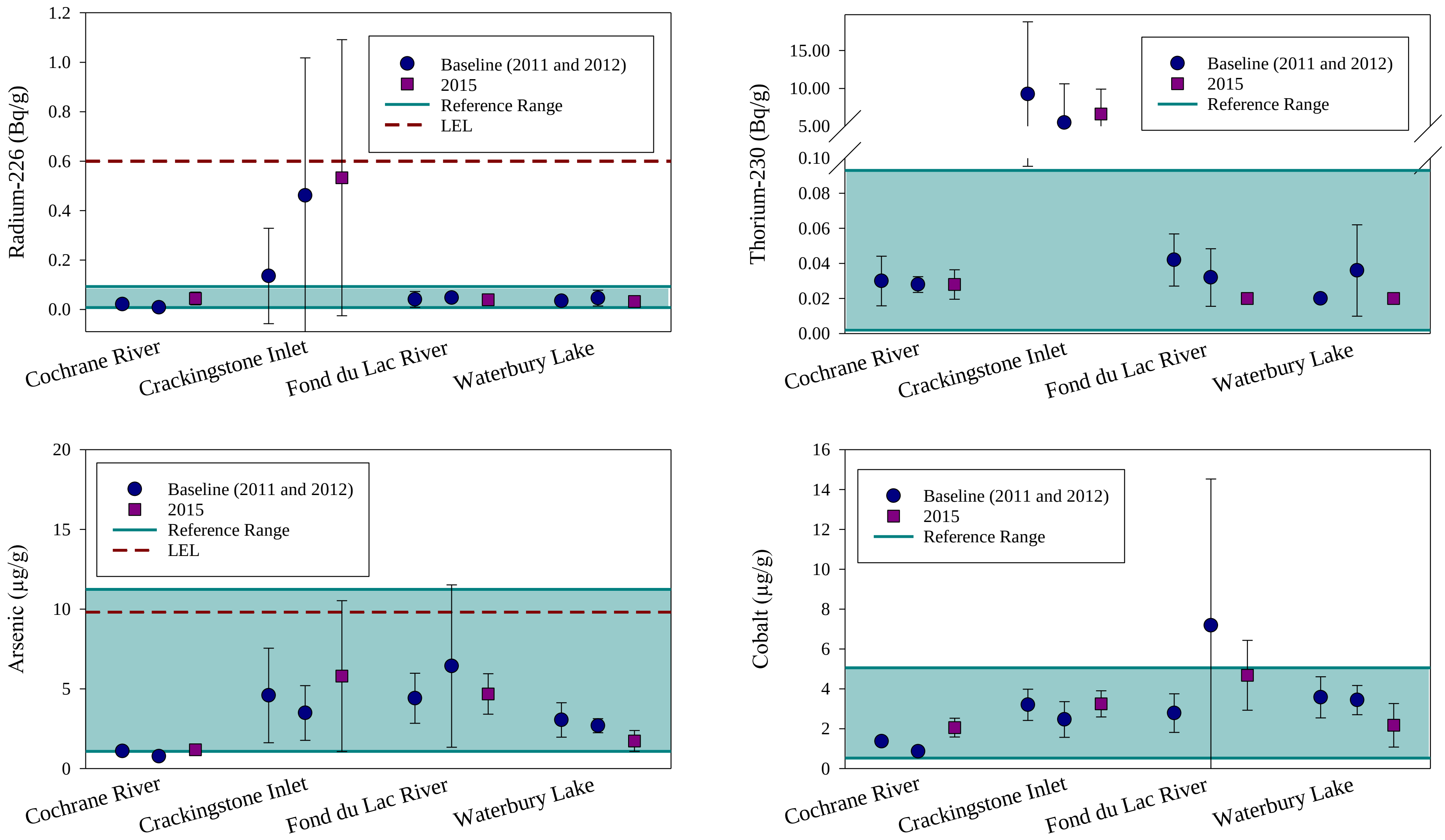
Appendix A, Figure 11
COPCs in sediment in the EARMP technical program study area, 2011 to 2015.



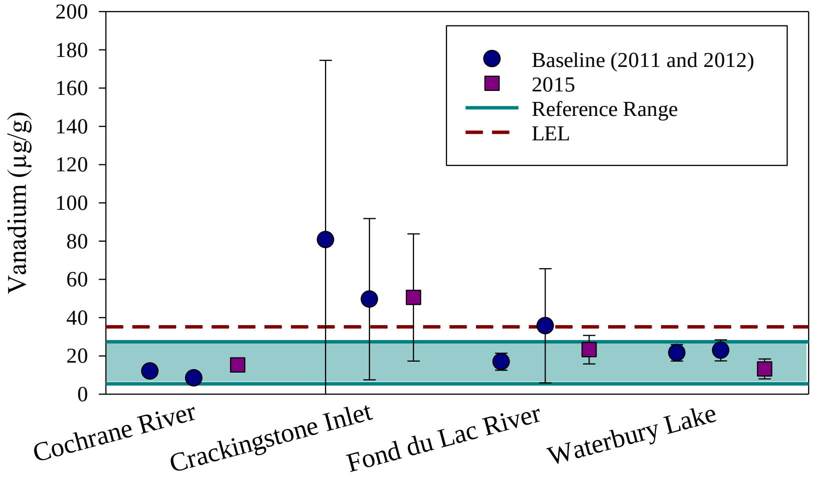
Appendix A, Figure 11 (Cont'd)
COPCs in sediment in the EARMP technical program study area, 2011 to 2015.



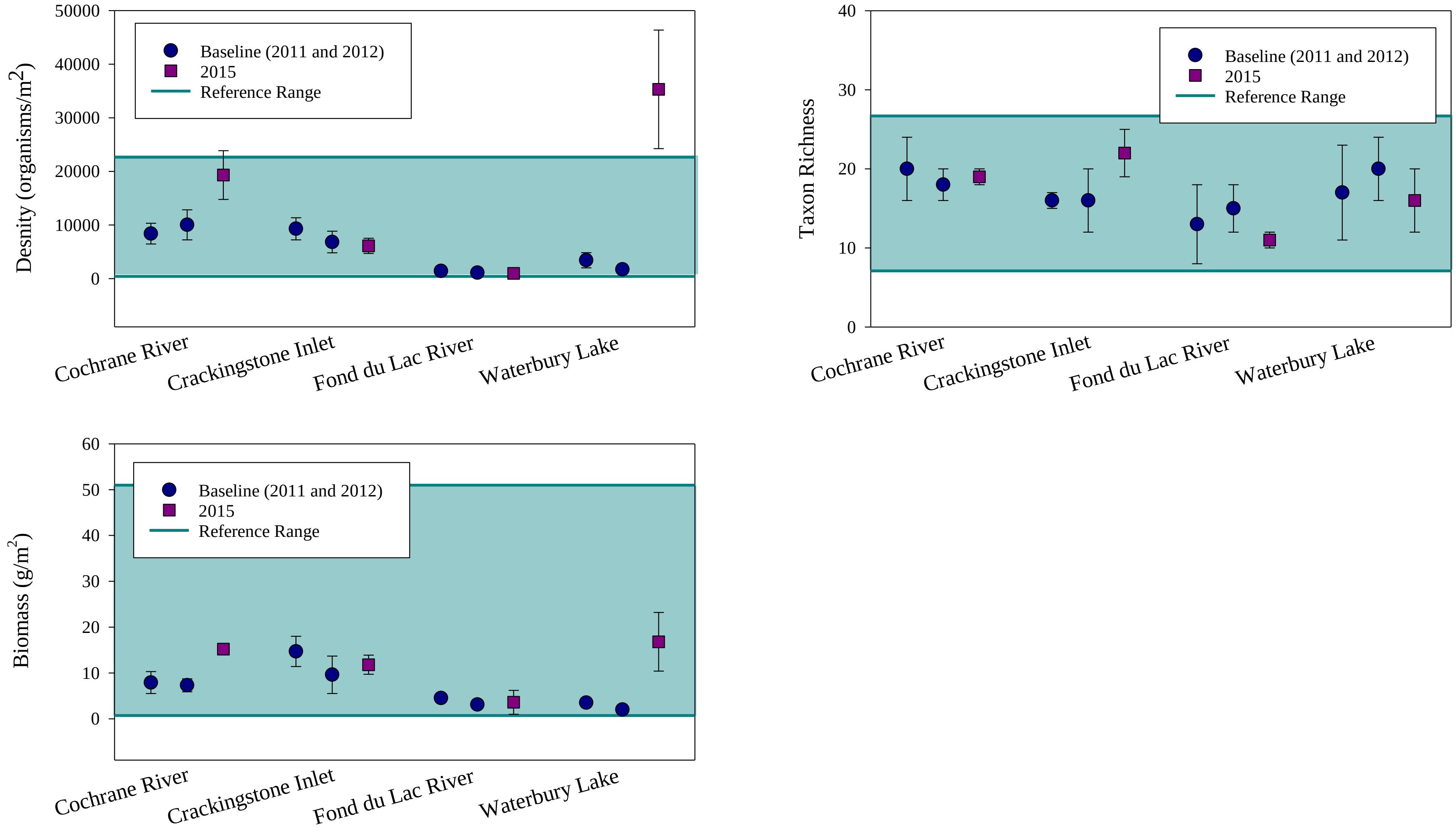
Appendix A, Figure 11 (Cont'd)
COPCs in sediment in the EARMP technical program study area, 2011 to 2015.



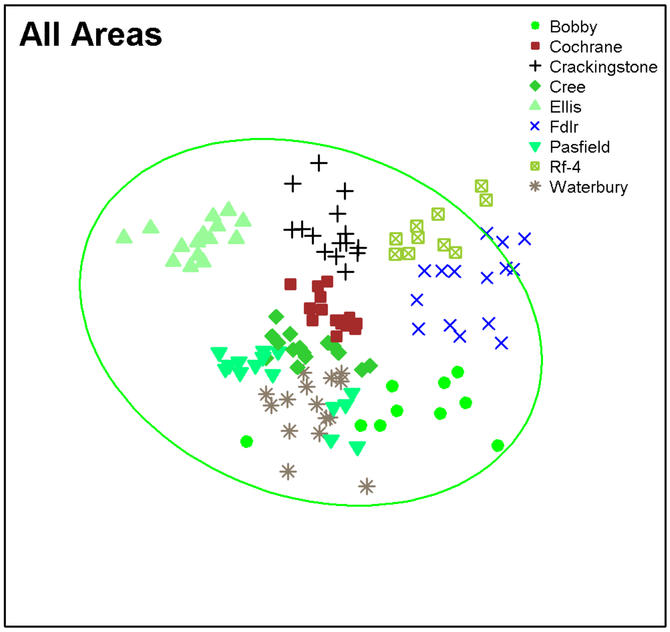
Appendix A, Figure 11 (Cont’d)
COPCs in sediment in the EARMP technical program study area, 2011 to 2015.



Appendix A, Figure 11 (Cont'd)
COPCs in sediment in the EARMP technical program study area, 2011 to 2015.



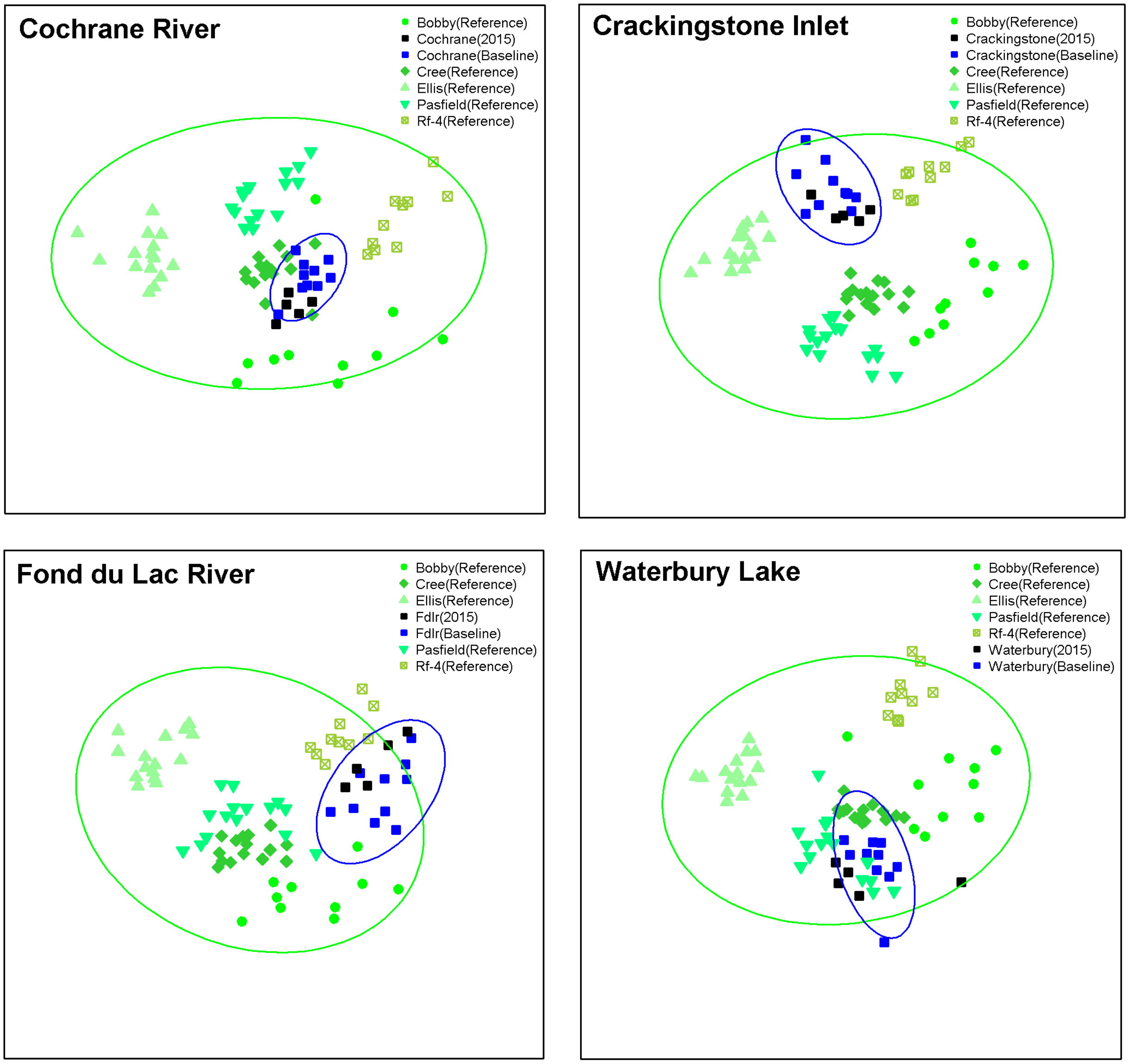
Appendix A, Figure 12
Benthic invertebrate community univariate endpoints in the EARMP technical program study area, 2011 to 2015.



Note: 95% reference area confidence ellipse shown in green.

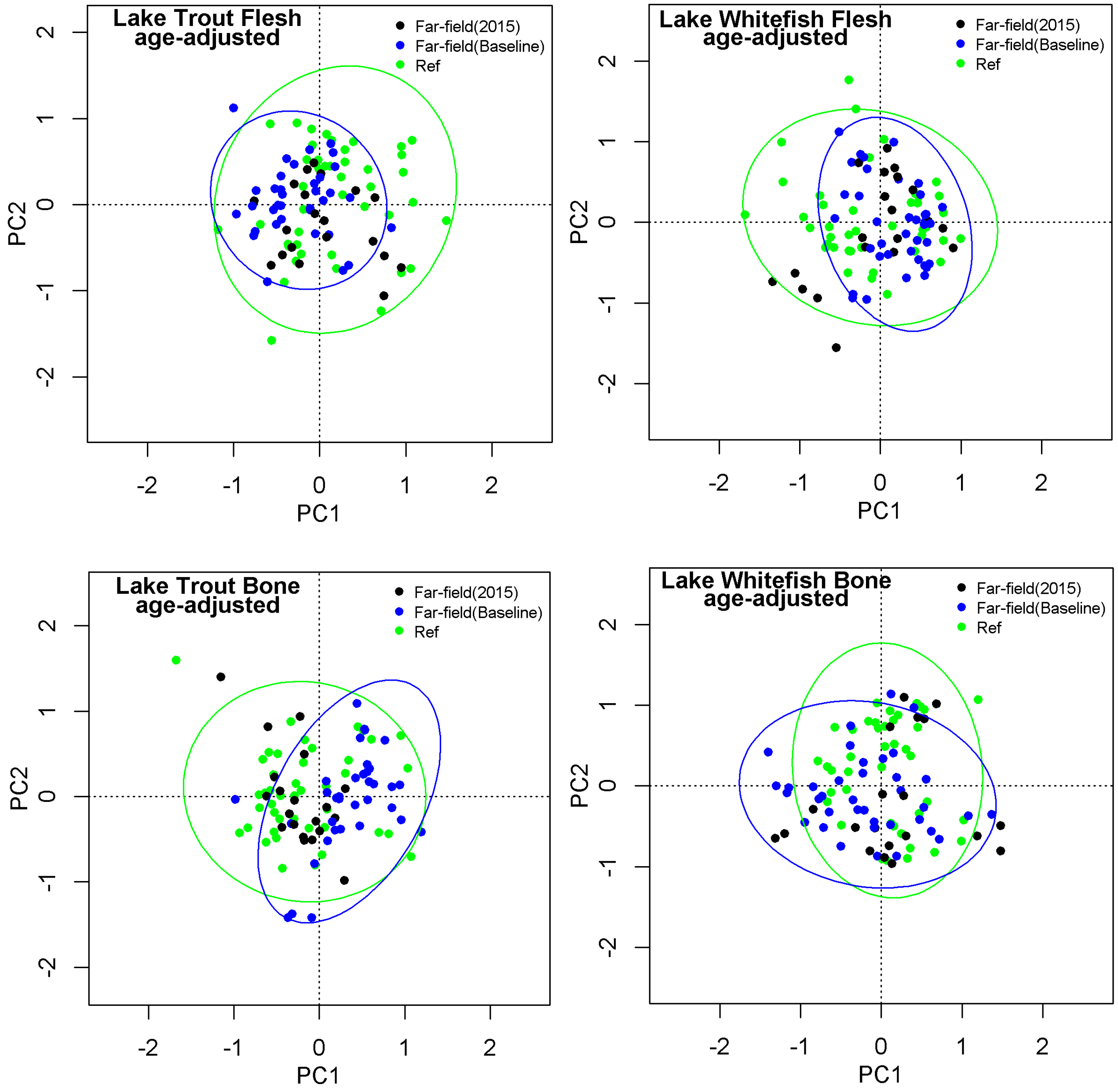
Appendix A, Figure 13

NMDS of benthic invertebrate communities from the EARMP technical program study area from 2011, 2012, and 2015.



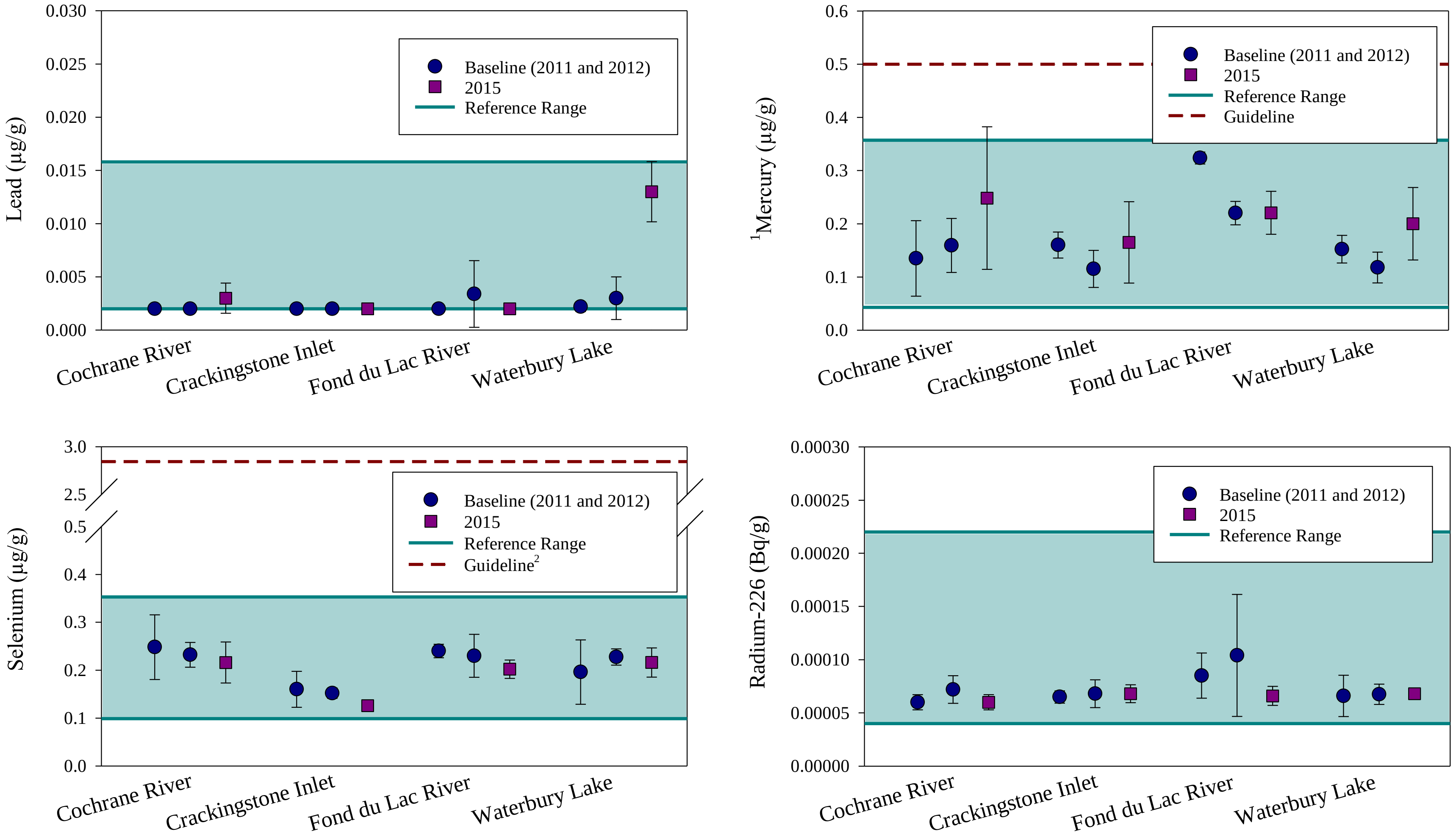
Note: 95% reference area confidence ellipse shown in green.
95% baseline confidence ellipse shown in blue.

Appendix A, Figure 14
NMDS of benthic invertebrate communities from the far-field areas in 2015 relative to reference and their respective baseline communities.



Note: 95% reference area confidence ellipse shown in green.
95% baseline confidence ellipse shown in blue.

Appendix A, Figure 15
Fish tissue PCA results for axes 1 and 2 for the EARMP technical program study area, 2011 to 2015.

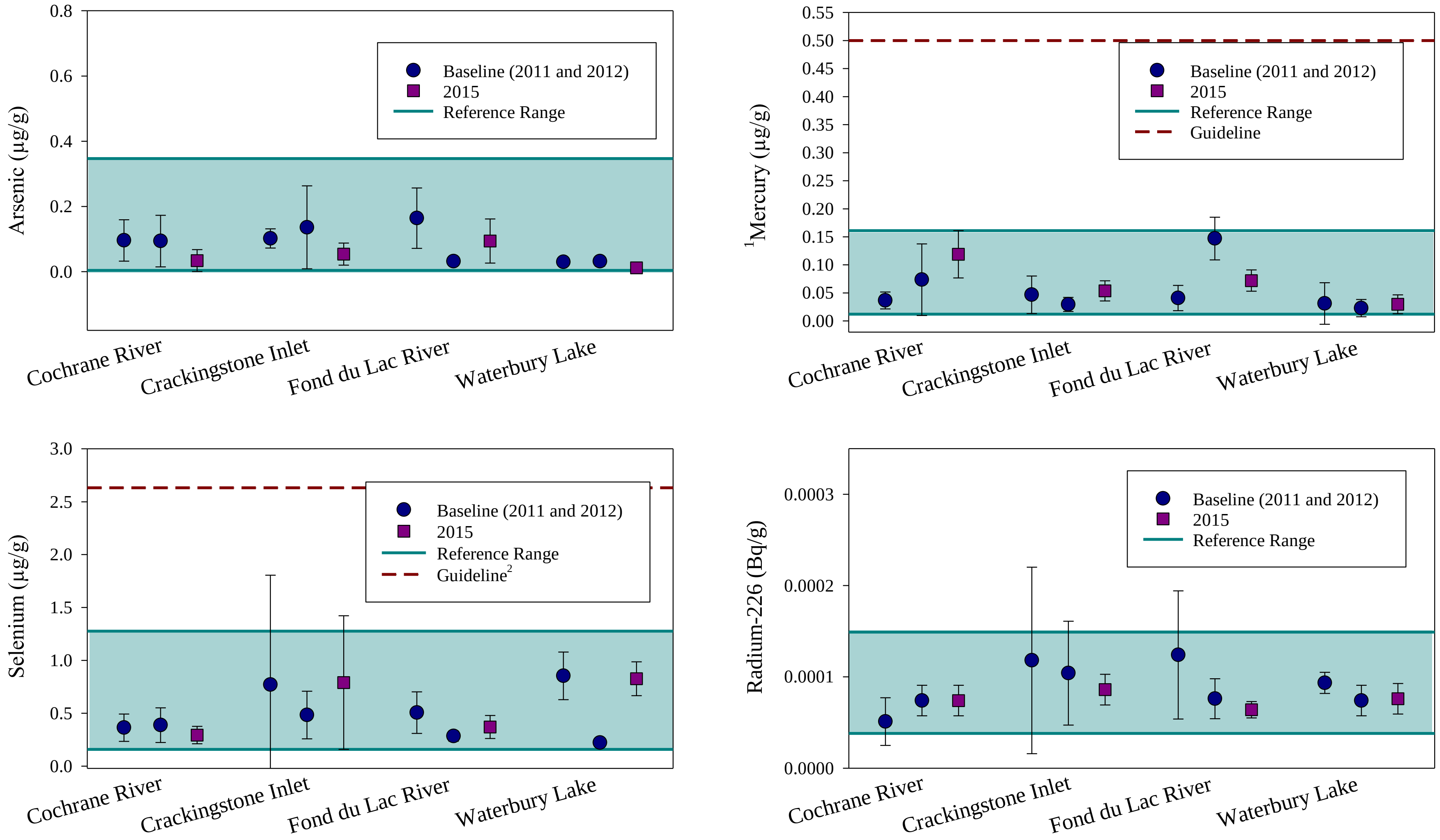


[1] Adjusted for age.

[2] Converted to wet weight basis based on average percent moisture of lake trout (74.82%).

Appendix A, Figure 16

Lake trout flesh concentrations of mercury, selenium, and of COPCs strongly correlated to the third or fourth PCA axis, in the EARMP technical program study area, 2011 to 2015.

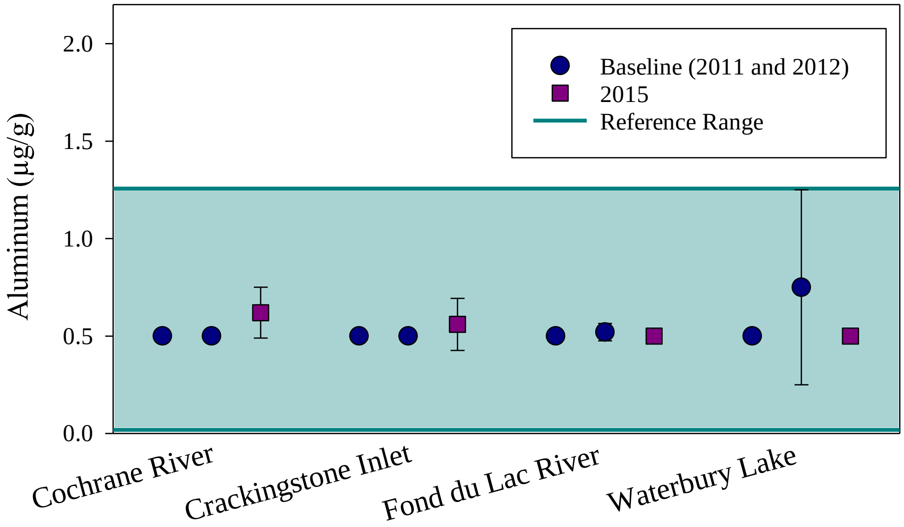


[1] Adjusted for age.

[2] Converted to wet weight basis based on average percent moisture of lake whitefish (76.7%).

Appendix A, Figure 17

Lake whitefish flesh concentrations of mercury, selenium, and of COPCs strongly correlated to the third or fourth PCA axis, in the EARMP technical program study area, 2011 to 2015.



Appendix A, Figure 18
Lake trout bone COPCs strongly correlated to the fourth PCA axis, in the EARMP technical program study area, 2011 to 2015.

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APPENDIX A, TABLE 1

Limnology profiles from the EARMP technical program study area, 2011, 2012, and 2015.

Parameter	Depth (m)	Far-Field Exposures												CWQG[2]
		Cochrane River			Crackingstone Inlet			Fond du Lac River			Waterbury Lake			
		26-Sep-11	19-Sep-12	21-Sep-15	02-Oct-11	29-Sep-12	29-Sep-15	26-Oct-11	22-Sep-12	15-Sep-15	22-Sep-11	20-Sep-12	17-Sep-15	
Temperature (°C)	0	12.5	10.4	9.9	11.1	11.9	11.0	3.4	10.4	12.9	12.2	11.3	11.8	-
	1	12.5	10.4	9.9	11.1	11.8	10.9	3.4	10.3	12.8	12.2	11.3	11.8	
	2	12.4	10.4	9.9	11.1	11.8	10.9	3.4	10.3	12.7	12.2	11.3	11.7	
	3	12.5	10.4	9.9	11.1	11.8	10.9	3.4	10.2	12.6	12.2	11.3	11.7	
	4	12.3	10.4	9.9	11.1	11.8	10.9	3.4	-[4]	12.6	12.2	11.3	11.7	
	5	12.3	10.4	9.9	11.0	11.7	10.8	3.4	10.2	12.6	12.2	11.3	11.6	
	6	12.2	10.4	10.0	11.0	11.8	10.8	3.4	10.2	12.5	12.2	11.3	11.6	
	7	12.1	10.4	10.0	9.8	11.8	10.8	3.5	10.2	12.5	12.2	11.3	11.7	
Dissolved Oxygen (mg/L)	0	9.33	10.28	9.86	10.60	10.88	10.73	12.66	10.44	9.86	9.34	9.51	8.95	6.5-9.5[3]
	1	9.23	10.10	9.69	10.31	10.93	10.56	12.58	10.15	9.48	9.68	9.31	8.67	
	2	9.01	10.17	9.62	10.45	10.91	10.55	12.48	10.01	9.49	9.62	9.16	8.26	
	3	8.91	10.09	9.55	10.53	10.92	10.49	11.25	10.01	9.72	10.54	9.14	8.46	
	4	8.90	10.14	9.53	10.25	10.90	10.68	11.01	-[4]	9.32	9.92	9.14	8.88	
	5	8.84	10.05	9.51	10.15	10.89	10.49	11.19	10.00	9.08	9.76	9.15	8.48	
	6	8.84	10.01	9.44	10.09	10.88	10.47	11.56	9.96	9.26	9.64	9.15	6.56	
	7	9.18	10.05	8.02	10.01	10.88	9.62	12.72	9.91	9.56	9.62	9.12	4.77	
Specific Conductance (µS/cm)	0	32	15	35.9	63	87	75.8	32	16	35.7	21	10	25.0	-
	1	32	14	35.9	63	88	75.6	32	15	35.8	21	10	25.0	
	2	32	14	35.9	63	91	75.5	32	15	35.8	21	10	25.0	
	3	32	14	35.9	63	88	75.6	32	15	35.8	21	10	25.0	
	4	32	14	35.9	63	100	75.6	32	-[4]	35.8	21	10	25.1	
	5	32	14	35.9	63	96	78.5	32	15	35.8	21	10	25.0	
	6	32	14	35.9	63	108	80.6	32	15	35.8	21	10	26.1	
	7	32	14	36.0	65	114	80.9	32	15	35.8	21	10	26.6	
pH	0	8.1	6.3	7.20	8.1	7.5	7.51	8.5	7.1	**6.45**	8.3	6.5	7.05	6.5-9.0
	1	7.9	6.3	7.27	8.2	7.5	7.45	8.3	6.9	6.64	8.1	6.5	7.10	
	2	7.8	6.2	7.29	8.2	7.6	7.43	8.2	6.8	6.75	8.0	6.6	7.11	
	3	7.7	6.3	7.29	8.1	7.6	7.44	8.1	6.7	6.78	7.9	6.6	7.11	
	4	7.6	6.2	7.31	8.1	7.6	7.43	8.0	-[4]	6.88	7.8	6.5	7.11	
	5	7.6	6.3	7.35	8.1	7.7	7.44	8.0	6.7	6.90	7.7	6.5	7.11	
	6	7.6	6.3	7.35	8.0	7.7	7.44	8.0	6.7	6.93	7.7	6.5	6.59	
	7	7.5	6.3	7.37	7.9	7.7	7.43	7.8	6.8	6.88	7.6	6.5	6.53	
Secchi Depth (m)		5.3	5.5	4.3	4.2	6.5	5.4	4.1	6.1	5.0	4.5	6.1	5.3	-
Max. Depth (m)		7.3	7.5	7.3	7.8	7.7	7.1	7.6	7.8	7.6	7.1	7.8	7.1	

APPENDIX A, TABLE 1

Limnology profiles from the EARMP technical program study area, 2011, 2012, and 2015.

Parameter	Depth (m)	References													CWQG[2]
		Bobby's Lake		Cree Lake			Ellis Bay			Pasfield Lake[1]			RF-4		
		14-Oct-09	02-Oct-12	28-Sep-11	26-Sep-12	26-Sep-15	04-Oct-11	02-Oct-12	02-Oct-15	24-Sep-11	24-Sep-12	20-Sep-15	24-Mar-08	12-Apr-12	
Temperature (°C)	0	9.1	10.0	12.5	11.2	10.2	10.6	11.0	9.9	11.6	10.4	10.8	0.0	0.0	-
	1	9.1	10.0	12.5	11.2	10.2	10.6	11.0	9.9	11.6	10.4	10.8	0.0	0.0	
	2	9.1	9.9	12.5	11.1	10.2	10.6	11.0	9.9	11.5	10.3	10.8	0.4	0.5	
	3	9.1	9.8	12.5	11.1	10.1	10.6	10.9	9.8	11.5	10.3	10.8	0.6	0.8	
	4	9.1	9.7	12.5	11.1	10.1	10.6	10.7	9.8	11.5	10.2	10.9	0.9	1.0	
	5	8.8	-	12.5	11.1	10.0	10.6	10.3	9.6	11.5	10.2	10.9	1.1	1.2	
	6	-	-	12.5	11.1	10.0	10.6	10.1	9.4	11.5	10.2	10.9	1.3	1.5	
	7	-	-	12.5	11.1	10.0	10.4	10.0	9.3	11.5	-	10.9	-	-	
Dissolved Oxygen (mg/L)	0	10.18	9.71	9.76	10.25	10.40	9.55	11.08	10.17	10.18	8.69	9.75	11.79	14.33	6.5-9.5[3]
	1	10.04	9.66	9.55	10.18	10.25	9.18	11.79	10.04	9.89	7.93	9.72	11.94	14.55	
	2	9.97	9.77	9.56	10.18	10.25	9.22	10.90	10.10	9.82	7.65	9.74	13.22	13.56	
	3	9.95	9.90	9.77	10.16	10.31	9.41	10.83	10.16	9.92	7.80	9.71	13.29	12.83	
	4	9.18	9.92	9.53	10.16	10.29	9.50	10.82	10.22	9.82	7.65	9.57	13.00	12.16	
	5	8.88	-	9.39	10.17	10.26	9.03	10.61	10.01	10.18	7.66	9.42	12.03	11.60	
	6	-	-	9.30	10.17	10.33	10.30	10.33	10.45	10.03	7.74	9.17	11.60	11.54	
	7	-	-	9.31	10.16	10.24	11.33	10.15	10.62	10.11	-	9.65	-	-	
Specific Conductance (µS/cm)	0	18	18	19	20	21.3	60	65	71.2	17	9	19.2	20	36	-
	1	18	18	19	20	21.3	60	65	71.2	17	8	19.2	20	35	
	2	18	18	19	20	21.3	60	65	71.2	17	8	19.2	19	34	
	3	18	18	19	20	21.3	60	65	71.2	17	8	19.3	18	35	
	4	18	18	19	20	21.3	60	65	71.3	17	8	19.3	18	37	
	5	18	-	19	20	21.3	61	65	71.4	17	8	19.2	18	37	
	6	-	-	19	20	21.3	61	65	70.9	17	8	19.2	19	37	
	7	-	-	19	20	21.4	61	65	70.5	17	-	19.2	-	-	
pH	0	6.7	**5.4**	8.2	7.6	6.90	8.1	8.0	7.54	8.5	7.2	6.65	7.2	6.5	6.5-9.0
	1	6.6	**5.8**	8.2	7.6	6.95	8.1	8.0	7.55	8.3	7.2	6.77	7.1	6.6	
	2	6.6	**5.9**	8.1	7.6	7.03	8.1	7.9	7.53	8.0	6.9	6.84	7.1	6.7	
	3	6.6	**6.0**	8.2	7.6	7.10	8.0	7.9	7.56	7.9	**6.0**	6.93	7.1	6.7	
	4	6.7	**6.0**	7.9	7.5	7.12	7.9	7.8	7.50	7.8	**6.0**	7.02	6.9	6.7	
	5	6.8	-	7.9	7.6	7.12	7.9	7.8	7.54	7.7	**5.9**	7.05	6.8	6.6	
	6	-	-	7.8	7.6	7.11	7.8	7.8	7.59	7.6	**5.8**	7.08	6.9	6.6	
	7	-	-	7.7	7.6	7.02	7.8	7.7	7.59	7.5	-	7.09	-	-	
Secchi Depth (m)		-[4]	2.7	4.8	4.6	6.0	5.8	6.5	5.3	6.7	6.4	6.3	-[4]	-[4]	-
Max. Depth (m)		5.5	4.0	7.4	8.0	7.8	7.2	7.0	6.6	6.7	6.4	6.3	6.4	6.4	

Bolded values indicate that values do not meet guidelines.

[1] The deepest limnological measurements in Pasfield Lake were taken at 6.5 m rather than at 7.0 m depth.

[2] Canadian water quality guidelines for the protection of freshwater aquatic life (CCME 2016).

[3] 9.5 mg/L for cold water biota in early life stages, 6.5 mg/L for cold water biota in other life stages.

[4] No data.

APPENDIX A, TABLE 2

Summary of the water chemistry results from the EARMP technical program study area, 2011.

Parameter[1]	Far-Field Exposure Areas				References					Reference Range[5]		CWQG[6]
	Cochrane River	Crackingstone Inlet	Fond du Lac River	Waterbury Lake	Bobby's Lake[2]	Cree Lake	Ellis Bay	Pasfield Lake	RF-4[3]	Lower	Upper	
Metals												
Aluminum	0.0052	0.0120	0.0120	0.0009	**0.0056**	0.0024	0.0023	<0.0005	0.0033	0.0004	0.007	0.005-0.1[7]
Cadmium	<0.00001	<0.00001	0.00001	0.00001	<0.0001	<0.00001	0.00002	<0.00001	<0.0001	-		0.00004-0.00005[8]
Copper	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-		0.002[8]
Iron	0.025	0.020	0.030	0.012	0.079	0.025	0.007	0.003	0.015	0.002	0.115	0.3
Lead	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-		0.001[8]
Mercury (µg/L)	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.05	-		0.026
Molybdenum	0.0013	0.0002	0.0012	0.0016	0.0001	<0.0001	0.0002	<0.0001	0.0005	0.00001	0.00041	0.073
Nickel	<0.0001	0.0002	<0.0001	0.0001	0.0001	<0.0001	0.0002	<0.0001	0.0001	-		0.025[8]
Selenium	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-		0.001
Uranium (µg/L)	<0.1	0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-		15
Zinc	0.0078	<0.0005	<0.0005	0.0007	0.0043	0.0010	<0.0005	0.0170	0.0032	<0.0005	0.016	0.03
Radionuclides												
Lead-210 (Bq/L)	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	-	-		
Polonium-210 (Bq/L)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	-		
Radium-226 (Bq/L)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.006	<0.005	0.0067	
Thorium-230 (Bq/L)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-		
Trace Elements												
Arsenic (µg/L)	0.1	0.2	<0.1	0.1	<0.1	0.1	0.1	<0.1	0.1	-		5
Cobalt	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-		
Vanadium	<0.0001	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-		
Supporting												
Ammonia as nitrogen	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.14	0.0001	0.049	0.63-39.7[9]
Organic carbon	2.4	2.8	2.9	1.8	2.3	1.8	2.8	0.7	4.2	<0.2	4.1	
pH (pH units)	7.12	7.46	7.18	6.97	**6.44**	6.96	7.44	6.87	7.37	6.3	7.4	6.5-9.0
Specific conductivity (µS/cm)	35	68	36	23	18	21	66	19	39	8.0	71.0	
Total hardness	13	27	12	7	6	7	26	5	14	3.4	23.4	

Bolded values indicate exceedances of applicable guidelines.

For values measured at less than the method detection limit (MDL), all average and standard deviation computations were performed with values set at the MDL.

[1] All values are in mg/L, unless specified otherwise.

[2] Because no data were available for this lake for 2011, data from 2009 were used instead.

[3] Because no data were available for this lake for 2011, data from 2008 were used instead.

[4] Inclusive of both the 2011 and the 2012 reference area data.

[5] Reference range lower limit represents the 2.5th percentile while the upper limit represents the 97.5th percentile of the available reference data; - indicates reference range could not be calculated due to number of data less than the MDL.

[6] Canadian water quality guidelines for the protection of freshwater aquatic life (CCME 2016).

[7] Adjusted according to water pH of each waterbody.

[8] Adjusted according to water hardness of each waterbody.

[9] Adjusted according to water temperature and pH of each waterbody.

APPENDIX A, TABLE 3

Summary of the water chemistry results from the EARMP technical program study area, 2012.

Parameter[1]	Far-Field Exposure Areas				References					Reference Range[2]		CWQG[3]
	Cochrane River	Crackingstone Inlet	Fond du Lac River	Waterbury Lake	Bobby's Lake	Cree Lake	Ellis Bay	Pasfield Lake	RF-4	Lower	Upper	
Metals												
Aluminum	0.0058	0.0055	0.0057	0.0013	0.0072	0.0030	0.0017	0.0009	0.0021	0.0004	0.007	0.1[4]
Cadmium	<0.00001	<0.00001	0.00001	<0.00001	0.00002	<0.00001	<0.00001	0.00001	<0.00001	-		0.00004-0.00005[5]
Copper	<0.0002	0.0002	**0.0480**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-		0.002[5]
Iron	0.0230	0.0130	0.0270	0.0097	0.1900	0.0160	0.0058	0.0039	0.0140	0.002	0.115	0.3
Lead	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-		0.001[5]
Mercury (µg/L)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-		0.026
Molybdenum	0.0012	0.0006	0.0012	0.0014	<0.0001	<0.0001	0.0002	<0.0001	0.0003	0.00001	0.00041	0.073
Nickel	<0.0001	0.0002	0.0001	<0.0001	<0.0001	<0.0001	0.0002	<0.0001	0.0001	-		0.025[5]
Selenium	<0.0001	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-		0.001
Uranium (µg/L)	<0.1	14	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-		15
Zinc	<0.0005	0.0006	<0.0005	<0.0005	0.0039	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.016	0.03
Radionuclides												
Lead-210 (Bq/L)	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	-	-		-
Polonium-210 (Bq/L)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	-		-
Radium-226 (Bq/L)	<0.005	<0.005	0.006	<0.005	<0.005	0.005	<0.005	0.005	<0.005	<0.005	0.0067	-
Thorium-230 (Bq/L)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-		-
Trace Elements												
Arsenic (µg/L)	<0.1	0.2	0.1	<0.1	<0.1	0.1	0.1	<0.1	<0.1	-		5
Cobalt	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-		-
Vanadium	<0.0001	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-		-
Supporting												
Ammonia as nitrogen	<0.01	0.07	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	0.0001	0.049	0.63-39.7[6]
Organic Carbon	2.8	4.0	2.8	2.0	3.6	2.0	3.4	0.8	3.9	<0.2	4.1	
pH	7.05	7.58	7.26	6.94	6.94	6.95	7.38	6.88	6.93	6.3	7.4	6.5-9.0
Specific conductivity (µS/cm)	33	97	34	21	20	19	67	17	34	8.0	71.0	-
Total hardness	13	36	12	7	6	7	26	5	12	3.4	23.4	-

Bolded values indicate exceedances of applicable guidelines; shaded cells indicate far-field exposure area values greater than the reference range.

For values measured at less than the method detection limit (MDL), all average and standard deviation computations were performed with values set at the MDL.

[1] All values are in mg/L, unless specified otherwise.

[2] Reference range lower limit represents the 2.5th percentile while the upper limit represents the 97.5th percentile of the available reference data; - indicates reference range could not be calculated due to number of data less than the MDL.

[3] Canadian water quality guidelines for the protection of freshwater aquatic life (CCME 2016).

[4] Adjusted according to water pH of each waterbody.

[5] Adjusted according to water hardness of each waterbody.

[6] Adjusted according to water temperature and pH of each waterbody.

APPENDIX A, TABLE 4

Summary of the water chemistry results from the EARMP technical program study area, 2015.

Parameter[1]	Far-Field Exposure Areas				References			Reference Range[2]		CWQG[3]
	Cochrane River	Crackingstone Inlet	Fond du Lac River	Waterbury Lake	Cree Lake	Ellis Bay	Pasfield Lake	Lower	Upper	
Metals										
Aluminum	0.0055	0.0056	0.0078	0.0017	0.0038	0.0064	**0.0054**	0.0004	0.007	0.005-0.1[4]
Cadmium	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	-		0.00004-0.00006[5]
Copper	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-		0.002[5]
Iron	0.033	0.009	0.040	0.011	0.012	0.009	0.006	0.002	0.115	0.3
Lead	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-		0.001[5]
Mercury (µg/L)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-		0.026
Molybdenum	0.0008	0.0002	0.0008	0.001	<0.0001	0.0002	<0.0001	0.00001	0.00041	0.073
Nickel	0.0004	0.0002	<0.0001	<0.0001	<0.0001	0.0002	<0.0001	-		0.025[5]
Selenium	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-		0.001
Uranium (µg/L)	<0.1	1.8	<0.1	<0.1	<0.1	0.1	<0.1	-		15
Zinc	0.0074	0.0005	0.014	0.0098	0.0049	<0.0005	0.0130	<0.0005	0.016	0.03
Radionuclides										
Lead-210 (Bq/L)	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	-		
Polonium-210 (Bq/L)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-		
Radium-226 (Bq/L)	<0.005	<0.005	<0.005	<0.005	<0.005	0.007	<0.005	<0.005	0.0067	
Thorium-230 (Bq/L)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-		
Trace Elements										
Arsenic (µg/L)	<0.1	0.2	<0.1	<0.1	0.1	0.1	<0.1	-		5
Cobalt	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-		
Vanadium	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-		
Supporting										
Ammonia as nitrogen	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.0001	0.049	1.97-60.0[6]
Organic carbon	2.3	3	3	1.9	1.8	3.4	0.7	<0.2	4.1	
pH (pH units)	6.72	7.15	6.75	6.61	6.52	7.1	**6.46**	6.3	7.4	6.5-9.0
Specific conductivity (µS/cm)	33	73	34	23	19	70	17	8.0	71.0	
Total hardness	12	28	12	6	6	26	5	3.4	23.4	

Bolded values indicate exceedances of applicable guidelines; shaded cells indicate far-field exposure area values greater than the reference range.

For values measured at less than the method detection limit (MDL), all average and standard deviation computations were performed with values set at the MDL.

[1] All values are in mg/L, unless specified otherwise.

[2] Reference range lower limit represents the 2.5th percentile while the upper limit represents the 97.5th percentile of the available reference data; - indicates reference range could not be calculated due to number of data less than the MDL.

[3] Canadian water quality guidelines for the protection of freshwater aquatic life (CCME 2016).

[4] Adjusted according to water pH of each waterbody.

[5] Adjusted according to water hardness of each waterbody.

[6] Adjusted according to water temperature and pH of each waterbody.

APPENDIX A, TABLE 5

Summary of the particle size and organic carbon content from the EARMP technical program study area, 2015.

Area	Year	Data	Clay	Silt	Fine Particles	Fine Sand	Coarse Sand	Total Sand	Gravel	Moisture	Organic Carbon
Cochrane River	2015 (0-2 cm)	Average	12.1	69.4	81.5	16.9	1.6	18.5	<0.1	91.1	7.6
		S.D.	2.5	5.0	7.1	7.5	1.3	7.1	-[1]	4.8	0.3
		Min	8.1	61.6	69.7	11.0	0.5	11.5	<0.1	88.1	7.0
		Max	14.5	73.9	88.4	29.2	3.5	32.7	<0.1	99.7	7.8
		<MDL	0	0	0	0	0	0	5	0	0
		N	5	5	5	5	5	5	5	5	5
Crackingstone Inlet	2015 (0-2 cm)	Average	13.0	56.4	69.4	27.6	3.0	30.6	<0.1	57.0	1.9
		S.D.	2.8	5.9	8.2	6.6	1.7	8.2	-[1]	6.3	0.3
		Min	9.0	49.9	62.1	17.4	0.2	17.6	<0.1	47.2	1.4
		Max	16.5	65.9	82.4	33.5	4.9	37.9	<0.1	63.9	2.1
		<MDL	0	0	0	0	0	0	5	0	0
		N	5	5	5	5	5	5	5	5	5
Fond du Lac River	2015 (0-2 cm)	Average	12.1	74.6	86.6	12.6	0.8	13.4	<0.1	91.4	9.3
		S.D.	1.1	3.2	4.2	3.6	0.7	4.2	-[1]	1.6	1.2
		Min	10.9	71.0	82.0	8.0	0.3	8.3	<0.1	89.4	8.1
		Max	13.2	78.6	91.8	15.9	2.0	17.9	<0.1	93.4	10.7
		<MDL	0	0	0	0	0	0	5	0	0
Waterbury Lake	2015 (0-2 cm)	Average	6.0	39.4	45.4	26.6	28.1	54.6	<0.1	81.5	3.6
		S.D.	1.4	9.0	10.3	7.2	6.2	10.4	-[1]	5.8	1.2
		Min	4.4	28.0	32.4	19.5	21.9	44.0	<0.1	72.7	2.2
		Max	7.6	49.1	56.0	36.8	36.2	67.6	<0.1	88.0	4.8
		<MDL	0	0	0	0	0	0	5	0	0
		N	5	5	5	5	5	5	5	5	5
Cree Lake	2015 (0-2 cm)	Average	5.4	50.0	55.4	34.5	10.1	44.6	<0.1	80.9	3.7
		S.D.	0.6	14.5	15.0	9.5	5.5	15.0	-[1]	6.1	0.8
		Min	4.9	35.8	40.7	22.0	2.3	24.3	<0.1	72.0	2.8
		Max	6.2	69.9	75.7	44.3	15.0	59.3	<0.1	86.2	4.6
		<MDL	0	0	0	0	0	0	5	0	0
		N	5	5	5	5	5	5	5	5	5
Ellis Bay	2015 (0-2 cm)	Average	18.3	57.4	75.7	20.7	3.5	24.2	<0.1	83.5	5.2
		S.D.	3.1	3.9	6.5	4.8	1.9	6.5	-[1]	1.7	0.7
		Min	15.3	50.7	66.0	14.8	1.7	16.5	<0.1	82.1	4.7
		Max	23.1	60.3	83.4	27.5	6.4	33.9	<0.1	86.4	6.5
		<MDL	0	0	0	0	0	0	5	0	0
		N	5	5	5	5	5	5	5	5	5
Pasfield Lake	2015 (0-2 cm)	Average	3.1	38.5	41.6	16.5	41.9	58.4	<0.1	70.3	3.2
		S.D.	1.7	29.5	31.2	4.7	32.1	31.3	-[1]	22.1	3.1
		Min	0.8	7.4	8.2	9.7	4.3	19.7	<0.1	35.0	0.5
		Max	5.0	75.2	80.2	22.5	82.1	91.8	<0.1	90.9	7.4
		<MDL	0	0	0	0	0	0	5	0	0
		N	5	5	5	5	5	5	5	5	5

All values are in % volume except moisture and organic carbon which is % weight.

S.D.: standard deviation; Min: minimum; Max: maximum; <MDL: number of samples with reading less than the method detection limit (MDL); N: sample size.

For values measured at less than the method detection limit (MDL), all average and standard deviation computations were performed with values set at the MDL.

[1] When all values were less than the method detection limit (MDL), standard deviations were not computed.

APPENDIX A, TABLE 6

Summary of the seive/pipette particle size content from the EARMP technical program study area, 2011, 2012, and 2015.

Area	Year	Data	Clay	Silt	Fine Sand	Coarse Sand	Gravel
Cochrane River	2011	Average	26.9	65.6	6.9	0.5	0.2
		S.D.	2.8	1.5	2.5	0.3	0.2
		Min	24.8	64.3	3.9	0.2	<0.1
		Max	31.3	68.2	9.5	1.0	0.5
		<MDL	0	0	0	0	3
		N	5	5	5	5	5
	2012	Average	13.9	82.6	3.2	0.3	0.1
		S.D.	2.3	2.9	2.0	0.1	-[1]
		Min	10.6	80.2	1.8	0.1	<0.1
		Max	16.6	87.5	6.8	0.5	<0.1
		<MDL	0	0	0	0	5
		N	5	5	5	5	5
	2015	Average	5.2	93.9	0.6	0.3	0.1
		S.D.	0.4	0.5	0.6	0.1	0
		Min	4.8	93.1	0.2	0.2	0.1
		Max	5.7	94.4	1.6	0.5	0.1
		<MDL	0	0	0	0	5
		N	5	5	5	5	5
Crackingstone Inlet	2011	Average	6.1	52.9	34.1	6.8	0.1
		S.D.	3.7	11.3	10.5	4.0	-
		Min	3.1	40.8	18.2	1.0	<0.1
		Max	12.3	68.5	42.8	11.3	<0.1
		<MDL	0	0	0	0	5
		N	5	5	5	5	5
	2012	Average	4.3	58.2	29.3	8.1	0.1
		S.D.	1.2	13.4	10.2	4.4	-
		Min	2.7	44.6	15.4	1.0	<0.1
		Max	5.3	78.3	41.2	11.5	<0.1
		<MDL	0	0	0	0	5
		N	5	5	5	5	5
	2015	Average	2.9	64.6	27.6	4.8	0.2
		S.D.	1.3	14.6	13.3	3.3	0
		Min	1.9	53.0	11.0	0.7	0.1
		Max	4.5	84.1	40.1	9.8	0.4
		<MDL	0	0	0	0	4
		N	5	5	5	5	5

APPENDIX A, TABLE 6

Summary of the seive/pipette particle size content from the EARMP technical program study area, 2011, 2012, and 2015.

Area	Year	Data	Clay	Silt	Fine Sand	Coarse Sand	Gravel
Fond du Lac River	2011	Average	6.1	85.6	3.6	4.7	0.1
		S.D.	1.6	10.2	1.9	8.3	-
		Min	4.3	67.4	1.4	0.9	<0.1
		Max	8.0	91.2	6.0	19.5	<0.1
		<MDL	0	0	0	0	5
		N	5	5	5	5	5
	2012	Average	19.2	55.4	11.3	14.1	0.1
		S.D.	9.3	18.5	11.8	14.2	-
		Min	8.3	33.0	2.5	1.4	<0.1
		Max	33.1	73.8	29.2	29.5	<0.1
		<MDL	0	0	0	0	5
		N	5	5	5	5	5
	2015	Average	3.7	84.8	8.8	2.8	0.1
		S.D.	2.1	6.7	6.2	2.3	0
		Min	1.9	76.3	2.1	0.7	0.1
		Max	7.0	93.1	15.5	6.4	0.1
		<MDL	0	0	0	0	5
		N	5	5	5	5	5
Waterbury Lake	2011	Average	4.4	12.7	28.5	54.3	0.2
		S.D.	3.1	7.1	7.1	13.4	0.1
		Min	1.5	6.7	20.4	39.0	<0.1
		Max	9.3	21.9	38.2	68.8	0.4
		<MDL	0	0	0	0	3
		N	5	5	5	5	5
	2012	Average	3.3	13.3	34.8	48.6	0.1
		S.D.	1.3	6.4	6.7	11.6	0[2]
		Min	1.9	5.5	26.6	37.8	<0.1
		Max	5.2	21.1	43.5	65.9	0.1
		<MDL	0	0	0	0	4
		N	5	5	5	5	5
	2015	Average	1.1	30.4	28.6	39.5	0.3
		S.D.	0.6	15.1	5.4	13.7	0
		Min	0.6	17.0	24.2	19.1	0.1
		Max	1.9	54.0	37.6	53.0	0.8
		<MDL	0	0	0	0	1
		N	5	5	5	5	5

APPENDIX A, TABLE 6

Summary of the seive/pipette particle size content from the EARMP technical program study area, 2011, 2012, and 2015.

Area	Year	Data	Clay	Silt	Fine Sand	Coarse Sand	Gravel
Cree Lake	2011	Average	2.8	28.2	27.1	41.8	0.2
		S.D.	2.4	22.1	7.6	23.8	0.2
		Min	0.2	6.2	17.1	18.5	<0.1
		Max	5.3	58.6	36.9	70.8	0.5
		<MDL	0	0	0	0	1
		N	5	5	5	5	5
	2012	Average	3.0	14.8	37.8	44.4	0.1
		S.D.	0.8	3.3	2.7	5.2	-
		Min	2.1	10.2	34.9	39.7	<0.1
		Max	4.1	18.9	40.9	52.8	<0.1
		<MDL	0	0	0	0	5
		N	5	5	5	5	5
	2015	Average	1.1	37.2	33.5	28.2	0.1
		S.D.	0.4	11.9	8.8	6.9	0
		Min	0.5	27.4	18.8	20.9	0.1
		Max	1.7	57.8	42.4	37.0	0.1
		<MDL	0	0	0	0	5
		N	5	5	5	5	5
Ellis Bay	2011	Average	38.6	60.5	0.6	0.3	0.1
		S.D.	3.3	3.6	0.5	0.2	-
		Min	35.4	55.2	0.1	0.1	<0.1
		Max	43.8	64.3	1.2	0.7	<0.1
		<MDL	0	0	0	0	5
		N	5	5	5	5	5
	2012	Average	29.9	69.4	0.4	0.3	0.1
		S.D.	4.6	4.1	0.4	0.3	-
		Min	24.4	65.7	<0.1	0.1	<0.1
		Max	34.0	74.7	1.1	0.8	<0.1
		<MDL	0	0	1	0	5
		N	5	5	5	5	5
	2015	Average	13.4	86.4	0.1	0.1	0.1
		S.D.	1.0	1.0	0.0	0.0	0
		Min	12.4	85.3	0.1	0.1	0.1
		Max	14.4	87.5	0.1	0.2	0.1
		<MDL	0	0	1	1	5
		N	5	5	5	5	5

APPENDIX A, TABLE 6

Summary of the seive/pipette particle size content from the EARMP technical program study area, 2011, 2012, and 2015.

Area	Year	Data	Clay	Silt	Fine Sand	Coarse Sand	Gravel
Pasfield Lake	2011	Average	1.1	4.3	15.3	79.3	0.2
		S.D.	2.2	6.3	5.4	13.7	0.1
		Min	<0.1	0.5	10.5	55.3	<0.1
		Max	5.1	15.5	24.1	88.3	0.3
		<MDL	1	0	0	0	1
		N	5	5	5	5	5
	2012	Average	1.2	4.1	12.5	82.1	0.1
		S.D.	1.0	4.8	4.9	10.4	0.03
		Min	0.4	0.7	8.2	65.4	<0.1
		Max	2.7	12.4	19.5	89.5	0.2
		<MDL	0	0	0	0	4
		N	5	5	5	5	5
	2015	Average	0.7	16.0	18.3	64.9	0.1
		S.D.	0.6	16.4	9.0	25.1	0
		Min	0.1	1.1	5.0	31.4	0.1
		Max	1.7	40.4	26.5	93.5	0.2
		<MDL	0	0	0	0	2
		N	5	5	5	5	5

All measures are in % dry weight from the 0 to 5 cm horizon.
S.D.: standard deviation; Min: minimum; Max: maximum; <MDL: number of samples with reading less than the method detection limit (MDL); N: sample size.
For values measured at less than the method detection limit (MDL), all average and standard deviation computations were performed with values set at the MDL.

[1] When all values were less than the method detection limit (MDL), standard deviations were not computed.
[2] Standard deviations of 0 signify no variation, not a very small value.

APPENDIX A, TABLE 7

Summary of the sediment chemistry results, un-adjusted for particle size, from the EARMP technical program study area, 2011, 2012, and 2015.

Parameter[1]	Far-Field Exposure Areas																								References			
	Cochrane River						Crackingstone Inlet						Fond du Lac River						Waterbury Lake						Bobby 's Lake			
	2011		2012		2015		2011		2012		2015		2011		2012		2015		2011		2012		2015		2009[2]		2012	
	Avr.	S.D.	Avr.	S.D.	Avr.	S.D.	Avr.	S.D.	Avr.	S.D.	Avr.	S.D.	Avr.	S.D.	Avr.	S.D.	Avr.	S.D.	Avr.	S.D.	Avr.	S.D.	Avr.	S.D.	Avr.	S.D.	Avr.	S.D.
Metals																												
Aluminum	12160	152	8920	581	11480	1134	9680	2297	7940	2084	11200	1261.0	13040	802	13860	2919	15240	1957.8	3600	1572	3200	660	3800	784.2	6580	2251	3510	1999
Cadmium	0.3	0.07	0.2	0[10]	0.38	0	0.1	0	0.1	-[11]	0.24	0.055	0.54	0.11	0.46	0.11	0.7	0.20	0.1	0	0.1	0	0.4	0.16	0.32	0.13	0.2	0.10
Copper	7.8	0.2	6.1	0.5	7.7	0.6	4.7	2.3	4.0	1.7	5.8	1.22	11.6	0.5	9.3	2.1	11.4	0.89	1.6	0.9	1.6	0.6	1.7	0.62	3.1	1.0	1.6	1.0
Iron	18780	1467	16740	2100	22240	2189	12080	2937	12160	2847	16460	2247.9	73000	20271	81360	44209	77520	17751.1	4140	2747	4780	1553	5520	1709.4	54280	17357	22000	12326
Lead	9.8	0.7	7.6	0.6	9.4	0.5	6.1	3.0	6.2	5.0	7.0	1.82	11.4	2.1	8.6	1.0	11.2	1.48	3.5	1.1	3.5	1.2	4.3	1.09	6.5	1.7	3.8	2.2
Molybdenum	6.3	0.5	4.5	0.6	6.9	0.7	0.7	0.4	0.6	0.2	1.1	0.37	19.2	5.8	14.4	4.3	19.8	3.96	1.9	1.6	1.7	0.8	3.0	0.99	0.7	0.2	1.0	1.2
Nickel	11.6	0.5	8.5	0.7	10.4	0.9	7.5	2.2	6.5	1.8	8.5	1.18	14.4	0.5	15.4	4.6	16.2	2.59	2.9	1.4	2.5	0.7	2.7	0.93	6.5	2.5	4.3	2.4
Selenium	0.6	0.07	0.5	0.04	0.7	0.05	0.8	0.3	0.8	0.3	1.4	0.16	1.1	0.1	0.9	0.3	1.1	0.05	0.2	0.1	0.3	0.1	0.2	0.09	0.6	0.2	0.6	0.3
Uranium	4.4	0.1	3.7	0.3	4.4	0.3	41.4	18.9	36.4	12.7	67.8	16.22	5.3	0.3	4.5	0.7	5.8	0.46	0.4	0.2	0.4	0.1	0.5	0.11	1.4	0.4	0.9	0.5
Zinc	41.6	0.9	32.2	2.4	37.8	2.5	17.6	4.5	14.6	3.8	20.2	2.17	77.8	7.8	92.2	41.0	96.2	27.28	14.2	6.7	14.6	3.4	14.0	4.37	40.6	12.2	18.6	8.0
Radionuclides																												
Lead-210 (Bq/g)	0.39	0.03	0.33	0.06	0.40	0.04	0.18	0.13	0.12	0.06	0.20	0.116	0.40	0.08	0.40	0.11	0.39	0.203	0.11	0.09	0.18	0.11	0.14	0.080	0.27	0.10	0.28	0.21
Polonium-210 (Bq/g)	0.38	0.05	0.35	0.06	0.37	0.02	0.21	0.15	0.17	0.05	0.20	0.085	0.45	0.08	0.33	0.04	0.43	0.073	0.12	0.08	0.19	0.07	0.16	0.057	0.34	0.10	0.30	0.19
Radium-226 (Bq/g)	0.03	0.02	0.01	0.01	0.06	0.04	0.14	0.21	0.48	0.58	0.59	0.602	0.06	0.04	0.06	0.01	0.06	0.018	0.02	0.01	0.03	0.02	0.03	0.009	0.04	0.02	0.04	0.02
Thorium-230 (Bq/g)	0.03	0.01	0.03	0.004	0.03	0.008	9.26	9.52	5.50	5.11	6.62	3.287	0.04	0.01	0.03	0.02	0.02	0	0.02	-	0.04	0.03	0.02	0	0.03	0.01	0.02	0
Trace Elements																												
Arsenic	2.1	0.1	1.6	0.2	1.8	0.1	4.5	3.2	3.5	1.1	7.0	5.88	8.5	3.7	7.1	2.8	7.9	1.60	1.4	0.7	1.1	0.2	1.3	0.34	4.3	1.2	2.3	1.0
Cobalt	3.5	0.1	2.5	0.2	3.8	0.2	3.1	0.6	2.5	0.5	4.2	0.43	6.7	0.7	7.4	2.6	9.9	2.71	1.1	0.6	1.0	0.2	1.3	0.38	3.1	1.0	1.6	1.0
Vanadium	25.4	0.5	19.6	1.1	25.0	1.2	85.6	109.0	52.2	44.6	63.4	43.83	34.4	2.2	38.4	11.1	42.2	9.86	8.4	3.1	8.6	2.2	9.2	2.26	17.3	5.3	8.2	3.4

APPENDIX A, TABLE 7

Summary of the sediment chemistry results, adjusted for particle size, from the EARMP technical program study area, 2011, 2012, and 2015.

Parameter[1]	**References**																								**Guidelines/Sediment Quality Values**				
	Cree Lake						**Ellis Bay**						**Pasfield Lake**						**RF-4**				**Pooled References and Years**						
	2011		**2012**		**2015**		**2011**		**2012**		**2015**		**2011**		**2012**		**2015**		**2008**[3]		**2012**				**CCME**[4]		**LEL**[7]	**NE2**[8]	**REF**[9]
	Avr.	**S.D.**	**Avr.**	**S.D.**	**Avr.**	**S.D.**	**Avr.**	**S.D.**	**Avr.**	**S.D.**	**Avr.**	**S.D.**	**Avr.**	**S.D.**	**Avr.**	**S.D.**	**Avr.**	**S.D.**	**Avr.**	**S.D.**	**Avr.**	**S.D.**	**Avr.**	**S.D.**	**ISQG**[5]	**PEL**[6]			
Metals																													
Aluminum	2540	1228	1444	262	2880	192	22180	1532	16260	727	23040	1388.5	1464	731	1268	525	2438	1159.9	8380	517	10140	680	7377	6890					
Cadmium	0.14	0.05	0.14	0.05	0.38	0.16	0.32	0.04	0.22	0.04	0.42	0.045	0.12	0.04	0.1	0	0.46	0.13	0.3	0.00	0.26	0.05	0.2	0.1	0.6	3.5			
Copper	1.4	0.8	1.4	0.4	1.2	0.3	21.0	0.7	18.8	0.8	19.8	1.10	0.8	0.5	0.8	0.4	1.5	0.97	6.4	0.6	6.3	1.1	6.2	7.3	35.7	197	22.2		
Iron	4780	2882	3108	530	3620	356	21880	4194	23160	3288	22860	1383.1	1752	1116	2258	840	2140	1348.8	39880	4738	50140	8808	22324	20406					
Lead	2.6	1.3	2.6	0.5	3.3	0.4	8.2	0.2	6.8	0.4	9.2	0.52	2.7	1.8	2.4	1.6	4.3	3.33	5.6	0.3	9.0	0.3	5	3	35	91.3	36.7		
Molybdenum	0.2	0.1	0.1	0.04	0.2	0.04	1.7	0.3	1.9	0.3	1.5	0.22	0.2	0.1	0.2	0.1	0.3	0.18	4.3	0.5	7.3	0.8	1.8	2.3			13.8	245	22.6
Nickel	2.5	1.6	1.7	0.4	1.8	0.3	21.2	0.8	18.6	0.9	19.6	0.55	1.0	0.5	1.0	0.6	1.4	1.04	8.3	0.5	8.4	1.0	7.4	7.0			23.4	326	21.4
Selenium	0.3	0.2	0.2	0	0.2	0	0.6	0.1	0.7	0.1	0.7	0.04	0.1	0.04	0.1	0.04	0.1	0.05	0.6	0.04	0.6	0.04	0.4	0.3			1.9	29.7	3.6
Uranium	0.2	0.1	0.2	0.0	0.3	0.0	7.7	0.8	7.9	0.8	8.9	0.36	0.1	0.04	0.1	0.1	0.3	0.09	2.5	0.1	4.9	0.2	2.6	3.0			104.4	2296	96.7
Zinc	9.3	4.8	9.5	1.7	9.8	1.3	46.0	0.7	39.6	3.7	45.6	1.14	8.3	4.4	7.1	3.8	10.8	9.41	49.2	7.4	46.6	6.9	27	18	123	315			
Radionuclides																													
Lead-210 (Bq/g)	0.14	0.07	0.19	0.07	0.16	0.05	0.17	0.07	0.18	0.03	0.21	0.069	0.20	0.12	0.16	0.12	0.16	0.172	0.25	0.02	0.15	0.02	0.20	0.10			0.9		
Polonium-210 (Bq/g)	0.14	0.08	0.17	0.05	0.17	0.03	0.19	0.06	0.23	0.04	0.20	0.026	0.16	0.11	0.19	0.12	0.16	0.143	0.31	0.02	0.29	0.02	0.23	0.11			0.8		
Radium-226 (Bq/g)	0.02	0.01	0.02	0.01	0.01	0.01	0.08	0.04	0.08	0.02	0.10	0.048	0.01	0	0.01	0.00	0.02	0.008	0.04	0.01	0.03	0.01	0.04	0.03			0.6		
Thorium-230 (Bq/g)	0.02	-	0.02	0.004	0.02	0.000	0.07	0.02	0.06	0.03	0.08	0.015	0.02	-	0.02	-	0.02	0	0.05	0.01	0.03	0.02	0.03	0.02					
Trace Elements																													
Arsenic	1.3	0.7	0.7	0.1	0.8	0.1	5.2	1.4	5.5	1.2	4.2	0.36	0.9	0.4	0.7	0.2	0.9	0.55	8.1	1.2	12.3	4.0	4.1	3.9	5.9	17	9.8	522	20.8
Cobalt	0.8	0.5	0.5	0.1	0.7	0.1	6.0	0.2	5.2	0.1	6.6	0.17	0.3	0.1	0.3	0.1	0.5	0.41	5.1	0.5	4.9	0.8	2.8	2.3					
Vanadium	7.1	3.8	4.1	0.8	4.9	0.5	37.4	1.7	31.4	0.9	38.2	1.30	4.2	2.1	3.2	1.0	5.7	4.19	22.4	2.3	25.2	1.5	16	12			35.2		

Avr.: average; S.D.: standard deviation.

For values measured at less than the method detection limit (MDL), all computations were performed with values set at the MDL.

Shaded guidelines or sediment quality values are those deemed most relevant and are those discussed in the report and shown in the figures, when applicable.

[1] All concentrations and activity levels are presented in µg/g on a dry weight basis, except when specified otherwise.

[2] No data were available for 2011 in Bobby's Lake, thus data from 2009 were used as a substitute.

[3] No data were available for 2011 in RF-4, thus data from 2008 were used as a substitute.

[4] Canadian Sediment Quality Guidelines for the protection of freshwater aquatic life (CCME 2016).

[5] ISQG: Interim freshwater sediment quality guideline (dry weight).

[6] PEL: Probable effects level (dry weight).

[7] LEL: Lowest effect level (dry weight) (Thompson et al. 2005).

[8] NE2: No effect sediment quality value (Burnett-Seidel and Liber 2013).

[9] REF: Reference sediment quality value (Burnett-Seidel and Liber 2013).

[10] Standard deviations of 0 signify no variation, not a very small value.

[11] When all values were less than the method detection limit (MDL), standard deviations were not computed.

APPENDIX A, TABLE 8

Summary of regression analysis completed on fine particle content and sediment COPC concentrations from the EARMP technical program study area, 2011 to 2015.

COPC	**r^2**	**Significance of Slope**	**Significance of Intercept**
Log$_{10}$Aluminum	0.71	p <0.001	p <0.001
Log$_{10}$Cadmium	0.34	p <0.001	p <0.001
Log$_{10}$Copper	0.71	p <0.001	p <0.001
Log$_{10}$Iron	0.59	p <0.001	p <0.001
Log$_{10}$Lead	0.64	p <0.001	p <0.001
Log$_{10}$Molybdenum	0.43	p <0.001	p <0.001
Log$_{10}$Nickel	0.72	p <0.001	p = 0.971
Log$_{10}$Selenium	0.62	p <0.001	p <0.001
Log$_{10}$Uranium	0.49	p <0.001	p <0.001
Log$_{10}$Zinc	0.60	p <0.001	p <0.001
Log$_{10}$Lead-210	0.26	p <0.001	p <0.001
Log$_{10}$Polonium-210	0.40	p <0.001	p <0.001
Log$_{10}$Radium-226	0.17	p <0.001	p <0.001
Log$_{10}$Thorium-230	0.02	p = 0.079	p <0.001
Log$_{10}$Arsenic	0.44	p <0.001	p = 0.037
Log$_{10}$Cobalt	0.68	p <0.001	p <0.001
Log$_{10}$Vanadium	0.55	p <0.001	p <0.001

Note: Bolded COPCs were considered to be significantly correlated with fine particle size content based on α (alpha) = 0.05.

APPENDIX A, TABLE 9

Benthic invertebrate univariate community indices and descriptive statistics from the EARMP technical program study area, 2011, 2012, and 2015.

Area	Year	Sample	Total Density (per m^2)	Taxon Richness (per sample)	Biomass (per m^2)
Cochrane River	2011	1	10423	24	11.4
		2	8850	21	8.9
		3	5900	21	5.6
		4	6946	14	5.6
		5	9900	19	8.1
		Total[1]	-	30	-
		Mean	**8404**	**20**	**7.9**
		S.D.	**1931**	**4**	**2.4**
		Minimum	5900	14	5.6
		Maximum	10423	24	11.4
	2012	1	10415	18	6.3
		2	13308	17	9.7
		3	11954	21	6.2
		4	6331	16	7.2
		5	8262	19	6.9
		Total[1]	-	29	-
		Mean	**10054**	**18**	**7.3**
		S.D.	**2802**	**2**	**1.4**
		Minimum	6331	16	6.2
		Maximum	13308	21	9.7
	2015	1	25323	21	16.2
		2	20500	19	15.4
		3	15385	18	14.3
		4	14208	20	15.7
		5	21208	19	14.4
		Total[1]	-	30	-
		Mean	**19325**	**19**	**15.2**
		S.D.	**4545**	**1**	**0.8**
		Minimum	14208	18	14.3
		Maximum	25323	21	16.2

APPENDIX A, TABLE 9 (Cont'd)

Benthic invertebrate univariate community indices and descriptive statistics from the EARMP technical program study area, 2011, 2012, and 2015.

Area	**Year**	**Sample**	**Total Density (per m^2)**	**Taxon Richness (per sample)**	**Biomass (per m^2)**
Crackingstone Inlet	2011	1	11042	17	16.5
		2	8592	16	11.6
		3	11758	18	18.2
		4	8377	15	16.2
		5	6742	16	10.9
		Total[1]	-	31	-
		Mean	**9302**	**16**	**14.7**
		S.D.	**2060**	**1**	**3.3**
		Minimum	6742	15	10.9
		Maximum	11758	18	18.2
	2012	1	7538	12	10.7
		2	4615	15	6.4
		3	9942	22	12.8
		4	6154	12	4.4
		5	5904	17	13.9
		Total[1]	-	33	-
		Mean	**6831**	**16**	**9.6**
		S.D.	**2025**	**4**	**4.1**
		Minimum	4615	12	4.4
		Maximum	9942	22	13.9
	2015	1	6292	27	13.1
		2	5854	21	13.1
		3	8358	22	13.9
		4	4442	20	9.6
		5	5658	18	9.6
		Total[1]	-	43	-
		Mean	**6121**	**22**	**11.8**
		S.D.	**1426**	**3**	**2.1**
		Minimum	4442	18	9.6
		Maximum	8358	27	13.9

APPENDIX A, TABLE 9 (Cont'd)

Benthic invertebrate univariate community indices and descriptive statistics from the EARMP technical program study area, 2011, 2012, and 2015.

Area	Year	Sample	Total Density (per m^2)	Taxon Richness (per sample)	Biomass (per m^2)
Fond du Lac River	2011	1	1592	7	4.5
		2	1338	18	3.7
		3	1562	18	5.1
		4	1377	10	4.6
		5	1315	13	4.6
		Total[1]	-	24	-
		Mean	**1437**	**13**	**4.5**
		S.D.	**130**	**5**	**0.5**
		Minimum	1315	7	3.7
		Maximum	1592	18	5.1
	2012	1	1077	12	3.4
		2	1077	20	2.6
		3	1250	13	3.6
		4	1146	13	3.1
		5	1012	15	2.5
		Total[1]	-	24	-
		Mean	**1112**	**15**	**3.1**
		S.D.	**91**	**3**	**0.5**
		Minimum	1012	12	2.5
		Maximum	1250	20	3.6
	2015	1	1354	12	3.5
		2	1088	12	2.7
		3	808	9	2.1
		4	715	10	1.6
		5	919	12	8.0
		Total[1]	-	25	-
		Mean	**977**	**11**	**3.6**
		S.D.	**252**	**1**	**2.6**
		Minimum	715	9	1.6
		Maximum	1354	12	8.0

APPENDIX A, TABLE 9 (Cont'd)

Benthic invertebrate univariate community indices and descriptive statistics from the EARMP technical program study area, 2011, 2012, and 2015.

Area	**Year**	**Sample**	**Total Density (per m^2)**	**Taxon Richness (per sample)**	**Biomass (per m^2)**
Waterbury Lake	2011	1	2554	21	2.6
		2	1650	8	3.1
		3	3327	17	3.1
		4	5023	20	4.6
		5	4619	20	4.1
		Total[1]	-	31	-
		Mean	**3435**	**17**	**3.5**
		S.D.	**1405**	**5**	**0.8**
		Minimum	1650	8	2.6
		Maximum	5023	21	4.6
	2012	1	1962	15	2.5
		2	1646	19	2.0
		3	1642	19	2.3
		4	1704	22	1.6
		5	1696	25	1.6
		Total[1]	-	32	-
		Mean	**1730**	**20**	**2.0**
		S.D.	**132**	**4**	**0.4**
		Minimum	1642	15	1.6
		Maximum	1962	25	2.5
	2015	1	51385	12	18.0
		2	40292	15	21.9
		3	28231	13	11.6
		4	33769	20	23.4
		5	22942	21	8.8
		Total[1]	-	29	-
		Mean	**35324**	**16**	**16.8**
		S.D.	**11053**	**4**	**6.4**
		Minimum	22942	12	8.8
		Maximum	51385	21	23.4

APPENDIX A, TABLE 9 (Cont'd)

Benthic invertebrate univariate community indices and descriptive statistics from the EARMP technical program study area, 2011, 2012, and 2015.

Area	Year	Sample	Total Density (per m^2)	Taxon Richness (per sample)	Biomass (per m^2)
Bobby's Lake	2009	1	1346	23	2.4
		2	2417	18	2.8
		3	724	11	1.9
		4	571	7	1.9
		5	660	11	1.4
		Total[1]	-	29	-
		Mean	**1144**	**14**	**2.1**
		S.D.	**775**	**6**	**0.5**
		Minimum	571	7	1.4
		Maximum	2417	23	2.8
	2012	1	4246	29	6.3
		2	8981	21	27.8
		3	5960	23	6.2
		4	3154	28	1.5
		5	6517	16	14.3
		Total[1]	-	45	-
		Mean	**5772**	**23**	**11.2**
		S.D.	**2240**	**5**	**10.4**
		Minimum	3154	16	1.5
		Maximum	8981	29	27.8
Cree Lake	2011	1	3485	24	3.6
		2	3669	20	5.1
		3	3038	22	5.0
		4	3104	28	4.0
		5	4069	19	5.0
		Total[1]	-	38	-
		Mean	**3473**	**23**	**4.5**
		S.D.	**424**	**4**	**0.7**
		Minimum	3038	19	3.6
		Maximum	4069	28	5.1
	2012	1	12754	25	12.0
		2	6715	17	4.9
		3	10831	24	7.5
		4	10973	21	11.2
		5	14350	21	13.8
		Total[1]	-	31	-
		Mean	**11125**	**22**	**9.9**
		S.D.	**2855**	**3**	**3.6**
		Minimum	6715	17	4.9
		Maximum	14350	25	13.8
	2015	1	6242	21	16.8
		2	4358	22	16.0
		3	7777	23	18.3
		4	8285	23	15.6
		5	6131	25	9.9
		Total[1]	-	35	-
		Mean	**6558**	**23**	**15.3**
		S.D.	**1548**	**1**	**3.2**
		Minimum	4358	21	9.9
		Maximum	8285	25	18.3

APPENDIX A, TABLE 9 (Cont'd)

Benthic invertebrate univariate community indices and descriptive statistics from the EARMP technical program study area, 2011, 2012, and 2015.

Area	Year	Sample	Total Density (per m^2)	Taxon Richness (per sample)	Biomass (per m^2)
Ellis Bay	2011	1	10062	24	18.6
		2	14562	22	27.3
		3	10723	23	21.3
		4	8812	23	20.3
		5	8838	22	15.7
		Total[1]	-	33	-
		Mean	**10599**	**23**	**20.7**
		S.D.	**2361**	**1**	**4.3**
		Minimum	8812	22	15.7
		Maximum	14562	24	27.3
	2012	1	17138	28	35.7
		2	9338	21	20.8
		3	8969	20	17.2
		4	9492	20	20.9
		5	4338	18	10.7
		Total[1]	-	32	-
		Mean	**9855**	**21**	**21.0**
		S.D.	**4601**	**4**	**9.2**
		Minimum	4338	18	10.7
		Maximum	17138	28	35.7
	2015	1	12154	21	48.6
		2	10800	21	34.9
		3	17908	22	49.8
		4	9569	18	21.7
		5	11200	17	26.0
		Total[1]	-	37	-
		Mean	**12326**	**20**	**36.2**
		S.D.	**3255**	**2**	**12.8**
		Minimum	9569	17	21.7
		Maximum	17908	22	49.8

APPENDIX A, TABLE 9 (Cont'd)

Benthic invertebrate univariate community indices and descriptive statistics from the EARMP technical program study area, 2011, 2012, and 2015.

Area	**Year**	**Sample**	**Total Density (per m^2)**	**Taxon Richness (per sample)**	**Biomass (per m^2)**
Pasfield Lake	2011	1	27785	16	45.0
		2	29585	17	29.2
		3	15969	18	10.4
		4	40585	14	56.2
		5	13281	21	11.3
		Total[1]	-	29	-
		Mean	**25441**	**17**	**30.4**
		S.D.	**11063**	**3**	**20.3**
		Minimum	13281	14	10.4
		Maximum	40585	21	56.2
	2012	1	9077	19	7.7
		2	1931	20	2.3
		3	4804	18	6.7
		4	4269	16	7.2
		5	6304	20	8.2
		Total[1]	-	27	-
		Mean	**5277**	**19**	**6.4**
		S.D.	**2642**	**2**	**2.4**
		Minimum	1931	16	2.3
		Maximum	9077	20	8.2
	2015	1	2842	13	1.9
		2	1523	16	1.0
		3	3004	15	1.6
		4	619	17	0.3
		5	2985	18	2.6
		Total[1]	-	25	-
		Mean	**2195**	**16**	**1.5**
		S.D.	**1076**	**2**	**0.9**
		Minimum	619	13	0.3
		Maximum	3004	18	2.6

APPENDIX A, TABLE 9 (Cont'd)

Benthic invertebrate univariate community indices and descriptive statistics from the EARMP technical program study area, 2011, 2012, and 2015.

Area	Year	Sample	Total Density (per m^2)	Taxon Richness (per sample)	Biomass (per m^2)
RF-4	2008	1	1462	9	-[2]
		2	253	11	-
		3	596	8	-
		4	2427	12	-
		5	1813	12	-
		Total[1]	-	15	-
		Mean	**1310**	**10**	-
		S.D.	**887**	**2**	-
		Minimum	253	8	-
		Maximum	2427	12	-
	2012	1	5653	11	-
		2	3947	8	-
		3	3564	13	-
		4	3573	13	-
		5	4622	13	-
		Total[1]	-	19	-
		Mean	**4272**	**12**	-
		S.D.	**884**	**2**	-
		Minimum	3564	8	-
		Maximum	5653	13	-
Pooled References		Total[1]	-	82	-
		Mean	**7642**	**19**	**14**
		S.D.	**7203**	**5**	**14**
		Minimum	253	7	0.3
		Maximum	40585	29	56

S.D.: standard deviation.

[1] Total taxon richness is presented on a per five sample basis rather than on a per m^2 basis.

[2] Biomass was not measured in RF-4.

APPENDIX A, TABLE 10

COPCs in lake trout and lake whitefish with more than 50% of the values greater than the method detection limit during at least one of the sampling periods in at least one far-field exposure area.

COPC	Flesh		Bone	
	Lake Trout	Lake Whitefish	Lake Trout	Lake Whitefish
Aluminum			√	√
Cadmium				
Copper	√	√	√	√
Iron	√	√	√	√
Lead	√	√		√
Mercury	√	√	√	√
Molybdenum				
Nickel			√	√
Selenium	√	√	√	√
Uranium				√
Zinc	√	√	√	√
Lead-210				
Polonium-210		√		√
Radium-226	√	√		√
Thorium-230				
Arsenic	√	√	√	√
Cobalt		√	√	√
Vanadium				√

✓: indicates more than 50% of the samples have readings greater than the method detection limit (MDL) for a given area and species.

Refer to Appendix B, Table 18 for total sample sizes per area and species and for total number of readings less than the method detection limit. Refer to Appendix B, Tables 10 to 17 for detailed data.

APPENDIX A, TABLE 11

Correlations of individual COPCs with principal component axis scores for lake trout and lake whitefish flesh and bone chemistry, 2011 to 2015.

COPC[1]	Lake Trout Flesh			
	PC1	**PC2**	**PC3**	**PC4**
Copper	**0.79**	-0.19	0.31	-0.03
Iron	**0.89**	-0.08	0.06	0.07
Lead	0.33	0.02	**-0.66**	-0.16
Mercury[2]	0.04	-0.28	**-0.60**	-0.55
Selenium	0.29	**0.81**	0.10	-0.08
Zinc	**0.75**	-0.33	0.00	0.08
Radium-226	0.03	0.15	0.50	**-0.80**
Arsenic	-0.31	**-0.74**	0.33	-0.07
Eigenvalue	2.3	1.5	1.3	1.0
% of Variance	28.3	18.1	15.7	12.4

COPC[1]	Lake Trout Bone			
	PC1	**PC2**	**PC3**	**PC4**
Aluminum	0.13	-0.22	-0.50	**0.75**
Copper[3]	-0.22	**0.68**	0.09	0.44
Iron	**-0.61**	0.16	0.06	-0.16
Mercury[2]	-0.29	**-0.62**	0.33	0.23
Nickel	**-0.74**	-0.13	0.46	0.20
Selenium	**-0.61**	-0.12	-0.55	-0.28
Zinc	-0.52	**0.66**	-0.14	0.04
Arsenic	**0.63**	0.26	0.57	0.02
Cobalt	**-0.79**	-0.14	0.26	0.06
Eigenvalue	2.7	1.5	1.3	1.0
% of Variance	30.3	16.4	14.4	10.7

COPC[1]	Lake Whitefish Flesh			
	PC1	**PC2**	**PC3**	**PC4**
Copper[3]	-0.52	**0.60**	-0.17	0.02
Iron	**-0.71**	0.37	-0.17	-0.11
Lead	**-0.60**	-0.15	0.27	-0.14
Mercury[2]	0.39	0.29	**0.70**	-0.29
Selenium	-0.31	-0.52	0.05	-0.57
Zinc[3]	**-0.61**	0.07	0.23	0.14
Polonium-210	**-0.64**	-0.50	-0.20	0.20
Radium-226	0.13	-0.18	-0.40	**-0.60**
Arsenic	0.34	0.33	**-0.62**	-0.10
Cobalt	-0.29	0.49	0.09	-0.39
Eigenvalue	2.4	1.5	1.3	1.0
% of Variance	24.0	15.2	12.7	10.3

COPC[1]	Lake Whitefish Bone			
	PC1	**PC2**	**PC3**	**PC4**
Aluminum[2]	0.58	0.01	-0.24	-
Copper	0.003	-0.19	-0.28	-
Iron	0.54	0.41	0.41	-
Lead	0.59	0.31	-0.16	-
Mercury[2]	-0.25	-0.22	0.43	-
Nickel	**0.65**	-0.20	0.58	-
Selenium	0.52	0.29	-0.13	-
Uranium[2]	0.53	**-0.70**	-0.24	-
Zinc[3]	-0.03	-0.08	0.41	-
Polonium-210	0.17	**0.82**	-0.13	-
Radium-226	0.17	-0.14	-0.44	-
Arsenic	0.12	**-0.70**	-0.23	-
Cobalt	**0.60**	-0.32	0.47	-
Vanadium	**0.78**	0.06	-0.27	-
Eigenvalue	3.0	2.3	1.7	1.2
% of Variance	21.7	16.1	11.8	8.6

[1] All COPC concentrations or activity levels were log-transformed before the PCA.

[2] Age-adjusted concentrations or activity levels were used after finding a statistically significant decrease in levels with specimen age in this species and tissue.

[3] Age-adjusted concentrations or activity levels were used after finding a statistically significant increase in levels with specimen age in this species and tissue.

Bolded values are COPCs with component loadings greater than 0.60 (disregarding positive or negative signs). Principal Components (PC) with eigenvalues less than 1.0 or explaining less than 10% of the variance were not computed.

Specimens for which one or more COPC concentrations were not available for a given tissue had to be excluded from the analyses.

APPENDIX B

DETAILED DATA TABLES

LIST OF TABLES

APPENDIX B, TABLE 1

Detailed water chemistry results for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Far-Field Exposure Areas												Reference Areas												
	Cochrane River			Crackingstone Inlet			Fond du Lac River			Waterbury Lake			Bobby's Lake		Cree Lake			Ellis Bay			Pasfield Lake			RF-4	
	2011	2012	2015	2011	2012	2015	2011	2012	2015	2011	2012	2015	2009	2012	2011	2012	2015	2011	2012	2015	2011	2012	2015	2008	2012
Inorganic Ions																									
Bicarbonate	20	17	12	30	44	34	21	18	13	7	18	10	11	16	12	17	10	34	30	33	6	7	7	18	26
Calcium	3.5	3.5	3.3	7.1	10	7.5	3.4	3.4	3.3	1.9	1.9	1.8	1.5	1.6	1.8	1.8	1.4	7	7.1	7.2	1.6	1.6	1.2	3.7	3.4
Carbonate	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloride	0.3	0.3	0.3	3.2	3.9	3.4	0.3	0.3	0.3	0.6	0.6	0.8	0.2	0.2	0.4	0.4	0.4	3	2.9	3.1	1.1	1	1.1	0.3	0.3
Hydroxide	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Magnesium	1	1	1	2.2	2.8	2.3	0.9	1	1	0.5	0.5	0.5	0.5	0.4	0.6	0.7	0.6	2	2	2.1	0.3	0.3	0.5	1.1	1
Potassium	0.6	0.6	0.4	0.9	0.9	0.6	0.6	0.6	0.4	0.5	0.4	0.3	0.4	0.4	0.4	0.4	0.2	0.9	0.8	0.7	0.4	0.4	0.2	0.8	0.6
Sodium	1.4	1.4	1.3	2.7	4.7	2.9	1.4	1.4	1.3	1.6	1.6	1.5	1.2	1.2	1.2	1.2	1.2	2.5	2.6	2.5	1.3	1.2	1.2	1.6	1.5
Sulfate	4.6	4	4.4	3.8	7.2	4.1	4.4	4	3.9	1.1	1.3	1.4	0.7	0.9	0.9	1.2	1	3.7	3.7	3.8	0.7	0.7	0.8	3.3	3
Metals																									
Aluminum	0.0052	0.0058	0.0055	0.012	0.0055	0.0056	0.012	0.0057	0.0078	0.0009	0.0013	0.0017	0.0056	0.0072	0.0024	0.003	0.0038	0.0023	0.0017	0.0064	<0.0005	0.0009	0.0054	0.0033	0.0021
Barium	0.0041	0.004	0.0041	0.011	0.019	0.012	0.0046	0.0044	0.0045	0.0027	0.0026	0.0027	0.0035	0.0031	0.0031	0.0032	0.0032	0.01	0.01	0.011	0.0022	0.0022	0.0022	0.0049	0.0043
Boron	<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	<0.01	<0.01	<0.01	<0.01	<0.01
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	<0.0001	0.00002	<0.00001	<0.00001	<0.00001	0.00002	<0.00001	<0.00001	<0.00001	0.00001	<0.00001	<0.0001	<0.00001
Chromium	<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	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Copper	<0.0002	<0.0002	<0.0002	0.0002	0.0002	<0.0002	<0.0002	0.048	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Iron	0.025	0.023	0.033	0.020	0.013	0.0092	0.030	0.027	0.04	0.012	0.010	0.011	0.079	0.190	0.025	0.016	0.012	0.007	0.0058	0.0087	0.003	0.0039	0.0056	0.015	0.014
Lead	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Manganese	0.0055	0.0054	0.0044	0.0012	0.002	0.001	0.0064	0.009	0.028	0.011	0.011	0.013	0.0093	0.022	0.0094	0.0098	0.0096	0.0012	0.0009	0.0008	0.0012	0.0015	0.0017	0.0018	0.0018
Mercury (µg/L)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01
Molybdenum	0.0013	0.0012	0.0008	0.0002	0.0006	0.0002	0.0012	0.0012	0.0008	0.0016	0.0014	0.001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0002	0.0002	0.0002	<0.0001	<0.0001	<0.0001	0.0005	0.0003
Nickel	<0.0001	<0.0001	0.0004	0.0002	0.0002	0.0002	<0.0001	0.0001	<0.0001	0.0001	<0.0001	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0002	0.0002	0.0002	<0.0001	<0.0001	<0.0001	0.0001	0.0001
Selenium	<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	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Silver	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.0001	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.0001	<0.00005
Thallium	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Tin	<0.0001	0.0019	<0.0001	<0.0001	0.0017	<0.0001	<0.0001	0.0017	<0.0001	<0.0001	0.0009	<0.0001	<0.0001	<0.0001	<0.0001	0.0018	<0.0001	<0.0001	0.0012	<0.0001	<0.0001	0.0013	<0.0001	0.0004	<0.0001
Titanium	<0.0002	<0.0002	0.0002	0.0005	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Uranium (µg/L)	<0.1	<0.1	<0.1	0.5	14	1.8	<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
Zinc	0.0078	<0.0005	0.0074	<0.0005	0.0006	0.0005	<0.0005	<0.0005	0.014	0.0007	<0.0005	0.0098	0.0043	0.0039	0.001	<0.0005	0.0049	<0.0005	<0.0005	<0.0005	0.017	<0.0005	0.013	0.0032	<0.0005
Nutrients																									
Ammonia as nitrogen	<0.01	<0.01	<0.01	<0.01	0.07	<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	0.14	<0.01
Nitrate	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.04	0.13	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.04	<0.04
Organic carbon	2.4	2.8	2.3	2.8	4	3	2.9	2.8	3	1.8	2	1.9	2.3	3.6	1.8	2	1.8	2.8	3.4	3.4	0.7	0.8	0.7	4.2	3.9
Organic carbon, dissolved	-	-	-	-	-	-	-	-	-	-	-	-	2.4	3.5	-	-	-	-	-	-	-	-	-	4.1	3.6
Phosphorus	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<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 Kjeldahl nitrogen	0.26	0.19	0.15	0.32	0.26	0.09	0.15	0.21	0.2	0.25	0.21	0.24	0.12	0.20	0.36	0.26	0.17	0.2	0.22	0.13	0.2	0.12	<0.05	0.22	0.25
Total nitrogen	0.26	0.19	0.15	0.32	0.26	0.09	0.15	0.21	0.2	0.25	0.21	0.25	-	-	0.36	0.26	0.17	0.2	0.22	0.13	0.2	0.12	<0.05	-	-
Physical Properties																									
P. alkalinity	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1
pH (pH units)	7.12	7.05	6.72	7.46	7.58	7.15	7.18	7.26	6.75	6.97	6.94	6.61	6.44	6.94	6.96	6.95	6.52	7.44	7.38	7.1	6.87	6.88	6.46	7.37	6.93
Specific conductivity (µS/cm)	35	33	33	68	97	73	36	34	34	23	21	23	18	20	21	19	19	66	67	70	19	17	17	39	34
Sum of ions	31	28	23	50	74	55	32	29	23	13	24	16	16	21	17	23	15	53	49	52	11	12	12	29	36
Total alkalinity	16	14	10	25	36	28	17	15	11	6	15	8	9	13	10	14	8	28	25	27	5	6	6	15	21
Total dissolved solids	27	23	26	44	67	39	30	30	26	22	26	20	29	13	19	20	14	45	49	40	13	19	9	36	33
Total hardness	13	13	12	27	36	28	12	12	12	7	7	6	6	6	7	7	6	26	26	26	5	5	5	14	12
Total suspended solids	1	1	<1	<1	<1	<1	<1	1	1	<1	<1	<1	1	2	1	1	1	<1	<1	<1	<1	<1	<1	<1	<1
Turbidity (NTU)	0.5	0.2	-	0.5	0.2	-	0.5	0.1	-	0.3	0.5	-	0.8	1.0	0.4	0.4	-	0.4	0.3	-	0.3	0.4	-	0.2	0.3
Radionuclides																									
Lead-210 (Bq/L)	<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	<0.02	<0.02	<0.02	-	-
Polonium-210 (Bq/L)	<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	<0.005	<0.005	<0.005	-	-
Radium-226 (Bq/L)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.005	<0.005	<0.005	<0.005	0.007	<0.005	0.005	<0.005	0.006	<0.005
Thorium-230 (Bq/L)	<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	<0.01	<0.01	<0.01	-	-

APPENDIX B, TABLE 1

Detailed water chemistry results for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Far-Field Exposure Areas												Reference Areas												
	Cochrane River			Crackingstone Inlet			Fond du Lac River			Waterbury Lake			Bobby's Lake		Cree Lake			Ellis Bay			Pasfield Lake			RF-4	
	2011	2012	2015	2011	2012	2015	2011	2012	2015	2011	2012	2015	2009	2012	2011	2012	2015	2011	2012	2015	2011	2012	2015	2008	2012
Trace Elements																									
Antimony	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Arsenic (µg/L)	0.1	<0.1	<0.1	0.2	0.2	0.2	<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
Beryllium	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Cobalt	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Fluoride	0.06	0.05	0.07	0.06	0.08	0.07	0.06	0.06	0.07	0.03	0.02	0.04	0.02	0.01	0.03	0.02	0.03	0.06	0.07	0.08	0.03	0.02	0.03	0.06	0.04
Strontium	0.012	0.012	0.012	0.054	0.067	0.058	0.012	0.012	0.013	0.015	0.015	0.016	0.012	0.013	0.015	0.015	0.015	0.051	0.054	0.055	0.017	0.017	0.017	0.016	0.013
Vanadium	<0.0001	<0.0001	<0.0001	0.0002	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001

[1] All values are in mg/L, unless specified otherwise.

A dash indicates data is not available.

APPENDIX B, TABLE 2

Detailed particle size and organic carbon content data for the EARMP technical program, 2011, 2012, and 2015.

Area	Year	Sample	Clay	Silt	Fine Particles	Fine Sand	Coarse Sand	Total Sand	Gravel	Moisture	Organic Carbon
Far-Field Exposure Areas											
Cochrane River	2011	1	28.1	65.3	93.4	5.1	1.0	6.1	0.4	69.3	6.9
		2	25.5	64.3	89.8	9.5	0.3	9.8	0.5	73.1	7.4
		3	24.8	65.3	90.1	9.4	0.5	9.9	<0.1	66.4	7.6
		4	31.3	64.7	96.0	3.9	0.2	4.1	<0.1	72.9	7.2
		5	25.0	68.2	93.2	6.5	0.4	6.9	<0.1	69.5	6.8
	2012	1	14.6	82.2	96.8	2.7	0.5	3.2	<0.1	87.3	7.3
		2	10.6	87.5	98.1	1.8	0.1	1.9	<0.1	89.4	7.7
		3	12.8	80.2	93.0	6.8	0.2	7.0	<0.1	86.0	6.2
		4	16.6	80.7	97.3	2.4	0.4	2.7	<0.1	85.7	6.3
		5	15.1	82.6	97.7	2.1	0.3	2.3	<0.1	87.7	7.0
	2015	1	14.5	73.6	88.10	11.4	0.49	11.89	<0.01	89	7.72
		2	8.1	61.6	69.70	29.2	1.1	30.30	<0.01	99.66	7.66
		3	12.6	68.8	81.40	18.1	0.57	18.67	<0.01	88.1	7
		4	11.6	73.9	85.50	11	3.5	14.50	<0.01	89.75	7.83
		5	13.7	69.2	82.90	14.7	2.4	17.10	<0.01	89	7.6
Crackingstone Inlet	2011	1	3.7	43.7	47.4	42.7	10.0	52.7	<0.1	30.9	1.1
		2	3.1	52.9	56.0	37.8	6.2	44.0	<0.1	36.0	0.9
		3	5.1	40.8	45.9	42.8	11.3	54.1	<0.1	35.5	1.0
		4	6.5	58.7	65.2	29.1	5.7	34.8	<0.1	54.3	1.8
		5	12.3	68.5	80.8	18.2	1.0	19.2	<0.1	52.8	1.8
	2012	1	3.4	47.9	51.3	37.2	11.5	48.7	<0.1	42.3	1.5
		2	5.0	62.9	67.9	25.2	6.9	32.1	<0.1	43.1	1.2
		3	2.7	44.6	47.3	41.2	11.4	52.6	<0.1	36.3	1.2
		4	5.2	57.3	62.5	27.7	9.8	37.5	<0.1	41.7	1.4
		5	5.3	78.3	83.6	15.4	1.0	16.4	<0.1	56.3	2.0
	2015	1	12.7	55.3	68.00	28.4	3.6	32.00	<0.01	58.72	2.07
		2	9	54.2	63.20	33.5	3.3	36.80	<0.01	47.19	1.36
		3	12.2	49.9	62.10	33	4.9	37.90	<0.01	55.06	2.13
		4	14.8	56.6	71.40	25.7	2.9	28.60	<0.01	60.36	1.82
		5	16.5	65.9	82.40	17.4	0.15	17.55	<0.01	63.85	2.12
Fond du Lac River	2011	1	8.0	67.4	75.4	5.0	19.5	24.5	<0.1	-	7.7
		2	7.3	90.2	97.5	1.4	1.1	2.5	<0.1	-	11.4
		3	6.0	90.5	96.5	2.7	0.9	3.6	<0.1	-	10.0
		4	4.9	91.2	96.1	3.0	1.0	4.0	<0.1	-	10.6
		5	4.3	88.5	92.8	6.0	1.2	7.2	<0.1	-	10.1
	2012	1	33.1	60.9	94.0	3.5	2.4	6.0	<0.1	90.2	10.6
		2	22.3	73.8	96.1	2.5	1.4	3.9	<0.1	91.2	11.7
		3	18.2	70.4	88.6	3.7	7.7	11.4	<0.1	87.6	9.2
		4	8.3	33.0	41.3	29.2	29.4	58.6	<0.1	82.8	5.6
		5	14.0	39.0	53.0	17.5	29.5	47.0	<0.1	85.0	7.6
	2015	1	13.2	78.6	91.80	8	0.3	8.30	<0.01	93.36	10.56
		2	13.1	77.2	90.30	9.4	0.28	9.68	<0.01	92.49	10.71
		3	10.9	72.9	83.80	15.5	0.79	16.29	<0.01	91.53	8.5
		4	11	71	82.00	15.9	2	17.90	<0.01	89.4	8.08
		5	12.1	73.2	85.30	14.1	0.54	14.64	<0.01	90.41	8.88

APPENDIX B, TABLE 2

Detailed particle size and organic carbon content data for the EARMP technical program, 2011, 2012, and 2015.

Area	Year	Sample	Clay	Silt	Fine Particles	Fine Sand	Coarse Sand	Total Sand	Gravel	Moisture	Organic Carbon
Far-Field Exposure Areas											
Waterbury Lake	2011	1	5.1	21.9	27.0	27.1	45.7	72.8	0.1	57.0	2.8
		2	9.3	18.8	28.1	32.9	39.0	71.9	<0.1	63.5	5.1
		3	3.2	7.3	10.5	20.4	68.8	89.2	0.4	42.7	2.1
		4	2.9	8.9	11.7	38.2	50.1	88.3	<0.1	53.5	2.8
		5	1.5	6.7	8.1	24.0	67.9	91.9	<0.1	56.3	2.4
	2012	1	5.2	21.1	26.3	33.0	40.8	73.8	<0.1	84.9	5.0
		2	4.3	18.7	23.0	39.3	37.8	77.1	<0.1	85.7	5.2
		3	2.5	10.3	12.8	43.5	43.6	87.1	<0.1	53.9	0.8
		4	2.7	10.9	13.6	31.4	54.9	86.3	<0.1	81.4	3.5
		5	1.9	5.5	7.5	26.6	65.9	92.5	0.1	69.7	2.1
	2015	1	4.6	34.2	38.80	36.8	24.5	61.30	<0.01	83.48	4.53
		2	4.4	28	32.40	31.4	36.2	67.60	<0.01	87.99	4.77
		3	6.9	49.1	56.00	19.5	24.5	44.00	<0.01	84.09	4.15
		4	7.6	47.9	55.50	22.6	21.9	44.50	<0.01	79.17	2.36
		5	6.4	37.8	44.20	22.6	33.2	55.80	<0.01	72.66	2.16
Reference Areas											
Bobby's Lake	2009^2	1	17.0	37.0	54.0	39.0	8.0	47.0	<1	70.5	5.5
		2	19.0	39.0	58.0	31.0	11.0	42.0	<1	84.3	5.7
		3	27.0	62.0	89.0	8.0	2.0	10.0	<1	94.1	8.5
		4	32.0	57.0	89.0	10.0	1.0	11.0	<1	85.9	9.3
		5	31.0	62.0	93.0	5.0	1.0	6.0	<1	87.9	9.3
	2012	1	17.5	79.4	96.9	2.7	0.4	3.1	<0.1	-	11.3
		2	18.7	50.6	69.3	24.6	6.1	30.7	<0.1	-	11.6
		3	3.1	24.7	27.8	55.8	16.5	72.3	<0.1	-	3.2
		4	6.9	32.9	39.8	38.0	22.2	60.2	<0.1	-	3.0
		5	10.1	42.4	52.5	41.4	6.2	47.6	<0.1	-	7.2
Cree Lake	2011	1	5.0	33.6	38.6	30.1	31.2	61.3	0.1	65.1	3.2
		2	2.8	35.6	38.4	36.9	24.7	61.6	<0.1	68.5	5.2
		3	0.2	6.8	7.0	29.2	63.8	93.0	0.1	42.6	1.2
		4	0.6	6.2	6.8	22.2	70.8	93.0	0.2	40.1	1.2
		5	5.3	58.6	63.9	17.1	18.5	35.6	0.5	74.2	9.0
	2012	1	3.2	16.2	19.4	35.6	45.0	80.6	<0.1	78.0	4.0
		2	2.1	10.2	12.3	34.9	52.8	87.7	<0.1	71.7	2.6
		3	3.3	15.3	18.6	40.9	40.5	81.4	<0.1	78.8	4.1
		4	4.1	18.9	23.0	37.3	39.7	77.0	<0.1	80.6	4.5
		5	2.4	13.3	15.7	40.1	44.1	84.2	<0.1	77.7	3.3
	2015	1	6.2	58.4	64.6	29	6.4	35.4	<0.01	83.45	4.17
		2	5.2	49.1	54.3	33.8	11.9	45.7	<0.01	72.02	2.75
		3	4.9	35.8	40.7	44.3	15	59.3	<0.01	86.17	4.17
		4	5.8	69.9	75.70	22	2.3	24.30	<0.01	85.48	4.59
		5	5.0	36.9	41.90	43.4	14.7	58.10	<0.01	77.35	3.02
Ellis Bay	2011	1	37.8	60.3	98.1	1.2	0.7	1.9	<0.1	60.7	3.8
		2	43.8	55.2	99.0	0.8	0.2	1.1	<0.1	60.8	3.5
		3	39.7	59.5	99.2	0.5	0.3	0.8	<0.1	71.5	4.8
		4	35.4	64.3	99.7	0.1	0.2	0.3	<0.1	61.4	4.5
		5	36.3	63.4	99.7	0.1	0.1	0.2	<0.1	69.9	4.0
	2012	1	25.4	72.7	98.1	1.1	0.8	1.9	<0.1	80.0	4.3
		2	24.4	74.7	99.1	0.6	0.3	0.9	<0.1	80.6	4.2
		3	34.0	65.7	99.7	0.2	0.1	0.3	<0.1	82.1	5.3
		4	32.5	67.1	99.6	0.3	0.2	0.4	<0.1	79.7	4.4
		5	33.2	66.6	99.8	<0.1	0.1	0.2	<0.1	79.9	4.2
	2015	1	19.5	60.2	79.7	17.8	2.5	20.3	<0.01	82.11	4.75
		2	23.1	60.3	83.4	14.8	1.7	16.5	<0.01	83.31	4.68
		3	15.3	50.7	66	27.5	6.4	33.9	<0.01	82.41	4.81
		4	17.4	57.8	75.2	22.2	2.6	24.8	<0.01	86.39	6.45
		5	16.4	58	74.4	21.3	4.3	25.6	<0.01	83.51	5.11

APPENDIX B, TABLE 2

Detailed particle size and organic carbon content data for the EARMP technical program, 2011, 2012, and 2015.

Area	Year	Sample	Clay	Silt	Fine Particles	Fine Sand	Coarse Sand	Total Sand	Gravel	Moisture	Organic Carbon
Reference Areas											
Pasfield Lake	2011	1	0.1	2.3	2.4	15.8	81.7	97.5	0.1	44.6	1.4
		2	0.2	2.0	2.2	14.7	82.9	97.6	0.3	38.8	1.4
		3	<0.1	1.0	1.1	10.5	88.3	98.8	0.2	41.9	1.4
		4	5.1	15.5	20.6	24.1	55.3	79.4	<0.1	66.4	5.8
		5	0.1	0.5	0.6	11.2	88.1	99.3	0.1	26.6	0.6
	2012	1	1.8	3.8	5.6	15.8	78.5	94.3	<0.1	73.3	3.5
		2	0.7	1.6	2.3	8.2	89.5	97.7	<0.1	50.1	1.0
		3	0.4	1.7	2.2	9.6	88.1	97.7	0.2	50.7	1.5
		4	2.7	12.4	15.1	19.5	65.4	84.9	<0.1	78.9	6.1
		5	0.5	0.7	1.2	9.6	89.1	98.7	<0.1	37.9	0.7
	2015	1	4.5	62.6	67.1	15.8	17	32.8	<0.01	73.82	1.24
		2	1.9	15.2	17.1	19	63.9	82.9	<0.01	65.57	1.29
		3	0.83	7.4	8.23	9.7	82.1	91.8	<0.01	34.99	0.48
		4	3.1	32.3	35.4	22.5	42.1	64.6	<0.01	86.37	5.62
		5	5.0	75.2	80.2	15.4	4.3	19.7	<0.01	90.85	7.37
RF-4	2008[3]	1	36.0	45.0	81.0	18.0	1.0	19.0	<1	-	14.4
		2	30.0	45.0	75.0	24.0	1.0	25.0	<1	-	5.0
		3	44.0	43.0	87.0	11.0	2.0	13.0	<1	-	16.5
		4	30.0	43.0	73.0	22.0	4.0	26.0	<1	-	5.9
		5	36.0	39.0	75.0	24.0	1.0	25.0	<1	-	6.3
	2012	1	6.0	57.8	63.8	27.6	8.6	36.2	<0.1	-	7.4
		2	4.4	54.7	59.1	31.6	9.4	41.0	<0.1	-	7.8
		3	7.8	55.1	62.9	24.5	12.7	37.2	0.2	-	11.1
		4	8.5	52.3	60.8	30.5	8.7	39.2	<0.1	-	6.6
		5	9.0	51.1	60.1	32.7	7.2	39.9	<0.1	-	5.2

[1] Prior to 2015, particle size content were evaluated using the sieve/pipette method, and results are in % dry weight. In 2015, and moving forward, particle size content is measured by laser diffraction, and the results are in % volume. Moisture and organic carbon are presented in % weight.

[2] No data were available for 2011 in Bobby's Lake, thus data from 2009 were used as a substitute.

[3] No data were available for 2011 in RF-4, thus data from 2008 were used as a substitute.

APPENDIX B, TABLE 3

Detailed sediment chemistry results for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Far-Field Exposure Areas																													
	Cochrane River															Crackingstone Inlet														
	2011					2012					2015					2011					2012					2015				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Metals																														
Aluminum	12000	12400	12200	12100	12100	9100	8600	8100	9600	9200	11000	11100	10200	13200	11900	8600	7900	7600	11800	12500	7800	5700	6100	10200	9900	10700	10100	10100	12400	12700
Barium	80	80	77	80	82	70	60	58	65	58	86	86	82	92	89	55	47	50	65	74	56	38	44	58	64	91	78	100	95	90
Boron	6	6	6	6	6	2	1	1	1	<1	5	5	4	5	5	8	7	6	11	13	6	4	4	8	10	10	9	10	14	13
Cadmium	0.3	0.4	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.4	0.4	0.4	<0.1	<0.1	<0.1	0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	0.2	0.3	0.2	0.3
Chromium	23	22	22	22	23	17	16	15	18	17	21	21	20	23	21	17	14	15	32	23	16	11	13	26	20	22	19	23	29	24
Copper	7.9	7.8	7.6	8.1	7.8	6.7	5.8	5.5	6.5	6.2	7.8	7.8	6.9	8.6	7.5	3.6	2.7	2.7	7.7	6.6	3.7	2.4	2.5	6.1	5.5	5.3	4.2	5.9	7.5	6.3
Iron	16800	18200	18800	19300	20800	20200	15200	17000	16300	15000	22000	18700	22400	24100	24000	10600	9200	10100	15300	15200	12700	8400	10300	13800	15600	15700	13300	16200	19200	17900
Lead	11	10	9.2	9.6	9.3	7.8	7.4	6.8	8.4	7.5	9.2	9.5	8.6	10	9.6	4.4	4	4	11	7	4.3	3.1	3.2	15	5.5	6	5.2	6.9	10	6.9
Manganese	240	230	250	250	280	240	160	190	170	150	320	270	330	320	310	220	180	210	220	370	260	140	200	250	300	470	290	540	410	520
Molybdenum	6.2	6.8	6.4	6.6	5.6	4.9	5.2	3.7	4.4	4.1	6.6	8	6	6.9	6.9	0.5	0.4	0.5	1.4	0.8	0.7	0.3	0.6	0.6	0.6	1	0.6	1.3	1.6	1.1
Nickel	12	12	11	12	11	9	8.2	7.6	9.3	8.4	10	10	9.8	12	10	6.6	5.7	5.5	9.7	10	6.6	4.5	5	8.2	8.3	8.1	6.9	8.4	10	9.3
Selenium	0.6	0.6	0.6	0.7	0.5	0.6	0.5	0.5	0.5	0.5	0.7	0.7	0.6	0.7	0.6	0.8	0.6	0.5	1.1	1.1	0.8	0.6	0.6	0.6	1.2	1.4	1.1	1.5	1.5	1.4
Silver	<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	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Thallium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Tin	1	0.8	0.8	0.7	0.8	0.6	0.6	0.5	0.6	0.6	0.7	0.7	0.7	0.8	0.7	0.4	0.4	0.3	0.6	0.6	0.4	0.3	0.3	0.5	0.5	0.6	0.5	0.6	0.7	0.6
Titanium	870	900	890	850	920	720	680	690	740	740	920	830	840	1000	920	720	780	640	880	990	690	530	510	660	780	910	970	820	800	890
Uranium	4.6	4.4	4.2	4.4	4.3	3.8	3.4	3.3	4	3.9	4.4	4.4	4	4.8	4.5	38	23	25	67	54	46	19	27	42	48	70	44	86	78	61
Zinc	43	42	41	41	41	33	33	28	34	33	38	38	34	41	38	15	14	14	22	23	14	10	12	18	19	19	18	19	23	22
Physical Properties																														
Loss on ignition (%)	16.28	16.18	14.79	17.3	16.41	18.3	16.83	15.75	17.19	16.04	17.98	18.15	16.62	18.17	17.8	2.46	1.86	1.83	3.73	4.15	3.46	2.17	2.57	3.83	4.67	4.69	3.15	4.84	4.62	5.22
Moisture (%)	90.61	91.54	91.15	92.45	92.14	93.16	91.84	90.73	91.25	88.53	89	99.66	88.1	89.75	89	43.06	38.59	34.9	57.78	64.65	46.78	46.68	47.04	59.06	63.74	58.72	47.19	55.06	60.36	63.85
Radionuclides																														
Lead-210 (Bq/g)	0.41	0.42	0.37	0.38	0.35	0.35	0.35	0.28	0.4	0.26	0.39	0.34	0.4	0.41	0.45	0.17	0.07	0.11	0.4	0.17	0.13	0.05	0.1	0.2	0.14	0.22	0.09	0.16	0.39	0.14
Polonium-210 (Bq/g)	0.43	0.42	0.31	0.35	0.37	0.42	0.38	0.34	0.37	0.25	0.35	0.39	0.39	0.38	0.36	0.14	0.12	0.13	0.47	0.21	0.16	0.12	0.14	0.24	0.18	0.18	0.12	0.15	0.34	0.2
Radium-226 (Bq/g)	0.04	0.05	0.06	<0.01	<0.01	0.02	<0.01	<0.01	0.02	<0.01	0.01	0.06	0.06	0.06	0.11	0.09	<0.01	0.01	0.51	0.1	0.18	0.1	0.28	1.5	0.33	0.16	0.14	1.3	1.2	0.16
Thorium-230 (Bq/g)	0.02	0.04	0.02	0.05	<0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.02	0.03	<0.02	0.04	5	2.8	7.7	26	4.8	4.7	2.4	5.6	14	0.8	4.9	3.5	7.2	12	5.5
Trace Elements																														
Antimony	<0.2	<0.2	0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arsenic	2.2	2.2	2	2	2.1	1.6	1.5	1.4	1.7	1.8	2	1.8	1.6	1.8	1.8	2.6	1.7	4.9	9.8	3.7	3.5	1.6	4.5	4	3.7	4	2.1	7.4	17	4.7
Beryllium	0.6	0.6	0.6	0.6	0.6	0.4	0.4	0.4	0.4	0.4	0.5	0.6	0.5	0.6	0.6	0.3	0.3	0.3	0.5	0.4	0.3	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.4
Cobalt	3.7	3.6	3.4	3.5	3.4	2.5	2.4	2.3	2.7	2.6	3.7	3.8	3.5	4.1	3.8	2.7	2.6	2.6	3.8	3.7	2.6	1.9	2.2	3	3	4	3.6	4.4	4.7	4.4
Strontium	20	20	20	19	20	17	16	16	17	16	23	23	22	25	24	30	32	28	39	47	32	24	24	34	40	49	45	53	55	55
Vanadium	26	25	25	25	26	20	18	19	21	20	25	24	24	27	25	36	31	31	280	50	34	24	29	131	43	42	35	52	141	47

APPENDIX B, TABLE 3

Detailed sediment chemistry results for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Far-Field Exposure Areas																													
	Fond du Lac River															Waterbury Lake														
	2011					2012					2015					2011					2012					2015				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Metals																														
Aluminum	14200	12600	12100	12900	13400	11300	11700	12300	16400	17600	13900	13000	17800	16600	14900	6000	4300	3100	2300	2300	3500	3600	3900	2600	2400	4400	4800	3600	2900	3300
Barium	170	170	240	190	150	110	120	210	140	140	190	250	310	190	170	59	66	41	24	42	48	53	55	32	32	71	91	68	47	44
Boron	1	1	<1	1	<1	4	3	3	<1	<1	7	8	4	5	4	4	3	3	2	2	<1	<1	<1	<1	<1	2	2	2	<1	1
Cadmium	0.4	0.5	0.7	0.5	0.6	0.4	0.5	0.5	0.3	0.6	0.5	0.6	1	0.8	0.6	<0.1	0.1	<0.1	<0.1	<0.1	0.1	0.1	<0.1	<0.1	<0.1	0.5	0.6	0.3	0.2	0.4
Chromium	24	21	21	23	23	19	19	20	76	28	24	23	32	40	24	10	8.2	6.7	3.5	4.1	6.7	6.7	7.4	4.4	4.2	7.5	9	8.1	5.9	4.4
Copper	12	12	11	12	11	9.7	10	11	5.6	10	12	12	12	11	10	2.8	2.3	1.4	0.7	1	1.9	1.9	2.2	1	0.9	1.9	2.5	2.1	1.1	1.1
Iron	54300	49500	96900	80900	83400	42400	39500	86700	148000	90200	56800	60100	95100	89700	85900	5400	8200	3600	2200	1300	4900	6400	6200	3200	3200	7600	6700	5700	3700	3900
Lead	7.9	13	11	13	12	7.4	9.2	10	7.8	8.5	9	12	11	13	11	3.4	5.3	3.6	2.4	2.6	4.0	4.5	4.5	2.2	2.2	4.8	5.4	5.1	3.2	3.1
Manganese	2440	2190	4510	3090	2840	1710	1200	3710	1930	1900	3970	3220	4200	2800	3420	290	1200	340	200	310	360	520	470	210	280	880	720	760	510	490
Molybdenum	14	14	28	21	19	13	12	22	12	13	23	13	20	21	22	1.3	4.7	1.5	0.8	1.3	1.5	2.8	2.4	0.9	1.0	4.2	3.2	3.5	2	1.9
Nickel	15	14	14	15	14	12	12	14	23	16	15	14	19	19	14	4.6	3.9	2.8	1.3	1.7	2.9	3.0	3.1	1.8	1.7	2.9	3.8	3.2	2	1.5
Selenium	0.9	1.2	1.1	1.1	1	1.2	1.1	1	0.5	0.8	1.1	1.2	1.1	1.1	1.2	0.2	0.3	0.2	0.2	0.1	0.3	0.4	0.3	0.2	0.2	0.3	0.3	0.3	0.2	0.1
Silver	<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	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Thallium	0.3	0.2	0.2	0.2	0.2	0.3	<0.2	<0.2	<0.2	0.2	0.3	0.2	0.4	0.3	0.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Tin	0.7	0.6	0.6	0.7	0.7	0.9	0.6	0.6	0.8	0.7	0.7	0.6	0.8	0.9	0.7	0.5	0.3	0.6	0.3	0.1	0.2	0.3	0.3	0.2	0.2	0.4	0.9	0.4	0.2	0.2
Titanium	810	630	640	760	760	590	590	690	1560	1240	770	700	1200	1300	930	440	290	230	140	150	290	280	310	200	170	300	380	290	190	190
Uranium	5	5.2	5.5	5.8	5.1	4.5	4.6	4.7	3.5	5.4	5.4	5.8	6.4	6.2	5.4	0.6	0.6	0.3	0.2	0.2	0.4	0.5	0.5	0.4	0.2	0.6	0.6	0.6	0.4	0.4
Zinc	88	68	75	75	83	59	58	74	150	120	77	68	130	120	86	24	18	12	7.9	9	17	16	18	12	10	16	18	17	11	7.8
Physical Properties																														
Loss on ignition (%)	21.45	25.12	23.88	24.04	22.19	24.51	25.13	23.67	11.27	18.66	24.82	26.08	21.4	20.19	21.62	6.44	13.26	4.62	3.12	4.96	11.33	12.86	12.76	6.94	6.43	9.17	11.45	8.84	5.42	4.66
Moisture (%)	89.5	91.38	90.8	90.97	89.64	92.57	92.43	91.89	75.22	88.94	93.36	92.49	91.53	89.4	90.41	79.05	87.81	81.96	75.58	78.69	86.35	89.9	87.07	79.64	79.26	83.48	87.99	84.09	79.17	72.66
Radionuclides																														
Lead-210 (Bq/g)	0.26	0.43	0.44	0.44	0.42	0.43	0.37	0.5	0.22	0.48	0.5	0.55	<0.04	0.46	0.39	0.06	0.27	0.07	0.06	0.1	0.16	0.33	0.23	0.13	0.05	0.16	0.27	0.11	0.06	0.11
Polonium-210 (Bq/g)	0.35	0.44	0.57	0.45	0.46	0.36	0.36	0.36	0.27	0.32	0.41	0.55	0.38	0.45	0.37	0.11	0.26	0.09	0.06	0.09	0.2	0.27	0.24	0.16	0.1	0.2	0.22	0.18	0.11	0.09
Radium-226 (Bq/g)	0.12	0.06	0.06	0.02	0.04	0.07	0.05	0.07	0.05	0.05	0.04	0.07	0.08	0.04	0.06	0.01	0.02	<0.01	0.02	0.03	0.06	0.03	0.02	<0.01	<0.01	0.02	0.03	0.04	0.02	0.02
Thorium-230 (Bq/g)	0.04	0.06	0.04	<0.02	0.05	<0.02	0.06	0.03	<0.02	0.03	0.02	0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.08	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Trace Elements																														
Antimony	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arsenic	4.6	4.9	13	11	9.1	4.4	4.3	10	10	6.7	5.9	6.7	7.8	9.4	9.5	2.4	1.9	1	0.7	0.9	1.2	1.4	1.3	0.9	0.9	1.4	1.5	1.6	1	0.8
Beryllium	0.9	0.7	0.8	0.8	0.9	0.6	0.5	0.8	1.4	1.2	0.7	0.6	1.4	1.2	0.9	0.2	0.2	0.1	<0.1	0.1	0.1	0.1	0.1	<0.1	<0.1	0.2	0.2	0.2	0.1	0.1
Cobalt	6.9	5.5	7.4	6.7	7.2	5.3	4.5	8.2	11	8.1	7.8	6.6	13	12	10	2	1.3	0.9	0.6	0.7	1.1	1.1	1.2	0.8	0.7	1.5	1.7	1.6	1.1	0.8
Strontium	27	24	26	25	25	20	20	23	18	22	30	32	32	31	26	25	22	18	17	16	21	20	23	16	17	30	31	32	25	24
Vanadium	35	31	34	35	37	28	28	36	50	50	34	32	53	52	40	12	11	8.2	5.2	5.7	9.7	9.6	11	6.4	6.1	10	11	11	8.2	5.7

APPENDIX B, TABLE 3

Detailed sediment chemistry results for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Reference Areas																																		
	Bobby's Lake										Cree Lake															Ellis Bay				
	2009					2012					2011					2012					2015					2011				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Metals																															
Aluminum	3300	7000	9000	5500	8100	6400	3600	950	2600	4000	3600	3400	1200	1200	3300	1650	1210	1380	1780	1200	2900	2600	2800	3100	3000	20900	23800	20300	22500	23400
Barium	43	86	110	91	110	65	56	23	37	60	29	30	11	15	43	24	16	17	24	17	30	29	32	31	32	200	180	270	190	200
Boron	65	41	<1	93	29	7	4	1	2	4	3	3	2	1	3	<1	<1	<1	<1	<1	2	2	2	2	1	32	33	34	32	33
Cadmium	0.1	0.3	0.4	0.4	0.4	0.3	0.2	0.1	0.1	0.3	0.1	0.2	<0.1	<0.1	0.2	0.2	<0.1	0.1	0.2	0.1	0.2	0.3	0.6	0.3	0.5	0.3	0.3	0.4	0.3	0.3
Chromium	2.1	3.9	6.1	12	6.6	11	8.8	1.8	4.6	13	7.4	5.7	1.8	2.5	6	2.9	2.2	2.4	3.5	2.1	3.9	3.2	3.7	4.5	3.7	32	34	30	32	33
Copper	1.5	2.9	3.9	3.4	3.8	2.5	2.4	0.5	0.6	2.2	1.7	1.9	<0.5	0.7	2.3	1.3	1.1	1.8	1.8	0.9	1.4	0.8	1.4	1.5	1	21	21	21	20	22
Iron	24500	55900	68900	58800	63300	40500	13400	8700	25800	21600	7600	6000	1300	2100	6900	3700	2440	2700	3500	3200	3900	3000	3700	3800	3700	20800	20300	29300	19100	19900
Lead	4.1	5.4	8.1	6.8	7.9	5.2	5.1	0.9	2	5.8	2.8	3.7	1.2	1.5	4	3.1	1.9	2.6	3.2	2.3	3.6	2.8	3.4	3.8	2.9	8.2	8.3	7.8	8.4	8.1
Manganese	570	1200	1770	1240	1520	330	360	400	590	310	260	280	83	140	290	200	170	160	170	220	330	230	340	260	320	1000	530	1600	620	450
Molybdenum	0.3	0.6	0.7	0.9	0.9	3.1	0.7	0.3	0.4	0.5	0.4	0.3	<0.1	0.1	0.3	0.1	<0.1	0.1	0.2	<0.1	0.2	0.2	0.3	0.2	0.2	1.9	1.9	2	1.2	1.7
Nickel	3.2	5.8	10	6.2	7.5	6.6	5.5	1.1	2.6	5.8	2.5	4.6	0.7	1.3	3.4	2	1.3	1.6	2.2	1.3	2.1	1.5	1.8	2.2	1.6	21	22	22	20	21
Selenium	0.2	0.5	0.7	0.7	0.8	0.6	1	0.2	0.4	0.8	0.5	0.3	<0.1	0.1	0.6	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.7	0.7	0.6	0.6	0.6
Silver	<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	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Thallium	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	0.2	0.2	0.2	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	0.2	<0.2	<0.2	0.2
Tin	0.1	0.2	0.2	0.3	0.3	0.3	0.2	0.1	0.1	0.2	0.2	0.2	<0.1	<0.1	0.2	0.1	<0.1	<0.1	0.1	<0.1	0.1	0.1	0.1	0.1	0.1	0.9	1.0	0.8	0.8	0.9
Titanium	140	230	310	180	310	220	99	46	94	120	230	230	80	91	200	140	100	120	170	130	180	170	180	170	160	1200	1400	1200	1200	1300
Uranium	0.8	1.4	1.7	1.4	1.7	1.4	1.1	0.3	0.6	1.2	0.3	0.3	<0.1	0.1	0.3	0.2	0.2	0.2	0.3	0.2	0.3	0.3	0.3	0.3	0.3	8.1	6.8	8.7	8.1	7.0
Zinc	20	42	51	42	48	31	18	8.8	16	19	9.7	13	3.7	5.3	15	9.8	7.7	9.7	12	8.2	11	8.8	10	11	8.2	45	47	46	46	46
Physical Properties																															
Loss on ignition (%)	15.4	12.7	19.2	19.2	20.3	22	24	5	7	15	7.33	10.23	1.93	4.6	13.82	8.74	5.91	7.78	12.07	7.32	8.4	5.98	8.3	9.37	6.39	12.46	8.68	16.84	13.13	11
Moisture (%)	70.91	84.18	88.43	87.79	88.69	87.98	93.51	77.25	76.4	93.4	84.98	88.22	50.44	75.27	90.9	84.41	75.13	80.89	87.81	79.69	83.45	72.02	86.17	85.48	77.35	85.71	80.68	87.53	85.69	81.89
Radionuclides																															
Lead-210 (Bq/g)	0.13	0.22	0.33	0.31	0.37	0.3	0.55	0.04	0.09	0.41	0.22	0.13	0.05	0.09	0.21	0.16	0.08	0.25	0.26	0.21	0.2	0.1	0.2	0.16	0.12	0.12	0.16	0.26	0.24	0.09
Polonium-210 (Bq/g)	0.22	0.25	0.38	0.43	0.42	0.34	0.52	0.08	0.14	0.42	0.14	0.16	0.04	0.1	0.27	0.17	0.13	0.13	0.25	0.16	0.16	0.14	0.18	0.21	0.14	0.16	0.12	0.26	0.25	0.14
Radium-226 (Bq/g)	0.04	0.06	0.06	<0.01	0.03	0.03	0.07	0.04	0.03	0.03	<0.01	0.01	0.04	0.01	0.02	0.02	<0.01	0.02	<0.01	0.02	0.02	0.01	0.02	<0.01	0.01	0.08	0.14	0.09	0.05	0.05
Thorium-230 (Bq/g)	0.03	0.03	<0.02	<0.02	0.03	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	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.1	0.06	0.05	0.06	0.09
Trace Elements																															
Antimony	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	0.2	0.2	0.2	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.6	0.3	0.3	0.2	0.3
Arsenic	2.4	4.2	5.3	4.2	5.3	3.8	2.4	0.9	2	2.4	2	1.5	0.5	0.7	1.8	0.8	0.7	0.7	0.9	0.6	0.8	0.8	0.8	1	0.7	5.3	4.5	7.5	3.9	4.7
Beryllium	0.2	0.4	0.5	0.3	0.4	0.3	0.2	0.1	0.1	0.2	0.2	0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	0.1	0.1	<0.1	0.1	<0.1	<0.1	0.7	0.8	0.7	0.7	0.7
Cobalt	1.4	3.2	4	3.1	3.7	3.3	1.5	0.5	1.3	1.2	1.2	1.1	0.2	0.3	1.2	0.5	0.4	0.4	0.6	0.4	0.8	0.6	0.7	0.8	0.8	5.9	6.4	6.0	5.8	6.1
Strontium	34	62	77	43	79	55	46	13	24	44	20	22	16	16	24	18	16	15	18	15	24	25	25	25	26	79	84	82	84	85
Vanadium	8.5	17	21	18	22	13	8.6	3.5	6.9	8.8	11	8.7	2.7	3.5	9.8	4.5	3.3	4	5.1	3.4	5.2	4.4	5	5.6	4.4	37	39	35	37	39

APPENDIX B, TABLE 3

Detailed sediment chemistry results for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Reference Areas																																		
	Ellis Bay										Pasfield Lake															RF-4									
	2012					2015					2011					2012					2015					2008					2012				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Metals																																			
Aluminum	16700	16400	16400	15000	16800	25000	21400	22400	22600	23800	1500	1500	1100	2600	620	890	970	1480	2100	900	1740	1630	1420	3800	3600	7700	8600	9100	8300	8200	9300	10000	10100	10100	11200
Barium	160	220	170	190	170	180	200	220	210	210	16	16	12	25	8.2	13	14	18	21	12	28	24	22	39	39	62	63	68	64	63	70	71	74	77	79
Boron	26	26	23	23	23	31	30	32	35	34	2	2	1	3	1	<1	<1	<1	<1	<1	1	<1	<1	2	3	<1	<1	<1	<1	<1	3	43	15	18	12
Cadmium	0.2	0.2	0.3	0.2	0.2	0.4	0.4	0.4	0.4	0.5	0.2	0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	0.4	0.4	0.4	0.4	0.7	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.3
Chromium	27	26	26	25	28	33	32	34	33	35	2.2	2.1	2	4	1	1.6	1.6	2.6	3.5	0.8	1.8	1.5	1.1	5	6.1	13	14	14	14	13	16	17	16	17	18
Copper	19	18	19	20	18	20	18	20	20	21	0.7	0.7	0.5	1.7	<0.5	<0.5	<0.5	1	1.5	<0.5	0.7	1.1	<0.5	2.5	2.5	5.8	6.6	6	6.5	7.3	5.8	5.4	6.4	8.2	5.6
Iron	19000	28100	22200	23800	22700	24300	23500	23400	22400	20700	1800	1500	1200	3600	660	1530	2240	2570	3500	1450	1550	1200	850	3100	4000	37300	37500	48300	37600	38700	41400	52300	64300	46500	46200
Lead	7.1	6.5	6.4	7.0	7.2	9.6	8.6	9	9	9.9	2.5	2.3	1.9	5.7	1.1	1.4	1.4	3.1	4.8	1.2	2.1	2.2	1.5	7.4	8.5	5.4	5.7	6	5.6	5.2	8.7	9.1	9.4	8.6	9.1
Manganese	420	1730	1170	1130	750	510	980	930	650	600	71	56	55	110	47	43	96	47	76	31	47	35	20	72	120	1800	1600	1900	1800	1700	1770	1600	2340	2030	1490
Molybdenum	1.6	2.0	2.2	2.1	1.7	1.4	1.4	1.9	1.4	1.5	0.2	0.2	0.1	0.3	0.1	<0.1	0.1	0.2	0.3	<0.1	0.3	0.2	0.1	0.5	0.5	4.2	3.9	5.1	4	4.4	6.8	6.8	8.4	8.1	6.6
Nickel	18	18	18	20	19	20	19	20	19	20	0.8	0.9	0.8	2	0.7	0.6	0.8	1.4	1.9	0.4	0.8	0.7	0.4	2.3	2.7	7.6	8.3	8.4	8.4	9	7.8	7.6	8.7	10	8.1
Selenium	0.8	0.6	0.6	0.7	0.6	0.7	0.6	0.7	0.7	0.7	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	0.1	0.2	<0.1	<0.1	<0.1	<0.1	0.2	0.2	0.6	0.6	0.6	0.7	0.6	0.6	0.5	0.6	0.6	0.6
Silver	<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	<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
Thallium	0.3	<0.2	<0.2	<0.2	<0.2	0.2	0.2	0.2	0.2	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	0.2	0.2	0.2	0.2
Tin	1.1	0.8	0.8	0.7	0.8	0.9	0.9	0.9	0.9	1	0.2	0.1	<0.1	0.2	<0.1	<0.1	<0.1	0.1	0.2	<0.1	0.1	0.1	<0.1	0.2	0.3	0.6	0.6	0.7	0.5	0.6	0.7	0.7	0.3	0.7	0.8
Titanium	1110	1060	1080	1040	1100	1600	1400	1400	1300	1300	98	110	67	200	40	54	89	120	160	53	75	73	45	190	250	540	630	680	610	620	640	570	470	630	660
Uranium	7.9	8	6.6	8.7	8.4	9	8.3	8.8	8.9	9.3	0.1	0.1	<0.1	0.2	<0.1	0.1	0.1	0.2	0.2	<0.1	0.2	0.2	0.2	0.3	0.4	2.4	2.5	2.7	2.4	2.4	4.7	4.9	4.9	5.2	5
Zinc	39	37	37	39	46	47	44	46	45	46	7.8	10	5.3	15	3.6	4.2	6	8.7	13	3.6	4.6	4.9	2.4	20	22	41	46	58	45	56	40	44	54	54	41
Physical Properties																																			
Loss on ignition (%)	14.13	18.4	14.1	15.45	14.05	10.38	12.08	12.07	15.91	12.71	4.8	4.67	3.29	12.38	3.18	4.13	3.68	9.38	3.08	3.5	2.75	2.84	1.08	12.99	16.81	-	-	-	-	-	-	-	-	-	-
Moisture (%)	86.52	88.83	87.68	87.91	87.64	82.11	83.31	82.41	86.39	83.51	63.38	64.27	58.57	81.96	72.86	60.32	61.51	74.18	84.47	52.28	73.82	65.57	34.99	86.37	90.85	84.02	83.2	83.77	85.6	84.72	84.38	82.51	85.13	89.25	80.02
Radionuclides																																			
Lead-210 (Bq/g)	0.16	0.22	0.14	0.17	0.2	0.14	0.26	0.18	0.31	0.18	0.14	0.3	0.08	0.35	0.11	0.12	0.06	0.26	0.32	0.05	<0.04	<0.04	<0.04	0.25	0.42	0.26	0.24	0.27	0.27	0.23	0.14	0.17	0.16	0.12	0.15
Polonium-210 (Bq/g)	0.21	0.23	0.17	0.25	0.27	0.16	0.21	0.19	0.23	0.19	0.16	0.11	0.1	0.35	0.1	0.12	0.08	0.25	0.38	0.12	0.07	0.08	0.03	0.24	0.37	0.34	0.28	0.3	0.32	0.29	0.27	0.3	0.3	0.26	0.32
Radium-226 (Bq/g)	0.05	0.07	0.09	0.08	0.11	0.08	0.08	0.05	0.16	0.15	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	0.02	<0.01	0.01	0.01	0.01	0.02	<0.01	0.02	0.03	0.03	0.04	0.04	0.05	0.04	0.02	0.01	0.04	0.03	0.04
Thorium-230 (Bq/g)	0.08	0.03	<0.02	0.08	0.08	0.1	0.1	0.08	0.07	0.07	<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	0.04	0.04	0.05	0.05	0.06	0.05	0.02	0.05	0.02	0.03
Trace Elements																																			
Antimony	0.3	0.3	0.3	0.3	0.2	0.3	<0.2	0.2	<0.2	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	0.2	0.2	0.2	0.2
Arsenic	3.6	6.8	5.6	6.2	5.2	3.8	4.2	4.8	4.1	4.2	0.7	0.7	1.4	1.2	0.5	0.5	0.6	0.8	1	0.6	0.6	0.4	0.4	1.4	1.5	7.5	7.1	10	7.3	8.4	19	12	12	9.7	9
Beryllium	0.7	0.5	0.5	0.5	0.5	0.8	0.7	0.7	0.7	0.7	<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	0.2	0.3	0.3	0.2	0.2	0.6	0.8	0.9	0.7	0.7
Cobalt	5.0	5.2	5.2	5.3	5.1	6.8	6.4	6.8	6.6	6.6	0.2	0.3	<0.2	0.5	<0.2	<0.2	0.2	0.3	0.5	<0.2	0.2	0.3	<0.2	0.8	1.1	4.4	5.3	5.7	5	5.1	4.3	4.4	5.5	5.9	4.3
Strontium	68	73	69	67	68	93	92	95	98	98	20	20	22	28	13	16	15	21	24	15	25	21	20	30	36	11	11	11	11	11	20	19	20	22	22
Vanadium	31	31	31	31	33	39	37	38	37	40	4.1	4.1	3.2	7.5	1.9	2.5	3.1	4.9	3.3	2.4	3.1	3	1.9	9.4	11	20	23	26	22	21	23	26	27	25	25

[1] All concentrations and activity levels are presented in μg/g on a dry weight basis, except when specified otherwise.

APPENDIX B, TABLE 4

Sediment chemistry descriptive statistics un-adjusted to particle size for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Far-Field Exposure Areas																																			
	Cochrane River																		Crackingstone Inlet																	
	2011						2012						2015						2011						2012						2015					
	Avr	S.D.	Min	Max	<MDL	N	Avr	S.D.	Min	Max	<MDL	N	Avr	S.D.	Min	Max	<MDL	N	Avr	S.D.	Min	Max	<MDL	N	Avr	S.D.	Min	Max	<MDL	N	Avr	S.D.	Min	Max	<MDL	N
Metals																																				
Aluminum	12160	152	12000	12400	0	5	8920	581	8100	9600	0	5	11480	1134	10200	13200	0	5	9680	2297	7600	12500	0	5	7940	2084	5700	10200	0	5	11200	1261	10100	12700	0	5
Barium	80	2	77	82	0	5	62	5	58	70	0	5	87	4	82	92	0	5	58	11	47	74	0	5	52	11	38	64	0	5	91	8	78	100	0	5
Boron	6.0	0[4]	6.0	6.0	0	5	1.2	0.4	<1	2.0	1	5	4.8	0.4	4.0	5.0	0	5	9.0	2.9	6.0	13.0	0	5	6.4	2.6	4.0	10.0	0	5	11	2	9	14	0	5
Cadmium	0.3	0.1	0.2	0.4	0	5	0.2	0	0.2	0.2	0	5	0.4	0.04	0.3	0.4	0	5	0.1	0	<0.1	0.1	3	5	0.1	-	<0.1	<0.1	5	5	0.2	0.1	0.2	0.3	0	5
Chromium	22.4	0.5	22.0	23.0	0	5	16.6	1.1	15.0	18.0	0	5	21	1	20	23	0	5	20.2	7.5	14.0	32.0	0	5	17.2	6.0	11.0	26.0	0	5	23	4	19	29	0	5
Copper	7.8	0.2	7.6	8.1	0	5	6.1	0.5	5.5	6.7	0	5	7.7	0.6	6.9	8.6	0	5	4.7	2.3	2.7	7.7	0	5	4.0	1.7	2.4	6.1	0	5	5.8	1.2	4.2	7.5	0	5
Iron	18780	1467	16800	20800	0	5	16740	2100	15000	20200	0	5	22240	2189	18700	24100	0	5	12080	2937	9200	15300	0	5	12160	2847	8400	15600	0	5	16460	2248	13300	19200	0	5
Lead	9.8	0.7	9.2	11.0	0	5	7.6	0.6	6.8	8.4	0	5	9.4	0.5	8.6	10.0	0	5	6.1	3.0	4.0	11.0	0	5	6.2	5.0	3.1	15.0	0	5	7.0	1.8	5.2	10	0	5
Manganese	250	19	230	280	0	5	182	36	150	240	0	5	310	23	270	330	0	5	240	74	180	370	0	5	230	62	140	300	0	5	446	101	290	540	0	5
Molybdenum	6.3	0.5	5.6	6.8	0	5	4.5	0.6	3.7	5.2	0	5	6.9	0.7	6.0	8.0	0	5	0.7	0.4	0.4	1.4	0	5	0.6	0.2	0.3	0.7	0	5	1.1	0.4	0.6	1.6	0	5
Nickel	11.6	0.5	11.0	12.0	0	5	8.5	0.7	7.6	9.3	0	5	10.4	0.9	9.8	12	0	5	7.5	2.2	5.5	10.0	0	5	6.5	1.8	4.5	8.3	0	5	9	1	6.9	10	0	5
Selenium	0.6	0.07	0.5	0.7	0	5	0.5	0.04	0.5	0.6	0	5	0.7	0.1	0.6	0.7	0	5	0.8	0.3	0.5	1.1	0	5	0.8	0.3	0.6	1.2	0	5	1.4	0.2	1.1	1.5	0	5
Silver	0.1	-[5]	<0.1	<0.1	5	5	0.1	-	<0.1	<0.1	5	5	<0.1	0	<0.1	<0.1	5	5	0.1	-	<0.1	<0.1	5	5	0.1	-	<0.1	<0.1	5	5	<0.1	0	<0.1	<0.1	5	5
Thallium	0.2	-	<0.2	<0.2	5	5	0.2	-	<0.2	<0.2	5	5	<0.2	0	<0.2	<0.2	5	5	0.2	-	<0.2	<0.2	5	5	0.2	-	<0.2	<0.2	5	5	<0.2	0	<0.2	<0.2	5	5
Tin	0.82	0.11	0.70	1.00	0	5	0.58	0.04	0.50	0.60	0	5	0.7	0.04	0.7	0.8	0	5	0.46	0.13	0.30	0.60	0	5	0.40	0.10	0.30	0.50	0	5	0.6	0.1	0.5	0.7	0	5
Titanium	886	27	850	920	0	5	714	28	680	740	0	5	902	69	830	1000	0	5	802	137	640	990	0	5	634	113	510	780	0	5	878	69	800	970	0	5
Uranium	4.4	0.1	4.2	4.6	0	5	3.7	0.3	3.3	4.0	0	5	4.4	0.3	4.0	4.8	0	5	41.4	18.9	23.0	67.0	0	5	36.4	12.7	19.0	48.0	0	5	68	16	44	86	0	5
Zinc	42	1	41	43	0	5	32	2	28	34	0	5	38	2	34	41	0	5	18	5	14	23	0	5	15	4	10	19	0	5	20	2	18	23	0	5
Physical Properties																																				
Loss on ignition (%)	16.2	0.9	14.8	17.3	0	5	16.8	1.0	15.8	18.3	0	5	18	1	16.62	18.17	0	5	2.8	1.1	1.8	4.2	0	5	3.3	1.0	2.2	4.7	0	5	5	1	3.15	5.22	0	5
Moisture (%)	92	1	91	92	0	5	91	2	89	93	0	5	91	5	88.1	99.66	0	5	48	13	35	65	0	5	53	8	47	64	0	5	57	6	47.19	63.85	0	5
Radionuclides																																				
Lead-210 (Bq/g)	0.39	0.03	0.35	0.42	0	5	0.33	0.06	0.26	0.4	0	5	0.40	0.04	0.34	0.45	0	5	0.18	0.13	0.07	0.40	0	5	0.12	0.06	0.05	0.20	0	5	0.20	0.12	0.09	0.39	0	5
Polonium-210 (Bq/g)	0.38	0.05	0.31	0.43	0	5	0.35	0.06	0.25	0.42	0	5	0.37	0.02	0.35	0.39	0	5	0.21	0.15	0.12	0.47	0	5	0.17	0.05	0.12	0.24	0	5	0.20	0.08	0.12	0.34	0	5
Radium-226 (Bq/g)	0.03	0.02	<0.01	0.06	2	5	0.01	0.01	<0.01	0.02	3	5	0.06	0.04	0.01	0.11	0	5	0.14	0.21	<0.01	0.51	1	5	0.48	0.58	0.10	1.5	0	5	0.59	0.60	0.14	1.30	0	5
Thorium-230 (Bq/g)	0.03	0.01	<0.02	0.05	1	5	0.03	0.004	0.02	0.03	0	5	0.03	0.01	<0.02	0.04	1	5	9.26	9.52	2.80	26.00	0	5	5.50	5.11	0.80	14.00	0	5	6.62	3.29	3.50	12.00	0	5
Trace Elements																																				
Antimony	0.2	0.1	<0.2	0.4	4	5	0.2	-	<0.2	<0.2	5	5	<0.2	0	<0.2	<0.2	5	5	0.2	-	<0.2	<0.2	5	5	0.2	-	<0.2	<0.2	5	5	<0.2	0	<0.2	<0.2	5	5
Arsenic	2.1	0.1	2.0	2.2	0	5	1.6	0.2	1.4	1.8	0	5	1.8	0.1	1.6	2.0	0	5	4.5	3.2	1.7	9.8	0	5	3.5	1.1	1.6	4.5	0	5	7	6	2.1	17	0	5
Beryllium	0.6	0	0.6	0.6	0	5	0.4	0	0.4	0.4	0	5	0.6	0.1	0.5	0.6	0	5	0.4	0.1	0.3	0.5	0	5	0.3	0.1	0.2	0.3	0	5	0.4	0.1	0.4	0.5	0	5
Cobalt	3.5	0.1	3.4	3.7	0	5	2.5	0.2	2.3	2.7	0	5	3.8	0.2	3.5	4.1	0	5	3.1	0.6	2.6	3.8	0	5	2.5	0.5	1.9	3.0	0	5	4.2	0.4	3.6	4.7	0	5
Strontium	19.8	0.4	19.0	20.0	0	5	16.4	0.5	16.0	17.0	0	5	23	1	22	25	0	5	35.2	7.8	28.0	47.0	0	5	30.8	6.9	24.0	40.0	0	5	51	4	45	55	0	5
Vanadium	25.4	0.5	25.0	26.0	0	5	19.6	1.1	18.0	21.0	0	5	25	1	24	27	0	5	85.6	109.0	31.0	280.0	0	5	52.2	44.6	24.0	131.0	0	5	63.4	43.8	35	141	0	5

APPENDIX B, TABLE 4

Sediment chemistry descriptive statistics un-adjusted to particle size for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Far-Field Exposure Areas																																			
	Fond du Lac River																		Waterbury Lake																	
	2011						2012						2015						2011						2012						2015					
	Avr	S.D.	Min	Max	<MDL	N	Avr	S.D.	Min	Max	<MDL	N	Avr	S.D.	Min	Max	<MDL	N	Avr	S.D.	Min	Max	<MDL	N	Avr	S.D.	Min	Max	<MDL	N	Avr	S.D.	Min	Max	<MDL	N
Metals																																				
Aluminum	13040	802	12100	14200	0	5	13860	2919	11300	17600	0	5	15240	1958	13000	17800	0	5	3600	1572	2300	6000	0	5	3200	660	2400	3900	0	5	3800	784	2900	4800	0	5
Barium	184	34	150	240	0	5	144	39	110	210	0	5	222	58	170	310	0	5	46	17	24	66	0	5	44	11	32	55	0	5	64	19	44	91	0	5
Boron	1.0	0	<1	1.0	2	5	2.4	1.3	<1	4.0	2	5	6	2	4	8	0	5	2.8	0.8	2.0	4.0	0	5	1.0	-	<1	<1	5	5	2	1	<1	2	1	5
Cadmium	0.5	0.1	0.4	0.7	0	5	0.5	0.1	0.3	0.6	0	5	0.7	0.2	0.5	1.0	0	5	0.1	0	<0.1	0.1	4	5	0.1	0	<0.1	0.1	3	5	0.4	0.2	0.2	0.6	0	5
Chromium	22.4	1.3	21.0	24.0	0	5	32.4	24.7	19.0	76.0	0	5	29	7	23	40	0	5	6.5	2.7	3.5	10.0	0	5	5.9	1.5	4.2	7.4	0	5	7.0	1.8	4.4	9.0	0	5
Copper	11.6	0.5	11.0	12.0	0	5	9.3	2.1	5.6	11.0	0	5	11	1	10	12	0	5	1.6	0.9	0.7	2.8	0	5	1.6	0.6	0.9	2.2	0	5	1.7	0.6	1.1	2.5	0	5
Iron	73000	20271	49500	96900	0	5	81360	44209	39500	148000	0	5	77520	17751	56800	95100	0	5	4140	2747	1300	8200	0	5	4780	1553	3200	6400	0	5	5520	1709	3700	7600	0	5
Lead	11.4	2.1	7.9	13.0	0	5	8.6	1.0	7.4	10.0	0	5	11	1	9	13	0	5	3.5	1.1	2.4	5.3	0	5	3.5	1.2	2.2	4.5	0	5	4.3	1.1	3.1	5.4	0	5
Manganese	3014	906	2190	4510	0	5	2090	952	1200	3710	0	5	3522	566	2800	4200	0	5	468	413	200	1200	0	5	368	129	210	520	0	5	672	168	490	880	0	5
Molybdenum	19.2	5.8	14.0	28.0	0	5	14.4	4.3	12.0	22.0	0	5	20	4	13	23	0	5	1.9	1.6	0.8	4.7	0	5	1.7	0.8	0.9	2.8	0	5	3.0	1.0	1.9	4.2	0	5
Nickel	14.4	0.5	14.0	15.0	0	5	15.4	4.6	12.0	23.0	0	5	16	3	14	19	0	5	2.9	1.4	1.3	4.6	0	5	2.5	0.7	1.7	3.1	0	5	2.7	0.9	1.5	3.8	0	5
Selenium	1.1	0.1	0.9	1.2	0	5	0.9	0.3	0.5	1.2	0	5	1.1	0.1	1.1	1.2	0	5	0.2	0.1	0.1	0.3	0	5	0.3	0.1	0.2	0.4	0	5	0.2	0.1	0.1	0.3	0	5
Silver	0.1	-	<0.1	<0.1	5	5	0.1	-	<0.1	<0.1	5	5	<0.1	0	<0.1	<0.1	5	5	0.1	-	<0.1	<0.1	5	5	0.1	-	<0.1	<0.1	5	5	<0.1	0	<0.1	<0.1	5	5
Thallium	0.2	0.04	0.2	0.3	0	5	0.2	0.04	<0.2	0.3	3	5	0.3	0.07	0.2	0.4	0	5	0.2	-	<0.2	<0.2	5	5	0.2	-	<0.2	<0.2	5	5	<0.2	0	<0.2	<0.2	5	5
Tin	0.66	0.05	0.60	0.70	0	5	0.72	0.13	0.60	0.90	0	5	1	0	0.6	0.9	0	5	0.36	0.19	0.10	0.60	0	5	0.24	0.05	0.20	0.30	0	5	0.4	0.3	0.2	0.9	0	5
Titanium	720	80	630	810	0	5	934	442	590	1560	0	5	980	263	700	1300	0	5	250	123	140	440	0	5	250	61	170	310	0	5	270	81	190	380	0	5
Uranium	5.3	0.3	5.0	5.8	0	5	4.5	0.7	3.5	5.4	0	5	6	0.5	5.4	6.4	0	5	0.4	0.2	0.2	0.6	0	5	0.4	0.1	0.2	0.5	0	5	0.5	0.1	0.4	0.6	0	5
Zinc	78	8	68	88	0	5	92	41	58	150	0	5	96	27	68	130	0	5	14	7	8	24	0	5	15	3	10	18	0	5	14	4	7.8	18	0	5
Physical Properties																																				
Loss on ignition (%)	23.3	1.5	21.5	25.1	0	5	20.6	5.8	11.3	25.1	0	5	23	3	20.19	26.08	0	5	6.5	4.0	3.1	13.3	0	5	10.1	3.1	6.4	12.9	0	5	8	3	4.66	11.45	0	5
Moisture (%)	90	1	90	91	0	5	88	7	75	93	0	5	91	2	89.4	93.36	0	5	81	5	76	88	0	5	84	5	79	90	0	5	81	6	72.66	87.99	0	5
Radionuclides																																				
Lead-210 (Bq/g)	0.40	0.08	0.26	0.44	0	5	0.40	0.11	0.22	0.50	0	5	0.39	0.20	<0.04	0.55	1	5	0.11	0.09	0.06	0.27	0	5	0.18	0.11	0.05	0.33	0	5	0.14	0.08	0.06	0.27	0	5
Polonium-210 (Bq/g)	0.45	0.08	0.35	0.57	0	5	0.33	0.04	0.27	0.36	0	5	0.43	0.07	0.37	0.55	0	5	0.12	0.08	0.06	0.26	0	5	0.19	0.07	0.10	0.27	0	5	0.16	0.06	0.09	0.22	0	5
Radium-226 (Bq/g)	0.06	0.04	0.02	0.12	0	5	0.06	0.01	0.05	0.07	0	5	0.06	0.02	0.04	0.08	0	5	0.02	0.01	<0.01	0.03	1	5	0.03	0.02	<0.01	0.06	2	5	0.03	0.01	0.02	0.04	0	5
Thorium-230 (Bq/g)	0.04	0.01	<0.02	0.06	1	5	0.03	0.02	<0.02	0.06	2	5	0.02	0	<0.02	0.02	2	5	0.02	-	<0.02	<0.02	5	5	0.04	0.03	<0.02	0.08	3	5	<0.02	0	<0.02	<0.02	5	5
Trace Elements																																				
Antimony	0.2	-	<0.2	<0.2	5	5	0.2	0.04	<0.2	0.3	4	5	<0.2	0	<0.2	<0.2	5	5	0.2	0.1	<0.2	0.4	4	5	0.2	-	<0.2	<0.2	5	5	<0.2	0	<0.2	<0.2	5	5
Arsenic	8.5	3.7	4.6	13	0	5	7.1	2.8	4.3	10	0	5	7.9	1.6	5.9	9.5	0	5	1.4	0.7	0.7	2.4	0	5	1.1	0.2	0.9	1.4	0	5	1.3	0.3	0.8	1.6	0	5
Beryllium	0.8	0.1	0.7	0.9	0	5	0.9	0.4	0.5	1.4	0	5	1.0	0.3	0.6	1.4	0	5	0.1	0.1	<0.1	0.2	1	5	0.1	0	<0.1	0.1	2	5	0.2	0.1	0.1	0.2	0	5
Cobalt	6.7	0.7	5.5	7.4	0	5	7.4	2.6	4.5	11.0	0	5	10	3	6.6	13	0	5	1.1	0.6	0.6	2.0	0	5	1.0	0.2	0.7	1.2	0	5	1.3	0.4	0.8	1.7	0	5
Strontium	25.4	1.1	24.0	27.0	0	5	20.6	1.9	18.0	23.0	0	5	30	2	26	32	0	5	19.6	3.8	16.0	25.0	0	5	19.4	2.9	16.0	23.0	0	5	28	4	24	32	0	5
Vanadium	34.4	2.2	31.0	37.0	0	5	38.4	11.1	28.0	50.0	0	5	42	10	32	53	0	5	8.4	3.1	5.2	12.0	0	5	8.6	2.2	6.1	11.0	0	5	9	2	5.7	11	0	5

APPENDIX B, TABLE 4

Sediment chemistry descriptive statistics un-adjusted to particle size for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Reference Areas																													
	Bobby's Lake												Cree Lake																	
	2009[2]						2012						2011						2012						2015					
	Avr	S.D.	Min	Max	<MDL	N	Avr	S.D.	Min	Max	<MDL	N	Avr	S.D.	Min	Max	<MDL	N	Avr	S.D.	Min	Max	<MDL	N	Avr	S.D.	Min	Max	<MDL	N
Metals																														
Aluminum	6580	2251	3300	9000	0	5	3510	1999	950	6400	0	5	2540	1228	1200	3600	0	5	1444	262	1200	1780	0	5	2880	192	2600	3100	0	5
Barium	88	27	43	110	0	5	48	18	23	65	0	5	26	13	11	43	0	5	20	4	16	24	0	5	31	1	29	32	0	5
Boron	45.8	35.0	<1	93.0	1	5	3.6	2.3	<1	7.0	1	5	2.4	0.9	1.0	3.0	0	5	1.0	-	<1	<1	5	5	2	0.4	1	2	0	5
Cadmium	0.3	0.1	0.1	0.4	0	5	0.2	0.1	<0.1	0.3	2	5	0.1	0.05	<0.1	0.2	2	5	0.1	0.05	<0.1	0.2	1	5	0.4	0.2	0.2	0.6	0	5
Chromium	6.1	3.7	2.1	12.0	0	5	7.8	4.6	1.8	13.0	0	5	4.7	2.4	1.8	7.4	0	5	2.6	0.6	2.1	3.5	0	5	3.8	0.5	3.2	4.5	0	5
Copper	3.1	1.0	1.5	3.9	0	5	1.6	1.0	<0.5	2.5	1	5	1.4	0.8	<0.5	2.3	1	5	1.4	0.4	0.9	1.8	0	5	1.2	0.3	0.8	1.5	0	5
Iron	54280	17357	24500	68900	0	5	22000	12326	8700	40500	0	5	4780	2882	1300	7600	0	5	3108	530	2440	3700	0	5	3620	356	3000	3900	0	5
Lead	6.5	1.7	4.1	8.1	0	5	3.8	2.2	0.9	5.8	0	5	2.6	1.3	1.2	4.0	0	5	2.6	0.5	1.9	3.2	0	5	3.3	0.4	2.8	3.8	0	5
Manganese	1260	449	570	1770	0	5	398	113	310	590	0	5	211	93	83	290	0	5	184	25	160	220	0	5	296	48	230	340	0	5
Molybdenum	0.7	0.2	0.3	0.9	0	5	1.0	1.2	0.3	3.1	0	5	0.2	0.1	<0.1	0.4	1	5	0.1	0.04	<0.1	0.2	2	5	0.2	0.04	0.2	0.3	0	5
Nickel	6.5	2.5	3.2	10.0	0	5	4.3	2.4	1.1	6.6	0	5	2.5	1.6	0.7	4.6	0	5	1.7	0.4	1.3	2.2	0	5	1.8	0.3	1.5	2.2	0	5
Selenium	0.6	0.2	0.2	0.8	0	5	0.6	0.3	0.2	1.0	0	5	0.3	0.2	<0.1	0.6	1	5	0.2	0	0.2	0.2	0	5	0.2	0	0.2	0.2	0	5
Silver	0.1	-	<0.1	<0.1	5	5	0.1	-	<0.1	<0.1	5	5	0.1	-	<0.1	<0.1	5	5	0.1	-	<0.1	<0.1	5	5	<0.1	0	<0.1	<0.1	5	5
Thallium	0.2	-	<0.2	<0.2	5	5	0.2	-	<0.2	<0.2	5	5	0.2	-	<0.2	<0.2	5	5	0.2	-	<0.2	<0.2	5	5	<0.2	0	<0.2	<0.2	5	5
Tin	0.22	0.08	0.10	0.30	0	5	0.18	0.08	<0.1	0.30	1	5	0.16	0.05	<0.1	0.20	2	5	0.10	0	<0.1	0.10	3	5	0.1	0	0.1	0.1	0	5
Titanium	234	76	140	310	0	5	116	64	46	220	0	5	166	75	80	230	0	5	132	26	100	170	0	5	172	8	160	180	0	5
Uranium	1.4	0.4	0.8	1.7	0	5	0.9	0.5	0.3	1.4	0	5	0.2	0.1	<0.1	0.3	1	5	0.2	0.04	0.2	0.3	0	5	0.3	0.0	0.3	0.3	0	5
Zinc	41	12	20	51	0	5	19	8	9	31	0	5	9	5	4	15	0	5	9	2	8	12	0	5	9.8	1.3	8.2	11	0	5
Physical Properties																														
Loss on ignition (%)	17.4	3.2	12.7	20.3	0	5	14.6	8.6	5.0	24.0	0	5	7.6	4.7	1.9	13.8	0	5	8.4	2.3	5.9	12.1	0	5	8	1	5.98	9.37	0	5
Moisture (%)	84	8	71	89	0	5	86	8	76	94	0	5	78	16	50	91	0	5	82	5	75	88	0	5	81	6	72.02	86.17	0	5
Radionuclides																														
Lead-210 (Bq/g)	0.27	0.10	0.13	0.37	0	5	0.28	0.21	0.04	0.55	0	5	0.14	0.07	0.05	0.22	0	5	0.19	0.07	0.08	0.26	0	5	0.16	0.05	0.10	0.20	0	5
Polonium-210 (Bq/g)	0.34	0.10	0.22	0.43	0	5	0.30	0.19	0.08	0.52	0	5	0.14	0.08	0.04	0.27	0	5	0.17	0.05	0.13	0.25	0	5	0.17	0.03	0.14	0.21	0	5
Radium-226 (Bq/g)	0.04	0.02	<0.01	0.06	1	5	0.04	0.02	0.03	0.07	0	5	0.02	0.01	<0.01	0.04	1	5	0.02	0.01	<0.01	0.02	2	5	0.01	0.01	<0.01	0.02	1	5
Thorium-230 (Bq/g)	0.03	0.01	<0.02	0.03	2	5	0.02	-	<0.02	<0.02	5	5	0.02	0	<0.02	0.02	4	5	0.02	0.004	<0.02	0.03	4	5	<0.02	0	<0.02	<0.02	5	5
Trace Elements																														
Antimony	0.2	-	<0.2	<0.2	5	5	0.2	-	<0.2	<0.2	5	5	0.2	-	<0.2	<0.2	5	5	0.2	-	<0.2	<0.2	5	5	<0.2	0	<0.2	<0.2	5	5
Arsenic	4.3	1.2	2.4	5.3	0	5	2.3	1.0	0.9	3.8	0	5	1.3	0.7	0.5	2.0	0	5	0.7	0.1	0.6	0.9	0	5	0.8	0.1	0.7	1.0	0	5
Beryllium	0.4	0.1	0.2	0.5	0	5	0.2	0.1	<0.1	0.3	1	5	0.1	0.1	<0.1	0.2	2	5	0.1	0	<0.1	0.1	4	5	0.1	0	<0.1	0.1	3	5
Cobalt	3.1	1.0	1.4	4.0	0	5	1.6	1.0	0.5	3.3	0	5	0.8	0.5	0.2	1.2	0	5	0.5	0.1	0.4	0.6	0	5	0.7	0.1	0.6	0.8	0	5
Strontium	59.0	20.1	34.0	79.0	0	5	36.4	17.3	13.0	55.0	0	5	19.6	3.6	16.0	24.0	0	5	16.4	1.5	15.0	18.0	0	5	25	1	24	26	0	5
Vanadium	17.3	5.3	8.5	22.0	0	5	8.2	3.4	3.5	13.0	0	5	7.1	3.8	2.7	11.0	0	5	4.1	0.8	3.3	5.1	0	5	5	1	4.4	5.6	0	5

APPENDIX B, TABLE 4

Sediment chemistry descriptive statistics un-adjusted to particle size for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Reference Areas																																			
	Ellis Bay																		Pasfield Lake																	
	2011						2012						2015						2011						2012						2015					
	Avr	S.D.	Min	Max	<MDL	N	Avr	S.D.	Min	Max	<MDL	N	Avr	S.D.	Min	Max	<MDL	N	Avr	S.D.	Min	Max	<MDL	N	Avr	S.D.	Min	Max	<MDL	N	Avr	S.D.	Min	Max	<MDL	N
Metals																																				
Aluminum	22180	1532	20300	23800	0	5	16260	727	15000	16800	0	5	23040	1389	21400	25000	0	5	1464	731	620	2600	0	5	1268	525	890	2100	0	5	2438	1160	1420	3800	0	5
Barium	208	36	180	270	0	5	182	24	160	220	0	5	204	15	180	220	0	5	15	6	8	25	0	5	16	4	12	21	0	5	30	8	22	39	0	5
Boron	32.8	0.8	32.0	34.0	0	5	24.2	1.6	23.0	26.0	0	5	32	2	30	35	0	5	1.8	0.8	1.0	3.0	0	5	1.0	-	<1	<1	5	5	2.0	1.0	1.0	3.0	2	5
Cadmium	0.3	0.04	0.3	0.4	0	5	0.2	0.04	0.2	0.3	0	5	0.4	0.04	0.4	0.5	0	5	0.1	0.04	<0.1	0.2	2	5	0.1	0	<0.1	0.1	4	5	0.5	0.1	0.4	0.7	0	5
Chromium	32.2	1.5	30.0	34.0	0	5	26.4	1.1	25.0	28.0	0	5	33	1	32	35	0	5	2.3	1.1	1.0	4.0	0	5	2.0	1.0	0.8	3.5	0	5	3.1	2.3	1.1	6.1	0	5
Copper	21.0	0.7	20.0	22.0	0	5	18.8	0.8	18.0	20.0	0	5	20	1	18	21	0	5	0.8	0.5	<0.5	1.7	1	5	0.8	0.4	<0.5	1.5	3	5	1.5	1.0	0.5	2.5	1	5
Iron	21880	4194	19100	29300	0	5	23160	3288	19000	28100	0	5	22860	1383	20700	24300	0	5	1752	1116	660	3600	0	5	2258	840	1450	3500	0	5	2140	1349	850	4000	0	5
Lead	8.2	0.2	7.8	8.4	0	5	6.8	0.4	6.4	7.2	0	5	9.2	0.5	8.6	9.9	0	5	2.7	1.8	1.1	5.7	0	5	2.4	1.6	1.2	4.8	0	5	4.3	3.3	1.5	8.5	0	5
Manganese	840	474	450	1600	0	5	1040	492	420	1730	0	5	734	209	510	980	0	5	68	25	47	110	0	5	59	27	31	96	0	5	59	39	20	120	0	5
Molybdenum	1.7	0.3	1.2	2.0	0	5	1.9	0.3	1.6	2.2	0	5	1.5	0.2	1.4	1.9	0	5	0.2	0.1	0.1	0.3	0	5	0.2	0.1	<0.1	0.3	2	5	0.3	0.2	0.1	0.5	0	5
Nickel	21.2	0.8	20.0	22.0	0	5	18.6	0.9	18.0	20.0	0	5	20	1	19	20	0	5	1.0	0.5	0.7	2.0	0	5	1.0	0.6	0.4	1.9	0	5	1.4	1.0	0.4	2.7	0	5
Selenium	0.6	0.1	0.6	0.7	0	5	0.7	0.1	0.6	0.8	0	5	0.7	0.0	0.6	0.7	0	5	0.1	0.04	<0.1	0.2	4	5	0.1	0.04	<0.1	0.2	3	5	0.1	0.1	0.1	0.2	3	5
Silver	0.1	-	<0.1	<0.1	5	5	0.1	-	<0.1	<0.1	5	5	<0.1	0	<0.1	<0.1	5	5	0.1	-	<0.1	<0.1	5	5	0.1	-	<0.1	<0.1	5	5	<0.1	0	<0.1	<0.1	5	5
Thallium	0.2	0	<0.2	0.2	2	5	0.2	0.04	<0.2	0.3	4	5	0.2	0	0.2	0.2	0	5	0.2	-	<0.2	<0.2	5	5	0.2	-	<0.2	<0.2	5	5	<0.2	0	<0.2	<0.2	5	5
Tin	0.88	0.08	0.80	1.00	0	5	0.84	0.15	0.70	1.10	0	5	0.9	0.04	0.9	1.0	0	5	0.14	0.05	<0.1	0.20	2	5	0.12	0.04	<0.1	0.20	3	5	0.2	0.1	0.1	0.3	1	5
Titanium	1260	89	1200	1400	0	5	1078	29	1040	1110	0	5	1400	122	1300	1600	0	5	103	61	40	200	0	5	95	46	53	160	0	5	127	89	45	250	0	5
Uranium	7.7	0.8	6.8	8.7	0	5	7.9	0.8	6.6	8.7	0	5	8.9	0.4	8.3	9.3	0	5	0.1	0.04	<0.1	0.2	2	5	0.1	0.1	<0.1	0.2	1	5	0.3	0.1	0.2	0.4	0	5
Zinc	46	1	45	47	0	5	40	4	37	46	0	5	46	1	44	47	0	5	8	4	4	15	0	5	7	4	4	13	0	5	10.8	9.4	2.4	22.0	0	5
Physical Properties																																				
Loss on ignition (%)	12.4	3.0	8.7	16.8	0	5	15.2	1.9	14.1	18.4	0	5	13	2	10.38	15.91	0	5	5.7	3.8	3.2	12.4	0	5	4.8	2.6	3.1	9.4	0	5	7	7	1.08	16.81	0	5
Moisture (%)	84	3	81	88	0	5	88	1	87	89	0	5	84	2	82.11	86.39	0	5	68	9	59	82	0	5	67	13	52	84	0	5	70	22	34.99	90.85	0	5
Radionuclides																																				
Lead-210 (Bq/g)	0.17	0.07	0.09	0.26	0	5	0.18	0.03	0.14	0.22	0	5	0.21	0.07	0.14	0.31	0	5	0.20	0.12	0.08	0.35	0	5	0.16	0.12	0.05	0.32	0	5	0.16	0.17	<0.04	0.42	3	5
Polonium-210 (Bq/g)	0.19	0.06	0.12	0.26	0	5	0.23	0.04	0.17	0.27	0	5	0.20	0.03	0.16	0.23	0	5	0.16	0.11	0.10	0.35	0	5	0.19	0.12	0.08	0.38	0	5	0.16	0.14	0.03	0.37	0	5
Radium-226 (Bq/g)	0.08	0.04	0.05	0.14	0	5	0.08	0.02	0.05	0.11	0	5	0.10	0.05	0.05	0.16	0	5	0.01	0	<0.01	0.01	4	5	0.01	0.004	<0.01	0.02	2	5	0.02	0.01	<0.01	0.03	1	5
Thorium-230 (Bq/g)	0.07	0.02	0.05	0.10	0	5	0.06	0.03	<0.02	0.08	1	5	0.08	0.02	0.07	0.1	0	5	0.02	-	<0.02	<0.02	5	5	0.02	-	<0.02	<0.02	5	5	<0.02	0	<0.02	<0.02	5	5
Trace Elements																																				
Antimony	0.3	0.2	0.2	0.6	0	5	0.3	0.0	0.2	0.3	0	5	0.2	0.04	0.2	0.3	2	5	0.2	-	<0.2	<0.2	5	5	0.2	-	<0.2	<0.2	5	5	<0.2	0	<0.2	<0.2	5	5
Arsenic	5.2	1.4	3.9	7.5	0	5	5.5	1.2	3.6	6.8	0	5	4.2	0.4	3.8	4.8	0	5	0.9	0.4	0.5	1.4	0	5	0.7	0.2	0.5	1.0	0	5	0.9	0.5	0.4	1.5	0	5
Beryllium	0.7	0.04	0.7	0.8	0	5	0.5	0.1	0.5	0.7	0	5	0.7	0.04	0.7	0.8	0	5	0.1	-	<0.1	<0.1	5	5	0.1	-	<0.1	<0.1	5	5	0.1	0.0	<0.1	0.1	3	5
Cobalt	6.0	0.2	5.8	6.4	0	5	5.2	0.1	5.0	5.3	0	5	6.6	0.2	6.4	6.8	0	5	0.3	0.1	<0.2	0.5	2	5	0.3	0.1	<0.2	0.5	2	5	0.5	0.4	0.2	1.1	1	5
Strontium	82.8	2.4	79.0	85.0	0	5	69.0	2.3	67.0	73.0	0	5	95	3	92	98	0	5	20.6	5.4	13.0	28.0	0	5	18.2	4.1	15.0	24.0	0	5	26	7	20	36	0	5
Vanadium	37.4	1.7	35.0	39.0	0	5	31.4	0.9	31.0	33.0	0	5	38	1	37	40	0	5	4.2	2.1	1.9	7.5	0	5	3.2	1.0	2.4	4.9	0	5	6	4	1.9	11	0	5

APPENDIX B, TABLE 4

Sediment chemistry descriptive statistics un-adjusted to particle size for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Reference Areas																	
	RF-4												Pooled Reference Areas and Years					
	2008[3]						2012											
	Avr	S.D.	Min	Max	<MDL	N	Avr	S.D.	Min	Max	<MDL	N	Avr	S.D.	Min	Max	<MDL	N
Metals																		
Aluminum	8380	517	7700	9100	0	5	10140	680	9300	11200	0	5	7377	6890	620	23800	0	50
Barium	64	2	62	68	0	5	74	4	70	79	0	5	74	68	8	270	0	50
Boron	1.0	-	<1	<1	5	5	18.2	15.0	3.0	43.0	0	5	13.2	19.0	<1	93.0	17	50
Cadmium	0.3	0	0.3	0.3	0	5	0.3	0.05	0.2	0.3	0	5	0.2	0.1	<0.1	0.4	11	50
Chromium	13.6	0.5	13.0	14.0	0	5	16.8	0.8	16.0	18.0	0	5	11.5	10.4	0.8	34.0	0	50
Copper	6.4	0.6	5.8	7.3	0	5	6.3	1.1	5.4	8.2	0	5	6.2	7.3	<0.5	22.0	6	50
Iron	39880	4738	37300	48300	0	5	50140	8808	41400	64300	0	5	22324	20406	660	68900	0	50
Lead	5.6	0.3	5.2	6.0	0	5	9.0	0.3	8.6	9.4	0	5	5.0	2.7	0.9	9.4	0	50
Manganese	1760	114	1600	1900	0	5	1846	343	1490	2340	0	5	767	708	31	2340	0	50
Molybdenum	4.3	0.5	3.9	5.1	0	5	7.3	0.8	6.6	8.4	0	5	1.8	2.3	<0.1	8.4	5	50
Nickel	8.3	0.5	7.6	9.0	0	5	8.4	1.0	7.6	10.0	0	5	7.4	7.0	0.4	22.0	0	50
Selenium	0.6	0.04	0.6	0.7	0	5	0.6	0.04	0.5	0.6	0	5	0.4	0.3	<0.1	1	8	50
Silver	0.1	-	<0.1	<0.1	5	5	0.1	-	<0.1	<0.1	5	5	0.1	0	<0.1	<0.1	50	50
Thallium	0.2	-	<0.2	<0.2	5	5	0.2	-	<0.2	<0.2	5	5	0.2	0.01	<0.2	0.3	46	50
Tin	0.60	0.07	0.50	0.70	0	5	0.64	0.19	0.30	0.80	0	5	0.39	0.31	<0.1	1.10	11	50
Titanium	616	50	540	680	0	5	594	77	470	660	0	5	439	418	40	1400	0	50
Uranium	2.5	0.1	2.4	2.7	0	5	4.9	0.2	4.7	5.2	0	5	2.6	3.0	<0.1	8.7	4	50
Zinc	49	7	41	58	0	5	47	7	40	54	0	5	27	18	4	58	0	50
Physical Properties																		
Loss on ignition (%)	-	-	-	-	-	-	-	-	-	-	-	-	11	6	1.9	24.0	0	40
Moisture (%)	84	1	83	86	0	5	84	3	80	89	0	5	80	10	50	94	0	50
Radionuclides																		
Lead-210 (Bq/g)	0.25	0.02	0.23	0.27	0	5	0.15	0.02	0.12	0.17	0	5	0.20	0.10	0.04	0.55	0	50
Polonium-210 (Bq/g)	0.31	0.02	0.28	0.34	0	5	0.29	0.02	0.26	0.32	0	5	0.23	0.11	0.04	0.52	0	50
Radium-226 (Bq/g)	0.04	0.01	0.03	0.05	0	5	0.03	0.01	<0.01	0.04	1	5	0.04	0.03	<0.01	0.14	11	50
Thorium-230 (Bq/g)	0.05	0.01	0.04	0.06	0	5	0.03	0.02	<0.02	0.05	1	5	0.03	0.02	<0.02	0.10	27	50
Trace Elements																		
Antimony	0.2	-	<0.2	<0.2	5	5	0.2	-	<0.2	<0.2	5	5	0.2	0.06	<0.2	0.6	40	50
Arsenic	8.1	1.2	7.1	10.0	0	5	12.3	4.0	9.0	19.0	0	5	4.1	3.9	0.5	19.0	0	50
Beryllium	0.2	0.1	0.2	0.3	0	5	0.7	0.1	0.6	0.9	0	5	0.3	0.3	<0.1	0.9	17	50
Cobalt	5.1	0.5	4.4	5.7	0	5	4.9	0.8	4.3	5.9	0	5	2.8	2.3	<0.2	6.4	4	50
Strontium	11.0	0	11.0	11.0	0	5	20.6	1.3	19.0	22.0	0	5	35.4	25.7	11.0	85.0	0	50
Vanadium	22.4	2.3	20.0	26.0	0	5	25.2	1.5	23.0	27.0	0	5	16.0	12.2	1.9	39.0	0	50

S.D.: standard deviation; Min: minimum; Max: maximum; <MDL: number of samples with reading less than the method detection limit (MDL); N: sample size.

For values measured at less than the method detection limit (MDL), all average and standard deviation computations were performed with values set at the MDL.

[1] All concentrations and activity levels are presented in μg/g on a dry weight basis, except when specified otherwise.

[2] No data were available for 2011 in Bobby's Lake, thus data from 2009 were used as a substitute.

[3] No data were available for 2011 in RF-4, thus data from 2008 were used as a substitute.

[4] Standard deviations of 0 signify no variation, not a very small value.

[5] When all values were less than the method detection limit (MDL), standard deviations were not computed.

APPENDIX B, TABLE 5

Detailed benthic invertebrate taxonomy and densities for the EARMP technical program, 2011.

Taxonomy	Far-Field Exposure Areas																												Reference Areas						
	Cochrane River							**Crackingstone Inlet**							**Fond du Lac River**							**Waterbury Lake**							**Bobby's Lake[2]**						
	1[1]	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**
Phylum: Annelida																																			
Class: Hirudinea																																			
Order: Arhynchobdellida																																			
Family: Erpobdellidae[4]																																			
Unidentified Erpobdellidae																																			
Erpobdella punctata	4					**1**	**0.01**				8		**2**	**0.02**																					
Nephelopsis obscura																																			
Order: Rhynchobdellida																																			
Family: Glossiphoniidae																																			
Glossiphonia complanata																																			
Helobdella stagnalis	38					**8**	**0.1**																												
Family: Piscicolidae																																			
Piscicola milneri										31			**6**	**0.1**																					
Class: Oligochaeta																																			
Subclass: Lumbriculata																																			
Order: Lumbriculida																																			
Family: Lumbriculidae										31			**6**	**0.1**												8	**2**	**0.04**							
Subclass: Oligochaeta																																			
Order: Enchytraeida																																			
Family: Enchytraeidae																																			
Order: Haplotaxida																																			
Family: Naididae																																			
Subfamily: Naidinae	231					**46**	**0.5**																		31	31	**12**	**0.4**							
Family: Tubificidae																																			
Subfamily: Tubificinae	19	92	77	38	92	**64**	**0.8**	69	38	31	31	123	**58**	**0.6**		15			4	**4**	**0.3**	19	19	35	58	108	**48**	**1.4**					38	**8**	**0.7**
Phylum: Arthropoda																																			
Subphylum: Crustacea																																			
Class: Branchiopoda																																			
Order: Diplostraca																																			
Suborder: Cladocera																																			
Family: Chydoridae[4]																																			
Unidentified Chydoridae																								31			**6**	**0.2**							
Eurycercus	654	338	323	92	231	**328**	**3.9**															792	635	1446	1523	1762	**1232**	**35.9**							
Family: Macrothricidae	538	692	400	192	492	**463**	**5.5**										4	12		**3**	**0.2**	62	154	215	554	154	**228**	**6.6**	13	51	13			**15**	**1.3**
Class: Malacostraca																																			
Order: Amphipoda																																			
Family: Gammaridae																																			
Gammarus lacustris																																			
Family: Hyalellidae																																			
Hyalella azteca								646	62	862	215	62	**369**	**4.0**								50	12	358	873	831	**425**	**12.4**							
Family: Pontoporeiidae																																			
Pontoporeia hoyi	615	323	354	108	615	**403**	**4.8**	3600	2977	4331	3631	3231	**3554**	**38.2**	1062	727	1085	1004	869	**949**	**66.1**														
Order: Mysida																																			
Family: Mysidae																																			
Mysis relicta																	4			**1**	**0.1**														
Class: Maxillopoda																																			
Subclass: Copepoda																																			
Order: Harpacticoida																																			
Class: Ostracoda	77		46		62	**37**	**0.4**								200	123	96	108	73	**120**	**8.4**	77	31	62	154	62	**77**	**2.2**							

APPENDIX B, TABLE 5

Detailed benthic invertebrate taxonomy and densities for the EARMP technical program, 2011.

Taxonomy	Far-Field Exposure Areas																												Reference Areas						
	Cochrane River							**Crackingstone Inlet**							**Fond du Lac River**							**Waterbury Lake**							**Bobby's Lake[2]**						
	1[1]	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**
Subphylum: Hexapoda																																			
Class: Insecta																																			
Order: Diptera																																			
Family: Ceratopogonidae																																			
Subfamily: Ceratopogoninae[4]																																			
Unidentified Ceratopogoninae																																			
Bezzia																						15	4	8	88	15	**26**	**0.8**							
Palpomyia																																			
Probezzia		38			31	**14**	**0.2**	1077	1808	1500	585	615	**1117**	**12.0**	4	8	12	4	15	**8**	**0.6**	8				4	**2**	**0.1**	51	51				**21**	**1.8**
Family: Chaoboridae																																			
Chaoborus																													6					**1**	**0.1**
Family: Chironomidae																																			
Unidentified Chironomidae pupae [5]																																			
Subfamily: Chironominae																																			
Tribe: Chironomini																																			
Unidentified Chironomini[5]																																			
Chironomus	19	31	15			**13**	**0.2**									4	19	4		**5**	**0.4**				4		**1**	**0.02**	6	6				**3**	**0.2**
Cladopelma	77	192		54	15	**68**	**0.8**		38				**8**	**0.1**			8			**2**	**0.1**														
Cryptochironomus	19	177	46	46	31	**64**	**0.8**					31	**6**	**0.1**	31	8	4	4	4	**10**	**0.7**	8			19	35	**12**	**0.4**	26	6	51	13	19	**23**	**2.0**
Cryptotendipes																																			
Demicryptochironomus																																			
Dicrotendipes			31		46	**15**	**0.2**			38			**8**	**0.1**															6		32			**8**	**0.7**
Endochironomus									38				**8**	**0.1**		4				**1**	**0.1**								6		32			**8**	**0.7**
Glyptotendipes																																			
Lauterborniella																													6					**1**	**0.1**
Microtendipes																																			
Nilothauma																																			
Pagastiella		15	46			**12**	**0.1**									8	85		8	**20**	**1.4**			31			**6**	**0.2**			13		6	**4**	**0.3**
Parachironomus																																			
Paracladopelma																																			
Polypedilum	96	54	46	38	46	**56**	**0.7**	115	192	69	31	62	**94**	**1.0**		4				**1**	**0.1**														
Sergentia	115	54				**34**	**0.4**																		31	31	**12**	**0.4**							
Stictochironomus																						258		250	81	115	**141**	**4.1**				6	6	**3**	**0.2**
Tribelos																														6				**1**	**0.1**
Xenochironomus																																			
Tribe: Pseudochironomini																																			
Pseudochironomus								38					**8**	**0.1**								12			12	8	**6**	**0.2**							
Tribe: Tanytarsini																																			
Unidentififed Tanytarsini[5]																4				**1**	**0.1**														
Cladotanytarsus		31	62		31	**25**	**0.3**															54		69	331	223	**135**	**3.9**		282				**56**	**4.9**
Corynocera	1154	254		423	800	**526**	**6.3**															77					**15**	**0.4**							
Micropsectra																						15		62			**15**	**0.4**							
Neostempellina																																			
Paratanytarsus									38			62	**20**	**0.2**																					
Stempellinella																	4			**1**	**0.1**								77	385				**92**	**8.1**
Tanytarsus	846	662	492	362	1446	**762**	**9.1**	231	231	223	92	431	**242**	**2.6**		4	4			**2**	**0.1**	77			62		**28**	**0.8**	109	58	26		19	**42**	**3.7**
Subfamily: Diamesinae																																			
Tribe: Diamesini																																			
Potthastia longimana			31			**6**	**0.1**		31	38	31	31	**26**	**0.3**		4			4	**2**	**0.1**	12					**2**	**0.1**	6					**1**	**0.1**
Protanypus																8	4			**2**	**0.2**	4					**1**	**0.02**							

APPENDIX B, TABLE 5

Detailed benthic invertebrate taxonomy and densities for the EARMP technical program, 2011.

Taxonomy	Far-Field Exposure Areas																												Reference Areas						
	Cochrane River							Crackingstone Inlet							Fond du Lac River							Waterbury Lake							Bobby's Lake[2]						
	1[1]	2	3	4	5	Avr.	%	1	2	3	4	5	Avr.	%	1	2	3	4	5	Avr.	%	1	2	3	4	5	Avr.	%	1	2	3	4	5	Avr.	%
Subfamily: Orthocladiinae																																			
Unidentified Orthocladiinae[5]																																			
Cricotopus/Orthocladius																																			
Epoicocladius																													13					**3**	**0.2**
Heterotanytarsus																8	4	4	19	**7**	**0.5**					31	**6**	**0.2**	6	26				**6**	**0.6**
Heterotrissocladius								38					**8**	**0.1**																					
Nanocladius																																			
Parakiefferiella																8	12		8	**5**	**0.4**								6	154				**32**	**2.8**
Psectrocladius																									62		**12**	**0.4**		51				**10**	**0.9**
Stilocladius																																			
Zalutschia	3288	4038	2600	3392	3108	**3285**	**39.1**															27		4			**6**	**0.2**	71	45	263	288	282	**190**	**16.6**
Subfamily: Prodiamesinae																																			
Monodiamesa																						19		4			**5**	**0.1**							
Subfamily: Tanypodinae																																			
Unidentified Tanypodinae[5]																																			
Tribe: Coelotanypodini																																			
Clinotanypus																													6					**1**	**0.1**
Tribe: Pentaneurini																																			
Ablabesmyia										38			**8**	**0.1**																					
Guttipelopia																																			
Larsia								308	31	31	123	31	**105**	**1.1**	15	19	15	19	31	**20**	**1.4**								6	26			6	**8**	**0.7**
Thienemannimyia Group											31		**6**	**0.1**																					
Tribe: Procladiini																																			
Procladius	269	154	385	269	231	**262**	**3.1**		69		62	92	**45**	**0.5**	19	142	158	200	246	**153**	**10.7**	315		335	423	335	**282**	**8.2**	314	526	115	147	96	**240**	**21.0**
Tribe: Tanypodini																																			
Tanypus																																			
Family: Empididae																																			
Chelifera																																			
Order: Ephemeroptera																																			
Family: Baetidae																																			
Callibaetis																																			
Family: Caenidae																																			
Caenis									31	100			**26**	**0.3**										4			**1**	**0.02**							
Family: Ephemerellidae																																			
Eurylophella																																			
Family: Ephemeridae																																			
Hexagenia limbata																			4	**1**	**0.1**								71	32	19	26	19	**33**	**2.9**
Family: Leptophlebiidae																																			
Leptophlebia																																			
Order: Megaloptera (fishflies)																																			
Family: Sialidae																																			
Sialis																													13	6				**4**	**0.3**
Order: Odonata																																			
Family: Coenagrionidae																																			
Enallagma								92				4	**19**	**0.2**																					
Family: Corduliidae																																			
Somatochlora																																			
Order: Trichoptera																																			
Family: Hydropsychidae																																			
Hydropsyche																																			
Family: Hydroptilidae																																			
Agraylea																																			
Oxyethira	308	38	108		15	**94**	**1.1**																												
Family: Lepidostomatidae																																			
Lepidostoma																																			

APPENDIX B, TABLE 5

Detailed benthic invertebrate taxonomy and densities for the EARMP technical program, 2011.

Taxonomy	Far-Field Exposure Areas																														Reference Areas					
	Cochrane River							Crackingstone Inlet							Fond du Lac River							Waterbury Lake							Bobby's Lake[2]						
	1[1]	2	3	4	5	Avr.	%	1	2	3	4	5	Avr.	%	1	2	3	4	5	Avr.	%	1	2	3	4	5	Avr.	%	1	2	3	4	5	Avr.	%
Family: Leptoceridae																																			
Mystacides											31	31	**12**	**0.1**																					
Oecetis								31					**6**	**0.1**																					
Triaenodes																																			
Family: Molannidae[4]																																			
Unidentified Molannidae																																			
Molanna		77	15			**18**	**0.2**																			8	**2**	**0.04**							
Family: Phryganeidae																																			
Unidentified Phryganeidae[5]																						4					**1**	**0.02**							
Agrypnia	8	4	8	4		**5**	**0.1**																												
Phryganea																																			
Family: Polycentropodidae																																			
Polycentropus																																			
Phylum: Mollusca																																			
Class: Bivalvia																																			
Order: Veneroida																																			
Family: Pisidiidae[4]																																			
Unidentified Pisidiidae	1385	1254	523	1415	2046	**1325**	**15.8**	4254	2277	3785	2800	1200	**2863**	**30.8**	262	231	38	19	31	**116**	**8.1**	504	596	319	550	738	**542**	**15.8**	288	462	103	38	90	**196**	**17.2**
Pisidium	4	138	169	342	392	**209**	**2.5**	62		158	185	92	**99**	**1.1**								42	135	31	15	31	**51**	**1.5**	154	199	45		51	**90**	**7.8**
Sphaerium	42				15	**12**	**0.1**		31				**6**	**0.1**										4	4		**2**	**0.04**	6					**1**	**0.1**
Class: Gastropoda																																			
Subclass: Prosobranchia																																			
Order: Basommatophora																																			
Family: Lymnaeidae[4]																																			
Unidentified Lymnaeidae	173					**35**	**0.4**	38		31			**14**	**0.1**																					
Lymnaea										8			**2**	**0.02**																					
Family: Planorbidae																																			
Gyraulus	38					**8**	**0.1**	38		38	31		**22**	**0.2**											12	4	**3**	**0.1**							
Order: Heterostropha																																			
Family: Valvatidae																																			
Valvata sincera	385	192	92	169	123	**192**	**2.3**	335	315	338	492	615	**419**	**4.5**		12				**2**	**0.2**	100	65	27	77	77	**69**	**2.0**	13	45				**12**	**1.0**
Subclass: Pulmonata																																			
Family: Physidae																																			
Physa								31					**6**	**0.1**																					
Phylum: Nematoda	19		31		31	**16**	**0.2**	38	385	77		31	**106**	**1.1**			8			**2**	**0.1**	4		35	62	12	**22**	**0.6**	64	0	13	51	26	**31**	**2.7**
Phylum: Platyhelminthes																																			
Subphylum: Rhabditophora																																			
Family: Typhloplanidae																																			
Mesostoma																																			
Total	10423	8850	5900	6946	9900	**8404**	**100**	11042	8592	11758	8377	6742	**9302**	**100**	1592	1338	1562	1377	1315	**1437**	**100**	2554	1650	3327	5023	4619	**3435**	**100**	1346	2417	724.4	570.5	660.3	**1144**	**100**

APPENDIX B, TABLE 5

Detailed benthic invertebrate taxonomy and densities for the EARMP technical program, 2011.

Taxonomy	Reference Areas																											
	Cree Lake							Ellis Bay							Pasfield Lake							RF-4[3]						
	1	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**
Phylum: Annelida																												
Class: Hirudinea																												
Order: Arhynchobdellida																												
Family: Erpobdellidae[4]																												
Unidentified Erpobdellidae																												
Erpobdella punctata			4			**1**	**0.02**	8		8	23		**8**	**0.1**														
Nephelopsis obscura																												
Order: Rhynchobdellida																												
Family: Glossiphoniidae																												
Glossiphonia complanata																												
Helobdella stagnalis		15			15	**6**	**0.2**		31		31		**12**	**0.1**					15	**3**	**0.01**							
Family: Piscicolidae																												
Piscicola milneri																												
Class: Oligochaeta																												
Subclass: Lumbriculata																												
Order: Lumbriculida																												
Family: Lumbriculidae								215	154	200	62	96	**145**	**1.4**	31	215	31		31	**62**	**0.2**							
Subclass: Oligochaeta																												
Order: Enchytraeida																												
Family: Enchytraeidae																												
Order: Haplotaxida																												
Family: Naididae																												
Subfamily: Naidinae									369	615	492	96	**315**	**3.0**														
Family: Tubificidae																												
Subfamily: Tubificinae	142	92	200	212	77	**145**	**4.2**	62	400	62	15	19	**112**	**1.1**	154	62	15	31	173	**87**	**0.3**	107	9	4	58	116	**59**	**4.5**
Phylum: Arthropoda																												
Subphylum: Crustacea																												
Class: Branchiopoda																												
Order: Diplostraca																												
Suborder: Cladocera																												
Family: Chydoridae[4]																												
Unidentified Chydoridae																												
Eurycercus	154	338	77	127	92	**158**	**4.5**				77	19	**19**	**0.2**	31	15	15		31	**18**	**0.1**							
Family: Macrothricidae	308	585	400	338	631	**452**	**13.0**																					
Class: Malacostraca																												
Order: Amphipoda																												
Family: Gammaridae																												
Gammarus lacustris								142	492	215	185	146	**236**	**2.2**			15	15	69	**20**	**0.1**							
Family: Hyalellidae																												
Hyalella azteca								4646	6154	4446	3292	3173	**4342**	**41.0**														
Family: Pontoporeiidae																												
Pontoporeia hoyi																						467	102	267	827	604	**453**	**34.6**
Order: Mysida																												
Family: Mysidae																												
Mysis relicta																												
Class: Maxillopoda																												
Subclass: Copepoda																												
Order: Harpacticoida																												
Class: Ostracoda	96	108	62	138	292	**139**	**4.0**									246	185		77	**102**	**0.4**	36			36		**14**	**1.1**

APPENDIX B, TABLE 5

Detailed benthic invertebrate taxonomy and densities for the EARMP technical program, 2011.

Taxonomy	**Reference Areas**																											
	Cree Lake							**Ellis Bay**							**Pasfield Lake**							**RF-4[3]**						
	1	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**
Subphylum: Hexapoda																												
Class: Insecta																												
Order: Diptera																												
Family: Ceratopogonidae																												
Subfamily: Ceratopogoninae[4]																												
Unidentified Ceratopogoninae																												
Bezzia	35	31	31	23	92	**42**	**1.2**		62		15		**15**	**0.1**	31					**6**	**0.02**							
Palpomyia																						18			9	4	**6**	**0.5**
Probezzia	96		169	65	62	**78**	**2.3**	92					**18**	**0.2**								18			22	4	**9**	**0.7**
Family: Chaoboridae																												
Chaoborus																												
Family: Chironomidae																												
Unidentified Chironomidae pupae [5]																												
Subfamily: Chironominae																												
Tribe: Chironomini																												
Unidentified Chironomini[5]																												
Chironomus	58	115	8	23	92	**59**	**1.7**	523	1231	477	369	712	**662**	**6.2**			15	46		**12**	**0.05**		9	13	22	9	**11**	**0.8**
Cladopelma	81	31			77	**38**	**1.1**									15	62			**15**	**0.1**	89	4		18	18	**26**	**2.0**
Cryptochironomus	69	46		46	62	**45**	**1.3**								215	154	15	62	31	**95**	**0.4**	44	27	36	40	36	**36**	**2.8**
Cryptotendipes																												
Demicryptochironomus	8		46	12		**13**	**0.4**																					
Dicrotendipes	12		31		15	**12**	**0.3**	831	1569	954	1138	538	**1006**	**9.5**			92	15		**22**	**0.1**					4	**1**	**0.1**
Endochironomus			15	4		**4**	**0.1**																					
Glyptotendipes																												
Lauterborniella				4		**1**	**0.02**																					
Microtendipes				19		**4**	**0.1**	31					**6**	**0.1**														
Nilothauma				46		**9**	**0.3**																					
Pagastiella	154	31	92	46		**65**	**1.9**																					
Parachironomus										62			**12**	**0.1**														
Paracladopelma																												
Polypedilum	119	77	200	35	262	**138**	**4.0**	62	31	62	31	58	**48**	**0.5**	31	15				**9**	**0.04**		4				**1**	**0.1**
Sergentia			31			**6**	**0.2**				15	58	**15**	**0.1**	31		15		31	**15**	**0.1**							
Stictochironomus				8	15	**5**	**0.1**	185	462	169	31	192	**208**	**2.0**	185	15	46	185	200	**126**	**0.5**		4				**1**	**0.1**
Tribelos				23		**5**	**0.1**												15	**3**	**0.01**							
Xenochironomus																												
Tribe: Pseudochironomini																												
Pseudochironomus	4					**1**	**0.02**								31					**6**	**0.02**							
Tribe: Tanytarsini																												
Unidentififed Tanytarsini[5]																												
Cladotanytarsus	38		15		62	**23**	**0.7**			62			**12**	**0.1**														
Corynocera	38	31	31	4		**21**	**0.6**								25015	26323	13554	37123	8892	**22182**	**87.2**							
Micropsectra																							4	4	53	18	**16**	**1.2**
Neostempellina																												
Paratanytarsus								338	492	308	169	462	**354**	**3.3**														
Stempellinella	19			15		**7**	**0.2**																					
Tanytarsus	565	569	400	677	708	**584**	**16.8**	185	185	262	185	77	**178**	**1.7**		123			31	**31**	**0.1**							
Subfamily: Diamesinae																												
Tribe: Diamesini																												
Potthastia longimana																												
Protanypus																						22	4	22	44	44	**28**	**2.1**

APPENDIX B, TABLE 5

Detailed benthic invertebrate taxonomy and densities for the EARMP technical program, 2011.

Taxonomy	Reference Areas																											
	Cree Lake							**Ellis Bay**							**Pasfield Lake**							**RF-4**[3]						
	1	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**
Subfamily: Orthocladiinae																												
Unidentified Orthocladiinae[5]																												
Cricotopus/Orthocladius															123	138	754	246	77	**268**	**1.1**							
Epoicocladius				4		**1**	**0.02**																					
Heterotanytarsus	19	31		15		**13**	**0.4**																					
Heterotrissocladius																												
Nanocladius																												
Parakiefferiella																												
Psectrocladius												19	**4**	**0.04**					108	**22**	**0.1**							
Stilocladius																												
Zalutschia																												
Subfamily: Prodiamesinae																												
Monodiamesa																												
Subfamily: Tanypodinae																												
Unidentified Tanypodinae[5]	4					**1**	**0.02**																		9		**2**	**0.1**
Tribe: Coelotanypodini																												
Clinotanypus																												
Tribe: Pentaneurini																												
Ablabesmyia	19					**4**	**0.1**					19	**4**	**0.04**			15		92	**22**	**0.1**							
Guttipelopia																												
Larsia				8		**2**	**0.04**																					
Thienemannimyia Group								1723	1815	1446	1308	1481	**1555**	**14.7**											9	18	**5**	**0.4**
Tribe: Procladiini																												
Procladius	623	665	662	542	677	**634**	**18.3**	31	92	131		38	**58**	**0.6**	154	200	123	154	215	**169**	**0.7**	93	4	31	191	160	**96**	**7.3**
Tribe: Tanypodini																												
Tanypus																												
Family: Empididae																												
Chelifera																												
Order: Ephemeroptera																												
Family: Baetidae																												
Callibaetis								62	31	15	92	19	**44**	**0.4**														
Family: Caenidae																												
Caenis								62		15		19	**19**	**0.2**														
Family: Ephemerellidae																												
Eurylophella								31					**6**	**0.1**														
Family: Ephemeridae																												
Hexagenia limbata	35	65	4	38	8	**30**	**0.9**																					
Family: Leptophlebiidae																												
Leptophlebia																												
Order: Megaloptera (fishflies)																												
Family: Sialidae																												
Sialis			85	23		**22**	**0.6**																					
Order: Odonata																												
Family: Coenagrionidae																												
Enallagma																												
Family: Corduliidae																												
Somatochlora		4				**1**	**0.02**																					
Order: Trichoptera																												
Family: Hydropsychidae																												
Hydropsyche																												
Family: Hydroptilidae																												
Agraylea																												
Oxyethira																												
Family: Lepidostomatidae																												
Lepidostoma																												

APPENDIX B, TABLE 5

Detailed benthic invertebrate taxonomy and densities for the EARMP technical program, 2011.

Taxonomy	**Reference Areas**																											
	Cree Lake							**Ellis Bay**							**Pasfield Lake**							**RF-4[3]**						
	1	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**
Family: Leptoceridae																												
Mystacides															62					**12**	**0.05**							
Oecetis																												
Triaenodes																15				**3**	**0.01**							
Family: Molannidae[4]																												
Unidentified Molannidae																												
Molanna								31					**6**	**0.1**				4	19	**5**	**0.02**							
Family: Phryganeidae																												
Unidentified Phryganeidae[5]																												
Agrypnia								4	4				**2**	**0.01**		15	31	54	4	**21**	**0.1**							
Phryganea		4				**1**	**0.02**		4	15	4		**5**	**0.04**														
Family: Polycentropodidae																												
Polycentropus																												
Phylum: Mollusca																												
Class: Bivalvia																												
Order: Veneroida																												
Family: Pisidiidae[4]																												
Unidentified Pisidiidae	612	677	415	531	662	**579**	**16.7**	123	185	123	277	731	**288**	**2.7**	1354	1123	631	1200	446	**951**	**3.7**	498	80	218	1031	760	**517**	**39.5**
Pisidium	62	123	15	19	108	**65**	**1.9**	31	31	46			**22**	**0.2**	277	277	62	650	62	**265**	**1.0**	71			58	18	**29**	**2.2**
Sphaerium				4		**1**	**0.0**			31	15		**9**	**0.1**														
Class: Gastropoda																												
Subclass: Prosobranchia																												
Order: Basommatophora																												
Family: Lymnaeidae[4]																												
Unidentified Lymnaeidae																												
Lymnaea																												
Family: Planorbidae																												
Gyraulus								62	246	108	231	135	**156**	**1.5**														
Order: Heterostropha																												
Family: Valvatidae																												
Valvata sincera	23		15	46	15	**20**	**0.6**	462	246	738	677	731	**571**	**5.4**	31	15		15	31	**18**	**0.1**							
Subclass: Pulmonata																												
Family: Physidae																												
Physa																												
Phylum: Nematoda	92	31	31	8	46	**42**	**1.2**	123	277	154	77		**126**	**1.2**	31	615	292	785	2631	**871**	**3.4**							
Phylum: Platyhelminthes																												
Subphylum: Rhabditophora																												
Family: Typhloplanidae																												
Mesostoma																												
Total	3485	3669	3038	3104	4069	**3473**	**100**	10062	14562	10723	8812	8838	**10599**	**100**	27785	29585	15969	40585	13281	**25441**	**100**	1462	253.3	595.6	2427	1813	**1310**	**100**

Avr. = average; % = percent composition.

[1] Numbers are per m^2.

[2] In Bobby's Lake, no data were available for 2011, thus data from 2009 were used as a substitute.

[3] In RF-4, no data were available for 2011, thus data from 2008 were used as a substitute.

[4] Taxa whose taxonomic resolution differed across areas or years were grouped together under the lowest common taxonomic level.

[5] These taxa were included in total benthic invertebrate density and biomass analyses but not in taxon richness analyses if conspecifics identified with higher taxonomic resolution were present. This was to avoid artificially inflating taxon diversity.

APPENDIX B, TABLE 6

Detailed benthic invertebrate taxonomy and densities for the EARMP technical program, 2012.

Taxonomy	**Far-Field Exposure Areas**																												**Reference Areas**						
	Cochrane River							**Crackingstone Inlet**							**Fond du Lac River**							**Waterbury Lake**							**Bobby's Lake**						
	1[1]	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**
Phylum: Annelida																																			
Class: Hirudinea																																			
Order: Arhynchobdellida																																			
Family: Erpobdellidae[2]																																			
Unidentified Erpobdellidae																																			
Erpobdella punctata												4	**1**	**0.01**																					
Nephelopsis obscura																															2			**0**	**0.01**
Order: Rhynchobdellida																																			
Family: Glossiphoniidae																																			
Glossiphonia complanata																																			
Helobdella stagnalis	46				15	**12**	**0.1**																												
Family: Piscicolidae																																			
Piscicola milneri																																			
Class: Oligochaeta																																			
Subclass: Lumbriculata																																			
Order: Lumbriculida																																			
Family: Lumbriculidae										19			**4**	**0.1**												4	**1**	**0.04**							
Subclass: Oligochaeta																																			
Order: Enchytraeida																																			
Family: Enchytraeidae																																			
Order: Haplotaxida																																			
Family: Naididae																																			
Subfamily: Naidinae	723	1262	1785	785	385	**988**	**9.8**		38				**8**	**0.1**															46				77	**25**	**0.4**
Family: Tubificidae																																			
Subfamily: Tubificinae	185	231	246	169	231	**212**	**2.1**	415	208	77	54	177	**186**	**2.7**	12	46	4		23	**17**	**1.5**	8	4	35		35	**16**	**0.9**	19	77		2	38	**27**	**0.5**
Phylum: Arthropoda																																			
Subphylum: Crustacea																																			
Class: Branchiopoda																																			
Order: Diplostraca																																			
Suborder: Cladocera																																			
Family: Chydoridae[2]																																			
Unidentified Chydoridae																						58	31	31		15	**27**	**1.6**		154	38			**38**	**0.7**
Eurycercus	15	15	46		15	**18**	**0.2**															615	300	542	281	292	**406**	**23.5**	2					**0**	**0.01**
Family: Macrothricidae	231	462	77	231	385	**277**	**2.8**								4	31		4	4	**8**	**0.8**	19	46	15	15	31	**25**	**1.5**	92	77	115	38	38	**72**	**1.3**
Class: Malacostraca																																			
Order: Amphipoda																																			
Family: Gammaridae																																			
Gammarus lacustris																																			
Family: Hyalellidae																																			
Hyalella azteca	31					**6**	**0.1**	31	215	346	138		**146**	**2.1**	692	565	954	750	646	**722**	**64.9**	4		19	342	227	**118**	**6.8**		38	660	4		**140**	**2.4**
Family: Pontoporeiidae																																			
Pontoporeia hoyi	46	92	123	31	246	**108**	**1.1**	2200	1023	1673	1908	2154	**1792**	**26.2**																					
Order: Mysida																																			
Family: Mysidae																																			
Mysis relicta	15					**3**	**0.03**			19			**4**	**0.1**																					
Class: Maxillopoda																																			
Subclass: Copepoda																																			
Order: Harpacticoida																																			
Class: Ostracoda	77	77	154	154	77	**108**	**1.1**			154		38	**38**	**0.6**	8	73	69	42	42	**47**	**4.2**		19	92	46	62	**44**	**2.5**	100	308	192		269	**174**	**3.0**

APPENDIX B, TABLE 6

Detailed benthic invertebrate taxonomy and densities for the EARMP technical program, 2012.

Taxonomy	**Far-Field Exposure Areas**																												**Reference Areas**						
	Cochrane River							**Crackingstone Inlet**							**Fond du Lac River**							**Waterbury Lake**							**Bobby's Lake**						
	1[1]	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**
Subphylum: Hexapoda																																			
Class: Insecta																																			
Order: Diptera																																			
Family: Ceratopogonidae																																			
Subfamily: Ceratopogoninae[2]																																			
Unidentified Ceratopogoninae																																			
Bezzia																									15	8	**5**	**0.3**							
Palpomyia																																			
Probezzia			31			**6**	**0.1**	292	254	192	77	446	**252**	**3.7**		8	27	27	23	**17**	**1.5**					31	**6**	**0.4**	38		2	87		**25**	**0.4**
Family: Chaoboridae																																			
Chaoborus	15				15	**6**	**0.1**																						54	1108		2		**233**	**4.0**
Family: Chironomidae																																			
Unidentified Chironomidae pupae [3]																																			
Subfamily: Chironominae																																			
Tribe: Chironomini																																			
Unidentified Chironomini[3]																																			
Chironomus																4				**1**	**0.1**								2	1404	4		1429	**568**	**9.8**
Cladopelma			77		77	**31**	**0.3**									4		4	4	**2**	**0.2**			4	15		**4**	**0.2**		77				**15**	**0.3**
Cryptochironomus		31	31	31	31	**25**	**0.2**				38		**8**	**0.1**	4	8	8		4	**5**	**0.4**	54	12	35	27	12	**28**	**1.6**	163	269	160	71		**133**	**2.3**
Cryptotendipes																4		8		**2**	**0.2**								190			231	1231	**330**	**5.7**
Demicryptochironomus												15	**3**	**0.05**		4				**1**	**0.1**											2		**0**	**0.01**
Dicrotendipes			92			**18**	**0.2**		31	385	31	77	**105**	**1.5**															37			260	115	**82**	**1.4**
Endochironomus																														79		2		**16**	**0.3**
Glyptotendipes																																			
Lauterborniella																																			
Microtendipes											15		**3**	**0.05**																					
Nilothauma																																115		**23**	**0.4**
Pagastiella																4		19	4	**5**	**0.5**				15	15	**6**	**0.4**	215		269	38	38	**112**	**1.9**
Parachironomus																																			
Paracladopelma																																			
Polypedilum	123	15	77	15	15	**49**	**0.5**	31	15	58	15	92	**42**	**0.6**	4	4				**2**	**0.1**								248			44		**58**	**1.0**
Sergentia	15	46		31		**18**	**0.2**																												
Stictochironomus																						412	369	162	85	54	**216**	**12.5**		38	2	763	38	**168**	**2.9**
Tribelos																														42				**8**	**0.1**
Xenochironomus			77			**15**	**0.2**																												
Tribe: Pseudochironomini																																			
Pseudochironomus								15				54	**14**	**0.2**								4	8	8			**4**	**0.2**				2		**0**	**0.01**
Tribe: Tanytarsini																																			
Unidentifed Tanytarsini[3]																																			
Cladotanytarsus		77	231			**62**	**0.6**															77	15	35	154	92	**75**	**4.3**	123		385	313	192	**203**	**3.5**
Corynocera	1046	862	738	938	538	**825**	**8.2**															19	15	15	35	4	**18**	**1.0**							
Micropsectra																																			
Neostempellina																													31					**6**	**0.1**
Paratanytarsus									77				**15**	**0.2**																					
Stempellinella					77	**15**	**0.2**																												
Tanytarsus	1015	1523	1908	877	554	**1175**	**11.7**	477	1200	423	131	377	**522**	**7.6**	12	38	4	23	38	**23**	**2.1**	19		15	4	15	**11**	**0.6**	1154	885	1000	425	1462	**985**	**17.1**
Subfamily: Diamesinae																																			
Tribe: Diamesini																																			
Potthastia longimana			15	15	15	**9**	**0.1**					31	**6**	**0.1**												4	**1**	**0.04**							
Protanypus																								4			**1**	**0.04**							

APPENDIX B, TABLE 6

Detailed benthic invertebrate taxonomy and densities for the EARMP technical program, 2012.

Taxonomy	Far-Field Exposure Areas																												Reference Areas						
	Cochrane River							**Crackingstone Inlet**							**Fond du Lac River**							**Waterbury Lake**							**Bobby's Lake**						
	1[1]	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**
Subfamily: Orthocladiinae																																			
Unidentified Orthocladiinae[3]																																			
Cricotopus/Orthocladius																																			
Epoicocladius																																			
Heterotanytarsus																			4	**1**	**0.1**	19					**4**	**0.2**	31		38			**14**	**0.2**
Heterotrissocladius																																79		**16**	**0.3**
Nanocladius																														38				**8**	**0.1**
Parakiefferiella															8	8	15	4	4	**8**	**0.7**					15	**3**	**0.2**	125		462		38	**125**	**2.2**
Psectrocladius										38			**8**	**0.1**									15		4		**4**	**0.2**	31	38	154	4		**45**	**0.8**
Stilocladius																																			
Zalutschia	4569	5831	4477	469	3631	**3795**	**37.8**															42	31	58	15	8	**31**	**1.8**	17				38	**11**	**0.2**
Subfamily: Prodiamesinae																																			
Monodiamesa																							35	4		15	**11**	**0.6**				6		**1**	**0.02**
Subfamily: Tanypodinae																																			
Unidentified Tanypodinae[3]																																2		**0**	**0.01**
Tribe: Coelotanypodini																																			
Clinotanypus																													6					**1**	**0.02**
Tribe: Pentaneurini																																			
Ablabesmyia		77		77		**31**	**0.3**		38	77			**23**	**0.3**									15				**3**	**0.2**	25					**5**	**0.1**
Guttipelopia																																			
Larsia															4	4	8			**3**	**0.3**														
Thienemannimyia Group																															38			**8**	**0.1**
Tribe: Procladiini																																			
Procladius	615	769	508	738		**526**	**5.2**	138	131	58	246	169	**148**	**2.2**	81	69	77	65	54	**69**	**6.2**	219	304	154	242	315	**247**	**14.3**	873	1954	1248	138	1148	**1072**	**18.6**
Tribe: Tanypodini																																			
Tanypus																														1698			50	**350**	**6.1**
Family: Empididae																																			
Chelifera												31	**6**	**0.1**																					
Order: Ephemeroptera																																			
Family: Baetidae																																			
Callibaetis										19			**4**	**0.1**																					
Family: Caenidae																																			
Caenis									38	192			**46**	**0.7**											35	4	**8**	**0.4**	94		435	69		**120**	**2.1**
Family: Ephemerellidae																																			
Eurylophella																																			
Family: Ephemeridae																																			
Hexagenia limbata																		4		**1**	**0.1**								88	40	4	225		**72**	**1.2**
Family: Leptophlebiidae																																			
Leptophlebia																4				**1**	**0.1**														
Order: Megaloptera (fishflies)																																			
Family: Sialidae																																			
Sialis																													2	2	19	2		**5**	**0.1**
Order: Odonata																																			
Family: Coenagrionidae																																			
Enallagma																																			
Family: Corduliidae																																			
Somatochlora																																			
Order: Trichoptera																																			
Family: Hydropsychidae																																			
Hydropsyche																																			
Family: Hydroptilidae																																			
Agraylea																																			
Oxyethira			15			**3**	**0.03**																												
Family: Lepidostomatidae																																			
Lepidostoma																																			

APPENDIX B, TABLE 6

Detailed benthic invertebrate taxonomy and densities for the EARMP technical program, 2012.

Taxonomy	Far-Field Exposure Areas																												Reference Areas						
	Cochrane River							Crackingstone Inlet							Fond du Lac River							Waterbury Lake							Bobby's Lake						
	1[1]	2	3	4	5	Avr.	%	1	2	3	4	5	Avr.	%	1	2	3	4	5	Avr.	%	1	2	3	4	5	Avr.	%	1	2	3	4	5	Avr.	%
Family: Leptoceridae																																			
Mystacides										77			**15**	**0.2**			4			**1**	**0.1**		4				**1**	**0.04**				4		**1**	**0.01**
Oecetis												15	**3**	**0.05**			4	8	4	**3**	**0.3**		4		4	8	**3**	**0.2**			38	83		**24**	**0.4**
Triaenodes																																			
Family: Molannidae[2]																																			
Unidentified Molannidae																									4	4	**2**	**0.1**							
Molanna								15					**3**	**0.05**												4	**1**	**0.04**							
Family: Phryganeidae																																			
Unidentified Phryganeidae[3]																										4	**1**	**0.04**							
Agrypnia																																			
Phryganea																																			
Family: Polycentropodidae																																			
Polycentropus																																			
Phylum: Mollusca																																			
Class: Bivalvia																																			
Order: Veneroida																																			
Family: Pisidiidae[2]																																			
Unidentified Pisidiidae	1415	1508	938	1585	1538	**1397**	**13.9**	3523	800	4750	2923	1362	**2672**	**39.1**	242	185	73	188	154	**168**	**15.1**	296	350	315	273	338	**315**	**18.2**	381	462	308	17	269	**287**	**5.0**
Pisidium	46	262	77	92	154	**126**	**1.3**	62	108	250	15	108	**108**	**1.6**		8				**2**	**0.1**	38	15	15	4	4	**15**	**0.9**	46	154	77	4	44	**65**	**1.1**
Sphaerium	15	46	46			**22**	**0.2**	15	15	19			**10**	**0.1**	4					**1**	**0.1**	8	4	12	8		**6**	**0.4**							
Class: Gastropoda																																			
Subclass: Prosobranchia																																			
Order: Basommatophora																																			
Family: Lymnaeidae[2]										19			**4**	**0.1**																					
Unidentified Lymnaeidae																																			
Lymnaea																																			
Family: Planorbidae																																			
Gyraulus										38			**8**	**0.1**											4	4	**2**	**0.1**							
Order: Heterostropha																																			
Family: Valvatidae																																			
Valvata sincera	169	123	185	92	246	**163**	**1.6**	231	231	865	562	531	**484**	**7.1**	4	4				**2**	**0.1**	50	35	58	38	50	**46**	**2.7**	2					**0**	**0.01**
Subclass: Pulmonata																																			
Family: Physidae																																			
Physa										38			**8**	**0.1**																					
Phylum: Nematoda					15	**3**	**0.03**	92	192	154		223	**132**	**1.9**		4	4		4	**2**	**0.2**		15	15	38	23	**18**	**1.1**	10	38	310	121		**96**	**1.7**
Phylum: Platyhelminthes																																			
Subphylum: Rhabditophora																																			
Family: Typhloplanidae																																			
Mesostoma																																			
Total	10415	13308	11954	6331	8262	**10054**	**100**	7538	4615	9942	6154	5904	**6831**	**100**	1077	1077	1250	1146	1012	**1112**	**100**	1962	1646	1642	1704	1696	**1730**	**100**	4246	8981	5960	3154	6517	**5772**	**100**

APPENDIX B, TABLE 6

Detailed benthic invertebrate taxonomy and densities for the EARMP technical program, 2012.

Taxonomy	Reference Areas																											
	Cree Lake							Ellis Bay							Pasfield Lake							RF-4						
	1	2	3	4	5	Avr.	%	1	2	3	4	5	Avr.	%	1	2	3	4	5	Avr.	%	1	2	3	4	5	Avr.	%
Phylum: Annelida																												
Class: Hirudinea																												
Order: Arhynchobdellida																												
Family: Erpobdellidae[2]																												
Unidentified Erpobdellidae																												
Erpobdella punctata																												
Nephelopsis obscura																												
Order: Rhynchobdellida																												
Family: Glossiphoniidae																												
Glossiphonia complanata																												
Helobdella stagnalis								31		77			**22**	**0.2**														
Family: Piscicolidae																												
Piscicola milneri																												
Class: Oligochaeta																												
Subclass: Lumbriculata																												
Order: Lumbriculida																												
Family: Lumbriculidae								708	77	138	292	31	**249**	**2.5**	46	19	88	77	46	**55**	**1.0**							
Subclass: Oligochaeta																												
Order: Enchytraeida																												
Family: Enchytraeidae								31				31	**12**	**0.1**														
Order: Haplotaxida																												
Family: Naididae																												
Subfamily: Naidinae								308		108	154	62	**126**	**1.3**														
Family: Tubificidae																												
Subfamily: Tubificinae	12	158	4	177	162	**102**	**0.9**	31	31				**12**	**0.1**	77		88	8	215	**78**	**1.5**	36	249	196	213	142	**167**	**3.9**
Phylum: Arthropoda																												
Subphylum: Crustacea																												
Class: Branchiopoda																												
Order: Diplostraca																												
Suborder: Cladocera																												
Family: Chydoridae[2]																												
Unidentified Chydoridae																												
Eurycercus	692	385	77	312	385	**370**	**3.3**								523	138	96	231	58	**209**	**4.0**							
Family: Macrothricidae								154					**31**	**0.3**														
Class: Malacostraca																												
Order: Amphipoda																												
Family: Gammaridae																												
Gammarus lacustris								462	185	123	431	185	**277**	**2.8**		38	112	31	246	**85**	**1.6**							
Family: Hyalellidae																												
Hyalella azteca								4646	4077	4785	3954	1754	**3843**	**39.0**														
Family: Pontoporeiidae																												
Pontoporeia hoyi								62	31				**18**	**0.2**								3733	2044	1573	1644	2613	**2322**	**54.3**
Order: Mysida																												
Family: Mysidae																												
Mysis relicta																												
Class: Maxillopoda																												
Subclass: Copepoda																												
Order: Harpacticoida																												
Class: Ostracoda	154		231	77		**92**	**0.8**								231	31	246	77	123	**142**	**2.7**		36				**7**	**0.2**

APPENDIX B, TABLE 6

Detailed benthic invertebrate taxonomy and densities for the EARMP technical program, 2012.

Taxonomy	**Reference Areas**																											
	Cree Lake							**Ellis Bay**							**Pasfield Lake**							**RF-4**						
	1	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**
Subphylum: Hexapoda																												
Class: Insecta																												
Order: Diptera																												
Family: Ceratopogonidae																												
Subfamily: Ceratopogoninae[2]																												
Unidentified Ceratopogoninae																												
Bezzia								31	62	77	31	31	**46**	**0.5**														
Palpomyia																												
Probezzia	81				158	**48**	**0.4**		31				**6**	**0.1**										133	9	36	**36**	**0.8**
Family: Chaoboridae																												
Chaoborus																												
Family: Chironomidae																												
Unidentified Chironomidae pupae [3]																												
Subfamily: Chironominae																												
Tribe: Chironomini																												
Unidentified Chironomini[3]		4				**1**	**0.01**																					
Chironomus	146	38	77	119	181	**112**	**1.0**	800	862	400	554	492	**622**	**6.3**	15		69		31	**23**	**0.4**	71	142	71	98	133	**103**	**2.4**
Cladopelma																			31	**6**	**0.1**			36	53		**18**	**0.4**
Cryptochironomus	269	162	162	269	346	**242**	**2.2**								62	42	35	46	31	**43**	**0.8**	53		9	44	36	**28**	**0.7**
Cryptotendipes																												
Demicryptochironomus	85	4	4			**18**	**0.2**															18					**4**	**0.1**
Dicrotendipes	735	723	627	1085	696	**773**	**6.9**	3631	1077	1077	1046	338	**1434**	**14.5**	92	31			62	**37**	**0.7**							
Endochironomus		8	4			**2**	**0.02**																					
Glyptotendipes					4	**1**	**0.01**																					
Lauterborniella	77				77	**31**	**0.3**																					
Microtendipes																												
Nilothauma	4					**1**	**0.01**																					
Pagastiella			231	4	4	**48**	**0.4**																		18		**4**	**0.1**
Parachironomus								31					**6**	**0.1**														
Paracladopelma																												
Polypedilum	77	4	8	81	158	**65**	**0.6**	523	138	108	31		**160**	**1.6**					31	**6**	**0.1**							
Sergentia								31	62	31	31	123	**55**	**0.6**	15					**3**	**0.1**							
Stictochironomus	77	154	77			**62**	**0.6**		62	31	62	92	**49**	**0.5**	92	69	88	200	108	**112**	**2.1**							
Tribelos																												
Xenochironomus																												
Tribe: Pseudochironomini																												
Pseudochironomus	165	81	173	77	50	**109**	**1.0**								46	15	27	138	31	**52**	**1.0**							
Tribe: Tanytarsini																												
Unidentifed Tanytarsini[3]				15	4	**4**	**0.03**																					
Cladotanytarsus	627	469	1242	831	319	**698**	**6.3**								77				62	**28**	**0.5**	36					**7**	**0.2**
Corynocera	5327	2181	3935	5069	7885	**4879**	**43.9**								3662	362	2238	1092	2446	**1960**	**37.1**							
Micropsectra																												
Neostempellina																												
Paratanytarsus								1415	108	231	215	62	**406**	**4.1**														
Stempellinella																												
Tanytarsus	1000	462	400	615	619	**619**	**5.6**	215	262	31	77		**117**	**1.2**		31	123	77		**46**	**0.9**	196	213	98	142	80	**146**	**3.4**
Subfamily: Diamesinae																												
Tribe: Diamesini																												
Potthastia longimana																								44		9	**11**	**0.2**
Protanypus																						124	36	89	80	116	**89**	**2.1**

APPENDIX B, TABLE 6

Detailed benthic invertebrate taxonomy and densities for the EARMP technical program, 2012.

Taxonomy	Reference Areas																											
	Cree Lake							**Ellis Bay**							**Pasfield Lake**							**RF-4**						
	1	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**
Subfamily: Orthocladiinae																												
Unidentified Orthocladiinae[3]																												
Cricotopus/Orthocladius								492					**98**	**1.0**	169	35	58			**52**	**1.0**							
Epoicocladius																												
Heterotanytarsus																												
Heterotrissocladius																								18	18	9	**9**	**0.2**
Nanocladius																												
Parakiefferiella																								36			**7**	**0.2**
Psectrocladius								462					**92**	**0.9**	15	8	58	15	15	**22**	**0.4**							
Stilocladius																												
Zalutschia																												
Subfamily: Prodiamesinae																												
Monodiamesa																										9	**2**	**0.04**
Subfamily: Tanypodinae																												
Unidentified Tanypodinae[3]										77			**15**	**0.2**											9		**2**	**0.04**
Tribe: Coelotanypodini																												
Clinotanypus																												
Tribe: Pentaneurini																												
Ablabesmyia			238	81		**64**	**0.6**	31					**6**	**0.1**	77	31		31		**28**	**0.5**							
Guttipelopia																												
Larsia	77			8		**17**	**0.2**																					
Thienemannimyia Group								585	1015	923	1508	554	**917**	**9.3**														
Tribe: Procladiini																												
Procladius	631	396	992	296	465	**556**	**5.0**	615	92		62		**154**	**1.6**	385	92	254	446	508	**337**	**6.4**	551	196	284	382	249	**332**	**7.8**
Tribe: Tanypodini																												
Tanypus																												
Family: Empididae																												
Chelifera																												
Order: Ephemeroptera																												
Family: Baetidae																												
Callibaetis			77			**15**	**0.1**																					
Family: Caenidae																												
Caenis				8	4	**2**	**0.02**	215	77		31		**65**	**0.7**														
Family: Ephemerellidae																												
Eurylophella																												
Family: Ephemeridae																												
Hexagenia limbata	4		4	4		**2**	**0.02**																					
Family: Leptophlebiidae																												
Leptophlebia																	31			**6**	**0.1**							
Order: Megaloptera (fishflies)																												
Family: Sialidae																												
Sialis																												
Order: Odonata																												
Family: Coenagrionidae																												
Enallagma																												
Family: Corduliidae																												
Somatochlora																												
Order: Trichoptera																												
Family: Hydropsychidae																												
Hydropsyche																												
Family: Hydroptilidae																												
Agraylea								62	31	12	62	92	**52**	**0.5**														
Oxyethira																												
Family: Lepidostomatidae																												
Lepidostoma												31	**6**	**0.1**														

APPENDIX B, TABLE 6

Detailed benthic invertebrate taxonomy and densities for the EARMP technical program, 2012.

Taxonomy	**Reference Areas**																											
	Cree Lake							**Ellis Bay**							**Pasfield Lake**							**RF-4**						
	1	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**
Family: Leptoceridae																												
Mystacides	77		231		77	**77**	**0.7**									35			15	**10**	**0.2**							
Oecetis	77					**15**	**0.1**																					
Triaenodes																												
Family: Molannidae[2]																												
Unidentified Molannidae																												
Molanna	19		12	15	15	**12**	**0.1**									19				**4**	**0.1**							
Family: Phryganeidae																												
Unidentified Phryganeidae[3]																												
Agrypnia																4				**1**	**0.01**							
Phryganea																												
Family: Polycentropodidae																												
Polycentropus										4			**1**	**0.01**														
Phylum: Mollusca																												
Class: Bivalvia																												
Order: Veneroida																												
Family: Pisidiidae[2]																												
Unidentified Pisidiidae	2004	1238	1846	1542	2238	**1774**	**15.9**	215	138		138	92	**117**	**1.2**	1292	673	808	1369	1000	**1028**	**19.5**	764	1013	942	818	1120	**932**	**21.8**
Pisidium				12		**2**	**0.02**	92	123	62	92	92	**92**	**0.9**	200	42	73	123	46	**97**	**1.8**	36	18	36	36		**25**	**0.6**
Sphaerium									31				**6**	**0.1**														
Class: Gastropoda																												
Subclass: Prosobranchia																												
Order: Basommatophora																												
Family: Lymnaeidae[2]																												
Unidentified Lymnaeidae																												
Lymnaea																												
Family: Planorbidae																												
Gyraulus									77	77	108	62	**65**	**0.7**														
Order: Heterostropha																												
Family: Valvatidae																												
Valvata sincera	254	173	100	104	488	**224**	**2.0**	646	369	338	508	154	**403**	**4.1**	138	38	19	31	15	**48**	**0.9**							
Subclass: Pulmonata																												
Family: Physidae																												
Physa								31					**6**	**0.1**														
Phylum: Nematoda	85	77	81	173	15	**86**	**0.8**	585	323	262	108	62	**268**	**2.7**	1862	177	292	277	1185	**758**	**14.4**	36			9	71	**23**	**0.5**
Phylum: Platyhelminthes																												
Subphylum: Rhabditophora																												
Family: Typhloplanidae																												
Mesostoma																												
Total	12754	6715	10831	10973	14350	**11125**	**100**	17138	9338	8969	9492	4338	**9855**	**100**	9077	1931	4804	4269	6304	**5277**	**100**	5653	3947	3564	3573	4622	**4272**	**100**

Avr. = average; % = percent composition.

[1] Numbers are per m^2.

[2] Taxa whose taxonomic resolution differed across areas or years were grouped together under the lowest common taxonomic level.

[3] These taxa were included in total benthic invertebrate density and biomass analyses but not in taxon richness analyses if conspecifics identified with higher taxonomic resolution were present. This was to avoid artificially inflating taxon diversity.

APPENDIX B, TABLE 7

Detailed benthic invertebrate taxonomy and densities for the EARMP technical program, 2015.

Taxonomy	Far-Field Exposure Areas																											
	Cochrane River							Crackingstone Inlet							Fond du Lac River							Waterbury Lake						
	1[1]	2	3	4	5	Avr.	%	1	2	3	4	5	Avr.	%	1	2	3	4	5	Avr.	%	1	2	3	4	5	Avr.	%
Phylum: Annelida																												
Class: Hirudinea																												
Order: Arhynchobdellida																												
Family: Erpobdellidae[2]																												
Unidentified Erpobdellidae											4		**0.769**	**0.01**														
Erpobdella punctata									4				**0.769**	**0.01**					4	**0.769**	**0.1**							
Nephelopsis obscura																												
Order: Rhynchobdellida																												
Family: Glossiphoniidae																												
Glossiphonia complanata								4		4			**1.538**	**0.03**														
Helobdella stagnalis	8	8		77		**18**	**0.1**		31				**6.154**	**0.1**														
Family: Piscicolidae																												
Piscicola milneri								19					**3.846**	**0.1**														
Class: Oligochaeta																												
Subclass: Lumbriculata																												
Order: Lumbriculida																												
Family: Lumbriculidae											19		**3.846**	**0.1**												96	**19**	**0.1**
Subclass: Oligochaeta																												
Order: Enchytraeida																												
Family: Enchytraeidae																												
Order: Haplotaxida																												
Family: Naididae																												
Subfamily: Naidinae	154	154				**62**	**0.3**															154					**31**	**0.1**
Family: Tubificidae																												
Subfamily: Tubificinae	185	85	246	131	115	**152**	**0.8**	269	408	31	92	400	**240**	**3.9**	58	15		23	31	**25.38**	**2.6**	269	308	169	523	127	**279**	**0.8**
Phylum: Arthropoda																												
Subphylum: Crustacea																												
Class: Branchiopoda																												
Order: Diplostraca																												
Suborder: Cladocera																												
Family: Chydoridae[2]																												
Unidentified Chydoridae																							231		77	77	**77**	**0.2**
Eurycercus																							154	277	600	835	**373**	**1.1**
Family: Macrothricidae		77		31		**22**	**0.1**								38	38				**15.38**	**1.6**	308	77	154	462	231	**246**	**0.7**
Class: Malacostraca																												
Order: Amphipoda																												
Family: Gammaridae																												
Gammarus lacustris								4					**0.769**	**0.0**														
Family: Hyalellidae																												
Hyalella azteca								73	42	246	185		**109.2**	**1.8**									31	31	1015	319	**279**	**0.8**
Family: Pontoporeiidae																												
Pontoporeia hoyi	35	50	138	435	85	**148**	**0.8**	1646	2231	2619	1669	2146	**2062**	**33.7**	681	638	508	381	465	**534.6**	**54.7**							
Order: Mysida																												
Family: Mysidae																												
Mysis relicta									4	8			**2.308**	**0.04**														

APPENDIX B, TABLE 7

Detailed benthic invertebrate taxonomy and densities for the EARMP technical program, 2015.

Taxonomy	Far-Field Exposure Areas																											
	Cochrane River							Crackingstone Inlet							Fond du Lac River							Waterbury Lake						
	1[1]	2	3	4	5	Avr.	%	1	2	3	4	5	Avr.	%	1	2	3	4	5	Avr.	%	1	2	3	4	5	Avr.	%
Class: Maxillopoda																												
Subclass: Copepoda																												
Order: Harpacticoida																												
Class: Ostracoda		77				**15**	**0.1**	38	385	154	31	31	**127.7**	**2.1**	77	58	123	58	115	**86.15**	**8.8**			231	77		**62**	**0.2**
Subphylum: Hexapoda																												
Class: Insecta																												
Order: Diptera																												
Family: Ceratopogonidae																												
Subfamily: Ceratopogoninae[2]																												
Unidentified Ceratopogoninae	92		154	185	19	**90**	**0.5**	308	323	277	150	185	**248.5**	**4.1**	38	65		58	19	**36.15**	**3.7**	154				8	**32**	**0.1**
Bezzia								19		31			**10**	**0.2**												77	**15**	**0.04**
Palpomyia																												
Probezzia																												
Family: Chaoboridae																												
Chaoborus																												
Family: Chironomidae																												
Unidentified Chironomidae pupae[3]																4				**0.769**	**0.1**					4	**1**	**0.002**
Subfamily: Chironominae																												
Tribe: Chironomini																												
Unidentified Chironomini[3]																												
Chironomus				77		**15**	**0.1**										4	4		**10**	**0.2**							
Cladopelma															38		4			**11.54**	**0.9**							
Cryptochironomus	54	188	138	115	127	**125**	**0.6**		38	92		31	**32.31**	**0.5**	15					**3.077**	**0.3**	38		31	292	285	**129**	**0.4**
Cryptotendipes																												
Demicryptochironomus					27	**5**	**0.03**		19	35		31	**16.92**	**0.3**				4		**3.846**	**0.1**							
Dicrotendipes	427	123	46	262	73	**186**	**1.0**		19	31	50	62	**32.31**	**0.5**	15					**3.077**	**0.3**							
Endochironomus	31					**6**	**0.03**																					
Glyptotendipes																												
Lauterborniella																												
Microtendipes								19					**3.846**	**0.1**														
Nilothauma																												
Pagastiella										31			**6.154**	**0.1**			42	38	38	**23.85**	**2.4**							
Parachironomus																												
Paracladopelma										4			**0.769**	**0.0**														
Polypedilum	35	4	31	62	38	**34**	**0.2**	231	88	308	142	31	**160**	**2.6**		4				**1.538**	**0.1**							
Sergentia	138	469	31	4	23	**133**	**0.7**									4				**0.769**	**0.1**							
Stictochironomus																						962	1046	462	323	108	**580**	**1.6**
Tribelos																												
Xenochironomus																												
Tribe: Pseudochironomini																												
Pseudochironomus			4			**1**	**0.004**				19		**3.846**	**0.1**					4	**0.769**	**0.1**							
Tribe: Tanytarsini																												
Unidentififed Tanytarsini[3]																												
Cladotanytarsus	723	538	31	108	235	**327**	**1.7**	19	38				**11.54**	**0.2**	38					**7.692**	**0.8**	154			615	231	**200**	**0.6**
Corynocera	17681	12985	11388	7585	17404	**13408**	**69.4**															1269	1523	892	431	512	**925**	**2.6**
Micropsectra																						44808	35000	24062	24754	16627	**29050**	**82.2**
Neostempellina																19				**3.846**	**0.4**							

APPENDIX B, TABLE 7

Detailed benthic invertebrate taxonomy and densities for the EARMP technical program, 2015.

Taxonomy	**Far-Field Exposure Areas**																											
	Cochrane River							**Crackingstone Inlet**							**Fond du Lac River**							**Waterbury Lake**						
	1[1]	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**
Paratanytarsus								19					**3.846**	**0.1**														
Stempellinella																												
Tanytarsus	1373	388	185	277	412	**527**	**2.7**	788	523	1815	542	862	**906.2**	**14.8**	38	77	4		96	**43.08**	**4.4**	2769	615	1292	3185	2862	**2145**	**6.1**
Subfamily: Diamesinae																												
Tribe: Diamesini																												
Potthastia longimana								58	131	31		62	**56.15**	**0.9**											31	8	**8**	**0.02**
Protanypus												31	**6.154**	**0.1**														
Subfamily: Orthocladiinae																												
Unidentified Orthocladiinae[3]								38		92			**26.15**	**0.4**														
Cricotopus/Orthocladius																										77	**15**	**0.04**
Epoicocladius																												
Heterotanytarsus	77					**15**	**0.1**																					
Heterotrissocladius											31		**6.154**	**0.1**														
Nanocladius																												
Parakiefferiella																												
Psectrocladius								58					**11.54**	**0.2**										108	31	119	**52**	**0.1**
Stilocladius												92	**18.46**	**0.3**				19		**3.846**	**0.4**							
Zalutschia	2881	2738	1896	1800	1823	**2228**	**11.5**															154	77				**46**	**0.1**
Subfamily: Prodiamesinae																												
Monodiamesa									19		4	62	**16.92**	**0.3**														
Subfamily: Tanypodinae																												
Unidentified Tanypodinae[3]								19		31	23		**14.62**	**0.2**														
Tribe: Coelotanypodini																												
Clinotanypus																												
Tribe: Pentaneurini																												
Ablabesmyia								58					**11.54**	**0.2**														
Guttipelopia	81	108			154	**68**	**0.4**																					
Larsia																												
Thienemannimyia Group																												
Tribe: Procladiini																												
Procladius	904	1254	692	1735	508	**1018**	**5.3**	192	346	177	504	188	**281.5**	**4.6**	246	115	50	46	69	**105.4**	**10.8**	346	831	415	492	185	**454**	**1.3**
Tribe: Tanypodini																												
Tanypus																												
Family: Empididae																												
Chelifera																												
Order: Ephemeroptera																												
Family: Baetidae																												
Callibaetis			31			**6**	**0.03**	38					**7.692**	**0.1**														
Family: Caenidae																												
Caenis								19					**3.846**	**0.1**												15	**3**	**0.01**
Family: Ephemerellidae																												
Eurylophella																												
Family: Ephemeridae																												
Hexagenia limbata				77		**15**	**0.1**												19	**3.846**	**0.4**							
Family: Leptophlebiidae																												
Leptophlebia																												

APPENDIX B, TABLE 7

Detailed benthic invertebrate taxonomy and densities for the EARMP technical program, 2015.

Taxonomy	Far-Field Exposure Areas																											
	Cochrane River							Crackingstone Inlet							Fond du Lac River							Waterbury Lake						
	1[1]	2	3	4	5	Avr.	%	1	2	3	4	5	Avr.	%	1	2	3	4	5	Avr.	%	1	2	3	4	5	Avr.	%
Order: Megaloptera (fishflies)																												
Family: Sialidae																												
Sialis																												
Order: Odonata																												
Family: Coenagrionidae																												
Enallagma								4					**0.769**	**0.01**														
Family: Corduliidae																												
Somatochlora																												
Order: Trichoptera																												
Family: Hydropsychidae																												
Hydropsyche																												
Family: Hydroptilidae																												
Agraylea																												
Oxyethira					15	**3**	**0.02**										38			**7.692**	**0.8**							
Family: Lepidostomatidae																												
Lepidostoma																												
Family: Leptoceridae																												
Mystacides																												
Oecetis																												
Triaenodes											4		**0.769**	**0.01**											92		**18**	**0.1**
Family: Molannidae[2]																												
Unidentified Molannidae								19					**3.8**	**0.1**														
Molanna			4			**1**	**0.004**		4	4	4		**2.308**	**0.04**									31				**6**	**0.02**
Family: Phryganeidae																												
Unidentified Phryganeidae[3]																												
Agrypnia	4	4	4	8	4	**5**	**0.02**	4			19		**4.615**	**0.1**									31				**6**	**0.02**
Phryganea										4		4	**1.538**	**0.03**														
Family: Polycentropodidae																												
Polycentropus																												
Phylum: Mollusca																												
Class: Bivalvia																												
Order: Veneroida																												
Family: Pisidiidae[2]																												
Unidentified Pisidiidae		308		31	77	**83**	**0.4**	1154	827	1754	700	769	**1041**	**17.0**		4	35	77	38	**53.08**	**3.1**					77	**15**	**0.04**
Pisidium	396	846	354	1100	42	**548**	**2.8**	727	200	327	8	331	**318.5**	**5.2**	69	19		8	15	**22.31**	**2.3**		92		338	31	**92**	**0.3**
Sphaerium		4		4		**2**	**0.01**	15	4				**3.846**	**0.1**											62		**12**	**0.03**
Class: Gastropoda																												
Subclass: Prosobranchia																												
Order: Basommatophora																												
Family: Lymnaeidae[2]								23					**4.615**	**0.1**											31		**6**	**0.02**
Unidentified Lymnaeidae																												
Lymnaea																												
Family: Planorbidae																												
Gyraulus								38		31			**13.85**	**0.2**											62		**12**	**0.03**
Order: Heterostropha																												
Family: Valvatidae																												
Valvata sincera	42	92	12	77	19	**48**	**0.3**	350	138	162	212	281	**228.5**	**3.7**		27				**5.385**	**0.6**		169	108	215	19	**102**	**0.3**
Subclass: Pulmonata																												
Family: Physidae																												
Physa																												

APPENDIX B, TABLE 7

Detailed benthic invertebrate taxonomy and densities for the EARMP technical program, 2015.

Taxonomy	**Far-Field Exposure Areas**																											
	Cochrane River							**Crackingstone Inlet**							**Fond du Lac River**							**Waterbury Lake**						
	1[1]	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**
Phylum: Nematoda	4			31	8	**8**	**0.04**	19	31	62	31	62	**40.77**	**0.7**					4	**0.769**	**0.1**		77			12	**18**	**0.1**
Phylum: Platyhelminthes																												
Subphylum: Rhabditophora																												
Family: Typhloplanidae																												
Mesostoma																									62	4	**13**	**0.0**
Total	25323	20500	15385	14208	21208	**19325**	**100**	6292	5854	8358	4442	5658	**6121**	**100**	1354	1088	808	715	919	**992**	**100**	51385	40292	28231	33769	22942	**35324**	**100**

APPENDIX B, TABLE 7

Detailed benthic invertebrate taxonomy and densities for the EARMP technical program, 2015.

Taxonomy	Reference Areas																				
	Cree Lake							Ellis Bay							Pasfield Lake						
	1	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**
Phylum: Annelida																					
Class: Hirudinea																					
Order: Arhynchobdellida																					
Family: Erpobdellidae[2]																					
Unidentified Erpobdellidae										31			**6**	**0.05**							
Erpobdella punctata								31					**6**	**0.05**							
Nephelopsis obscura																					
Order: Rhynchobdellida																					
Family: Glossiphoniidae																					
Glossiphonia complanata																					
Helobdella stagnalis									31				**6**	**0.05**							
Family: Piscicolidae																					
Piscicola milneri																		4		**1**	**0.04**
Class: Oligochaeta																					
Subclass: Lumbriculata																					
Order: Lumbriculida																					
Family: Lumbriculidae								31					**6**	**0.05**					8	**2**	**0.1**
Subclass: Oligochaeta																					
Order: Enchytraeida																					
Family: Enchytraeidae									31				**6**	**0.05**							
Order: Haplotaxida																					
Family: Naididae																					
Subfamily: Naidinae								31					**6**	**0.05**							
Family: Tubificidae																					
Subfamily: Tubificinae	723	550	62	985	404	**545**	**8.3**	31	92			31	**31**	**0.2**	81	23	54	12	65	**47**	**2.1**
Phylum: Arthropoda																					
Subphylum: Crustacea																					
Class: Branchiopoda																					
Order: Diplostraca																					
Suborder: Cladocera																					
Family: Chydoridae[2]																					
Unidentified Chydoridae		54	154			**42**	**0.6**								92	46	31	15	123	**62**	**2.8**
Eurycercus	115		62	177	462	**163**	**2.5**								538	492	842	208	673	**551**	**25.1**
Family: Macrothricidae	885	577	1308	692	1231	**938**	**14.3**								1004	504	954	177	800	**688**	**31.3**
Class: Malacostraca																					
Order: Amphipoda																					
Family: Gammaridae																					
Gammarus lacustris								1231	1323	923	769	708	**991**	**8.0**	4	12	31		23	**14**	**0.6**
Family: Hyalellidae																					
Hyalella azteca								5600	1692	7262	2215	3723	**4098**	**33.3**	292	27		8	12	**68**	**3.1**
Family: Pontoporeiidae																					
Pontoporeia hoyi								338	769	462	369	185	**425**	**3.4**							
Order: Mysida																					
Family: Mysidae																					
Mysis relicta																					

APPENDIX B, TABLE 7

Detailed benthic invertebrate taxonomy and densities for the EARMP technical program, 2015.

Taxonomy	Reference Areas																				
	Cree Lake							Ellis Bay							Pasfield Lake						
	1	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**
Class: Maxillopoda																					
Subclass: Copepoda																					
Order: Harpacticoida								31					**6**	**0.05**							
Class: Ostracoda		38	77	81	77	**55**	**0.8**								100	50	123	46	246	**113**	**5.2**
Subphylum: Hexapoda																					
Class: Insecta																					
Order: Diptera																					
Family: Ceratopogonidae																					
Subfamily: Ceratopogoninae[2]																					
Unidentified Ceratopogoninae	4	4		15	62	**17**	**0.3**		62				**12**	**0.1**							
Bezzia									92				**18**	**0.1**					35	**7**	**0.3**
Palpomyia																					
Probezzia																					
Family: Chaoboridae																					
Chaoborus																					
Family: Chironomidae																					
Unidentified Chironomidae pupae[3]		4	8			**2**	**0.04**														
Subfamily: Chironominae																					
Tribe: Chironomini																					
Unidentified Chironomini[3]																					
Chironomus	262	281	331	254	158	**257**	**3.9**				31	215	**49**	**0.4**					23	**5**	**0.2**
Cladopelma	38					**8**	**0.1**								38	73	277	27	215	**126**	**5.7**
Cryptochironomus	177	165	238	112	108	**160**	**2.4**				31		**6**	**0.05**	77	15	8	4		**21**	**0.9**
Cryptotendipes																					
Demicryptochironomus	4		4	4		**2**	**0.04**														
Dicrotendipes	223	104	254	312	338	**246**	**3.8**	1446	1569	1385	1508	1538	**1489**	**12.1**			4			**1**	**0.04**
Endochironomus																					
Glyptotendipes																					
Lauterborniella																					
Microtendipes																					
Nilothauma				4		**1**	**0.01**	31					**6**	**0.05**							
Pagastiella					38	**8**	**0.1**		31				**6**	**0.05**							
Parachironomus																					
Paracladopelma																					
Polypedilum					4	**1**	**0.01**			92	492		**117**	**0.9**	12	4	31	4	4	**11**	**0.5**
Sergentia				8		**2**	**0.02**			646	462	923	**406**	**3.3**							
Stictochironomus		12	4	19	142	**35**	**0.5**	400	431	246	338	62	**295**	**2.4**	35	4	35	12	4	**18**	**0.8**
Tribelos																					
Xenochironomus																					
Tribe: Pseudochironomini																					
Pseudochironomus		42				**8**	**0.1**									8	54	4		**13**	**0.6**
Tribe: Tanytarsini																					
Unidentifed Tanytarsini[3]																4	31			**7**	**0.3**
Cladotanytarsus	192		388	312	158	**210**	**3.2**											8	92	**20**	**0.9**
Corynocera	1735	1069	2731	3385	792	**1942**	**29.6**			615			**123**	**1.0**			31	4		**7**	**0.3**
Micropsectra		38	4		154	**39**	**0.6**														
Neostempellina																					

APPENDIX B, TABLE 7

Detailed benthic invertebrate taxonomy and densities for the EARMP technical program, 2015.

Taxonomy	Reference Areas																				
	Cree Lake							**Ellis Bay**							**Pasfield Lake**						
	1	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**
Paratanytarsus								492	738	1231	1231	738	**886**	**7.2**							
Stempellinella	38					**8**	**0.1**			154			**31**	**0.2**							
Tanytarsus	346	158	81	462	281	**265**	**4.0**	62	31	492	154		**148**	**1.2**							
Subfamily: Diamesinae																					
Tribe: Diamesini																					
Potthastia longimana	19	19	27	15	65	**29**	**0.4**														
Protanypus																					
Subfamily: Orthocladiinae																					
Unidentified Orthocladiinae[3]								92		338			**86**	**0.7**							
Cricotopus/Orthocladius								246	400	1231	31	154	**412**	**3.3**							
Epoicocladius																					
Heterotanytarsus			77			**15**	**0.2**														
Heterotrissocladius			77			**15**	**0.2**														
Nanocladius																					
Parakiefferiella																					
Psectrocladius	42				4	**9**	**0.1**		62	31		154	**49**	**0.4**							
Stilocladius																					
Zalutschia																					
Subfamily: Prodiamesinae																					
Monodiamesa																					
Subfamily: Tanypodinae																					
Unidentified Tanypodinae[3]		38				**8**	**0.1**	92	369	523	646	985	**523**	**4.2**							
Tribe: Coelotanypodini																					
Clinotanypus																					
Tribe: Pentaneurini																					
Ablabesmyia																	31			**6**	**0.3**
Guttipelopia																					
Larsia																					
Thienemannimyia Group																					
Tribe: Procladiini																					
Procladius	688	558	838	288	708	**616**	**9.4**	338	431	585	338	62	**351**	**2.8**	50	50	42	23	185	**70**	**3.2**
Tribe: Tanypodini																					
Tanypus																					
Family: Empididae																					
Chelifera																					
Order: Ephemeroptera																					
Family: Baetidae																					
Callibaetis					4	**1**	**0.01**				31		**6**	**0.05**							
Family: Caenidae																					
Caenis	77	4	77	81	58	**59**	**0.9**	31		154			**37**	**0.3**							
Family: Ephemerellidae																					
Eurylophella																					
Family: Ephemeridae																					
Hexagenia limbata			4		38	**8**	**0.1**														
Family: Leptophlebiidae																					
Leptophlebia		38		4		**8**	**0.1**														

APPENDIX B, TABLE 7

Detailed benthic invertebrate taxonomy and densities for the EARMP technical program, 2015.

Taxonomy	**Reference Areas**																				
	Cree Lake							**Ellis Bay**							**Pasfield Lake**						
	1	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**
Order: Megaloptera (fishflies)																					
Family: Sialidae																					
Sialis																					
Order: Odonata																					
Family: Coenagrionidae																					
Enallagma																					
Family: Corduliidae																					
Somatochlora																					
Order: Trichoptera																					
Family: Hydropsychidae																					
Hydropsyche		8				**2**	**0.02**														
Family: Hydroptilidae																					
Agraylea								31			31		**12**	**0.1**							
Oxyethira									62				**12**	**0.1**							
Family: Lepidostomatidae																					
Lepidostoma																					
Family: Leptoceridae																					
Mystacides																					
Oecetis																					
Triaenodes																			4	**1**	**0.04**
Family: Molannidae[2]																					
Unidentified Molannidae																					
Molanna	15	23	23	23	15	**20**	**0.3**														
Family: Phryganeidae																					
Unidentified Phryganeidae[3]																					
Agrypnia									92				**18**	**0.1**							
Phryganea										62			**12**	**0.1**							
Family: Polycentropodidae																					
Polycentropus										31		31	**12**	**0.1**							
Phylum: Mollusca																					
Class: Bivalvia																					
Order: Veneroida																					
Family: Pisidiidae[2]																					
Unidentified Pisidiidae	115	396	615	769	508	**481**	**7.3**	31	308			400	**148**	**1.2**	358	65	338	19	338	**224**	**10.2**
Pisidium	258	96	165	131	96	**149**	**2.3**	338	308	154	31	62	**178**	**1.4**	123	38	88	4	112	**73**	**3.3**
Sphaerium																					
Class: Gastropoda																					
Subclass: Prosobranchia																					
Order: Basommatophora																					
Family: Lymnaeidae[2]																					
Unidentified Lymnaeidae																					
Lymnaea																					
Family: Planorbidae																					
Gyraulus								523	677	892	738	523	**671**	**5.4**		8				**2**	**0.1**
Order: Heterostropha																					
Family: Valvatidae																					
Valvata sincera	238	58	85	69	81	**106**	**1.6**	554	1046	308	123	677	**542**	**4.4**	38	46		4	12	**20**	**0.9**
Subclass: Pulmonata																					
Family: Physidae																					
Physa																					

APPENDIX B, TABLE 7

Detailed benthic invertebrate taxonomy and densities for the EARMP technical program, 2015.

Taxonomy	**Reference Areas**																				
	Cree Lake							**Ellis Bay**							**Pasfield Lake**						
	1	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**	**1**	**2**	**3**	**4**	**5**	**Avr.**	**%**
Phylum: Nematoda	46	23	85	85	146	**77**	**1.2**	123	154	62		31	**74**	**0.6**		54		38	12	**21**	**0.9**
Phylum: Platyhelminthes																					
Subphylum: Rhabditophora																					
Family: Typhloplanidae																					
Mesostoma																					
Total	6242	4358	7777	8285	6131	**6558**	**100**	12154	10800	17908	9569	11200	**12326**	**100**	2842	1523	3004	619	2985	**2195**	**100**

Avr. = average; % = percent composition.

[1] Numbers are per m^2.

[2] Taxa whose taxonomic resolution differed across areas or years were grouped together under the lowest common taxonomic level.

[3] These taxa were included in total benthic invertebrate density and biomass analyses but not in taxon richness analyses if conspecifics identified with higher taxonomic resolution were present. This was to avoid artificially inflating taxon diver

APPENDIX B, TABLE 8

Detailed benthic invertebrate community biomass data collected for the EARMP technical program, 2011, 2012, and 2015.

Taxonomic Group[1]	**Far-Field Exposure Areas**														
	Cochrane River														
	2011					**2012**					**2015**				
	1	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**
Amphipoda	**3.348**	1.826	1.517	0.562	**3.131**	0.269	0.383	0.722	0.135	1.162	0.160	0.224	0.629	1.882	0.680
Chironomidae	2.844	**3.930**	**1.906**	**2.292**	2.248	**2.198**	3.775	**2.897**	2.838	**3.672**	**14.067**	**11.036**	**11.323**	**8.225**	**11.904**
Ephemeroptera	0[2]	0	0	0	0	0	0	0	0	0	0	0	0.034	0.123	0
Gastropoda/Pelecypoda	2.884	1.862	1.028	2.131	1.927	2.185	**4.731**	1.242	**3.049**	1.215	1.330	3.313	0.953	2.973	0.987
Hirudinea	0.412	0	0	0	0	0.517	0	0	0	0.063	0.060	0.062	0	0.162	0
Malacostraca	0	0	0	0	0	0.072	0	0	0	0	0	0	0	0	0
Megaloptera	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Odonata	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oligochaeta	0.106	0.297	0.123	0.050	0.292	0.569	0.594	0.958	0.994	0.460	0.337	0.186	0.967	0.672	0.455
Other Diptera	0	0.015	0	0	0.022	0.020	0	0.023	0	0.074	0.062	0.092	0.092	0.234	0.023
Other taxa	0.808	0.612	0.360	0.265	0.452	0.429	0.243	0.342	0.218	0.291	0.077	0.283	0.015	0.249	0.175
Trichoptera	0.995	0.363	0.663	0.316	0.009	0	0	0.011	0	0	0.135	0.224	0.319	1.198	0.155
Total	11.4	8.9	5.6	5.6	8.1	6.3	9.7	6.2	7.2	6.9	16.228	15.420	14.333	15.718	14.379

Taxonomic Group	**Far-Field Exposure Areas**														
	Crackingstone Inlet														
	2011					**2012**					**2015**				
	1	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**
Amphipoda	**11.714**	**8.202**	**12.765**	**10.895**	**8.797**	**7.292**	**3.635**	**6.088**	1.738	0.712	**6.818**	**9.675**	**9.738**	**6.842**	**5.921**
Chironomidae	0.119	0.143	0.097	0.283	0.111	0.269	0.254	0.267	0.301	0.267	0.446	0.576	0.568	0.470	0.626
Ephemeroptera	0	0.009	0.034	0	0	0	0.008	0.073	0	0	0.217	0	0	0	0
Gastropoda/Pelecypoda	3.912	2.664	4.428	2.935	1.538	2.146	1.525	5.763	**2.115**	2.276	4.780	1.779	2.572	1.339	2.213
Hirudinea	0	0	0.151	1.576	0	0	0	0	0	2.442	0.093	0.405	0.359	0.124	0
Malacostraca	0	0	0	0	0	0	0	0.162	0	0	0	0.062	0.057	0	0
Megaloptera	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Odonata	0.249	0	0	0	0.036	0	0	0	0	0	0.052	0	0	0	0
Oligochaeta	0.191	0.073	0.311	0.052	0.089	0.765	0.884	0.192	0.159	**7.965**	0.437	0.525	0.055	0.290	0.637
Other Diptera	0.208	0.300	0.258	0.206	0.178	0.108	0.045	0.073	0.032	0.135	0.156	0.056	0.095	0.066	0.049
Other taxa	0.118	0.163	0.168	0	0.031	0.028	0.045	0.121	0.008	0.031	0.063	0.065	0.089	0.028	0.086
Trichoptera	0.028	0	0	0.295	0.095	0.111	0	0.015	0	0.034	0.021	0.068	0.332	0.418	0.594
Total	16.5	11.6	18.2	16.2	10.9	10.7	6.4	12.8	4.4	13.9	13.084	13.210	13.867	9.576	10.126

APPENDIX B, TABLE 8

Detailed benthic invertebrate community biomass data collected for the EARMP technical program, 2011, 2012, and 2015.

Taxonomic Group	Far-Field Exposure Areas														
	Fond du Lac River														
	2011					2012					2015				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Amphipoda	**4.054**	**2.960**	**4.512**	**4.147**	**4.210**	**2.978**	**2.181**	**3.431**	**2.917**	**2.366**	**2.659**	**2.255**	**1.825**	**1.410**	**6.562**
Chironomidae	0.111	0.413	0.428	0.353	0.315	0.130	0.182	0.100	0.068	0.040	0.468	0.125	0.162	0.099	0.272
Ephemeroptera	0	0	0	0	0.005	0	0.002	0	0.023	0	0	0	0	0	0.015
Gastropoda/Pelecypoda	0.235	0.253	0.012	0.005	0.045	0.260	0.185	0.036	0.063	0.082	0.087	0.184	0.026	0.025	0.148
Hirudinea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.502
Malacostraca	0	0	0.085	0	0	0	0	0	0	0	0	0	0	0	0
Megaloptera	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Odonata	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oligochaeta	0	0.008	0	0	0.017	0.015	0.056	0.002	0	0.032	0.222	0.062	0	0.018	0.265
Other Diptera	0.011	0.002	0.005	0.001	0.002	0.002	0.0004	0.008	0.009	0.004	0.019	0.017	0.007	0.021	0.015
Other taxa	0.052	0.040	0.042	0.048	0.022	0.017	0.036	0.018	0.013	0.012	0.035	0.079	0.072	0.026	0.185
Trichoptera	0	0	0	0	0	0	0	0.006	0.015	0.005	0	0	0.017	0	0
Total	4.5	3.7	5.1	4.6	4.6	3.4	2.6	3.6	3.1	2.5	3.489	2.722	2.108	1.599	7.963

Taxonomic Group	Far-Field Exposure Areas														
	Waterbury Lake														
	2011					2012					2015				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Amphipoda	0.045	0.020	0.438	**1.328**	**1.155**	0.004	0	0.035	0.469	0.373	0	0.058	0.022	2.212	0.477
Chironomidae	**1.251**	1.152	**1.145**	1.223	1.019	**1.267**	**1.331**	0.825	**0.625**	**0.496**	**17.188**	**16.706**	**10.482**	**10.005**	**6.998**
Ephemeroptera	0	0	0.003	0	0	0	0	0	0.007	0.001	0	0	0	0	0.002
Gastropoda/Pelecypoda	0.812	**1.553**	0.682	0.707	0.704	0.829	0.419	**0.929**	0.305	0.245	0	1.729	0.106	5.422	0.205
Hirudinea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Malacostraca	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Megaloptera	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Odonata	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oligochaeta	0.049	0.028	0.065	0.231	0.397	0.027	0.007	0.165	0	0.076	0.654	1.812	0.462	4.182	0.662
Other Diptera	0.016	0.003	0.002	0.057	0.017	0	0	0	0.009	0.007	0.031	0	0	0.077	0.012
Other taxa	0.455	0.385	0.736	1.030	0.772	0.361	0.193	0.300	0.149	0.175	0.154	0.308	0.529	0.622	0.462
Trichoptera	0.007	0	0	0	0.035	0	0.007	0	0.009	0.192	0	1.335	0	0.858	0
Total	2.6	3.1	3.1	4.6	4.1	2.5	2.0	2.3	1.6	1.6	18.027	21.949	11.600	23.377	8.818

APPENDIX B, TABLE 8

Detailed benthic invertebrate community biomass data collected for the EARMP technical program, 2011, 2012, and 2015.

Taxonomic Group	**Reference Areas[3]**														
	Bobby's Lake														
	2009					**2012**					**2015**				
	1	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**
Amphipoda	0	0	0	0	0	0	0.073	1.050	0.003	0	-	-	-	-	-
Chironomidae	0.287	0.485	0.317	0.212	0.249	0.515	**23.421**	**2.384**	0.654	**13.914**	-	-	-	-	-
Ephemeroptera	**1.656**	**1.495**	**1.438**	**1.660**	**0.933**	**5.240**	0.877	0.920	**0.697**	0	-	-	-	-	-
Gastropoda/Pelecypoda	0.362	0.764	0.121	0.066	0.176	0.276	0.546	0.327	0.021	0.163	-	-	-	-	-
Hirudinea	0	0	0	0	0	0	0	0.878	0	0	-	-	-	-	-
Malacostraca	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-
Megaloptera	0.008	0.007	0	0	0	0.018	0.031	0.337	0.028	0	-	-	-	-	-
Odonata	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-
Oligochaeta	0	0	0	0	0.017	0.020	0.088	0	0.002	0.019	-	-	-	-	-
Other Diptera	0.022	0.026	0	0	0	0.120	2.540	0.002	0.023	0	-	-	-	-	-
Other taxa	0.036	0.033	0.005	0.006	0.003	0.075	0.246	0.131	0.037	0.169	-	-	-	-	-
Trichoptera	0	0	0	0	0	0	0	0.185	0.026	0	-	-	-	-	-
Total	2.4	2.8	1.9	1.9	1.4	6.3	27.8	6.2	1.5	14.3	-	-	-	-	-

Taxonomic Group	**Reference Areas[3]**														
	Cree Lake														
	2011					**2012**					**2015**				
	1	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**	**1**	**2**	**3**	**4**	**5**
Amphipoda	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chironomidae	**2.099**	**2.215**	**1.263**	**1.281**	**3.568**	**10.262**	**3.469**	**6.069**	**8.836**	**10.818**	**14.732**	**14.447**	**16.268**	**11.847**	**7.638**
Ephemeroptera	0.149	0.279	0.066	1.146	0.098	0.021	0	0.261	0.047	0.0004	0.054	0.033	0.022	0.016	0.008
Gastropoda/Pelecypoda	0.724	0.714	0.471	0.398	0.678	0.857	0.890	0.717	1.082	1.110	0.660	0.602	0.860	0.852	0.474
Hirudinea	0	0.046	2.001	0	0.042	0	0	0	0	0	0	0	0	0	0
Malacostraca	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Megaloptera	0	0	0.511	0.377	0	0	0	0	0	0	0	0	0	0	0
Odonata	0	0.966	0	0	0	0	0	0	0	0	0	0	0	0	0
Oligochaeta	0.262	0.118	0.431	0.421	0.037	0.051	0.223	0.002	0.370	0.326	0.958	0.501	0.589	2.022	0.508
Other Diptera	0.047	0.023	0.068	0.023	0.040	0.010	0	0	0	0.093	0.002	0.0004	0	0.008	0.023
Other taxa	0.305	0.478	0.178	0.353	0.500	0.585	0.277	0.251	0.558	0.392	0.294	0.254	0.444	0.292	0.669
Trichoptera	0	0.261	0	0	0	0.222	0	0.182	0.268	1.047	0.068	0.203	0.105	0.560	0.547
Total	3.6	5.1	5.0	4.0	5.0	12.0	4.9	7.5	11.2	13.8	16.768	16.042	18.288	15.596	9.866

APPENDIX B, TABLE 8

Detailed benthic invertebrate community biomass data collected for the EARMP technical program, 2011, 2012, and 2015.

Taxonomic Group	Reference Areas[3]														
	Ellis Bay														
	2011					2012					2015				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Amphipoda	**11.218**	**16.047**	**10.303**	**8.595**	**7.160**	**16.354**	**9.349**	**10.625**	**11.888**	**4.898**	**28.483**	**22.837**	**34.329**	**16.123**	**18.548**
Chironomidae	3.234	7.258	3.963	3.109	4.517	8.215	7.129	2.478	4.745	3.812	2.812	3.551	4.237	4.142	3.012
Ephemeroptera	0.345	0.083	0.118	0.151	0.135	0.040	0.008	0	0.012	0	0.003	0	0.015	0.040	0
Gastropoda/Pelecypoda	1.825	1.034	2.429	2.089	3.152	9.698	2.652	2.522	2.892	1.400	2.769	7.797	1.449	1.126	4.052
Hirudinea	0	0.080	0.691	4.652	0	0.089	0	0.038	0	0	13.920	0.025	0.575	0	0
Malacostraca	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Megaloptera	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Odonata	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oligochaeta	1.157	1.378	1.157	0.432	0.483	0.834	0.511	0.618	0.854	0.148	0.323	0.175	0	0	0.108
Other Diptera	0.025	0.028	0	0.008	0	0.015	0.049	0.038	0.022	0.022	0	0.046	0	0	0
Other taxa	0.228	0.631	0.231	0.469	0.290	0.200	0.960	0.548	0.234	0.080	0.209	0.175	0.342	0.108	0.295
Trichoptera	0.591	0.777	2.385	0.838	0	0.228	0.117	0.317	0.228	0.363	0.117	0.338	8.865	0.145	0.018
Total	18.6	27.3	21.3	20.3	15.7	35.7	20.8	17.2	20.9	10.7	48.637	34.945	49.812	21.683	26.034

Taxonomic Group	Reference Areas[3]														
	Pasfield Lake														
	2011					2012					2015				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Amphipoda	0	0	0.045	0.028	0.392	0	0.209	0.648	0.235	1.642	0.425	0.064	0.173	0.010	0.118
Chironomidae	**24.372**	**23.069**	**8.909**	**49.800**	**6.971**	**4.900**	0.742	**3.205**	**3.329**	**4.138**	0.405	0.292	0.461	0.096	**0.856**
Ephemeroptera	0	0	0	0	0	0	0	0.003	0	0	0	0	0	0	0
Gastropoda/Pelecypoda	18.338	2.066	0.574	4.126	1.440	1.395	**0.882**	1.155	2.471	0.692	0.387	0.120	0.234	0.021	0.386
Hirudinea	0	0	0	0	0.017	0	0	0	0	0	0	0	0	0.026	0
Malacostraca	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Megaloptera	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Odonata	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oligochaeta	1.471	3.069	0.518	1.042	1.323	0.938	0.184	1.445	1.008	1.257	0.262	0.136	0.172	0.038	0.633
Other Diptera	0.003	0	0	0	0	0	0	0	0	0	0	0	0	0	0.022
Other taxa	0.160	0.286	0.271	0.160	0.363	0.495	0.122	0.254	0.163	0.411	**0.429**	**0.346**	**0.608**	**0.124**	0.631
Trichoptera	0.609	0.662	0.046	1.024	0.818	0	0.154	0	0	0.058	0	0	0	0	0.002
Total	45.0	29.2	10.4	56.2	11.3	7.7	2.3	6.7	7.2	8.2	1.908	0.959	1.650	0.316	2.648

All values are in g/m^2.

Bolded values are taxonomic groups with the highest biomass at a given sampling station.

[1] Heteroptera were excluded from biomass calculations because they are considered non-benthic.

[2] Values of 0 signify zero, not a very small value.

[3] Benthic invertebrate community biomass was not measured in RF-4 in either survey years, and Bobby's Lake was not sampled in 2015, therefore, biomass data was not available for these waterbodies at these times and is not included here.

APPENDIX B, TABLE 9

Detailed fish capture data for the EARMP technical program, 2011, 2012 and 2015.

Waterbody	Method	Site	Set Date	Catch Date	Species	Fish Number	Length (cm)	Weight (g)	Sex	Released	Maturity	Spawning Condition	Age Structure Collected	Age (years)	Stomach Contents	Comments
Bobby's Lake	HG	HG01-01	02/10/2009 10:30	02/10/2009 13:30	NP	1	66.2	1660	F	N	A	U	CL	9		Healthy; kept for chemistry
Bobby's Lake	HG	HG01-01	02/10/2009 10:30	02/10/2009 13:30	NP	2	59.2	1055	F	N	A	U	CL	8	Empty	Healthy; kept for chemistry
Bobby's Lake	HG	HG01-01	02/10/2009 10:30	02/10/2009 13:30	LSU	3	46.1	1220	F	N	A	U	FR	-	Empty	Healthy; kept for chemistry but not submitted
Bobby's Lake	HG	HG01-01	02/10/2009 10:30	02/10/2009 13:30	LW	4	35.5	340	M	Y	A	MT	-	-	-	-
Bobby's Lake	HG	HG01-01	02/10/2009 10:30	02/10/2009 13:30	LW	5	38.1	460	M	Y	A	MT	-	-	-	-
Bobby's Lake	HG	HG01-01	02/10/2009 10:30	02/10/2009 13:30	LW	6	26.6	220	F	Y	J	NS	-	-	-	-
Bobby's Lake	HG	HG01-01	02/10/2009 10:30	02/10/2009 13:30	LW	7	34	505	M	Y	A	MT	-	-	-	-
Bobby's Lake	HG	HG01-01	02/10/2009 10:30	02/10/2009 13:30	LW	8	21.2	110	U	Y	J	NS	-	-	-	-
Bobby's Lake	HG	HG01-01	02/10/2009 10:30	02/10/2009 13:30	WE	9	46.8	940	U	Y	U	U	-	-	-	-
Bobby's Lake	HG	HG01-01	02/10/2009 10:30	02/10/2009 13:30	WE	10	43.7	680	U	Y	U	U	-	-	-	-
Bobby's Lake	GN	GN01-01	02/10/2009 11:00	02/10/2009 14:30	LW	1	33.1	390	U	Y	U	U	-	-	-	-
Bobby's Lake	MT	MT01-01	02/10/2009 11:05	03/10/2009 12:30	NF	-	-	-	-	N	-	-	-	-	-	No fish captured
Bobby's Lake	MT	MT02-01	02/10/2009 11:10	03/10/2009 12:35	NF	-	-	-	-	N	-	-	-	-	-	No fish captured
Bobby's Lake	MT	MT03-01	02/10/2009 11:15	03/10/2009 12:40	NF	-	-	-	-	N	-	-	-	-	-	No fish captured
Bobby's Lake	MT	MT04-01	02/10/2009 11:20	03/10/2009 12:45	NF	-	-	-	-	N	-	-	-	-	-	No fish captured
Bobby's Lake	MT	MT05-01	02/10/2009 11:25	03/10/2009 12:50	NF	-	-	-	-	N	-	-	-	-	-	No fish captured
Bobby's Lake	MT	MT06-01	02/10/2009 11:30	03/10/2009 13:00	NF	-	-	-	-	N	-	-	-	-	-	No fish captured
Bobby's Lake	MT	MT07-01	02/10/2009 11:35	03/10/2009 13:10	NF	-	-	-	-	N	-	-	-	-	-	No fish captured
Bobby's Lake	MT	MT08-01	02/10/2009 11:40	03/10/2009 13:20	NF	-	-	-	-	N	-	-	-	-	-	No fish captured
Bobby's Lake	MT	MT09-01	02/10/2009 11:45	03/10/2009 13:30	NF	-	-	-	-	N	-	-	-	-	-	No fish captured
Bobby's Lake	MT	MT10-01	02/10/2009 11:50	03/10/2009 13:35	NF	-	-	-	-	N	-	-	-	-	-	No fish captured
Bobby's Lake	GN	GN02-01	02/10/2009 12:00	02/10/2009 15:00	WSU	1	42	705	M	N	U	U	FR	12	Empty	Healthy; kept for chemistry
Bobby's Lake	BN	BN01-01	02/10/2009 13:00	03/10/2009 13:00	-	-	-	-	-	N	-	-	-	-	-	-
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	NP	1	69.6	2460	F	N	U	U	CL	9	70% LW	Healthy; kept for chemistry
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	NP	2	43	550	M	N	U	U	CL		Empty	Healthy; kept for chemistry; not analyzed
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	WSU	3	45.8	1080	M	N	U	U	FR	14	5% Unidentified BI	Large lesion; kept for chemistry
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	WSU	4	47.2	1140	F	N	U	U	FR	12	25% Unidentified BI	Healthy; kept for chemistry
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	WSU	5	44.8	1005	F	N	U	U	FR	11	Empty	Healthy; kept for chemistry
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	WSU	6	40.9	700	U	Y	U	U	-	-	-	-
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	WSU	7	44	780	U	Y	U	U	-	-	-	-
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	WSU	8	47.2	1280	U	Y	U	U	-	-	-	-
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	LW	9	29	300	U	Y	J	U	-	-	-	-
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	WSU	10	24.6	180	U	Y	U	U	-	-	-	-
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	WE	11	40.5	780	U	Y	U	U	-	-	-	-
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	WE	12	51.2	1140	U	Y	U	U	-	-	-	-
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	WE	13	46.5	880	U	Y	U	U	-	-	-	-
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	WE	14	46.4	780	U	Y	U	U	-	-	-	-
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	WE	15	52.2	1160	U	Y	U	U	-	-	-	-
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	WE	16	479.3	1040	U	Y	U	U	-	-	-	-
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	WE	17	49.8	1060	U	Y	U	U	-	-	-	-
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	WE	18	48	1000	U	Y	U	U	-	-	-	-
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	WE	19	43.1	660	U	Y	U	U	-	-	-	-
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	WE	20	49.6	980	U	Y	U	U	-	-	-	-
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	WE	21	51.3	1120	U	Y	U	U	-	-	-	-
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	WE	22	52	1160	U	Y	U	U	-	-	-	-
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	WE	23	49.3	980	U	Y	U	U	-	-	-	-
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	WE	24	50.2	1060	U	Y	U	U	-	-	-	-
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	WE	25	52.7	1220	U	Y	U	U	-	-	-	-
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	WE	26	42.4	560	U	Y	U	U	-	-	-	-
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	WE	27	47.7	1000	U	Y	U	U	-	-	-	-
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	LW	28	45.8	1200	U	Y	A	MT	-	-	-	-
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	LW	29	41.6	760	U	Y	A	MT	-	-	-	-
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	LW	30	42.4	1000	U	Y	A	MT	-	-	-	-
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	LW	31	43.1	820	U	Y	A	MT	-	-	-	-
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	LW	32	42.8	1010	U	Y	A	MT	-	-	-	-
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	LW	33	42.1	805	U	Y	A	MT	-	-	-	-
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	LW	34	40.8	760	U	Y	A	MT	-	-	-	-
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	LW	35	45.5	1000	U	Y	A	MT	-	-	-	-
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	LW	36	42.1	720	U	Y	A	MT	-	-	-	-
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	LW	37	37.3	650	U	Y	U	U	-	-	-	-
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	LW	38	41.2	760	U	Y	U	U	-	-	-	-

APPENDIX B, TABLE 9

Detailed fish capture data for the EARMP technical program, 2011, 2012 and 2015.

Waterbody	Method	Site	Set Date	Catch Date	Species	Fish Number	Length (cm)	Weight (g)	Sex	Released	Maturity	Spawning Condition	Age Structure Collected	Age (years)	Stomach Contents	Comments
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	LW	39	40.7	740	U	Y	A	MT	-	-	-	-
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	LW	40	39.6	560	U	Y	A	MT	-	-	-	-
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	LW	41	38.8	680	U	Y	A	MT	-	-	-	-
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	LW	42	36.5	380	U	Y	A	MT	-	-	-	-
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	LW	43	39.1	580	U	Y	A	MT	-	-	-	-
Bobby's Lake	HG	HG02-01	02/10/2009 16:00	03/10/2009 9:00	LW	44	28.2	280	U	Y	J	NS	-	-	-	-
Bobby's Lake	BE	BE01-01	03/10/2009 14:00	03/10/2009 14:15	NP	1	17.1	-	U	Y	U	U	-	-	-	-
Bobby's Lake	BE	BE02-01	03/10/2009 14:30	03/10/2009 14:45	NF	-	-	-	-	N	-	-	-	-	-	No fish captured
Bobby's Lake	BE	BE03-01	03/10/2009 15:00	03/10/2009 15:15	YP	1	8.5	-	U	Y	U	U	-	-	-	-
Bobby's Lake	AN	AN01-01	03/10/2009 15:10	03/10/2009 15:15	NF	-	-	-	-	N	-	-	-	-	-	No fish captured
Bobby's Lake	AN	AN02-01	03/10/2009 15:15	03/10/2009 15:25	NF	-	-	-	-	N	-	-	-	-	-	No fish captured
Bobby's Lake	BE	BE04-01	03/10/2009 15:15	03/10/2009 15:30	NF	-	-	-	-	N	-	-	-	-	-	No fish captured
Bobby's Lake	BE	BE05-01	03/10/2009 15:50	03/10/2009 16:10	NF	-	-	-	-	N	-	-	-	-	-	No fish captured; observed small perch
Bobby's Lake	BE	BE06-01	03/10/2009 16:15	03/10/2009 16:30	NP	1	8.7	-	U	Y	U	U	-	-	-	-
Bobby's Lake	BE	BE07-01	03/10/2009 16:45	03/10/2009 17:00	NF	-	-	-	-	N	-	-	-	-	-	No fish captured
Bobby's Lake	BE	BE08-01	03/10/2009 17:00	03/10/2009 17:15	NF	-	-	-	-	N	-	-	-	-	-	No fish captured
Bobby's Lake	HG	HG03-1	04/10/2009 9:30	04/10/2009 13:00	NF	-	-	-	-	N	-	-	-	-	-	No fish captured
Bobby's Lake	HG	HG04-1	04/10/2009 13:30	04/10/2009 15:15	NF	-	-	-	-	N	-	-	-	-	-	No fish captured
Bobby's Lake	GN	GN03-01	04/10/2009 14:30	04/10/2009 16:00	NF	-	-	-	-	N	-	-	-	-	-	No fish captured
Bobby's Lake	GN	GN04-01	04/10/2009 14:40	04/10/2009 17:00	NP	1	53.1	715	F	N	U	U	CL	6	Empty	Kept for chemistry
Bobby's Lake	GN	GN04-01	04/10/2009 14:40	04/10/2009 17:00	NP	2	67.5	1720	F	N	U	U	CL	9	Empty	Kept for chemistry
Bobby's Lake	AN	AN01-1	04/10/2009 15:50	04/10/2009 16:50	NF	-	-	-	-	-	-	-	-	-	-	-
Waterbury Lake	GN	GN01-01	22/09/2011 11:10	22/09/2011 12:35	LT	2	47	1120	M	Y	A	SP	-	-	-	-
Waterbury Lake	GN	GN01-01	22/09/2011 11:10	22/09/2011 12:35	NP	3	78.5	3540	M	N	A	ST	CL	9	Empty	Kept for chemistry
Waterbury Lake	GN	GN02-01	22/09/2011 11:25	22/09/2011 13:55	NF	-	-	-	-	-	-	-	-	-	-	No fish captured
Waterbury Lake	GN	GN03-01	22/09/2011 11:45	22/09/2011 14:00	NF	-	-	-	-	-	-	-	-	-	-	No fish captured
Waterbury Lake	AN	AN01-01	22/09/2011 12:00	22/09/2011 12:10	LT	1	-	-	-	Y	-	-	-	-	-	-
Waterbury Lake	AN	AN01-01	22/09/2011 12:00	22/09/2011 12:10	LT	2	-	-	-	Y	-	-	-	-	-	-
Waterbury Lake	AN	AN02-01	22/09/2011 12:00	22/09/2011 12:20	NF	-	-	-	-	-	-	-	-	-	-	One LT got away; no fish captured
Waterbury Lake	GN	GN04-01	22/09/2011 12:45	22/09/2011 14:45	NF	-	-	-	-	-	-	-	-	-	-	No fish captured
Waterbury Lake	GN	GN05-01	22/09/2011 14:25	22/09/2011 17:25	NF	-	-	-	-	-	-	-	-	-	-	No fish captured
Waterbury Lake	GN	GN06-01	22/09/2011 14:55	22/09/2011 15:25	NF	-	-	-	-	-	-	-	-	-	-	No fish captured
Waterbury Lake	GN	GN07-01	22/09/2011 15:30	22/09/2011 17:35	NF	-	-	-	-	-	-	-	-	-	-	No fish captured
Waterbury Lake	GN	GN08-01	22/09/2011 17:45	23/09/2011 9:00	NP	1	85.9	4750	F	N	A	U	CL	8	Empty	Kept for chemistry
Waterbury Lake	GN	GN08-01	22/09/2011 17:45	23/09/2011 9:00	NP	2	67	2250	F	N	A	U	CL	4	Empty	Kept for chemistry
Waterbury Lake	GN	GN08-01	22/09/2011 17:45	23/09/2011 9:00	LT	3	66.2	2680	F	N	A	NS	OT	17	Empty	Kept for chemistry
Waterbury Lake	GN	GN08-01	22/09/2011 17:45	23/09/2011 9:00	LT	4	52.9	1920	M	N	A	M	OT	11	Empty	Kept for chemistry
Waterbury Lake	GN	GN08-01	22/09/2011 17:45	23/09/2011 9:00	LT	5	51.5	1440	F	N	A	ST	OT	16	Empty	Kept for chemistry
Waterbury Lake	GN	GN08-01	22/09/2011 17:45	23/09/2011 9:00	LT	6	50.6	1380	M	N	A	M	OT	12	Empty	Kept for chemistry
Waterbury Lake	GN	GN08-01	22/09/2011 17:45	23/09/2011 9:00	LT	7	53.5	3310	F	N	A	SP	OT	20	Empty	Kept for chemistry
Waterbury Lake	GN	GN08-01	22/09/2011 17:45	23/09/2011 9:00	LW	8	37.5	680	F	N	A	MT	OT	16	20% Unidentified BI	Kept for chemistry
Waterbury Lake	GN	GN08-01	22/09/2011 17:45	23/09/2011 9:00	LW	9	37.5	750	F	N	A	MT	OT	19	30% Unidentified BI	Kept for chemistry
Waterbury Lake	GN	GN08-01	22/09/2011 17:45	23/09/2011 9:00	LW	10	35.5	560	F	N	A	NS	OT	12	Empty	Kept for chemistry
Waterbury Lake	GN	GN08-01	22/09/2011 17:45	23/09/2011 9:00	LSU	11	37.2	750	M	N	A	U	FR	11	Empty	Composite with GN08-01 LSU12
Waterbury Lake	GN	GN08-01	22/09/2011 17:45	23/09/2011 9:00	LSU	12	33.5	480	F	N	A	U	FR	8	44% unknown	Composite with GN08-01 LSU11
Waterbury Lake	GN	GN08-01	22/09/2011 17:45	23/09/2011 9:00	LSU	13	38.6	800	M	N	A	U	FR	13	Empty	Kept for chemistry
Waterbury Lake	GN	GN08-01	22/09/2011 17:45	23/09/2011 9:00	LSU	14	39.5	920	M	N	A	U	FR	15	30% unknown	Kept for chemistry
Waterbury Lake	GN	GN08-01	22/09/2011 17:45	23/09/2011 9:00	LSU	15	37.5	720	M	N	A	U	FR	11	Empty	Composite with GN08-01 LSU16
Waterbury Lake	GN	GN08-01	22/09/2011 17:45	23/09/2011 9:00	LSU	16	33.5	550	F	N	A	U	FR	14	30% unknown	Composite with GN08-01 LSU15
Waterbury Lake	GN	GN08-01	22/09/2011 17:45	23/09/2011 9:00	LSU	17	33.5	5560	M	N	A	U	FR	13	20% unknown	Composite with GN08-01 LSU18
Waterbury Lake	GN	GN08-01	22/09/2011 17:45	23/09/2011 9:00	LSU	18	32.2	450	M	N	A	U	FR	10	Empty	Composite with GN08-01 LSU17
Waterbury Lake	GN	GN09-01	23/09/2011 10:00	23/09/2011 13:45	NF	-	-	-	-	-	-	-	-	-	-	No fish captured
Waterbury Lake	GN	GN10-01	23/09/2011 10:30	23/09/2011 14:00	NF	-	-	-	-	-	-	-	-	-	-	No fish captured
Pasfield Lake	GN	GN01-01	24/09/2011 9:30	24/09/2011 11:45	NF	-	-	-	-	-	-	-	-	-	-	No fish captured
Pasfield Lake	GN	GN02-01	24/09/2011 9:45	24/09/2011 10:20	LW	1	34	500	M	N	A	SP	OT	-	Empty	Kept for chemistry; not analyzed
Pasfield Lake	GN	GN02-01	24/09/2011 9:45	24/09/2011 10:20	NP	2	84.4	3750	F	N	A	U	CL	8	40% unknown	Kept for chemistry
Pasfield Lake	GN	GN03-01	24/09/2011 10:30	24/09/2011 12:45	LT	1	58.6	1980	F	N	A	NS	OT	23	Empty	Kept for chemistry
Pasfield Lake	AN	AN01-01	24/09/2011 12:00	24/09/2011 12:30	NF	-	-	-	-	-	-	-	-	-	-	No fish captured

APPENDIX B, TABLE 9

Detailed fish capture data for the EARMP technical program, 2011, 2012 and 2015.

Waterbody	Method	Site	Set Date	Catch Date	Species	Fish Number	Length (cm)	Weight (g)	Sex	Released	Maturity	Spawning Condition	Age Structure Collected	Age (years)	Stomach Contents	Comments
Pasfield Lake	AN	AN02-01	24/09/2011 12:00	24/09/2011 12:30	NF	-	-	-	-	-	-	-	-	-	-	No fish captured
Pasfield Lake	AN	AN03-01	24/09/2011 12:00	24/09/2011 13:00	LT	1	58.6	2010	F	N	A	ST	OT	18	10% small minnows	Kept for chemistry
Pasfield Lake	AN	AN03-01	24/09/2011 12:00	24/09/2011 13:00	LT	2	58.4	2015	M	N	A	ST	OT	19	Empty	Kept for chemistry
Pasfield Lake	AN	AN04-01	24/09/2011 12:00	24/09/2011 12:30	NF	-	-	-	-	-	-	-	-	-	-	No fish captured
Pasfield Lake	GN	GN04-01	24/09/2011 12:00	24/09/2011 15:30	NF	-	-	-	-	-	-	-	-	-	-	No fish captured
Pasfield Lake	GN	GN05-01	24/09/2011 13:20	24/09/2011 15:10	LT	1	53.1	1620	M	N	A	NS	OT	n/a	Empty	Kept for chemistry
Pasfield Lake	GN	GN05-01	24/09/2011 13:20	24/09/2011 15:10	LT	2	58.2	1630	M	N	A	ST	OT	21	Empty	Kept for chemistry
Pasfield Lake	GN	GN06-01	24/09/2011 15:45	24/09/2011 17:45	NF	-	-	-	-	-	-	-	-	-	-	No fish captured
Pasfield Lake	GN	GN07-01	24/09/2011 18:00	25/09/2011 9:00	LW	1	35.9	580	F	N	A	MT	OT	5	Empty	Composite with LW02
Pasfield Lake	GN	GN07-01	24/09/2011 18:00	25/09/2011 9:00	LW	2	32.3	410	M	N	A	NS	OT	5	Empty	Composite with LW01
Pasfield Lake	GN	GN07-01	24/09/2011 18:00	25/09/2011 9:00	LW	3	35.5	540	M	N	A	MT	OT	6	15% Unidentified BI	Composite with LW04
Pasfield Lake	GN	GN07-01	24/09/2011 18:00	25/09/2011 9:00	LW	4	33.5	475	F	N	A	M	OT	5	Empty	Composite with LW03
Pasfield Lake	GN	GN07-01	24/09/2011 18:00	25/09/2011 9:00	LW	5	36.1	528	F	N	A	NS	OT	5	Empty	Composite with LW06
Pasfield Lake	GN	GN07-01	24/09/2011 18:00	25/09/2011 9:00	LW	6	32.6	420	F	N	A	NS	OT	5	20% unknown	Composite with LW05
Pasfield Lake	GN	GN07-01	24/09/2011 18:00	25/09/2011 9:00	LW	7	33.4	460	F	N	J	NS	OT	5	Empty	Composite with LW08
Pasfield Lake	GN	GN07-01	24/09/2011 18:00	25/09/2011 9:00	LW	8	33.1	460	M	N	A	NS	OT	5	Empty	Composite with LW07
Pasfield Lake	GN	GN07-01	24/09/2011 18:00	25/09/2011 9:00	LW	9	34.3	510	F	N	A	MT	OT	5	Empty	Composite with LW10
Pasfield Lake	GN	GN07-01	24/09/2011 18:00	25/09/2011 9:00	LW	10	30.7	350	M	N	A	NS	OT	4	Empty	Composite with LW09
Pasfield Lake	GN	GN07-01	24/09/2011 18:00	25/09/2011 9:00	LSU	11	33.3	420	M	N	J	U	FR	10	25% Unidentified BI	Kept for chemistry
Pasfield Lake	GN	GN07-01	24/09/2011 18:00	25/09/2011 9:00	LSU	12	38.4	800	M	N	A	U	FR	13	40% unknown	Kept for chemistry
Pasfield Lake	GN	GN07-01	24/09/2011 18:00	25/09/2011 9:00	LSU	13	45.8	1690	F	N	A	U	FR	23	40% Unidentified BI	Kept for chemistry
Pasfield Lake	GN	GN08-01	25/09/2011 9:30	25/09/2011 12:30	NF	-	-	-	-	-	-	-	-	-	-	No fish captured
Cochrane River	GN	GN01-01	26/09/2011 9:15	26/09/2011 12:00	NF	-	-	-	-	-	-	-	-	-	-	No fish captured
Cochrane River	AN	AN01-01	26/09/2011 9:45	26/09/2011 10:45	LT	1	58.3	2440	F	N	A	ST	OT	18	60% stickleback	Kept for chemistry
Cochrane River	AN	AN01-01	26/09/2011 9:45	26/09/2011 10:45	LT	2	59.4	2280	F	N	A	ST	OT	10	50% stickleback	Kept for chemistry
Cochrane River	AN	AN01-01	26/09/2011 9:45	26/09/2011 10:45	LT	3	67.7	3460	F	N	A	ST	OT	23	60% stickleback	Kept for chemistry
Cochrane River	AN	AN01-01	26/09/2011 9:45	26/09/2011 10:45	LT	4	63.2	3320	F	N	A	ST	OT	23	35% stickleback	Kept for chemistry; green liver
Cochrane River	AN	AN01-01	26/09/2011 9:45	26/09/2011 10:45	LT	5	57.5	2380	F	N	A	ST	OT	19	90% white suckers	Kept for chemistry
Cochrane River	AN	AN01-01	26/09/2011 9:45	26/09/2011 10:45	NP	6	57.7	1420	M	N	A	U	CL	9	Empty	Kept for chemistry; green liver
Cochrane River	AN	AN01-01	26/09/2011 9:45	26/09/2011 10:45	NP	7	59.4	1700	M	N	A	U	CL	6	Empty	Kept for chemistry
Cochrane River	AN	AN02-01	26/09/2011 9:45	26/09/2011 10:45	NP	1	51.1	1110	M	N	A	U	CL	4	Empty	Kept for chemistry
Cochrane River	AN	AN02-01	26/09/2011 9:45	26/09/2011 10:45	NP	2	48.9	840	F	N	A	U	CL	4	Empty	Kept for chemistry
Cochrane River	AN	AN02-01	26/09/2011 9:45	26/09/2011 10:45	NP	3	52.1	1180	M	N	A	U	CL	6	Empty	Kept for chemistry
Cochrane River	GN	GN02-01	26/09/2011 9:45	26/09/2011 10:45	NF	-	-	-	-	-	-	-	-	-	-	No fish captured
Cochrane River	GN	GN03-01	26/09/2011 11:00	26/09/2011 15:30	NF	-	-	-	-	-	-	-	-	-	-	No fish captured
Cochrane River	GN	GN04-01	26/09/2011 12:30	26/09/2011 15:10	NF	-	-	-	-	-	-	-	-	-	-	No fish captured
Cochrane River	GN	GN05-01	26/09/2011 15:40	26/09/2011 17:00	NF	-	-	-	-	-	-	-	-	-	-	No fish captured
Cochrane River	GN	GN06-01	26/09/2011 17:00	27/09/2011 7:30	LW	1	42.5	960	F	N	A	MT	OT	32	Empty	Kept for chemistry
Cochrane River	GN	GN06-01	26/09/2011 17:00	27/09/2011 7:30	LW	2	49.4	1210	F	N	A	NS	OT	34	10% Unidentified BI	Kept for chemistry
Cochrane River	GN	GN06-01	26/09/2011 17:00	27/09/2011 7:30	LW	3	43.2	990	M	N	A	U	OT	10	40% BI	Kept for chemistry
Cochrane River	GN	GN06-01	26/09/2011 17:00	27/09/2011 7:30	LSU	4	37.9	930	M	N	A	U	FR	19	Empty	-
Cochrane River	GN	GN06-01	26/09/2011 17:00	27/09/2011 7:30	LSU	5	39.7	970	M	N	A	U	FR	16	10% unknown	Kept for chemistry
Cochrane River	GN	GN06-01	26/09/2011 17:00	27/09/2011 7:30	LSU	6	42.7	1210	M	N	A	U	FR	12	Empty	Kept for chemistry
Cochrane River	GN	GN07-01	27/09/2011 7:50	27/09/2011 11:50	NF	-	-	-	-	-	-	-	-	-	-	No fish captured
Cochrane River	GN	GN08-01	27/09/2011 12:00	27/09/2011 15:30	LW	1	46.5	1310	F	N	A	NS	OT	17	30% Unidentified BI	Kept for chemistry
Cochrane River	GN	GN08-01	27/09/2011 12:00	27/09/2011 15:30	LW	2	46.5	1380	F	N	A	M	OT	15	70% BI	Kept for chemistry
Cochrane River	GN	GN08-01	27/09/2011 12:00	27/09/2011 15:30	LW	3	43.8	1180	U	Y	A	U	-	-	-	-
Cree Lake	GN	GN01-01	28/09/2011 10:00	28/09/2011 13:10	LT	1	44.5	950	F	N	J	NS	OT	6	Empty	Kept for chemistry
Cree Lake	GN	GN01-01	28/09/2011 10:00	28/09/2011 13:10	LW	2	33.5	460	F	N	J	NS	OT	4	Empty	Composited with GN03-01 LW02
Cree Lake	GN	GN02-01	28/09/2011 10:15	28/09/2011 12:55	NF	-	-	-	-	-	-	-	-	-	-	No fish captured
Cree Lake	GN	GN03-01	28/09/2011 10:30	28/09/2011 12:45	LT	1	67.7	3240	M	N	A	M	OT	n/a	Empty	Dead
Cree Lake	GN	GN03-01	28/09/2011 10:30	28/09/2011 12:45	LW	2	36.3	550	M	N	J	NS	OT	6	15% BI	Composited with GN01-01 LW02
Cree Lake	AN	AN01-01	28/09/2011 12:00	28/09/2011 13:00	LT	1	47.4	1170	M	N	A	SP	OT	9	Empty	Kept for chemistry
Cree Lake	AN	AN01-01	28/09/2011 12:00	28/09/2011 13:00	LT	2	57.9	1920	M	N	A	SP	OT	18	Empty	Kept for chemistry
Cree Lake	AN	AN01-01	28/09/2011 12:00	28/09/2011 13:00	LT	3	48.1	1180	F	N	A	NS	OT	7	Empty	Kept for chemistry
Cree Lake	AN	AN01-01	28/09/2011 12:00	28/09/2011 13:00	LT	4	54.9	1620	F	N	A	NS	OT	10	Empty	Kept for chemistry
Cree Lake	GN	GN04-01	28/09/2011 13:15	28/09/2011 15:30	NF	-	-	-	-	-	-	-	-	-	-	No fish captured
Cree Lake	GN	GN05-01	28/09/2011 13:25	28/09/2011 15:25	NF	-	-	-	-	-	-	-	-	-	-	No fish captured
Cree Lake	GN	GN06-01	28/09/2011 15:45	28/09/2011 17:45	LT	1	60.6	2220	U	Y	A	U	-	-	-	-
Cree Lake	GN	GN06-01	28/09/2011 15:45	28/09/2011 17:45	LW	2	49.6	1530	M	N	A	MT	OT	9	Empty	Kept for chemistry

APPENDIX B, TABLE 9

Detailed fish capture data for the EARMP technical program, 2011, 2012 and 2015.

Waterbody	Method	Site	Set Date	Catch Date	Species	Fish Number	Length (cm)	Weight (g)	Sex	Released	Maturity	Spawning Condition	Age Structure Collected	Age (years)	Stomach Contents	Comments
Cree Lake	GN	GN07-01	28/09/2011 15:55	28/09/2011 17:55	LT	1	58.3	1740	M	Y	A	ST	-	-	-	-
Cree Lake	GN	GN07-01	28/09/2011 15:55	28/09/2011 17:55	LW	2	37.1	620	M	N	A	MT	OT	18	Empty	Composited with GN09-01 LW01
Cree Lake	GN	GN08-01	28/09/2011 18:15	29/09/2011 9:00	WSU	1	38.4	900	U	Y	A	U	-	-	-	-
Cree Lake	GN	GN08-01	28/09/2011 18:15	29/09/2011 9:00	LT	2	46.4	1180	F	N	A	SP	-	-	-	Dead
Cree Lake	GN	GN08-01	28/09/2011 18:15	29/09/2011 9:00	WSU	3	44.1	1360	U	Y	A	U	-	-	-	-
Cree Lake	GN	GN08-01	28/09/2011 18:15	29/09/2011 9:00	LT	4	54.1	1330	M	N	A	ST	-	-	-	Dead
Cree Lake	GN	GN08-01	28/09/2011 18:15	29/09/2011 9:00	LT	5	44	980	M	N	A	NS	-	-	-	Dead
Cree Lake	GN	GN08-01	28/09/2011 18:15	29/09/2011 9:00	LW	6	37.5	630	M	N	A	MT	-	-	Empty	Dead
Cree Lake	GN	GN08-01	28/09/2011 18:15	29/09/2011 9:00	LW	7	35.4	510	M	N	A	MT	-	-	Empty	Dead
Cree Lake	GN	GN08-01	28/09/2011 18:15	29/09/2011 9:00	LW	8	35.7	515	F	N	A	NS	-	-	Empty	Dead
Cree Lake	GN	GN08-01	28/09/2011 18:15	29/09/2011 9:00	LW	9	36.1	550	F	N	A	M	-	-	Empty	Dead
Cree Lake	GN	GN08-01	28/09/2011 18:15	29/09/2011 9:00	LW	10	34.9	520	M	N	A	NS	-	-	Empty	Dead
Cree Lake	GN	GN08-01	28/09/2011 18:15	29/09/2011 9:00	LW	11	35.7	550	U	Y	A	G	-	-	-	-
Cree Lake	GN	GN08-01	28/09/2011 18:15	29/09/2011 9:00	LW	12	35.7	480	U	Y	A	G	-	-	-	-
Cree Lake	GN	GN08-01	28/09/2011 18:15	29/09/2011 9:00	LW	13	33.7	475	F	N	A	M	-	-	Empty	Dead
Cree Lake	GN	GN08-01	28/09/2011 18:15	29/09/2011 9:00	LSU	14	34.5	580	U	Y	A	U	-	-	-	-
Cree Lake	GN	GN08-01	28/09/2011 18:15	29/09/2011 9:00	WSU	15	33.1	600	U	Y	A	MT	-	-	-	-
Cree Lake	GN	GN08-01	28/09/2011 18:15	29/09/2011 9:00	WSU	16	33.5	520	F	N	A	MT	-	-	-	Dead
Cree Lake	GN	GN08-01	28/09/2011 18:15	29/09/2011 9:00	BB	17	56.1	1140	U	Y	A	MT	-	-	-	-
Cree Lake	GN	GN09-01	28/09/2011 18:30	29/09/2011 9:30	LW	1	33.4	420	M	N	J	NS	OT	8	Empty	Composited with GN07-01 LW02
Cree Lake	GN	GN09-01	28/09/2011 18:30	29/09/2011 9:30	WSU	2	37.7	810	U	N	A	MT	FR	9	25% Unidentified BI	Kept for chemistry, lesion on tail
Cree Lake	GN	GN09-01	28/09/2011 18:30	29/09/2011 9:30	WSU	3	36.7	790	U	N	A	MT	FR	7	Empty	Kept for chemistry
Cree Lake	GN	GN09-01	28/09/2011 18:30	29/09/2011 9:30	WSU	4	38.4	900	U	N	A	MT	FR	9	Empty	Kept for chemistry
Cree Lake	GN	GN09-01	28/09/2011 18:30	29/09/2011 9:30	WSU	5	37.8	855	U	N	A	MT	FR	8	30% Unidentified BI	Kept for chemistry
Cree Lake	GN	GN09-01	28/09/2011 18:30	29/09/2011 9:30	WSU	6	41.7	1165	U	N	A	MT	FR	9	Empty	Kept for chemistry
Cree Lake	GN	GN09-01	28/09/2011 18:30	29/09/2011 9:30	LSU	7	45.6	1510	U	N	A	MT	FR	23	Empty	Kept for chemistry
Cree Lake	GN	GN09-01	28/09/2011 18:30	29/09/2011 9:30	LSU	8	36.4	610	U	N	A	MT	FR	14	Empty	Composited with LSU09
Cree Lake	GN	GN09-01	28/09/2011 18:30	29/09/2011 9:30	LSU	9	33.2	510	U	N	A	MT	FR	14	20% Unidentified BI	Composited with LSU08
Cree Lake	GN	GN09-01	28/09/2011 18:30	29/09/2011 9:30	LSU	10	35.1	600	U	N	A	MT	FR	10	Empty	Composited with LSU11
Cree Lake	GN	GN09-01	28/09/2011 18:30	29/09/2011 9:30	LSU	11	34.3	520	U	N	A	MT	FR	8	Empty	Composited with LSU10
Cree Lake	GN	GN09-01	28/09/2011 18:30	29/09/2011 9:30	LSU	12	34.6	540	U	N	A	MT	FR	9	10% Unidentified BI	Composited with LSU13
Cree Lake	GN	GN09-01	28/09/2011 18:30	29/09/2011 9:30	LSU	13	35	560	U	N	A	MT	FR	14	10% Unidentified BI	Composited with LSU12
Cree Lake	GN	GN09-01	28/09/2011 18:30	29/09/2011 9:30	LSU	14	36.7	715	U	N	A	MT	FR	13	10% Unidentified BI	Composited with LSU15
Cree Lake	GN	GN09-01	28/09/2011 18:30	29/09/2011 9:30	LSU	15	36.5	670	U	N	A	MT	FR	10	Empty	Composited with LSU14
Cree Lake	GN	GN09-01	28/09/2011 18:30	29/09/2011 9:30	LT	16	46.3	1180	U	Y	A	ST	-	-	-	-
Cree Lake	GN	GN09-01	28/09/2011 18:30	29/09/2011 9:30	LT	17	55.9	2050	M	Y	A	SP	-	-	-	-
Cree Lake	GN	GN09-01	28/09/2011 18:30	29/09/2011 9:30	NP	18	74.6	3150	U	Y	A	MT	-	-	-	-
Cree Lake	GN	GN09-01	28/09/2011 18:30	29/09/2011 9:30	LW	19	44.4	950	M	N	A	NS	OT	8	Empty	Kept for chemistry
Cree Lake	GN	GN09-01	28/09/2011 18:30	29/09/2011 9:30	LW	20	39.4	705	M	N	A	MT	OT	12	Empty	composited with GN09-01 LW21
Cree Lake	GN	GN09-01	28/09/2011 18:30	29/09/2011 9:30	LW	21	34.7	520	M	N	A	MT	OT	9	Empty	composited with GN09-01 LW20
Cree Lake	GN	GN09-01	28/09/2011 18:30	29/09/2011 9:30	LT	22	38.1	920	U	Y	A	MT	-	-	-	-
Crackingstone Inlet	GN	GN01-01	04/10/2011 12:00	05/10/2011 10:00	LT	1	55.1	2280	M	N	A	SP	OT	14	10% Stickleback	Kept for chemistry
Crackingstone Inlet	GN	GN01-01	04/10/2011 12:00	05/10/2011 10:00	LT	2	55.7	2160	F	N	A	SP	OT	19	Empty	Kept for chemistry
Crackingstone Inlet	GN	GN01-01	04/10/2011 12:00	05/10/2011 10:00	LT	3	54.1	1780	F	N	A	SP	OT	14	Empty	Kept for chemistry
Crackingstone Inlet	GN	GN01-01	04/10/2011 12:00	05/10/2011 10:00	LT	4	53.3	1950	M	N	A	SP	OT	14	70% Stickleback	Kept for chemistry
Crackingstone Inlet	GN	GN01-01	04/10/2011 12:00	05/10/2011 10:00	LT	5	52.6	1680	M	N	A	SP	OT	n/a	Empty	Kept for chemistry
Crackingstone Inlet	GN	GN01-01	04/10/2011 12:00	05/10/2011 10:00	LW	6	40.1	1090	F	N	A	M	OT	14	20% UIR	Kept for chemistry
Crackingstone Inlet	GN	GN01-01	04/10/2011 12:00	05/10/2011 10:00	LW	7	41.4	1220	M	N	A	M	OT	8	Empty	Kept for chemistry
Crackingstone Inlet	GN	GN01-01	04/10/2011 12:00	05/10/2011 10:00	LW	8	43.4	1260	M	N	A	NS	OT	13	35% UIR	Kept for chemistry
Crackingstone Inlet	GN	GN01-01	04/10/2011 12:00	05/10/2011 10:00	LW	9	40.4	1060	F	N	A	NS	OT	14	40% UIR	Kept for chemistry
Crackingstone Inlet	GN	GN01-01	04/10/2011 12:00	05/10/2011 10:00	LW	10	41.3	1150	F	N	A	M	OT	19	Empty	Kept for chemistry
Crackingstone Inlet	GN	GN01-01	04/10/2011 12:00	05/10/2011 10:00	NP	1	55.2	1320	M	N	A	MT	CL	5	10% Lake whitefish	Kept for chemistry
Crackingstone Inlet	GN	GN01-01	04/10/2011 12:00	05/10/2011 10:00	NP	2	55.9	1410	F	N	A	MT	CL	5	30% Lake whitefish	Kept for chemistry
Crackingstone Inlet	GN	GN01-01	04/10/2011 12:00	05/10/2011 10:00	NP	3	59.9	1720	F	N	A	MT	CL	5	Empty	Kept for chemistry
Crackingstone Inlet	GN	GN01-01	04/10/2011 12:00	05/10/2011 10:00	NP	4	61.7	1960	F	N	A	MT	CL	7	10% UIR	Kept for chemistry
Crackingstone Inlet	GN	GN01-01	04/10/2011 12:00	05/10/2011 10:00	NP	5	71.5	2560	F	N	A	MT	CL	9	Empty	Kept for chemistry
Ellis Bay	GN	GN01-01	04/10/2011 18:00	05/10/2011 10:00	LT	1	49.8	1490	M	N	A	NS	OT	12	30% Stickleback	Kept for chemistry
Ellis Bay	GN	GN01-01	04/10/2011 18:00	05/10/2011 10:00	LT	2	48.6	1480	M	N	A	NS	OT	8	50% Sucker	Kept for chemistry
Ellis Bay	GN	GN01-01	04/10/2011 18:00	05/10/2011 10:00	LT	3	53.9	1920	F	N	A	NS	OT	23	60% Stickleback	Kept for chemistry
Ellis Bay	GN	GN01-01	04/10/2011 18:00	05/10/2011 10:00	LT	4	48.5	1420	F	N	J	NS	OT	8	50% Stickleback	Kept for chemistry
Ellis Bay	GN	GN01-01	04/10/2011 18:00	05/10/2011 10:00	LT	5	55.6	2480	F	N	A	NS	OT	11	25% Stickleback	Kept for chemistry
Ellis Bay	GN	GN01-01	04/10/2011 18:00	05/10/2011 10:00	LW	6	32	1250	M	N	A	M	OT	31	Empty	Kept for chemistry
Ellis Bay	GN	GN01-01	04/10/2011 18:00	05/10/2011 10:00	LW	7	43.2	1260	M	N	A	M	OT	27	Empty	Kept for chemistry
Ellis Bay	GN	GN01-01	04/10/2011 18:00	05/10/2011 10:00	LW	8	40	1380	F	N	A	M	OT	22	Empty	Kept for chemistry
Ellis Bay	GN	GN01-01	04/10/2011 18:00	05/10/2011 10:00	LW	9	39.5	1120	F	N	A	M	OT	18	Empty	Kept for chemistry
Ellis Bay	GN	GN01-01	04/10/2011 18:00	05/10/2011 10:00	LW	10	38.6	880	F	N	A	M	OT	11	Empty	Kept for chemistry

APPENDIX B, TABLE 9

Detailed fish capture data for the EARMP technical program, 2011, 2012 and 2015.

Waterbody	Method	Site	Set Date	Catch Date	Species	Fish Number	Length (cm)	Weight (g)	Sex	Released	Maturity	Spawning Condition	Age Structure Collected	Age (years)	Stomach Contents	Comments
Fond du Lac River	GN	GN01-01	25/10/2011 10:26	25/10/2011 15:55	NF	-	-	-	-	-	-	-	-	-	-	No fish captured
Fond du Lac River	GN	GN02-01	25/10/2011 10:38	25/10/2011 15:43	NF	-	-	-	-	-	-	-	-	-	-	No fish captured
Fond du Lac River	GN	GN03-01	25/10/2011 10:45	25/10/2011 15:37	NF	-	-	-	-	-	-	-	-	-	-	No fish captured
Fond du Lac River	GN	GN04-01	25/10/2011 16:05	26/10/2011 10:15	LW	1	40.1	1060	M	N	A	NS	OT	16	25% Unidentified BI	Kept for chemistry
Fond du Lac River	GN	GN04-01	25/10/2011 16:05	26/10/2011 10:15	LW	2	41.5	1040	F	N	A	ST	OT	16	Empty	Kept for chemistry
Fond du Lac River	GN	GN04-01	25/10/2011 16:05	26/10/2011 10:15	LW	3	45.8	1690	M	N	A	SP	OT	26	Empty	Kept for chemistry
Fond du Lac River	GN	GN04-01	25/10/2011 16:05	26/10/2011 10:15	LW	4	53.1	2550	M	N	A	SP	OT	32	20% Unidentified BI	Kept for chemistry
Fond du Lac River	GN	GN04-01	25/10/2011 16:05	26/10/2011 10:15	LW	5	44.3	1050	M	N	A	SP	OT	10	Empty	Kept for chemistry
Fond du Lac River	GN	GN04-01	25/10/2011 16:05	26/10/2011 10:15	NP	6	46.3	910	M	N	A	ST	CL	3	Empty	Kept for chemistry
Fond du Lac River	GN	GN04-01	25/10/2011 16:05	26/10/2011 10:15	NP	7	54.3	4060	M	N	A	ST	CL	5	Empty	Kept for chemistry
Fond du Lac River	GN	GN04-01	25/10/2011 16:05	26/10/2011 10:15	NP	8	63.4	2550	M	N	A	ST	CL	9	40% Sucker	Kept for chemistry
Fond du Lac River	GN	GN04-01	25/10/2011 16:05	26/10/2011 10:15	NP	9	55.8	1380	F	N	A	ST	CL	5	Empty	Kept for chemistry
Fond du Lac River	GN	GN04-01	25/10/2011 16:05	26/10/2011 10:15	NP	10	48.9	980	M	N	A	ST	CL	3	Empty	Kept for chemistry
Fond du Lac River	GN	GN04-01	25/10/2011 16:05	26/10/2011 10:15	LW	11	37.5	680	F	Y	A	SP	-	-	-	-
Fond du Lac River	GN	GN04-01	25/10/2011 16:05	26/10/2011 10:15	LSU	11	37.5	980	F	N	A	MT	FR	16	35% Unidentified BI	Kept for chemistry
Fond du Lac River	GN	GN04-01	25/10/2011 16:05	26/10/2011 10:15	NP	12	50.8	950	U	Y	A	U	-	-	-	-
Fond du Lac River	GN	GN04-01	25/10/2011 16:05	26/10/2011 10:15	WSU	13	37.9	800	U	Y	A	U	-	-	-	-
Fond du Lac River	GN	GN04-01	25/10/2011 16:05	26/10/2011 10:15	NP	14	72.5	2920	U	Y	A	U	-	-	-	-
Fond du Lac River	GN	GN04-01	25/10/2011 16:05	26/10/2011 10:15	NP	15	68.3	2440	U	Y	A	U	-	-	-	-
Fond du Lac River	GN	GN05-01	25/10/2011 16:20	26/10/2011 9:15	WSU	1	43.2	1350	M	N	A	MT	FR	14	Empty	Kept for chemistry
Fond du Lac River	GN	GN05-01	25/10/2011 16:20	26/10/2011 9:15	WSU	2	44.5	1390	M	N	A	MT	FR	20	Empty	Kept for chemistry
Fond du Lac River	GN	GN05-01	25/10/2011 16:20	26/10/2011 9:15	WSU	3	40.8	1130	F	N	A	MT	FR	13	25% Unidentified BI	Kept for chemistry
Fond du Lac River	GN	GN05-01	25/10/2011 16:20	26/10/2011 9:15	WSU	4	40.5	1290	F	N	A	MT	FR	14	-	Kept for chemistry
Fond du Lac River	GN	GN05-01	25/10/2011 16:20	26/10/2011 9:15	WSU	5	49.6	1920	M	N	A	MT	FR	26	50% Unidentified BI	Kept for chemistry
Fond du Lac River	GN	GN05-01	25/10/2011 16:20	26/10/2011 9:15	LSU	6	36.2	840	M	N	A	MT	FR	13	-	Kept for chemistry
Fond du Lac River	GN	GN05-01	25/10/2011 16:20	26/10/2011 9:15	LSU	7	42.2	1450	F	N	A	MT	FR	19	30% Unidentified BI	Kept for chemistry
Fond du Lac River	GN	GN05-01	25/10/2011 16:20	26/10/2011 9:15	LT	8	56.2	2610	F	N	A	ST	OT	21	-	Kept for chemistry
Fond du Lac River	GN	GN05-01	25/10/2011 16:20	26/10/2011 9:15	NP	9	69.9	2750	U	Y	A	U	-	-	-	-
Fond du Lac River	GN	GN05-01	25/10/2011 16:20	26/10/2011 9:15	LW	10	40.3	945	U	Y	A	U	-	-	-	-
Fond du Lac River	GN	GN05-01	25/10/2011 16:20	26/10/2011 9:15	WSU	11	38.7	1050	U	Y	A	U	-	-	-	-
Fond du Lac River	GN	GN05-01	25/10/2011 16:20	26/10/2011 9:15	WSU	12	41.5	1180	U	Y	A	U	-	-	-	-
Fond du Lac River	GN	GN05-01	25/10/2011 16:20	26/10/2011 9:15	WSU	13	38.8	920	U	Y	A	U	-	-	-	-
Fond du Lac River	GN	GN05-01	25/10/2011 16:20	26/10/2011 9:15	WSU	14	51.2	1820	U	Y	A	U	-	-	-	-
Fond du Lac River	GN	GN05-01	25/10/2011 16:20	26/10/2011 9:15	WSU	15	37.5	880	U	Y	A	U	-	-	-	-
Fond du Lac River	GN	GN05-01	25/10/2011 16:20	26/10/2011 9:15	WSU	16	44.6	1520	U	Y	A	U	-	-	-	-
Fond du Lac River	GN	GN05-01	25/10/2011 16:20	26/10/2011 9:15	WSU	17	36.3	710	U	Y	A	U	-	-	-	-
Fond du Lac River	GN	GN05-01	25/10/2011 16:20	26/10/2011 9:15	WSU	18	39.4	1005	U	Y	A	U	-	-	-	-
Fond du Lac River	GN	GN05-01	25/10/2011 16:20	26/10/2011 9:15	WSU	19	45.2	1340	U	Y	A	U	-	-	-	-
Fond du Lac River	GN	GN05-01	25/10/2011 16:20	26/10/2011 9:15	WSU	20	37.2	840	U	Y	A	U	-	-	-	-
Fond du Lac River	GN	GN05-01	25/10/2011 16:20	26/10/2011 9:15	LW	21	47.2	1130	U	Y	A	U	-	-	-	-
Fond du Lac River	GN	GN05-01	25/10/2011 16:20	26/10/2011 9:15	LW	22	37.5	610	U	Y	A	U	-	-	-	-
Fond du Lac River	GN	GN05-01	25/10/2011 16:20	26/10/2011 9:15	LW	23	40.8	880	M	Y	A	SP	-	-	-	-
Fond du Lac River	GN	GN06-01	26/10/2011 10:35	26/10/2011 16:15	NF	-	-	-	-	-	-	-	-	-	-	No fish captured
Fond du Lac River	GN	GN07-01	26/10/2011 10:45	26/10/2011 16:24	NF	-	-	-	-	-	-	-	-	-	-	No fish captured
Fond du Lac River	GN	GN06-02	26/10/2011 16:20	28/10/2011 9:50	LSU	1	52.8	2020	F	N	A	MT	FR	27	Empty	Kept for chemistry
Fond du Lac River	GN	GN06-02	26/10/2011 16:20	28/10/2011 9:50	LSU	2	43.5	1250	M	N	A	MT	FR	19	Empty	Kept for chemistry
Fond du Lac River	GN	GN06-02	26/10/2011 16:20	28/10/2011 9:50	LW	3	38.8	670	M	Y	A	SP	-	-	-	-
Fond du Lac River	GN	GN06-02	26/10/2011 16:20	28/10/2011 9:50	LW	4	39.5	880	U	Y	A	MT	-	-	-	-
Fond du Lac River	GN	GN06-02	26/10/2011 16:20	28/10/2011 9:50	BB	5	44.6	550	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN06-02	26/10/2011 16:20	28/10/2011 9:50	LW	6	-	-	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN06-02	26/10/2011 16:20	28/10/2011 9:50	LW	7	-	-	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN06-02	26/10/2011 16:20	28/10/2011 9:50	LW	8	-	-	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN06-02	26/10/2011 16:20	28/10/2011 9:50	LW	9	-	-	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN06-02	26/10/2011 16:20	28/10/2011 9:50	LW	10	-	-	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN06-02	26/10/2011 16:20	28/10/2011 9:50	LW	11	-	-	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN06-02	26/10/2011 16:20	28/10/2011 9:50	NP	12	-	-	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN06-02	26/10/2011 16:20	28/10/2011 9:50	LSU	13	-	-	U	Y	U	U	-	-	-	-

APPENDIX B, TABLE 9

Detailed fish capture data for the EARMP technical program, 2011, 2012 and 2015.

Waterbody	Method	Site	Set Date	Catch Date	Species	Fish Number	Length (cm)	Weight (g)	Sex	Released	Maturity	Spawning Condition	Age Structure Collected	Age (years)	Stomach Contents	Comments
Fond du Lac River	GN	GN06-02	26/10/2011 16:20	28/10/2011 9:50	BB	14	-	-	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN07-02	26/10/2011 16:30	28/10/2011 9:15	LW	1	47.4	1310	F	Y	A	SP	-	-	-	-
Fond du Lac River	GN	GN07-02	26/10/2011 16:30	28/10/2011 9:15	LW	2	45.1	1180	F	Y	A	SP	-	-	-	-
Fond du Lac River	GN	GN07-02	26/10/2011 16:30	28/10/2011 9:15	LW	3	39.2	720	F	Y	A	SP	-	-	-	-
Fond du Lac River	GN	GN07-02	26/10/2011 16:30	28/10/2011 9:15	LW	4	43.5	1175	U	Y	A	U	-	-	-	-
Fond du Lac River	GN	GN07-02	26/10/2011 16:30	28/10/2011 9:15	LW	5	33.1	380	U	Y	J	NS	-	-	-	-
Fond du Lac River	GN	GN07-02	26/10/2011 16:30	28/10/2011 9:15	LW	6	33.8	410	U	Y	J	NS	-	-	-	-
Fond du Lac River	GN	GN07-02	26/10/2011 16:30	28/10/2011 9:15	LW	7	45.1	1150	M	Y	A	SP	-	-	-	-
Fond du Lac River	GN	GN07-02	26/10/2011 16:30	28/10/2011 9:15	LW	8	35.4	490	U	Y	J	NS	-	-	-	-
Fond du Lac River	GN	GN07-02	26/10/2011 16:30	28/10/2011 9:15	LW	9	40.2	830	M	Y	A	SP	-	-	-	-
Fond du Lac River	GN	GN07-02	26/10/2011 16:30	28/10/2011 9:15	LW	10	39.6	690	U	Y	A	U	-	-	-	-
Fond du Lac River	GN	GN07-02	26/10/2011 16:30	28/10/2011 9:15	LW	11	36.4	560	U	Y	J	NS	-	-	-	-
Fond du Lac River	GN	GN07-02	26/10/2011 16:30	28/10/2011 9:15	LW	12	35.5	560	U	Y	J	NS	-	-	-	-
Fond du Lac River	GN	GN07-02	26/10/2011 16:30	28/10/2011 9:15	LW	13	34.2	495	U	Y	J	NS	-	-	-	-
Fond du Lac River	GN	GN07-02	26/10/2011 16:30	28/10/2011 9:15	LW	14	34.3	430	U	Y	J	NS	-	-	-	-
Fond du Lac River	GN	GN07-02	26/10/2011 16:30	28/10/2011 9:15	LT	15	57.2	1850	F	N	A	ST	OT	21	Empty	Kept for chemistry
Fond du Lac River	GN	GN07-02	26/10/2011 16:30	28/10/2011 9:15	NP	16	56.4	1280	U	Y	A	U	-	-	-	-
Fond du Lac River	GN	GN07-02	26/10/2011 16:30	28/10/2011 9:15	NP	17	72.9	3930	U	Y	A	U	-	-	-	-
Fond du Lac River	GN	GN07-02	26/10/2011 16:30	28/10/2011 9:15	NP	18	74.9	3960	U	Y	A	U	-	-	-	-
Fond du Lac River	GN	GN07-02	26/10/2011 16:30	28/10/2011 9:15	NP	19	65.2	2230	U	Y	A	U	-	-	-	-
Fond du Lac River	GN	GN07-02	26/10/2011 16:30	28/10/2011 9:15	NP	20	61.5	1880	U	Y	A	U	-	-	-	-
Fond du Lac River	GN	GN07-02	26/10/2011 16:30	28/10/2011 9:15	LW	21	-	-	U	Y	A	U	-	-	-	-
Fond du Lac River	GN	GN07-02	26/10/2011 16:30	28/10/2011 9:15	LW	22	-	-	U	Y	A	U	-	-	-	-
Fond du Lac River	GN	GN07-02	26/10/2011 16:30	28/10/2011 9:15	LW	23	-	-	U	Y	A	U	-	-	-	-
Fond du Lac River	GN	GN07-02	26/10/2011 16:30	28/10/2011 9:15	LW	24	-	-	U	Y	A	U	-	-	-	-
Fond du Lac River	GN	GN07-02	26/10/2011 16:30	28/10/2011 9:15	LW	25	-	-	U	Y	A	U	-	-	-	-
Fond du Lac River	GN	GN07-02	26/10/2011 16:30	28/10/2011 9:15	LW	26	-	-	U	Y	A	U	-	-	-	-
Fond du Lac River	GN	GN07-02	26/10/2011 16:30	28/10/2011 9:15	LW	27	-	-	U	Y	A	U	-	-	-	-
Fond du Lac River	GN	GN07-02	26/10/2011 16:30	28/10/2011 9:15	LW	28	-	-	U	Y	A	U	-	-	-	-
Fond du Lac River	GN	GN07-02	26/10/2011 16:30	28/10/2011 9:15	LW	29	-	-	U	Y	A	U	-	-	-	-
Fond du Lac River	GN	GN07-02	26/10/2011 16:30	28/10/2011 9:15	NP	30	-	-	U	Y	A	U	-	-	-	-
Fond du Lac River	GN	GN07-02	26/10/2011 16:30	28/10/2011 9:15	NP	31	-	-	U	Y	A	U	-	-	-	-
Fond du Lac River	GN	GN07-02	26/10/2011 16:30	28/10/2011 9:15	NP	32	-	-	U	Y	A	U	-	-	-	-
Fond du Lac River	GN	GN07-02	26/10/2011 16:30	28/10/2011 9:15	NP	33	-	-	U	Y	A	U	-	-	-	-
Fond du Lac River	GN	GN07-02	26/10/2011 16:30	28/10/2011 9:15	WSU	34	-	-	U	Y	A	U	-	-	-	-
Fond du Lac River	GN	GN07-02	26/10/2011 16:30	28/10/2011 9:15	WSU	35	-	-	U	Y	A	U	-	-	-	-
Fond du Lac River	GN	GN08-01	28/10/2011 11:05	28/10/2011 15:30	NF	-	-	-	-	-	-	-	-	-	-	No fish captured
Ellis Bay	AN	AN01-01	28/06/2012 12:00	28/06/2012 12:00	NP	1	76	2800	F	FALSE	A	MT	CL	6	100% digested fish	Kept for chemistry
Ellis Bay	AN	AN01-01	28/06/2012 12:00	28/06/2012 12:00	NP	2	67.7	2760	M	FALSE	A	MT	CL	9	25% digested fish	Kept for chemistry
Ellis Bay	AN	AN01-01	28/06/2012 12:00	28/06/2012 12:00	NP	3	67.8	1660	F	FALSE	A	M	CL	5	Empty	Kept for chemistry
Ellis Bay	AN	AN01-01	28/06/2012 12:00	28/06/2012 12:00	NP	4	72.3	2760	F	FALSE	A	M	CL	7	25% digested fish	Kept for chemistry
Ellis Bay	AN	AN01-01	28/06/2012 12:00	28/06/2012 12:00	NP	5	89.5	4860	F	FALSE	A	MT	CL	16	100% Whole LW	Kept for chemistry
Cree Lake	AN	AN01-01	05/07/2012 3:10	05/07/2012 3:30	NF	-	-	-	-	N	-	-	-	-	-	No fish captured; observed ~20 fish LSU, WSU, and LW
Cree Lake	GN	GN01-01	05/07/2012 3:47	05/07/2012 5:07	WSU	1	44.6	1000	F	N	A	U	FR	13	-	Kept for chemistry; submitted
Cree Lake	AN	AN02-01	05/07/2012 3:52	05/07/2012 4:03	NF	-	-	-	-	N	-	-	-	-	-	No fish captured; 1 NP got away
Cree Lake	AN	AN03-01	05/07/2012 4:15	05/07/2012 4:25	NF	-	-	-	-	N	-	-	-	-	-	No fish captured
Cree Lake	AN	AN02-02	05/07/2012 4:43	05/07/2012 5:06	NF	-	-	-	-	N	-	-	-	-	-	No fish captured
Cree Lake	GN	GN01-02	05/07/2012 6:19	05/07/2012 7:33	WSU	1	38.8	730	M	N	A	U	FR	8	-	Kept for chemistry; submitted
Cree Lake	GN	GN01-02	05/07/2012 6:19	05/07/2012 7:33	WSU	2	38.6	710	F	N	A	U	FR	7	-	Kept for chemistry; submitted
Cree Lake	GN	GN01-02	05/07/2012 6:19	05/07/2012 7:33	WSU	3	38.6	710	U	Y	A	U	-	-	-	Healthy
Cree Lake	GN	GN01-02	05/07/2012 6:19	05/07/2012 7:33	WSU	4	34.9	620	U	Y	A	U	-	-	-	Healthy
Cree Lake	GN	GN01-02	05/07/2012 6:19	05/07/2012 7:33	WSU	5	35.8	640	U	Y	A	U	-	-	-	Healthy
Cree Lake	GN	GN01-02	05/07/2012 6:19	05/07/2012 7:33	WSU	6	34.7	560	U	Y	A	U	-	-	-	Healthy
Cree Lake	GN	GN01-02	05/07/2012 6:19	05/07/2012 7:33	NP	7	106	7900	F	N	A	U	CL	16	-	Kept for chemistry
Cree Lake	GN	GN01-02	05/07/2012 6:19	05/07/2012 7:33	NP	8	98.7	7600	F	N	A	U	CL	11	-	Kept for chemistry
Cree Lake	GN	GN01-02	05/07/2012 6:19	05/07/2012 7:33	LSU	9	36.9	660	F	N	A	U	FR	13	-	Kept for chemistry
Cree Lake	GN	GN01-03	05/07/2012 8:05	05/07/2012 9:15	NP	1	47.7	840	M	N	A	U	CL	3	-	Kept for chemistry; photo 18 & 19 green liver
Cree Lake	GN	GN01-03	05/07/2012 8:05	05/07/2012 9:15	NP	2	68.7	2600	M	N	A	U	CL	9	-	Kept for chemistry
Cree Lake	GN	GN01-03	05/07/2012 8:05	05/07/2012 9:15	LSU	3	39.7	780	F	N	A	U	FR	17	-	Kept for chemistry

APPENDIX B, TABLE 9

Detailed fish capture data for the EARMP technical program, 2011, 2012 and 2015.

Waterbody	Method	Site	Set Date	Catch Date	Species	Fish Number	Length (cm)	Weight (g)	Sex	Released	Maturity	Spawning Condition	Age Structure Collected	Age (years)	Stomach Contents	Comments
Cree Lake	GN	GN01-01	05/07/2012 12:00	05/07/2012 5:07	WSU	2	41.5	870	M	N	A	U	FR	14	-	Kept for chemistry; submitted
Cree Lake	GN	GN01-01	05/07/2012 12:00	05/07/2012 5:07	WSU	3	38.7	760	F	N	A	U	FR	9	-	Kept for chemistry; submitted
Cree Lake	GN	GN01-01	05/07/2012 12:00	05/07/2012 5:07	WSU	4	35.9	630	M	N	A	U	-	-	-	Kept for chemistry; did not submit
Cree Lake	GN	GN01-01	05/07/2012 12:00	05/07/2012 5:07	WSU	5	36.2	640	M	N	A	U	-	-	-	Kept for chemistry; did not submit
Cree Lake	GN	GN01-01	05/07/2012 12:00	05/07/2012 5:07	WSU	6	33.8	540	U	N	A	U	-	-	-	Kept for chemistry; did not submit
Cree Lake	GN	GN01-01	05/07/2012 12:00	05/07/2012 5:07	NP	7	65.7	1980	M	N	A	U	CL	8	-	Kept for chemistry
Cree Lake	GN	GN01-01	05/07/2012 12:00	05/07/2012 5:07	LSU	8	38.3	600	F	N	A	U	FR	15	-	Kept for chemistry; composited with GN01-01 LSU10
Cree Lake	GN	GN01-01	05/07/2012 12:00	05/07/2012 5:07	LSU	9	39.5	710	F	N	A	U	FR	14	-	Kept for chemistry
Cree Lake	GN	GN01-01	05/07/2012 12:00	05/07/2012 5:07	LSU	10	35.2	530	M	N	A	U	FR	14	-	Kept for chemistry; composited with GN01-01 LS08
Cree Lake	GN	GN01-01	05/07/2012 12:00	05/07/2012 5:07	LSU	11	34.8	540	M	N	A	U	FR	15	-	Kept for chemistry; composited with GN01-01 LSU12
Cree Lake	GN	GN01-01	05/07/2012 12:00	05/07/2012 5:07	LSU	12	34	460	M	N	A	U	FR	14	-	Kept for chemistry; composited with GN01-01 LSU11
Cochrane River	GN	GN01-01	18/09/2012 1:15	18/09/2012 6:15	LW	1	48.5	1240	F	N	A	MT	OT	18	-	Kept for chemistry
Cochrane River	GN	GN01-01	18/09/2012 1:15	18/09/2012 6:15	LW	2	42	560	M	N	A	MT	-	-	Empty	Did not keep
Cochrane River	GN	GN02-01	18/09/2012 2:30	18/09/2012 6:30	LW	1	48.5	1050	F	N	A	MT	OT	19	Empty	Kept for chemistry
Cochrane River	GN	GN02-01	18/09/2012 2:30	18/09/2012 6:30	LW	2	45.8	890	F	N	A	MT	OT	8	40% Unidentified Invert Remains	Kept for chemistry
Cochrane River	GN	GN03-01	18/09/2012 5:15	19/09/2012 9:00	LW	1	48.9	890	F	N	A	MT	OT	22	30%	Kept for chemistry
Cochrane River	GN	GN03-01	18/09/2012 5:15	19/09/2012 9:00	LW	2	46.7	710	F	N	A	MT	OT	25	Empty	Kept for chemistry
Cochrane River	GN	GN03-01	18/09/2012 5:15	19/09/2012 9:00	LW	3	44.8	550	M	N	A	MT	-	-	-	Did not keep
Cochrane River	GN	GN03-01	18/09/2012 5:15	19/09/2012 9:00	LW	4	35.1	160	M	N	A	MT	-	-	-	Did not keep
Cochrane River	GN	GN03-01	18/09/2012 5:15	19/09/2012 9:00	LT	5	51.7	1310	F	N	A	SP	OT	8	Empty	Kept for chemistry
Cochrane River	GN	GN03-01	18/09/2012 5:15	19/09/2012 9:00	LT	6	58.8	2120	F	N	A	SP	OT	15	Empty	Kept for chemistry
Cochrane River	GN	GN03-01	18/09/2012 5:15	19/09/2012 9:00	LT	7	61.2	2110	F	N	A	SP	OT	18	Empty	Kept for chemistry
Cochrane River	GN	GN03-01	18/09/2012 5:15	19/09/2012 9:00	LT	8	53.1	1350	M	N	A	SP	OT	16	Empty	Kept for chemistry
Cochrane River	GN	GN03-01	18/09/2012 5:15	19/09/2012 9:00	LSU	9	39	420	F	N	A	MT	FR	12	20% Unidentified Invert Remains	Kept for chemistry; composite with GN03-01 LSU10
Cochrane River	GN	GN03-01	18/09/2012 5:15	19/09/2012 9:00	LSU	10	38.5	435	F	N	A	MT	FR	16	10% Unidentified Invert Remains	Kept for chemistry GN03-01 LSU09
Cochrane River	GN	GN03-01	18/09/2012 5:15	19/09/2012 9:00	LSU	11	44.2	650	F	N	A	MT	FR	17		Composite with LSU02 GN05-01
Cochrane River	GN	GN03-01	18/09/2012 5:15	19/09/2012 9:00	WSU	12	50.5	1720	U	N	A	U	FR	16		Kept for chemistry
Cochrane River	GN	GN04-01	18/09/2012 5:45	19/09/2012 10:00	LT	1	47.8	920	F	N	A	ST	OT	7	Empty	Kept for chemistry
Cochrane River	GN	GN04-01	18/09/2012 5:45	19/09/2012 10:00	NP	2	95.7	6250	F	N	A	MT	CL	14	30% WSU	Kept for chemistry; green liver
Cochrane River	GN	GN04-01	18/09/2012 5:45	19/09/2012 10:00	NP	3	65	1820	M	N	A	MT	CL	11	Empty	Kept for chemistry
Cochrane River	GN	GN04-01	18/09/2012 5:45	19/09/2012 10:00	LW	4	-	-	U	N	U	U	-	-	-	Did not keep for chemistry
Cochrane River	GN	GN04-01	18/09/2012 5:45	19/09/2012 10:00	LW	5	-	-	U	N	U	U	-	-	-	Did not keep for chemistry
Cochrane River	GN	GN04-01	18/09/2012 5:45	19/09/2012 10:00	LW	6	-	-	U	N	U	U	-	-	-	Did not keep for chemistry
Cochrane River	GN	GN04-01	18/09/2012 5:45	19/09/2012 10:00	LW	7	-	-	U	N	U	U	-	-	-	Did not keep for chemistry
Cochrane River	GN	GN01-02	18/09/2012 6:20	19/09/2012 10:30	NP	1	65.1	1430	F	N	A	MT	CL	8	Empty	Kept for chemistry
Cochrane River	GN	GN01-02	18/09/2012 6:20	19/09/2012 10:30	WSU	2	47.5	1320	F	N	A	MT	FR	13	20% Unidentified Invert Remains	Kept for chemistry
Cochrane River	GN	GN01-02	18/09/2012 6:20	19/09/2012 10:30	WSU	3	50.1	1670	F	N	A	MT	FR	16	Empty	Kept for chemistry
Cochrane River	GN	GN01-02	18/09/2012 6:20	19/09/2012 10:30	WSU	4	47.2	1160	U	N	A	MT	FR	16	40% Unidentified Invert Remains	Kept for chemistry
Cochrane River	GN	GN05-01	18/09/2012 6:45	19/09/2012 11:00	LT	1	42.4	520	F	N	A	ST	-	-	-	Did not keep; dead
Cochrane River	GN	GN05-01	18/09/2012 6:45	19/09/2012 11:00	LSU	2	32.5	140	M	N	J	NS	FR	9	Empty	Kept for chemistry; composite with GN03-01 LSU11
Cochrane River	GN	GN06-01	19/09/2012 11:20	19/09/2012 3:30	NP	1	68.5	2100	U	N	A	MT	CL	8	-	Kept for chemistry
Waterbury Lake	GN	GN05-01	20/09/2012 2:00	20/09/2012 4:40	LT	1	-	-	U	Y	U	U	-	-	-	Captured and released alive
Waterbury Lake	GN	GN05-01	20/09/2012 2:00	20/09/2012 4:40	LT	2	-	-	U	Y	U	U	-	-	-	Captured and released alive
Waterbury Lake	GN	GN06-01	20/09/2012 2:20	20/09/2012 4:50	LT	1	-	-	U	Y	U	U	-	-	-	Captured and released alive
Waterbury Lake	GN	GN07-01	20/09/2012 5:45	21/09/2012 9:30	NP	1	57	1280	M	N	A	MT	CL	3	Empty	Kept for chemistry
Waterbury Lake	GN	GN07-01	20/09/2012 5:45	21/09/2012 9:30	NP	2	71.4	2080	M	N	A	MT	CL	9	Empty	Kept for chemistry
Waterbury Lake	GN	GN07-01	20/09/2012 5:45	21/09/2012 9:30	NP	3	51	680	F	N	A	MT	CL	2	Empty	Kept for chemistry
Waterbury Lake	GN	GN07-01	20/09/2012 5:45	21/09/2012 9:30	NP	4	46.9	540	F	N	A	MT	CL	2	Empty	Kept for chemistry; composited with GN07-01 NP05
Waterbury Lake	GN	GN07-01	20/09/2012 5:45	21/09/2012 9:30	NP	5	48.5	580	F	N	A	MT	CL	2	15% 2 minnows (suckers)	Kept for chemistry; composited with GN07-01 NP04; green liver
Waterbury Lake	GN	GN07-01	20/09/2012 5:45	21/09/2012 9:30	LW	6	44.7	900	M	N	A	NS	OT	8	40% Unidentified Invert Remains	Kept for chemistry
Waterbury Lake	GN	GN07-01	20/09/2012 5:45	21/09/2012 9:30	LW	7	50.5	1640	M	N	A	MT	OT	10	30% Unidentified Invert Remains	Kept for chemistry
Waterbury Lake	GN	GN07-01	20/09/2012 5:45	21/09/2012 9:30	LW	8	45	805	M	N	A	MT	OT	8	Empty	Kept for chemistry
Waterbury Lake	GN	GN07-01	20/09/2012 5:45	21/09/2012 9:30	WSU	9	33.5	280	M	N	A	MT	FR	6	Empty	Kept for chemistry; composited with GN007-01 WSU10 + WSU11
Waterbury Lake	GN	GN07-01	20/09/2012 5:45	21/09/2012 9:30	WSU	10	33.7	180	F	N	A	MT	FR	6	Empty	Kept for chemistry; composited with GN007-01 WSU09 + WSU11
Waterbury Lake	GN	GN07-01	20/09/2012 5:45	21/09/2012 9:30	WSU	11	33.4	280	M	N	A	MT	FR	6	Empty	Kept for chemistry; composited with GN007-01 WSU09 + WSU10
Waterbury Lake	GN	GN07-01	20/09/2012 5:45	21/09/2012 9:30	WSU	12	34.9	210	M	N	A	MT	FR	6	Empty	Kept for chemistry; composited with GN07-01 LSU13 + LSU23
Waterbury Lake	GN	GN07-01	20/09/2012 5:45	21/09/2012 9:30	LSU	13	39.8	375	F	N	A	MT	FR	8	Empty	Kept for chemistry: composited with GN07-01 WSU12 + LSU23
Waterbury Lake	GN	GN07-01	20/09/2012 5:45	21/09/2012 9:30	LT	14	48.4	1080	M	Y	A	M	-	10	-	Healthy
Waterbury Lake	GN	GN07-01	20/09/2012 5:45	21/09/2012 9:30	LT	15	61.5	1920	F	Y	A	SP	-	12	-	Healthy

APPENDIX B, TABLE 9

Detailed fish capture data for the EARMP technical program, 2011, 2012 and 2015.

Waterbody	Method	Site	Set Date	Catch Date	Species	Fish Number	Length (cm)	Weight (g)	Sex	Released	Maturity	Spawning Condition	Age Structure Collected	Age (years)	Stomach Contents	Comments
Waterbury Lake	GN	GN07-01	20/09/2012 5:45	21/09/2012 9:30	LT	16	65.7	2520	F	Y	A	ST	-	14	-	Healthy
Waterbury Lake	GN	GN07-01	20/09/2012 5:45	21/09/2012 9:30	LT	17	63.5	2260	F	Y	A	M	-	16	-	Healthy
Waterbury Lake	GN	GN07-01	20/09/2012 5:45	21/09/2012 9:30	NP	18	45.5	360	U	Y	A	MT	-	18	-	Healthy
Waterbury Lake	GN	GN07-01	20/09/2012 5:45	21/09/2012 9:30	NP	19	40.8	220	U	Y	A	MT	-	-	-	Healthy
Waterbury Lake	GN	GN07-01	20/09/2012 5:45	21/09/2012 9:30	NP	20	45.6	420	U	Y	A	MT	-	-	-	Healthy
Waterbury Lake	GN	GN07-01	20/09/2012 5:45	21/09/2012 9:30	NP	21	25.8	450	U	Y	A	MT	-	-	-	Healthy
Waterbury Lake	GN	GN07-01	20/09/2012 5:45	21/09/2012 9:30	LW	22	35.3	180	U	Y	A	MT	-	-	-	Healthy
Waterbury Lake	GN	GN07-01	20/09/2012 5:45	21/09/2012 9:30	LSU	23	29.4	75	M	N	A	MT	FR	6	Empty	Kept for chemistry; composited with GN07-01 WSU12 + LSU13
Waterbury Lake	GN	GN08-01	20/09/2012 6:00	21/09/2012 10:00	LT	1	54.5	1720	M	Y	A	M	-	-	-	Healthy
Waterbury Lake	GN	GN08-01	20/09/2012 6:00	21/09/2012 10:00	LT	2	54.1	1680	F	Y	A	M	-	-	-	Healthy
Waterbury Lake	GN	GN08-01	20/09/2012 6:00	21/09/2012 10:00	LT	3	54.7	1540	M	Y	A	M	-	-	-	Healthy
Waterbury Lake	GN	GN08-01	20/09/2012 6:00	21/09/2012 10:00	LT	4	57.8	1950	F	Y	A	M	-	-	-	Healthy
Waterbury Lake	GN	GN08-01	20/09/2012 6:00	21/09/2012 10:00	LT	5	52.1	1460	M	Y	A	M	-	-	-	Healthy
Waterbury Lake	GN	GN08-01	20/09/2012 6:00	21/09/2012 10:00	LT	6	52.3	1120	M	Y	A	M	-	-	-	Healthy
Waterbury Lake	GN	GN08-01	20/09/2012 6:00	21/09/2012 10:00	LT	7	55.6	1580	F	Y	A	M	-	-	-	Healthy
Waterbury Lake	GN	GN08-01	20/09/2012 6:00	21/09/2012 10:00	LT	8	59.1	1960	F	Y	A	M	-	-	-	Healthy
Waterbury Lake	GN	GN08-01	20/09/2012 6:00	21/09/2012 10:00	LT	9	52.8	1280	F	Y	A	SP	-	-	-	Healthy
Waterbury Lake	GN	GN08-01	20/09/2012 6:00	21/09/2012 10:00	LT	10	60.5	2180	F	Y	A	SP	-	-	-	Healthy
Waterbury Lake	GN	GN08-01	20/09/2012 6:00	21/09/2012 10:00	LT	11	54	1650	F	Y	A	M	-	-	-	Healthy
Waterbury Lake	GN	GN08-01	20/09/2012 6:00	21/09/2012 10:00	LW	12	56.5	2350	U	Y	A	MT	-	-	-	Healthy
Waterbury Lake	GN	GN08-01	20/09/2012 6:00	21/09/2012 10:00	LW	13	61.5	2780	U	Y	A	MT	-	-	-	Healthy
Waterbury Lake	GN	GN08-01	20/09/2012 6:00	21/09/2012 10:00	LW	14	49.6	1320	U	Y	A	MT	-	-	-	Healthy
Waterbury Lake	GN	GN08-01	20/09/2012 6:00	21/09/2012 10:00	LW	15	49.9	1320	U	Y	A	MT	-	-	-	Healthy
Waterbury Lake	GN	GN08-01	20/09/2012 6:00	21/09/2012 10:00	LW	16	33.5	240	U	Y	A	MT	-	-	-	Healthy
Waterbury Lake	GN	GN08-01	20/09/2012 6:00	21/09/2012 10:00	LW	17	32.7	120	U	Y	A	MT	-	-	-	Healthy
Waterbury Lake	GN	GN01-01	20/09/2012 10:00	20/09/2012 1:40	NF	-	-	-	-	N	-	-	-	-	-	No fish captured
Waterbury Lake	GN	GN02-01	20/09/2012 10:20	20/09/2012 1:50	NP	1	89.3	5250	M	N	A	MT	CL	9	30% WSU	Kept for chemistry
Waterbury Lake	GN	GN02-01	20/09/2012 10:20	20/09/2012 1:50	LW	2	40.1	405	M	N	A	M	OT	-	Empty	Did not keep for chemistry
Waterbury Lake	GN	GN02-01	20/09/2012 10:20	20/09/2012 1:50	LT	3	-	-	U	N	U	U	-	-	-	Did not keep for chemistry
Waterbury Lake	GN	GN03-01	20/09/2012 10:30	20/09/2012 2:10	NF	-	-	-	-	N	-	-	-	-	-	No fish captured
Waterbury Lake	GN	GN04-01	20/09/2012 10:45	20/09/2012 2:15	LW	1	53.9	1910	F	N	A	M	OT	18	Empty	Kept for chemistry
Waterbury Lake	GN	GN04-01	20/09/2012 10:45	20/09/2012 2:15	LT	2	49.3	820	M	N	A	SP			Empty	Dead
Waterbury Lake	GN	GN04-01	20/09/2012 10:45	20/09/2012 2:15	LW	3	51.2	2580	M	N	A	M	OT	19	10% Unidentified Invert Remains	Kept for chemistry
Waterbury Lake	AN	AN01-01	20/09/2012 12:00	20/09/2012 12:20	NF	-	-	-	-	N	-	-	-	-	-	No fish captured
Waterbury Lake	AN	AN02-01	20/09/2012 12:00	20/09/2012 12:40	LT	1	66.5	2320	F	N	A	SP	OT	26	Empty	Kept for chemistry
Waterbury Lake	AN	AN02-01	20/09/2012 12:00	20/09/2012 12:40	LT	2	61.5	1810	M	N	A	SP	OT	12	30% Unknown Fish Remains	Kept for chemistry
Waterbury Lake	AN	AN02-01	20/09/2012 12:00	20/09/2012 12:40	LT	3	52.4	1410	M	N	A	SP	OT	12	Empty	Kept for chemistry
Waterbury Lake	AN	AN02-01	20/09/2012 12:00	20/09/2012 12:40	LT	4	52.2	1320	M	N	A	SP	OT	-	10% WSU	Kept for chemistry; unable to age
Waterbury Lake	AN	AN02-01	20/09/2012 12:00	20/09/2012 12:40	LT	5	52.3	1340	U	N	A	SP	OT	9	-	Kept for chemistry
Fond du Lac River	GN	GN01-02	22/09/2012 2:25	22/09/2012 4:25	NF	-	-	-	-	N	-	-	-	-	-	No fish captured
Fond du Lac River	GN	GN03-02	22/09/2012 3:00	23/09/2012 10:00	NP	1	71.4	2320	M	N	A	MT	CL	8	Empty	Kept for chemistry
Fond du Lac River	GN	GN03-02	22/09/2012 3:00	23/09/2012 10:00	NP	2	64.4	1850	F	N	A	MT	CL	6	Empty	Kept for chemistry
Fond du Lac River	GN	GN03-02	22/09/2012 3:00	23/09/2012 10:00	NP	3	51.5	650	U	Y	A	MT	-	-	-	Released
Fond du Lac River	GN	GN03-02	22/09/2012 3:00	23/09/2012 10:00	LW	4	49.4	1050	F	N	A	MT	OT	25	Empty	Kept for chemistry
Fond du Lac River	GN	GN03-02	22/09/2012 3:00	23/09/2012 10:00	LW	5	43.5	590	U	Y	A	MT	-	-	-	Released
Fond du Lac River	GN	GN03-02	22/09/2012 3:00	23/09/2012 10:00	LW	6	37.5	410	U	N	A	NS	-	-	Empty	Dead
Fond du Lac River	GN	GN03-02	22/09/2012 3:00	23/09/2012 10:00	WSU	7	41.4	1220	F	N	A	MT	FR	12	Empty	Kept for chemistry
Fond du Lac River	GN	GN03-02	22/09/2012 3:00	23/09/2012 10:00	WSU	8	42.8	1120	F	N	A	MT	FR	10	Empty	Kept for chemistry
Fond du Lac River	GN	GN03-02	22/09/2012 3:00	23/09/2012 10:00	WSU	9	42.9	930	M	N	A	MT	FR	9	Empty	Kept for chemistry
Fond du Lac River	GN	GN03-02	22/09/2012 3:00	23/09/2012 10:00	WSU	10	45.1	910	U	Y	A	MT	-	-	-	Released
Fond du Lac River	GN	GN03-02	22/09/2012 3:00	23/09/2012 10:00	WSU	11	34.1	290	M	N	A	MT	-	-	Empty	Dead
Fond du Lac River	GN	GN05-01	22/09/2012 3:10	23/09/2012 10:15	NP	1	64.5	1710	F	N	A	MT	CL	6	Empty	Kept for chemistry
Fond du Lac River	GN	GN05-01	22/09/2012 3:10	23/09/2012 10:15	NP	2	45	350	U	Y	A	U	-	-	-	Released
Fond du Lac River	GN	GN05-01	22/09/2012 3:10	23/09/2012 10:15	NP	3	44.2	320	U	Y	A	U	-	-	-	Released
Fond du Lac River	GN	GN05-01	22/09/2012 3:10	23/09/2012 10:15	WSU	4	33.3	200	U	Y	A	U	-	-	-	Released
Fond du Lac River	GN	GN06-01	22/09/2012 4:00	23/09/2012 9:30	LT	1	51	1120	F	N	A	NS	OT	8	50% 7 NSB	Kept for chemistry
Fond du Lac River	GN	GN06-01	22/09/2012 4:00	23/09/2012 9:30	LW	2	43.6	650	F	N	A	MT	OT	-	Empty	Kept for chemistry for another program (not included in earmp data)
Fond du Lac River	GN	GN06-01	22/09/2012 4:00	23/09/2012 9:30	WSU	3	43.8	810	M	N	A	MT	FR	10	Empty	Kept for chemistry
Fond du Lac River	GN	GN06-01	22/09/2012 4:00	23/09/2012 9:30	WSU	4	41	720	M	N	A	MT	FR	-	Empty	Dead

APPENDIX B, TABLE 9

Detailed fish capture data for the EARMP technical program, 2011, 2012 and 2015.

Waterbody	Method	Site	Set Date	Catch Date	Species	Fish Number	Length (cm)	Weight (g)	Sex	Released	Maturity	Spawning Condition	Age Structure Collected	Age (years)	Stomach Contents	Comments
Fond du Lac River	GN	GN06-01	22/09/2012 4:00	23/09/2012 9:30	NP	5	52.7	800	F	N	A	MT	CL	3	Empty	Kept for chemistry
Fond du Lac River	GN	GN06-01	22/09/2012 4:00	23/09/2012 9:30	NP	6	40.2	200	U	Y	A	U	-	-	-	Released
Fond du Lac River	GN	GN07-01	22/09/2012 4:30	23/09/2012 9:45	LT	1	58.1	1760	F	N	A	NS	OT	10	Empty	Kept for chemistry
Fond du Lac River	GN	GN07-01	22/09/2012 4:30	23/09/2012 9:45	LW	2	46.8	980	F	N	A	MT	OT	21	Empty	Kept for chemistry
Fond du Lac River	GN	GN07-01	22/09/2012 4:30	23/09/2012 9:45	WSU	3	46.7	1300	F	N	A	MT	FR		Empty	Kept for chemistry; no sample sent for ageing
Fond du Lac River	GN	GN07-01	22/09/2012 4:30	23/09/2012 9:45	WSU	4	41.2	720	U	Y	A	U	-	-	-	Released
Fond du Lac River	GN	GN07-01	22/09/2012 4:30	23/09/2012 9:45	LSU	5	38.3	520	M	N	A	MT	FR	14	Empty	Kept for chemistry; composited with GN07-01 LSU06
Fond du Lac River	GN	GN07-01	22/09/2012 4:30	23/09/2012 9:45	LSU	6	38.6	525	M	N	A	MT	FR	16	Empty	Kept for chemistry; composited with GN07-01 LSU05
Fond du Lac River	GN	GN07-01	22/09/2012 4:30	23/09/2012 9:45	LSU	7	51.4	1620	F	N	A	MT	FR	26	Empty	Kept for chemistry
Fond du Lac River	GN	GN07-01	22/09/2012 4:30	23/09/2012 9:45	LSU	8	62.5	1650	M	N	A	MT	FR	23	Empty	Kept for chemistry
Fond du Lac River	GN	GN07-01	22/09/2012 4:30	23/09/2012 9:45	LT	9	51.5	1540	M	N	A	SP	-	-	-	Dead
Fond du Lac River	GN	GN07-01	22/09/2012 4:30	23/09/2012 9:45	LT	10	57.5	1980	F	Y	A	SP	-	-	-	Released
Fond du Lac River	GN	GN07-01	22/09/2012 4:30	23/09/2012 9:45	LT	11	69.4	1820	U	Y	A	NS	-	-	-	Released
Fond du Lac River	GN	GN01-01	22/09/2012 10:45	22/09/2012 2:15	LT	1	62.3	2420	F	N	A	M	OT	16	Empty	Kept for chemistry
Fond du Lac River	GN	GN01-01	22/09/2012 10:45	22/09/2012 2:15	LT	2	63.8	1620	M	N	A	NS	OT	9	10% 1 Minnow	Kept for chemistry
Fond du Lac River	GN	GN01-01	22/09/2012 10:45	22/09/2012 2:15	LW	3	45.4	910	F	N	A	MT	OT	12	30% Unidentified Invert Remains	Kept for chemistry
Fond du Lac River	GN	GN02-01	22/09/2012 11:00	22/09/2012 2:30	NF					N						No fish captured
Fond du Lac River	GN	GN03-01	22/09/2012 11:15	22/09/2012 2:45	LW	1	43.9	720	M	N	A	MT	OT	9	Empty	Kept for chemistry
Fond du Lac River	GN	GN03-01	22/09/2012 11:15	22/09/2012 2:45	LW	2	41.5	620	M	N	A	MT	OT	7	Empty	Kept for chemistry; composited with GN03-01 LW03
Fond du Lac River	GN	GN03-01	22/09/2012 11:15	22/09/2012 2:45	LW	3	38.2	390	F	N	A	MT	OT	9	Empty	Kept for chemistry; composited with GN03-01 LW02
Fond du Lac River	GN	GN04-01	22/09/2012 11:30	22/09/2012 3:15	NP	1	62.4	1350	M	N	A	MT	CL	8	Empty	Kept for chemistry
Fond du Lac River	GN	GN04-01	22/09/2012 11:30	22/09/2012 3:15	LT	2	49.8	1010	M	N	A	MT	CL	7	50% 8 Minnows	Kept for chemistry
Fond du Lac River	AN	AN01-01	22/09/2012 12:00	22/09/2012 12:20	NF	-	-	-	-	N	-	-	-	-	-	No fish captured
Fond du Lac River	AN	AN02-01	22/09/2012 12:00	22/09/2012 12:15	NF	-	-	-	-	N	-	-	-	-	-	No fish captured
Pasfield Lake	GN	GN05-01	24/09/2012 1:45	24/09/2012 4:15	LT	1	65.4	2360	M	N	A	M	OT	19	Empty	Kept for chemistry
Pasfield Lake	GN	GN06-01	24/09/2012 2:15	24/09/2012 4:45	LT	1	-	-	U	Y	U	U	-	-	-	Released alive
Pasfield Lake	GN	GN07-01	24/09/2012 2:45	24/09/2012 5:00	LT	1	-	-	U	Y	U	U	-	-	-	Released alive
Pasfield Lake	GN	GN08-01	24/09/2012 3:00	24/09/2012 5:20	NF	-	-	-	-	N	-	-	-	-	-	No fish captured
Pasfield Lake	AN	AN01-01	24/09/2012 3:30	24/09/2012 4:00	NF	-	-	-	-	N	-	-	-	-	-	No fish captured
Pasfield Lake	GN	GN09-01	24/09/2012 4:20	25/09/2012 9:45	LT	1	64.5	2620	M	Y	A	SP	-	-	-	Released
Pasfield Lake	GN	GN09-01	24/09/2012 4:20	25/09/2012 9:45	LT	2	59.9	2150	F	N	A	ST	-	-	Empty	Dead
Pasfield Lake	GN	GN09-01	24/09/2012 4:20	25/09/2012 9:45	LW	3	33.1	290	U	N	J	NS	OT	5	Empty	Kept for chemistry; composited with GN11-01 LW04 + LW07, GN09-01 LW04
Pasfield Lake	GN	GN09-01	24/09/2012 4:20	25/09/2012 9:45	LW	4	30.5	170	U	N	J	NS	OT	4	Empty	Kept for chemistry; composited with GN11-01 LW04 + LW07, GN09-01 LW03
Pasfield Lake	GN	GN10-01	24/09/2012 4:50	25/09/2012 10:10	LW	1	45	860	M	N	A	NS	OT	6	30% Unidentified invert remains	Kept for chemistry
Pasfield Lake	GN	GN10-01	24/09/2012 4:50	25/09/2012 10:10	LSU	2	32.3	395	U	N	J	NS	FR	7	Empty	Kept for chemistry; composited with GN10-01 LSU03
Pasfield Lake	GN	GN10-01	24/09/2012 4:50	25/09/2012 10:10	LSU	3	32.1	390	U	N	J	NS	FR	10	Empty	Kept for chemistry; composited with GN10-01 LSU02
Pasfield Lake	GN	GN10-01	24/09/2012 4:50	25/09/2012 10:10	LSU	4	30.8	335	U	N	J	NS	FR	7	Empty	Kept for chemistry; composited with GN10-01 LSU05 + WSU06
Pasfield Lake	GN	GN10-01	24/09/2012 4:50	25/09/2012 10:10	LSU	5	29.1	275	U	N	J	NS	FR	6	Empty	Kept for chemistry; composited with GN10-01 LSU04 + WSU06
Pasfield Lake	GN	GN10-01	24/09/2012 4:50	25/09/2012 10:10	WSU	6	28.5	265	U	N	J	NS	FR	3	Empty	Kept for chemistry; composited with GN10-01 LSU04 + LSU05
Pasfield Lake	GN	GN10-01	24/09/2012 4:50	25/09/2012 10:10	LT	7	62.5	2350	F	N	A	NS	-	-	Empty	Dead
Pasfield Lake	GN	GN10-01	24/09/2012 4:50	25/09/2012 10:10	LT	8	62.9	2780	M	N	A	SP	-	-	Empty	Dead
Pasfield Lake	GN	GN11-01	24/09/2012 5:10	25/09/2012 10:30	NP	1	63.1	1720	M	N	A	MT	CL	3	Empty	Kept for chemistry
Pasfield Lake	GN	GN11-01	24/09/2012 5:10	25/09/2012 10:30	LSU	2	49.6	1630	F	N	A	MT	FR	22	Empty	Kept for chemistry
Pasfield Lake	GN	GN11-01	24/09/2012 5:10	25/09/2012 10:30	LT	3	62.7	2450	M	N	A	SP			25% minnows	Dead
Pasfield Lake	GN	GN11-01	24/09/2012 5:10	25/09/2012 10:30	LW	4	32.4	295	U	N	J	NS	OT	5	Empty	Kept with chemistry; composited with GN 11-01 LW07 + GN09-01 LW03 + LW04
Pasfield Lake	GN	GN11-01	24/09/2012 5:10	25/09/2012 10:30	LW	5	31.5	280	U	N	J	NS	OT	3	Empty	Kept for chemistry; composited with GN11-01 LW06 + GN08-02 LW03
Pasfield Lake	GN	GN11-01	24/09/2012 5:10	25/09/2012 10:30	LW	6	62.9	280	U	N	J	NS	OT	3	Empty	Kept for chemistry; composited with GN11-01 LW05 + GN08-02 LW03
Pasfield Lake	GN	GN11-01	24/09/2012 5:10	25/09/2012 10:30	LW	7	32	285	U	N	J	NS	OT	4	Empty	Kept for chemistry; composited with GN11-01 LW04 + GN09-01 LW03 + LW04
Pasfield Lake	GN	GN11-01	24/09/2012 5:10	25/09/2012 10:30	LW	8	30.9	280	U	N	J	NS	OT	5	Empty	Kept for chemistry; composited with GN11-01 LW10 + LW12 + LW13
Pasfield Lake	GN	GN11-01	24/09/2012 5:10	25/09/2012 10:30	LW	9	30.8	255	U	N	J	NS	OT	4	Empty	Kept for chemistry; composited with GN11-01 LW11 + LW14 + LW15
Pasfield Lake	GN	GN11-01	24/09/2012 5:10	25/09/2012 10:30	LW	10	30.8	310	U	N	J	NS	OT	5	Empty	Kept for chemistry; composited with GN11-01 LW8 + LW12 + LW13
Pasfield Lake	GN	GN11-01	24/09/2012 5:10	25/09/2012 10:30	LW	11	29.5	270	U	N	J	NS	OT	3	Empty	Kept for chemistry; composited with GN11-01 LW09 + LW14 + LW15
Pasfield Lake	GN	GN11-01	24/09/2012 5:10	25/09/2012 10:30	LW	12	29.9	305	U	N	J	NS	OT	3	Empty	Kept for chemistry; composited with GN11-01 LW08 + LW10 + LW13
Pasfield Lake	GN	GN11-01	24/09/2012 5:10	25/09/2012 10:30	LW	13	27.7	240	U	N	J	NS	OT	2	Empty	Kept for chemistry; composited with GN11-01 LW08 + LW10 + LW12
Pasfield Lake	GN	GN11-01	24/09/2012 5:10	25/09/2012 10:30	LW	14	28.4	250	U	N	J	NS	OT	3	Empty	Kept for chemistry; composited with GN11-01 LW09 + LW11 + LW15
Pasfield Lake	GN	GN11-01	24/09/2012 5:10	25/09/2012 10:30	LW	15	29.4	255	U	N	J	NS	OT	3	Empty	Kept for chemistry; composited with GN11-01 LW09 + LW11 + LW14
Pasfield Lake	GN	GN08-02	24/09/2012 5:30	25/09/2012 10:45	NP	1	93.8	5850	F	N	A	MT	CL	12	Empty	Kept for chemistry; heavy fish; Ryan photos #85-86
Pasfield Lake	GN	GN08-02	24/09/2012 5:30	25/09/2012 10:45	LT	2	55.4	1760	F	Y	A	ST	-	-	-	Released
Pasfield Lake	GN	GN08-02	24/09/2012 5:30	25/09/2012 10:45	LW	3	35.3	380	F	N	A	NS	OT	5	Empty	Kept for chemistry; composited with GN11-1 LW05 +LW06

APPENDIX B, TABLE 9

Detailed fish capture data for the EARMP technical program, 2011, 2012 and 2015.

Waterbody	Method	Site	Set Date	Catch Date	Species	Fish Number	Length (cm)	Weight (g)	Sex	Released	Maturity	Spawning Condition	Age Structure Collected	Age (years)	Stomach Contents	Comments
Pasfield Lake	GN	GN01-01	24/09/2012 10:15	24/09/2012 1:30	NF	-	-	-		N	-	-	-	-	-	No fish captured
Pasfield Lake	GN	GN02-01	24/09/2012 10:30	24/09/2012 2:00	NF	-	-	-		N	-	-	-	-	-	No fish captured
Pasfield Lake	GN	GN03-01	24/09/2012 10:45	24/09/2012 2:20	NF		-	-		N	-	-	-	-	-	No fish captured
Pasfield Lake	GN	GN04-01	24/09/2012 11:00	24/09/2012 2:30	LT	1	65.8	3260	F	N	A	NS	OT	18	Empty	Kept for chemistry
Pasfield Lake	GN	GN04-01	24/09/2012 11:00	24/09/2012 2:30	LT	2	59.9	2130	M	N	A	M	OT	20	50% minnows	Kept for chemistry
Pasfield Lake	GN	GN04-01	24/09/2012 11:00	24/09/2012 2:30	LT	3	61.5	1880	F	N	A	NS	OT	17	Empty	Kept for chemistry
Pasfield Lake	GN	GN04-01	24/09/2012 11:00	24/09/2012 2:30	LT	4	58.4	1850	M	N	A	SP	OT	18	100% Suckers	Kept for chemistry
Pasfield Lake	GN	GN12-01	25/09/2012 11:30	25/09/2012 3:30	NF	-	-	-	-	N	-	-	-	-	-	No fish captured
Pasfield Lake	GN	GN13-01	25/09/2012 11:45	25/09/2012 3:45	NF	-	-	-	-	N	-	-	-	-	-	No fish captured
Pasfield Lake	GN	GN14-01	25/09/2012 12:00	25/09/2012 4:00	NF	-	-	-	-	N	-	-	-	-	-	No fish captured
Cree Lake	GN	GN01-01	26/09/2012 11:00	26/09/2012 4:15	LW	1	37.6	350	U	Y	A	U	-	-	-	Released alive
Cree Lake	GN	GN01-01	26/09/2012 11:00	26/09/2012 4:15	LW	2	36.2	240	M	N	A	MT	-	-	Empty	Dead
Cree Lake	GN	GN01-01	26/09/2012 11:00	26/09/2012 4:15	LW	3	38.7	390	U	Y	A	U	-	-	-	Released, healthy
Cree Lake	GN	GN01-01	26/09/2012 11:00	26/09/2012 4:15	LW	4	37.5	330	M	N	A	MT	-	-	Empty	Dead, but otherwise healthy
Cree Lake	GN	GN02-01	26/09/2012 11:15	26/09/2012 4:30	LW	1	38.2	360	F	N	A	MT	OT	11	Empty	Kept for chemistry; composited with GN02-01 LW02
Cree Lake	GN	GN02-01	26/09/2012 11:15	26/09/2012 4:30	LW	2	38.7	380	M	N	A	MT	OT	23	Empty	Kept for chemistry; composited with GN02-01 LW01
Cree Lake	GN	GN03-01	26/09/2012 11:30	26/09/2012 4:45	LT	1	55.2	1080	M	N	A	SP	OT	19	Empty	Kept for chemistry; only 1 otolith
Cree Lake	GN	GN03-01	26/09/2012 11:30	26/09/2012 4:45	LT	2	56.4	1520	M	N	A	SP	OT	15	Empty	Kept for chemistry
Cree Lake	GN	GN03-01	26/09/2012 11:30	26/09/2012 4:45	LW	3	33.3	420	M	N	A	NS			Empty	Dead but released
Cree Lake	GN	GN04-01	26/09/2012 11:45	26/09/2012 5:00	LW	1	45	790	M	N	A	MT	OT	8	Empty	Kept for chemistry
Cree Lake	GN	GN04-01	26/09/2012 11:45	26/09/2012 5:00	LW	2	44.5	750	F	N	A	MT	OT	11	Empty	Kept for chemistry
Cree Lake	GN	GN04-01	26/09/2012 11:45	26/09/2012 5:00	LW	3	41.2	450	F	N	A	MT	OT	21	Empty	Kept for chemistry; composited with GN04-01 LW04
Cree Lake	GN	GN04-01	26/09/2012 11:45	26/09/2012 5:00	LW	4	41.2	460	F	N	A	MT	OT	7	Empty	Kept for chemistry; composited with GN04-01 LW03
Cree Lake	GN	GN04-01	26/09/2012 11:45	26/09/2012 5:00	LW	5	39.6	420	F	N	A	MT	OT	22	Empty	Kept for chemistry; composited with GN04-01 LW06
Cree Lake	GN	GN04-01	26/09/2012 11:45	26/09/2012 5:00	LW	6	39.7	395	M	N	A	MT	OT	18	Empty	Kept for chemistry; composited with GN04-01 LW05
Cree Lake	GN	GN04-01	26/09/2012 11:45	26/09/2012 5:00	LT	7	60.5	1520	M	N	A	SP	OT	23	Empty	Kept for chemistry
Cree Lake	GN	GN04-01	26/09/2012 11:45	26/09/2012 5:00	LT	8	73.3	3120	F	N	A	ST	OT	17	30% minnows (LW)	Kept for chemistry
Cree Lake	GN	GN04-01	26/09/2012 11:45	26/09/2012 5:00	LT	9	64.9	1910	F	N	A	ST	OT	-	Empty	Kept for chemistry; unable to age >20 yrs
Crackingstone Inlet	AN	AN01-01	28/09/2012 3:00	28/09/2012 4:00	NP	1	83.1	4100	F	N	A	MT	CL	8	Empty	Kept for chemistry
Crackingstone Inlet	AN	AN01-01	28/09/2012 3:00	28/09/2012 4:00	NP	2	64.5	1630	F	N	A	MT	CL	6	Empty	Kept for chemistry
Crackingstone Inlet	AN	AN01-01	28/09/2012 3:00	28/09/2012 4:00	NP	3	63.8	1390	F	N	A	MT	CL	6	Empty	Kept for chemistry
Crackingstone Inlet	AN	AN01-01	28/09/2012 3:00	28/09/2012 4:00	NP	4	65.6	1610	F	N	A	MT	CL	5	20% WSU	Kept for chemistry
Crackingstone Inlet	AN	AN01-01	28/09/2012 3:00	28/09/2012 4:00	NP	5	60.8	1320	M	N	A	MT	CL	7	40% Unknown	Kept for chemistry
Crackingstone Inlet	GN	GN01-01	28/09/2012 4:00	29/09/2012 10:30	LW	1	44.8	905	M	N	A	MT	OT	12	Empty	Kept for chemistry
Crackingstone Inlet	GN	GN01-01	28/09/2012 4:00	29/09/2012 10:30	LW	2	43.5	820	F	N	A	MT	OT	12	Empty	Kept for chemistry
Crackingstone Inlet	GN	GN01-01	28/09/2012 4:00	29/09/2012 10:30	LW	3	39.1	740	F	N	A	NS	OT	6	Empty	Kept for chemistry
Crackingstone Inlet	GN	GN01-01	28/09/2012 4:00	29/09/2012 10:30	LSU	4	33.1	460	M	N	A	MT	FR	11	Empty	Kept for chemistry; need to composite possibly - not submitted
Crackingstone Inlet	GN	GN01-01	28/09/2012 4:00	29/09/2012 10:30	LT	5	49.7	1290	F	N	A	SP	-	-	Empty	Dead
Crackingstone Inlet	GN	GN01-01	28/09/2012 4:00	29/09/2012 10:30	LT	6	52.4	1090	M	N	A	SP	-	-	Empty	Dead
Crackingstone Inlet	GN	GN02-01	28/09/2012 6:00	29/09/2012 9:30	LT	1	63.4	2290	F	N	A	SP	OT	13	Empty	Kept for chemistry
Crackingstone Inlet	GN	GN02-01	28/09/2012 6:00	29/09/2012 9:30	LT	2	55.4	1720	M	N	A	SP	OT	16	Empty	Kept for chemistry
Crackingstone Inlet	GN	GN02-01	28/09/2012 6:00	29/09/2012 9:30	LT	3	58.9	1850	F	N	A	SP	OT	23	10% minnow	Kept for chemistry
Crackingstone Inlet	GN	GN02-01	28/09/2012 6:00	29/09/2012 9:30	LT	4	52.2	1310	F	N	A	SP	OT	13	30% unknown minnow	Kept for chemistry
Crackingstone Inlet	GN	GN02-01	28/09/2012 6:00	29/09/2012 9:30	LT	5	56.3	1590	M	N	A	SP	-	-	Empty	-
Crackingstone Inlet	GN	GN02-01	28/09/2012 6:00	29/09/2012 9:30	LT	6	50.1	1150	M	N	A	SP	OT	9	Empty	Kept for chemistry
Crackingstone Inlet	GN	GN02-01	28/09/2012 6:00	29/09/2012 9:30	LT	7	52.6	1090	M	N	A	SP	-	-	Empty	-
Crackingstone Inlet	GN	GN02-01	28/09/2012 6:00	29/09/2012 9:30	LT	8	51.1	1060	M	N	A	SP	-	-	Empty	-
Crackingstone Inlet	GN	GN02-01	28/09/2012 6:00	29/09/2012 9:30	NP	9	67.5	2140	F	N	A	MT	-	-	50% WSU	-
Crackingstone Inlet	GN	GN02-01	28/09/2012 6:00	29/09/2012 9:30	NP	10	77.2	2980	F	N	A	MT	-	-	25% WSU	-
Crackingstone Inlet	GN	GN02-01	28/09/2012 6:00	29/09/2012 9:30	NP	11	64.5	1520	F	N	A	MT	-	-	Empty	-
Crackingstone Inlet	GN	GN02-01	28/09/2012 6:00	29/09/2012 9:30	NP	12	65.5	1670	M	N	A	MT	-	-	Empty	-
Crackingstone Inlet	GN	GN01-03	29/09/2012 3:00	30/09/2012 10:00	LW	1	43.1	780	F	N	A	NS	OT	16	15% Unidentified Invert Remains	Kept for chemistry
Crackingstone Inlet	GN	GN01-03	29/09/2012 3:00	30/09/2012 10:00	LW	2	41.2	750	M	N	A	MT	OT	13	Empty	Kept for chemistry
Crackingstone Inlet	GN	GN01-02	29/09/2012 11:00	29/09/2012 2:30	NF	-	-	-	-	N	-	-	-	-	-	No fish captured
Ellis Bay	GN	GN01-01	01/10/2012 12:00	01/10/2012 12:00	LT	1	62.2	3640	F	FALSE	A	SP	OT	19	Empty	Kept for chemistry
Ellis Bay	GN	GN01-01	01/10/2012 12:00	01/10/2012 12:00	LT	2	69.1	2920	M	FALSE	A	SP	OT	13	Empty	Kept for chemistry
Ellis Bay	GN	GN01-01	01/10/2012 12:00	01/10/2012 12:00	LT	3	53	1420	M	FALSE	A	SP	OT	9	Empty	Kept for chemistry
Ellis Bay	GN	GN01-01	01/10/2012 12:00	01/10/2012 12:00	LT	4	60.3	1760	M	FALSE	A	SP	OT	20	Empty	Kept for chemistry
Ellis Bay	GN	GN01-01	01/10/2012 12:00	01/10/2012 12:00	LT	5	63.5	2560	F	FALSE	A	SP	OT	18	Empty	Kept for chemistry

APPENDIX B, TABLE 9

Detailed fish capture data for the EARMP technical program, 2011, 2012 and 2015.

Waterbody	Method	Site	Set Date	Catch Date	Species	Fish Number	Length (cm)	Weight (g)	Sex	Released	Maturity	Spawning Condition	Age Structure Collected	Age (years)	Stomach Contents	Comments
Ellis Bay	GN	GN01-01	01/10/2012 12:00	01/10/2012 12:00	LW	6	49.1	1180	M	FALSE	A	U	OT	30	Empty	Kept for chemistry
Ellis Bay	GN	GN01-01	01/10/2012 12:00	01/10/2012 12:00	LW	7	48.5	1120	M	FALSE	A	U	OT	33	25% Unidentified invert remains	Kept for chemistry
Cochrane River	AN	AN1-1	22/09/2015 10:45	22/09/2015 10:55	NF	-	-	-	-	-	-	-	-	-	-	-
Cochrane River	AN	AN2-1	22/09/2015 10:56	22/09/2015 11:20	LT	1	59.5	2280	M	N	A	M	OT/SC	22	Empty	Kept for chemistry. Damaged dorsal fin, white parasites in abdonimal cavity.
Cochrane River	GN	GN1-1	21/09/2015 10:47	21/09/2015 16:10	NP	1	72	2700	U	Y	U	U	-	-	-	-
Cochrane River	GN	GN1-1	21/09/2015 10:47	21/09/2015 16:10	LW	2	41.1	920	F	N	A	M	OT/SC	16	60% Unidentified invert remains	Kept for chemistry
Cochrane River	GN	GN1-1	21/09/2015 10:47	21/09/2015 16:10	LW	3	39.8	920	U	Y	U	U	-	-	-	-
Cochrane River	GN	GN2-1	21/09/2015 11:00	21/09/2015 16:00	LT	1	51.1	1580	F	N	A	NS	OT/SC	10	Empty	Kept for chemistry
Cochrane River	GN	GN2-1	21/09/2015 11:00	21/09/2015 16:00	LW	2	44.9	1060	M	N	A	MT	OT/SC	21	100% Unidentified invert remains	Kept for chemistry
Cochrane River	GN	GN2-1	21/09/2015 11:00	21/09/2015 16:00	LW	3	43.8	980	F	N	A	MT	OT/SC	18	50% Unidentified invert remains	Kept for chemistry
Cochrane River	GN	GN3-1	21/09/2015 11:30	21/09/2015 15:34	NF	-	-	-	-	-	-	-	-	-	-	-
Cochrane River	GN	GN4-1	21/09/2015 11:37	21/09/2015 15:45	LSU	1	40	1100	U	Y	U	U	-	-	-	-
Cochrane River	GN	GN4-1	21/09/2015 11:37	21/09/2015 15:45	LSU	2	42.8	1180	U	Y	U	U	-	-	-	-
Cochrane River	GN	GN5-1	21/09/2015 15:50	21/09/2015 16:30	NF	-	-	-	-	-	-	-	-	-	-	White parasites
Cochrane River	GN	GN6-1	21/09/2015 16:15	22/09/2015 9:55	WSU	1	46.1	1740	U	Y	U	U	-	-	-	-
Cochrane River	GN	GN6-1	21/09/2015 16:15	22/09/2015 9:55	NP	2	65.5	2260	U	Y	U	U	-	-	-	White parasites
Cochrane River	GN	GN6-1	21/09/2015 16:15	22/09/2015 9:55	NP	3	57.7	1460	U	Y	U	U	-	-	-	White parasites
Cochrane River	GN	GN6-1	21/09/2015 16:15	22/09/2015 9:55	LSU	4	42.1	1180	U	Y	U	U	-	-	-	White parasites
Cochrane River	GN	GN6-1	21/09/2015 16:15	22/09/2015 9:55	LSU	5	51.9	2020	U	Y	U	U	-	-	-	-
Cochrane River	GN	GN6-1	21/09/2015 16:15	22/09/2015 9:55	LSU	6	44	1400	U	Y	U	U	-	-	-	White parasites
Cochrane River	GN	GN6-1	21/09/2015 16:15	22/09/2015 9:55	LW	7	45.2	940	U	N	U	U	-	-	-	-
Cochrane River	GN	GN6-1	21/09/2015 16:15	22/09/2015 9:55	LW	8	51.3	1520	U	N	U	U	-	-	-	-
Cochrane River	GN	GN6-1	21/09/2015 16:15	22/09/2015 9:55	NP	9	86.1	4800	U	N	U	U	-	-	-	White parasites
Cochrane River	GN	GN6-1	21/09/2015 16:15	22/09/2015 9:55	NP	10	103	8960	U	N	U	U	-	-	-	White parasites
Cochrane River	GN	GN6-1	21/09/2015 16:15	22/09/2015 9:55	LT	11	62.5	3100	M	N	A	M	OT/SC	19	Empty	Kept for chemistry
Cochrane River	HG	HG1-1	21/09/2015 11:25	21/09/2015 15:04	LT	1	63.3	3480	F	N	A	NS	OT/SC	9	80% Unidentified fish remains	Kept for chemistry
Cochrane River	HG	HG1-1	21/09/2015 11:25	21/09/2015 15:04	LSU	2	52.5	2500	U	Y	U	U	-	-	-	-
Cochrane River	HG	HG1-1	21/09/2015 11:25	21/09/2015 15:04	LSU	3	51.1	1880	U	Y	U	U	-	-	-	-
Cochrane River	HG	HG1-1	21/09/2015 11:25	21/09/2015 15:04	LSU	4	51.2	2520	U	Y	U	U	-	-	-	-
Cochrane River	HG	HG1-1	21/09/2015 11:25	21/09/2015 15:04	LT	5	53	1740	M	N	A	M	OT/SC	10	60% Unidentified invert remains	Kept for chemistry
Cochrane River	HG	HG1-1	21/09/2015 11:25	21/09/2015 15:04	LW	6	32	460	U	Y	U	U	-	-	-	-
Cochrane River	HG	HG1-1	21/09/2015 11:25	21/09/2015 15:04	LW	7	37.3	620	U	Y	U	U	-	-	-	-
Cochrane River	HG	HG1-1	21/09/2015 11:25	21/09/2015 15:04	LW	8	46.9	1300	M	N	A	MT	OT/SC	21	10% Unidentified invert remains	Kept for chemistry
Cochrane River	HG	HG1-1	21/09/2015 11:25	21/09/2015 15:04	LW	9	44.7	940	F	N	A	MT	OT/SC	21	50% Unidentified invert remains	Kept for chemistry
Crackingstone Inlet	GN	GN1-1	22/09/2015 16:30	23/09/2015 9:00	LT	1	50.6	1920	M	N	A	M	OT/SC	15	Empty	Kept for chemistry
Crackingstone Inlet	GN	GN1-1	22/09/2015 16:30	23/09/2015 9:00	LT	2	56.1	2220	M	N	A	M	OT/SC	24	Empty	Kept for chemistry
Crackingstone Inlet	GN	GN1-1	22/09/2015 16:30	23/09/2015 9:00	LT	3	53.9	2040	F	N	A	M	OT/SC	19	Empty	Kept for chemistry
Crackingstone Inlet	GN	GN1-1	22/09/2015 16:30	23/09/2015 9:00	LT	4	50	1780	M	N	A	M	OT/SC	16	Empty	Kept for chemistry. White parasites on stomach.
Crackingstone Inlet	GN	GN1-1	22/09/2015 16:30	23/09/2015 9:00	LT	5	50.9	1460	M	N	A	M	OT/SC	10	Empty	Kept for chemistry
Crackingstone Inlet	GN	GN1-1	22/09/2015 16:30	23/09/2015 9:00	LW	6	43.7	1400	F	N	A	MT	OT/SC	11	10% Unidentified invert remains	Kept for chemistry
Crackingstone Inlet	GN	GN2-1	23/09/2015 18:00	24/09/2015 9:00	LW	1	45.4	1400	U	N	A	MT	OT/SC	10	50% Unidentified invert remains	Kept for chemistry
Crackingstone Inlet	GN	GN2-1	23/09/2015 18:00	24/09/2015 9:00	LW	2	48.5	2020	U	N	A	MT	OT/SC	11	Empty	Kept for chemistry
Crackingstone Inlet	GN	GN2-1	23/09/2015 18:00	24/09/2015 9:00	LW	3	41.5	1180	U	N	A	MT	OT/SC	9	Empty	Kept for chemistry
Crackingstone Inlet	GN	GN2-1	23/09/2015 18:00	24/09/2015 9:00	LW	4	47.8	1980	U	N	A	MT	OT/SC	8	70% Unidentified invert remains	Kept for chemistry
Crackingstone Inlet	GN	GN2-1	23/09/2015 18:00	24/09/2015 9:00	LW	5	-	-	U	-	U	U	-	-	-	-
Crackingstone Inlet	GN	GN2-1	23/09/2015 18:00	24/09/2015 9:00	NP	5	-	-	U	-	U	U	-	-	-	-
Crackingstone Inlet	GN	GN2-1	23/09/2015 18:00	24/09/2015 9:00	LW	6	-	-	U	-	U	U	-	-	-	-
Crackingstone Inlet	GN	GN2-1	23/09/2015 18:00	24/09/2015 9:00	NP	6	-	-	U	-	U	U	-	-	-	-
Crackingstone Inlet	GN	GN2-1	23/09/2015 18:00	24/09/2015 9:00	LW	7	-	-	U	-	U	U	-	-	-	-
Crackingstone Inlet	GN	GN2-1	23/09/2015 18:00	24/09/2015 9:00	LW	8	-	-	U	-	U	U	-	-	-	-
Cree Lake	AN	AN1-1	24/09/2015 14:10	24/09/2015 14:25	NF	-	-	-	-	-	-	-	-	-	-	-
Cree Lake	AN	AN2-1	24/09/2015 16:25	24/09/2015 16:33	LT	1	55	1880	M	N	A	M	OT/SC	14	50% Unidentified fish remains	Kept for chemistry.
Cree Lake	AN	AN2-1	24/09/2015 16:25	24/09/2015 16:33	LT	2	67.5	3000	F	N	A	M	OT/SC	25	50% Unidentified fish remains	Kept for chemistry.
Cree Lake	AN	AN2-1	24/09/2015 16:25	24/09/2015 16:33	LT	3	52.6	1520	F	N	A	M	OT/SC	14	80% Unidentified fish remains	Kept for chemistry.
Cree Lake	AN	AN2-1	24/09/2015 16:25	24/09/2015 16:33	LT	4	58.2	2100	M	N	A	M	OT/SC	26	20% Unidentified fish remains	Kept for chemistry.
Cree Lake	AN	AN3-1	24/09/2015 16:45	24/09/2015 17:30	NP	1	79.1	4120	F	N	A	MT	CL/SC	5	Empty	Kept for chemistry.
Cree Lake	AN	AN3-1	24/09/2015 16:45	24/09/2015 17:30	NP	2	88.5	6420	M	N	A	MT	CL/SC	7	20% Unidentified fish remains	Kept for chemistry.
Cree Lake	AN	AN3-1	24/09/2015 16:45	24/09/2015 17:30	NP	3	82.3	4080	M	N	A	MT	CL/SC	7	Empty	Kept for chemistry.

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Detailed fish capture data for the EARMP technical program, 2011, 2012 and 2015.

Waterbody	Method	Site	Set Date	Catch Date	Species	Fish Number	Length (cm)	Weight (g)	Sex	Released	Maturity	Spawning Condition	Age Structure Collected	Age (years)	Stomach Contents	Comments
Cree Lake	AN	AN3-1	24/09/2015 16:45	24/09/2015 17:30	NP	4	76.7	3740	F	N	A	MT	CL/SC	7	30% Unidentified fish remains	Kept for chemistry.
Cree Lake	AN	AN3-1	24/09/2015 16:45	24/09/2015 17:30	NP	5	96	7800	F	N	A	MT	CL/SC	9	100% Lake whitefish	Kept for chemistry.
Cree Lake	GN	GN1-1	24/09/2015 11:40	24/09/2015 15:20	NF	-	-	-	-	-	-	-	-	-	-	-
Cree Lake	GN	GN2-1	24/09/2015 11:55	24/09/2015 15:30	NF	-	-	-	-	-	-	-	-	-	-	-
Cree Lake	GN	GN2-2	24/09/2015 15:35	25/09/2015 10:50	WSU	1	40	960	U	Y	U	U	-	-	-	-
Cree Lake	GN	GN2-2	24/09/2015 15:35	25/09/2015 10:50	LT	2	69.1	4640	M	Y	A	M	-	-	-	-
Cree Lake	GN	GN2-2	24/09/2015 15:35	25/09/2015 10:50	LT	3	59.6	2440	M	Y	A	M	-	-	-	-
Cree Lake	GN	GN2-2	24/09/2015 15:35	25/09/2015 10:50	LT	4	60.2	2500	F	Y	A	M	-	-	-	-
Cree Lake	GN	GN2-2	24/09/2015 15:35	25/09/2015 10:50	LT	5	62.3	2720	M	Y	A	M	-	-	-	-
Cree Lake	GN	GN2-2	24/09/2015 15:35	25/09/2015 10:50	LT	6	41	700	U	Y	U	U	-	-	-	-
Cree Lake	GN	GN2-2	24/09/2015 15:35	25/09/2015 10:50	LT	7	45	1120	U	N	U	U	-	-	-	-
Cree Lake	GN	GN2-2	24/09/2015 15:35	25/09/2015 10:50	NP	8	62.1	2080	U	N	U	U	-	-	-	-
Cree Lake	GN	GN2-2	24/09/2015 15:35	25/09/2015 10:50	WSU	9	43.6	1600	M	N	A	MT	FR/SC	8	100% Unknown	Kept for chemistry
Cree Lake	GN	GN2-2	24/09/2015 15:35	25/09/2015 10:50	WSU	10	40	1040	F	N	A	MT	FR/SC	10	100% Unknown	Kept for chemistry
Cree Lake	GN	GN2-2	24/09/2015 15:35	25/09/2015 10:50	WSU	11	41.9	1280	M	N	A	MT	FR/SC	9	Empty	Kept for chemistry
Cree Lake	GN	GN2-2	24/09/2015 15:35	25/09/2015 10:50	WSU	12	38.5	960	U	N	J	NS	FR/SC	6	20% Unknown	Kept for chemistry
Cree Lake	GN	GN2-2	24/09/2015 15:35	25/09/2015 10:50	WSU	13	41.6	1160	F	N	A	MT	FR/SC	10	50% Unknown	Kept for chemistry
Cree Lake	GN	GN2-2	24/09/2015 15:35	25/09/2015 10:50	LSU	14	31.1	360	U	N	U	U	-	-	-	-
Cree Lake	GN	GN2-2	24/09/2015 15:35	25/09/2015 10:50	LSU	15	37.1	660	U	N	U	U	-	-	-	-
Cree Lake	GN	GN2-2	24/09/2015 15:35	25/09/2015 10:50	LSU	16	32	380	U	N	U	U	-	-	-	-
Cree Lake	GN	GN2-2	24/09/2015 15:35	25/09/2015 10:50	LW	17	55	2180	F	N	A	MT	OT/SC	13	50% Unidentified invert remains	Kept for chemistry
Cree Lake	GN	GN2-2	24/09/2015 15:35	25/09/2015 10:50	LW	18	54	2080	F	N	A	NS	OT/SC	13	Empty	Kept for chemistry
Cree Lake	GN	GN3-1	24/09/2015 12:08	24/09/2015 15:40	NF	-	-	-	-	-	-	-	-	-	-	-
Cree Lake	GN	GN4-1	24/09/2015 12:20	24/09/2015 15:45	NF	-	-	-	-	-	-	-	-	-	-	-
Cree Lake	GN	GN5-1	24/09/2015 15:25	25/09/2015 10:35	LT	1	56.9	2060	M	Y	A	M	-	-	-	-
Cree Lake	GN	GN5-1	24/09/2015 15:25	25/09/2015 10:35	LT	2	43	960	U	Y	U	U	-	-	-	-
Cree Lake	GN	GN5-1	24/09/2015 15:25	25/09/2015 10:35	LT	3	59.6	2440	F	Y	A	M	-	-	-	-
Cree Lake	GN	GN5-1	24/09/2015 15:25	25/09/2015 10:35	LT	4	69	4620	F	Y	A	M	-	-	-	-
Cree Lake	GN	GN5-1	24/09/2015 15:25	25/09/2015 10:35	LSU	5	35.7	720	M	N	A	MT	FR/SC	14	30% Unknown	Kept for chemistry
Cree Lake	GN	GN5-1	24/09/2015 15:25	25/09/2015 10:35	LSU	6	29.1	310	U	N	U	U	-	-	-	-
Cree Lake	GN	GN5-1	24/09/2015 15:25	25/09/2015 10:35	LSU	7	31.7	400	U	N	U	U	-	-	-	-
Cree Lake	GN	GN5-1	24/09/2015 15:25	25/09/2015 10:35	LSU	8	30	380	U	N	U	U	-	-	-	-
Cree Lake	GN	GN5-1	24/09/2015 15:25	25/09/2015 10:35	LW	9	39.5	740	F	N	A	MT	OT/SC	14	60% Unidentified invert remains	Kept for chemistry. Composited with GN5-1 LW10
Cree Lake	GN	GN5-1	24/09/2015 15:25	25/09/2015 10:35	LW	10	36.3	620	F	N	A	MT	OT/SC	11	80% Unidentified invert remains	Kept for chemistry. Composited with GN5-1 LW9
Cree Lake	GN	GN5-1	24/09/2015 15:25	25/09/2015 10:35	LW	11	38.6	780	M	N	A	MT	OT/SC	12	100% Unidentified invert remains	Kept for chemistry. Composited with GN5-1 LW12
Cree Lake	GN	GN5-1	24/09/2015 15:25	25/09/2015 10:35	LW	12	37	620	M	N	A	MT	OT/SC	12	100% Unidentified invert remains	Kept for chemistry. Composited with GN5-1 LW11
Cree Lake	GN	GN5-1	24/09/2015 15:25	25/09/2015 10:35	LW	13	37.6	540	M	N	A	NS	OT/SC	19	10% Unidentified invert remains	Kept for chemistry. Composited with GN7-1 LW1
Cree Lake	GN	GN6-1	24/09/2015 16:00	25/09/2015 11:35	LSU	1	35.5	660	U	Y	U	U	-	-	-	-
Cree Lake	GN	GN6-1	24/09/2015 16:00	25/09/2015 11:35	LSU	2	36	700	U	Y	U	U	-	-	-	White parasites
Cree Lake	GN	GN6-1	24/09/2015 16:00	25/09/2015 11:35	LSU	3	34.6	640	U	Y	U	U	-	-	-	-
Cree Lake	GN	GN6-1	24/09/2015 16:00	25/09/2015 11:35	LSU	4	32.5	480	U	Y	U	U	-	-	-	-
Cree Lake	GN	GN6-1	24/09/2015 16:00	25/09/2015 11:35	LSU	5	32.7	500	U	Y	U	U	-	-	-	-
Cree Lake	GN	GN6-1	24/09/2015 16:00	25/09/2015 11:35	LT	6	42.1	900	U	Y	U	U	-	-	-	-
Cree Lake	GN	GN6-1	24/09/2015 16:00	25/09/2015 11:35	BB	7	45.5	820	U	Y	U	U	-	-	-	-
Cree Lake	GN	GN6-1	24/09/2015 16:00	25/09/2015 11:35	LW	8	30.5	420	U	Y	U	U	-	-	-	-
Cree Lake	GN	GN6-1	24/09/2015 16:00	25/09/2015 11:35	BB	9	53	1220	U	Y	U	U	-	-	-	-
Cree Lake	GN	GN6-1	24/09/2015 16:00	25/09/2015 11:35	LW	10	36	540	U	Y	U	U	-	-	-	-
Cree Lake	GN	GN6-1	24/09/2015 16:00	25/09/2015 11:35	LW	11	31.2	500	U	Y	U	U	-	-	-	-
Cree Lake	GN	GN6-1	24/09/2015 16:00	25/09/2015 11:35	LW	12	33.3	480	U	Y	U	U	-	-	-	-
Cree Lake	GN	GN6-1	24/09/2015 16:00	25/09/2015 11:35	LSU	13	32.5	540	U	Y	U	U	-	-	-	-
Cree Lake	GN	GN6-1	24/09/2015 16:00	25/09/2015 11:35	LT	14	49	2580	M	N	A	M	-	-	-	-
Cree Lake	GN	GN6-1	24/09/2015 16:00	25/09/2015 11:35	BB	15	47.1	620	U	Y	U	U	-	-	-	-
Cree Lake	GN	GN6-1	24/09/2015 16:00	25/09/2015 11:35	LW	16	37	640	U	Y	U	U	-	-	-	-
Cree Lake	GN	GN6-1	24/09/2015 16:00	25/09/2015 11:35	LW	17	31.5	420	U	Y	U	U	-	-	-	-
Cree Lake	GN	GN6-1	24/09/2015 16:00	25/09/2015 11:35	LW	18	37.5	640	U	Y	U	U	-	-	-	-
Cree Lake	GN	GN7-1	24/09/2015 16:20	25/09/2015 9:45	LW	1	39.5	720	M	N	A	MT	OT/SC	14	10% Unidentified invert remains	Kept for chemistry
Cree Lake	GN	GN7-1	24/09/2015 16:20	25/09/2015 9:45	LT	2	58.8	1820	F	N	A	NS	-	-	-	-
Cree Lake	GN	GN7-1	24/09/2015 16:20	25/09/2015 9:45	LT	3	53.6	1620	M	N	A	M	-	-	-	-
Cree Lake	GN	GN7-1	24/09/2015 16:20	25/09/2015 9:45	LT	4	54.2	1580	M	N	A	M	-	-	-	-

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Detailed fish capture data for the EARMP technical program, 2011, 2012 and 2015.

Waterbody	Method	Site	Set Date	Catch Date	Species	Fish Number	Length (cm)	Weight (g)	Sex	Released	Maturity	Spawning Condition	Age Structure Collected	Age (years)	Stomach Contents	Comments
Cree Lake	GN	GN7-1	24/09/2015 16:20	25/09/2015 9:45	LT	5	58	2060	M	N	A	M	-	-	-	-
Cree Lake	GN	GN7-1	24/09/2015 16:20	25/09/2015 9:45	LW	6	35.2	560	U	N	U	U	-	-	-	-
Cree Lake	GN	GN7-1	24/09/2015 16:20	25/09/2015 9:45	LW	7	37	640	U	N	U	U	-	-	-	-
Cree Lake	GN	GN7-1	24/09/2015 16:20	25/09/2015 9:45	LSU	8	32.3	455	U	N	J	NS	FR/SC	10	Empty	Kept for chemistry. Composited with GN7-1 LSU9
Cree Lake	GN	GN7-1	24/09/2015 16:20	25/09/2015 9:45	LSU	9	31.1	360	U	N	J	NS	FR/SC	8	100% Unknown	Kept for chemistry. Composited with GN7-1 LSU8
Cree Lake	HG	HG1-1	24/09/2015 11:30	24/09/2015 15:05	NF	-	-	-	-	-	-	-	-	-	-	-
Cree Lake	HG	HG1-2	24/09/2015 15:15	25/09/2015 9:45	BB	1	43	540	U	Y	U	U	-	-	-	White parasites
Cree Lake	HG	HG1-2	24/09/2015 15:15	25/09/2015 9:45	BB	2	51.7	1020	U	Y	U	U	-	-	-	-
Cree Lake	HG	HG1-2	24/09/2015 15:15	25/09/2015 9:45	BB	3	59.1	1340	U	Y	U	U	-	-	-	White parasites
Cree Lake	HG	HG1-2	24/09/2015 15:15	25/09/2015 9:45	LT	4	69.9	4800	F	Y	A	M	-	-	-	-
Cree Lake	HG	HG1-2	24/09/2015 15:15	25/09/2015 9:45	BB	5	55.5	1060	U	Y	U	U	-	-	-	White parasites
Cree Lake	HG	HG1-2	24/09/2015 15:15	25/09/2015 9:45	BB	6	30.5	225	U	Y	U	U	-	-	-	-
Cree Lake	HG	HG1-2	24/09/2015 15:15	25/09/2015 9:45	LT	7	57.1	2100	M	Y	A	M	-	-	-	-
Cree Lake	HG	HG1-2	24/09/2015 15:15	25/09/2015 9:45	LT	8	46.2	1220	U	Y	U	U	-	-	-	-
Cree Lake	HG	HG1-2	24/09/2015 15:15	25/09/2015 9:45	LT	9	57	1900	M	Y	A	M	-	-	-	-
Cree Lake	HG	HG1-2	24/09/2015 15:15	25/09/2015 9:45	LT	10	57.7	1520	F	Y	A	M	-	-	-	-
Cree Lake	HG	HG1-2	24/09/2015 15:15	25/09/2015 9:45	LT	11	54.5	2840	M	Y	A	M	-	-	-	-
Cree Lake	HG	HG1-2	24/09/2015 15:15	25/09/2015 9:45	LSU	12	40.4	1040	F	N	A	MT	FR/SC	18	10% Unknown	Kept for chemistry
Cree Lake	HG	HG1-2	24/09/2015 15:15	25/09/2015 9:45	LSU	13	37.2	700	U	N	J	NS	FR/SC	17	Empty	Kept for chemistry
Cree Lake	HG	HG1-2	24/09/2015 15:15	25/09/2015 9:45	LSU	14	33.1	435	U	N	J	NS	FR/SC	8	100% Unknown	Kept for chemistry. Composited with HG1-2 LSU15
Cree Lake	HG	HG1-2	24/09/2015 15:15	25/09/2015 9:45	LSU	15	31.9	410	U	N	J	NS	FR/SC	9	100% Unknown	Kept for chemistry. Composited with HG1-2 LSU14
Cree Lake	HG	HG1-2	24/09/2015 15:15	25/09/2015 9:45	LSU	16	20.3	80	U	N	U	U	-	-	-	-
Cree Lake	HG	HG1-2	24/09/2015 15:15	25/09/2015 9:45	LSU	17	23.1	135	U	N	U	U	-	-	-	-
Cree Lake	HG	HG1-2	24/09/2015 15:15	25/09/2015 9:45	LSU	18	19.7	90	U	N	U	U	-	-	-	-
Cree Lake	HG	HG1-2	24/09/2015 15:15	25/09/2015 9:45	LSU	19	18.9	80	U	N	U	U	-	-	-	-
Cree Lake	HG	HG1-2	24/09/2015 15:15	25/09/2015 9:45	LSU	20	21.2	115	U	N	U	U	-	-	-	-
Cree Lake	HG	HG1-2	24/09/2015 15:15	25/09/2015 9:45	LSU	21	22.2	140	U	N	U	U	-	-	-	-
Cree Lake	HG	HG1-2	24/09/2015 15:15	25/09/2015 9:45	LSU	22	20.6	105	U	N	U	U	-	-	-	-
Cree Lake	HG	HG1-2	24/09/2015 15:15	25/09/2015 9:45	LSU	23	22.7	145	U	N	U	U	-	-	-	-
Cree Lake	HG	HG1-2	24/09/2015 15:15	25/09/2015 9:45	WSU	24	23.5	170	U	N	U	U	-	-	-	-
Cree Lake	HG	HG1-2	24/09/2015 15:15	25/09/2015 9:45	WSU	25	24.4	180	U	N	U	U	-	-	-	White parasites on intestines
Cree Lake	HG	HG1-2	24/09/2015 15:15	25/09/2015 9:45	WSU	26	30.2	340	U	N	U	U	-	-	-	-
Cree Lake	HG	HG1-2	24/09/2015 15:15	25/09/2015 9:45	WSU	27	21	130	U	N	U	U	-	-	-	-
Cree Lake	HG	HG1-2	24/09/2015 15:15	25/09/2015 9:45	LW	28	24.2	175	U	N	U	U	-	-	-	-
Cree Lake	HG	HG1-2	24/09/2015 15:15	25/09/2015 9:45	LW	29	23.8	165	U	N	U	U	-	-	-	-
Cree Lake	HG	HG1-2	24/09/2015 15:15	25/09/2015 9:45	LW	30	20.1	75	U	N	U	U	-	-	-	-
Cree Lake	HG	HG1-2	24/09/2015 15:15	25/09/2015 9:45	LW	31	16.8	45	U	N	U	U	-	-	-	-
Cree Lake	HG	HG1-2	24/09/2015 15:15	25/09/2015 9:45	LT	32	50.3	1540	M	N	A	M	OT/SC	11	Empty	Kept for chemistry
Ellis Bay	AN	AN1-1	26/09/2015 12:00	26/09/2015 12:50	NF	-	-	-	-	-	-	-	-	-	-	-
Ellis Bay	AN	AN2-1	26/09/2015 12:30	26/09/2015 13:00	NF	-	-	-	-	-	-	-	-	-	-	-
Ellis Bay	AN	AN3-1	26/09/2015 13:00	26/09/2015 13:45	NF	-	-	-	-	-	-	-	-	-	-	-
Ellis Bay	AN	AN4-1	26/09/2015 13:45	26/09/2015 14:15	NF	-	-	-	-	-	-	-	-	-	-	-
Ellis Bay	AN	AN5-1	29/09/2015 12:00	29/09/2015 12:15	LT	1	59.2	2540	F	N	A	SPENT	OT/SC	19	Empty	Kept for chemistry.
Ellis Bay	AN	AN5-1	29/09/2015 12:00	29/09/2015 12:15	LT	2	51.8	1680	M	N	A	M	OT/SC	12	Empty	Kept for chemistry.
Ellis Bay	AN	AN5-1	29/09/2015 12:00	29/09/2015 12:15	LT	3	52.7	1940	M	N	A	M	OT/SC	16	Empty	Kept for chemistry.
Ellis Bay	GN	GN1-1	26/09/2015 12:00	26/09/2015 14:30	NF	-	-	-	-	-	-	-	-	-	-	Damaged caudal fin
Ellis Bay	GN	GN2-1	26/09/2015 15:00	26/09/2015 18:00	LW	1	-	-	U	N	U	U	-	-	-	-
Ellis Bay	GN	GN3-1	26/09/2015 18:20	27/09/2015 9:00	LT	1	52.6	1860	F	N	A	M	OT/SC	15	Empty	Kept for chemistry
Ellis Bay	GN	GN3-1	26/09/2015 18:20	27/09/2015 9:00	LT	2	58.4	2140	F	N	A	ST	OT/SC	15	Empty	Kept for chemistry
Ellis Bay	GN	GN3-1	26/09/2015 18:20	27/09/2015 9:00	LW	3	40.8	1100	M	N	A	M	OT/SC	10	Empty	Kept for chemistry
Ellis Bay	GN	GN3-1	26/09/2015 18:20	27/09/2015 9:00	LW	4	36.3	880	F	N	A	MT	OT/SC	18	10% Unidentified invert remains	Kept for chemistry
Ellis Bay	GN	GN3-1	26/09/2015 18:20	27/09/2015 9:00	LW	5	38.6	940	F	N	A	ST	OT/SC	12	50% Unidentified invert remains	Kept for chemistry
Ellis Bay	GN	GN3-1	26/09/2015 18:20	27/09/2015 9:00	LW	6	39.2	980	M	N	A	MT	OT/SC	16	50% Unidentified invert remains	Kept for chemistry
Ellis Bay	GN	GN3-1	26/09/2015 18:20	27/09/2015 9:00	LW	7	43.5	1300	M	N	A	MT	OT/SC	11	Empty	Kept for chemistry
Fond du Lac River	GN	GN1-1	15/09/2015 14:10	15/09/2015 16:26	LT	1	64.5	3420	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN2-1	15/09/2015 14:20	15/09/2015 16:20	LT	1	52.4	1540	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN2-1	15/09/2015 14:20	15/09/2015 16:20	LT	2	49.5	1340	M	N	A	M	OT/SC	11	Empty	Kept for chemistry
Fond du Lac River	GN	GN2-1	15/09/2015 14:20	15/09/2015 16:20	LT	3	53.4	1960	M	N	A	M	OT/SC	11	Empty	Kept for chemistry
Fond du Lac River	GN	GN2-1	15/09/2015 14:20	15/09/2015 16:20	LT	4	51.7	1620	M	N	A	M	OT/SC	10	Empty	Kept for chemistry

APPENDIX B, TABLE 9

Detailed fish capture data for the EARMP technical program, 2011, 2012 and 2015.

Waterbody	Method	Site	Set Date	Catch Date	Species	Fish Number	Length (cm)	Weight (g)	Sex	Released	Maturity	Spawning Condition	Age Structure Collected	Age (years)	Stomach Contents	Comments
Fond du Lac River	GN	GN2-1	15/09/2015 14:20	15/09/2015 16:20	LT	5	52.3	1880	M	N	A	M	OT/SC	11	20% Ninespine Stickleback	Kept for chemistry
Fond du Lac River	GN	GN2-1	15/09/2015 14:20	15/09/2015 16:20	LT	6	57.7	2300	M	N	A	M	OT/SC	10	Empty	Kept for chemistry
Fond du Lac River	GN	GN3-1	15/09/2015 14:35	15/09/2015 16:34	NF	-	-	-	-	-	-	-	-	-	-	-
Fond du Lac River	GN	GN4-1	15/09/2015 14:45	15/09/2015 16:45	NP	1	57.8	1420	U	Y	A	MT	-	-	-	-
Fond du Lac River	GN	GN4-2	15/09/2015 17:00	16/09/2015 11:15	LSU	1	43.8	1320	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN4-2	15/09/2015 17:00	16/09/2015 11:15	LSU	2	44	1280	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN4-2	15/09/2015 17:00	16/09/2015 11:15	WSU	3	33.8	680	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN4-2	15/09/2015 17:00	16/09/2015 11:15	LSU	4	42.2	1260	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN4-2	15/09/2015 17:00	16/09/2015 11:15	LSU	5	42.6	1780	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN4-2	15/09/2015 17:00	16/09/2015 11:15	LSU	6	41	1000	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN4-2	15/09/2015 17:00	16/09/2015 11:15	WSU	7	40.6	1040	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN4-2	15/09/2015 17:00	16/09/2015 11:15	LSU	8	47.2	1600	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN4-2	15/09/2015 17:00	16/09/2015 11:15	LT	9	54.3	1720	F	Y	A	M	-	-	-	-
Fond du Lac River	GN	GN4-2	15/09/2015 17:00	16/09/2015 11:15	NP	10	61.5	2360	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN4-2	15/09/2015 17:00	16/09/2015 11:15	LT	11	60.5	2740	F	N	A	M	-	-	-	-
Fond du Lac River	GN	GN4-2	15/09/2015 17:00	16/09/2015 11:15	WSU	12	38.4	820	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN4-2	15/09/2015 17:00	16/09/2015 11:15	WSU	13	35.4	760	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN4-2	15/09/2015 17:00	16/09/2015 11:15	WSU	14	32.5	740	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN4-2	15/09/2015 17:00	16/09/2015 11:15	LW	15	35.5	720	U	N	J	NS	OT/SC	11	50% Unidentified invert remains	Kept for chemistry
Fond du Lac River	GN	GN4-2	15/09/2015 17:00	16/09/2015 11:15	LT	16	37.6	800	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN5-1	15/09/2015 17:04	16/09/2015 11:30	LT	1	58	2440	M	Y	A	M	-	-	-	-
Fond du Lac River	GN	GN5-1	15/09/2015 17:04	16/09/2015 11:30	LT	2	55	2100	F	Y	A	M	-	-	-	-
Fond du Lac River	GN	GN5-1	15/09/2015 17:04	16/09/2015 11:30	LT	3	63.6	2380	M	N	A	M	-	-	-	-
Fond du Lac River	GN	GN5-1	15/09/2015 17:04	16/09/2015 11:30	LT	4	63.1	2820	F	Y	A	M	-	-	-	-
Fond du Lac River	GN	GN5-1	15/09/2015 17:04	16/09/2015 11:30	LT	5	47.7	1480	F	N	A	M	-	-	-	-
Fond du Lac River	GN	GN5-1	15/09/2015 17:04	16/09/2015 11:30	LSU	6	41	1080	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN5-1	15/09/2015 17:04	16/09/2015 11:30	NP	7	57.4	1460	U	N	U	U	-	-	-	-
Fond du Lac River	GN	GN5-1	15/09/2015 17:04	16/09/2015 11:30	NP	8	58.6	1620	U	N	U	U	-	-	-	-
Fond du Lac River	GN	GN6-1	15/09/2015 17:15	16/09/2015 10:45	WSU	1	43.4	1100	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN6-1	15/09/2015 17:15	16/09/2015 10:45	LT	2	56.4	2120	M	Y	A	M	-	-	-	-
Fond du Lac River	GN	GN6-1	15/09/2015 17:15	16/09/2015 10:45	LT	3	56.4	2160	M	Y	A	M	-	-	-	-
Fond du Lac River	GN	GN6-1	15/09/2015 17:15	16/09/2015 10:45	LT	4	54.6	1900	M	Y	A	M	-	-	-	-
Fond du Lac River	GN	GN6-1	15/09/2015 17:15	16/09/2015 10:45	LSU	5	36.8	800	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN6-1	15/09/2015 17:15	16/09/2015 10:45	LSU	6	43.1	1300	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN6-1	15/09/2015 17:15	16/09/2015 10:45	LT	7	58.4	2320	M	Y	A	M	-	-	-	-
Fond du Lac River	GN	GN6-1	15/09/2015 17:15	16/09/2015 10:45	LT	8	63.5	2900	M	Y	A	M	-	-	-	-
Fond du Lac River	GN	GN6-1	15/09/2015 17:15	16/09/2015 10:45	LT	9	64.2	2940	F	N	A	M	-	-	-	-
Fond du Lac River	GN	GN6-1	15/09/2015 17:15	16/09/2015 10:45	LT	10	48.2	1480	F	N	A	MT	-	-	-	-
Fond du Lac River	GN	GN6-1	15/09/2015 17:15	16/09/2015 10:45	LT	11	47.7	1380	M	N	A	M	-	-	-	-
Fond du Lac River	GN	GN6-1	15/09/2015 17:15	16/09/2015 10:45	LT	12	55.4	2200	M	N	A	M	-	-	-	-
Fond du Lac River	GN	GN6-1	15/09/2015 17:15	16/09/2015 10:45	LT	13	55.7	2240	M	N	A	M	-	-	-	-
Fond du Lac River	GN	GN6-1	15/09/2015 17:15	16/09/2015 10:45	LT	14	50.2	1520	M	N	A	M	-	-	-	-
Fond du Lac River	GN	GN6-1	15/09/2015 17:15	16/09/2015 10:45	LT	15	48.6	1500	F	N	A	M	-	-	-	-
Fond du Lac River	GN	GN6-1	15/09/2015 17:15	16/09/2015 10:45	LT	16	52	1600	F	N	A	M	-	-	-	-
Fond du Lac River	GN	GN6-1	15/09/2015 17:15	16/09/2015 10:45	LSU	17	51.5	1960	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN6-1	15/09/2015 17:15	16/09/2015 10:45	LSU	18	47.1	1500	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN6-1	15/09/2015 17:15	16/09/2015 10:45	LSU	19	37.3	860	U	Y	U	U	-	-	-	White parasites on liver
Fond du Lac River	GN	GN6-1	15/09/2015 17:15	16/09/2015 10:45	WSU	20	29	460	U	N	U	U	-	-	-	-
Fond du Lac River	GN	GN7-1	15/09/2015 17:20	16/09/2015 10:15	WSU	1	35	560	U	N	A	U	-	-	-	-
Fond du Lac River	GN	GN7-1	15/09/2015 17:20	16/09/2015 10:15	WSU	2	29.7	420	U	N	A	U	-	-	-	White parasites on liver
Fond du Lac River	GN	GN7-1	15/09/2015 17:20	16/09/2015 10:15	LT	3	54.5	1640	F	N	A	M	-	-	-	-
Fond du Lac River	GN	GN7-1	15/09/2015 17:20	16/09/2015 10:15	WSU	4	38.7	1020	U	Y	U	U	-	-	-	White parasites
Fond du Lac River	GN	GN7-1	15/09/2015 17:20	16/09/2015 10:15	LT	5	55	1880	M	Y	A	M	-	-	-	-
Fond du Lac River	GN	GN7-1	15/09/2015 17:20	16/09/2015 10:15	WSU	6	39.1	860	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN7-1	15/09/2015 17:20	16/09/2015 10:15	NP	7	68.1	2580	U	N	U	U	-	-	-	-
Fond du Lac River	GN	GN7-1	15/09/2015 17:20	16/09/2015 10:15	WSU	8	34.8	680	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN7-1	15/09/2015 17:20	16/09/2015 10:15	LT	9	51	1600	F	Y	A	M	-	-	-	-
Fond du Lac River	GN	GN7-1	15/09/2015 17:20	16/09/2015 10:15	LSU	10	38	800	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN7-1	15/09/2015 17:20	16/09/2015 10:15	WSU	11	30.1	420	U	Y	U	U	-	-	-	-

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Detailed fish capture data for the EARMP technical program, 2011, 2012 and 2015.

Waterbody	Method	Site	Set Date	Catch Date	Species	Fish Number	Length (cm)	Weight (g)	Sex	Released	Maturity	Spawning Condition	Age Structure Collected	Age (years)	Stomach Contents	Comments
Fond du Lac River	GN	GN7-1	15/09/2015 17:20	16/09/2015 10:15	LT	12	52.4	1720	M	N	A	M	-	-	-	-
Fond du Lac River	GN	GN7-1	15/09/2015 17:20	16/09/2015 10:15	LT	13	50	1440	M	N	A	M	-	-	-	-
Fond du Lac River	GN	GN7-1	15/09/2015 17:20	16/09/2015 10:15	LT	14	49.5	1400	M	N	A	M	-	-	-	-
Fond du Lac River	GN	GN7-1	15/09/2015 17:20	16/09/2015 10:15	LT	15	54.8	1880	M	N	A	M	-	-	-	-
Fond du Lac River	GN	GN7-1	15/09/2015 17:20	16/09/2015 10:15	LT	16	60.4	-	F	N	A	M	-	-	-	-
Fond du Lac River	GN	GN7-1	15/09/2015 17:20	16/09/2015 10:15	WE	17	64.9	3820	U	N	U	U	-	-	-	-
Fond du Lac River	GN	GN7-1	15/09/2015 17:20	16/09/2015 10:15	WE	18	61	3320	U	N	U	U	-	-	-	-
Fond du Lac River	GN	GN7-1	15/09/2015 17:20	16/09/2015 10:15	LW	19	42.8	1120	M	N	A	MT	OT/SC	19	70% Unidentified invert remains	Kept for chemistry
Fond du Lac River	GN	GN7-1	15/09/2015 17:20	16/09/2015 10:15	LW	20	39.3	820	M	N	A	MT	OT/SC	16	20% Unidentified invert remains	Kept for chemistry
Fond du Lac River	GN	GN7-1	15/09/2015 17:20	16/09/2015 10:15	LW	21	30.3	400	U	N	J	NS	OT/SC	5	Empty	Kept for chemistry. Composited with GN7-1 LW22
Fond du Lac River	GN	GN7-1	15/09/2015 17:20	16/09/2015 10:15	LW	22	31	400	U	N	J	NS	OT/SC	5	Empty	Kept for chemistry. Composited with GN7-1 LW21
Fond du Lac River	GN	GN8-1	16/09/2015 12:18	16/09/2015 14:10	WSU	1	30.4	500	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN8-1	16/09/2015 12:18	16/09/2015 14:10	WSU	2	30.7	460	U	N	U	U	-	-	-	-
Fond du Lac River	GN	GN8-1	16/09/2015 12:18	16/09/2015 14:10	WSU	3	32.1	620	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN8-1	16/09/2015 12:18	16/09/2015 14:10	WSU	4	35.3	780	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN8-1	16/09/2015 12:18	16/09/2015 14:10	WSU	5	35.2	740	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN8-1	16/09/2015 12:18	16/09/2015 14:10	WSU	6	30.6	480	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN8-1	16/09/2015 12:18	16/09/2015 14:10	WSU	7	31.2	600	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN8-1	16/09/2015 12:18	16/09/2015 14:10	WSU	8	33.6	620	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN9-1	16/09/2015 12:30	16/09/2015 14:20	LSU	1	40.6	1120	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN9-1	16/09/2015 12:30	16/09/2015 14:20	WSU	2	36.4	720	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN9-1	16/09/2015 12:30	16/09/2015 14:20	WSU	3	32.8	620	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN9-1	16/09/2015 12:30	16/09/2015 14:20	WSU	4	30.8	500	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN9-1	16/09/2015 12:30	16/09/2015 14:20	LT	5	21.5	160	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN9-1	16/09/2015 12:30	16/09/2015 14:20	WSU	6	30.2	420	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN9-1	16/09/2015 12:30	16/09/2015 14:20	WSU	7	33.2	520	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN9-1	16/09/2015 12:30	16/09/2015 14:20	WSU	8	30	500	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN9-1	16/09/2015 12:30	16/09/2015 14:20	WSU	9	31.4	500	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN9-1	16/09/2015 12:30	16/09/2015 14:20	LSU	10	39.1	800	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN9-1	16/09/2015 12:30	16/09/2015 14:20	LSU	11	36.9	840	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN9-1	16/09/2015 12:30	16/09/2015 14:20	LSU	12	43.1	1180	U	Y	U	U	-	-	-	-
Fond du Lac River	GN	GN9-1	16/09/2015 12:30	16/09/2015 14:20	LT	13	70.5	4200	F	N	A	NS	-	-	-	-
Fond du Lac River	GN	GN9-1	16/09/2015 12:30	16/09/2015 14:20	LW	14	38.4	800	F	N	A	MT	OT/SC	15	50% Unidentified invert remains	Kept for chemistry
Pasfield Lake	GN	GN10-1	23/09/2015 10:26	23/09/2015 14:25	NP	1	48.8	900	M	N	A	MT	CL/SC	2	Empty	Kept for chemistry
Pasfield Lake	GN	GN10-1	23/09/2015 10:26	23/09/2015 14:25	NP	2	46.3	660	F	N	J	NS	CL/SC	2	50% Lake whitefish	Kept for chemistry
Pasfield Lake	GN	GN1-1	19/09/2015 14:09	19/09/2015 16:36	LT	1	58.4	2360	U	Y	A	NS	-	-	-	-
Pasfield Lake	GN	GN11-1	23/09/2015 10:32	23/09/2015 14:30	NF	-	-	-	-	-	-	-	-	-	-	-
Pasfield Lake	GN	GN1-2	19/09/2015 16:39	20/09/2015 9:46	WSU	1	37.8	800	U	Y	U	U	-	-	-	-
Pasfield Lake	GN	GN1-2	19/09/2015 16:39	20/09/2015 9:46	WSU	2	38.1	980	U	Y	U	U	-	-	-	-
Pasfield Lake	GN	GN1-2	19/09/2015 16:39	20/09/2015 9:46	WSU	3	38.6	740	U	Y	U	U	-	-	-	-
Pasfield Lake	GN	GN1-2	19/09/2015 16:39	20/09/2015 9:46	WSU	4	38.5	1100	U	Y	U	U	-	-	-	-
Pasfield Lake	GN	GN1-2	19/09/2015 16:39	20/09/2015 9:46	WSU	5	37	820	U	Y	U	U	-	-	-	-
Pasfield Lake	GN	GN1-2	19/09/2015 16:39	20/09/2015 9:46	LT	6	66	4120	F	Y	A	M	-	-	-	-
Pasfield Lake	GN	GN1-2	19/09/2015 16:39	20/09/2015 9:46	LT	7	58.5	2800	M	Y	A	M	-	-	-	-
Pasfield Lake	GN	GN1-2	19/09/2015 16:39	20/09/2015 9:46	LT	8	64.1	3120	M	Y	A	M	-	-	-	-
Pasfield Lake	GN	GN1-2	19/09/2015 16:39	20/09/2015 9:46	WSU	9	36.4	820	U	Y	U	U	-	-	-	-
Pasfield Lake	GN	GN1-2	19/09/2015 16:39	20/09/2015 9:46	WSU	10	35.2	820	U	Y	U	U	-	-	-	-
Pasfield Lake	GN	GN1-2	19/09/2015 16:39	20/09/2015 9:46	WSU	11	38	1000	U	Y	U	U	-	-	-	-
Pasfield Lake	GN	GN1-2	19/09/2015 16:39	20/09/2015 9:46	WSU	12	38.8	1040	U	Y	U	U	-	-	-	White parasites
Pasfield Lake	GN	GN1-2	19/09/2015 16:39	20/09/2015 9:46	WSU	13	40	1000	U	Y	U	U	-	-	-	Damaged dorsal fin, lesions
Pasfield Lake	GN	GN1-2	19/09/2015 16:39	20/09/2015 9:46	WSU	14	36.5	-	U	Y	U	U	-	-	-	-
Pasfield Lake	GN	GN1-2	19/09/2015 16:39	20/09/2015 9:46	WSU	15	35.5	-	U	Y	U	U	-	-	-	Lesion
Pasfield Lake	GN	GN1-2	19/09/2015 16:39	20/09/2015 9:46	WSU	16	38.9	-	U	Y	U	U	-	-	-	-
Pasfield Lake	GN	GN1-2	19/09/2015 16:39	20/09/2015 9:46	WSU	17	31.6	-	U	Y	U	U	-	-	-	-
Pasfield Lake	GN	GN1-2	19/09/2015 16:39	20/09/2015 9:46	WSU	18	34.4	-	U	Y	U	U	-	-	-	-
Pasfield Lake	GN	GN1-2	19/09/2015 16:39	20/09/2015 9:46	WSU	19	35.5	-	U	Y	U	U	-	-	-	-
Pasfield Lake	GN	GN12-1	23/09/2015 10:45	23/09/2015 14:38	NF	-	-	-	-	-	-	-	-	-	-	-
Pasfield Lake	GN	GN2-1	19/09/2015 14:12	19/09/2015 16:45	LT	1	62.3	2360	F	Y	A	M	-	-	-	-
Pasfield Lake	GN	GN2-2	19/09/2015 16:49	20/09/2015 8:44	WSU	1	39.4	1060	F	N	A	MT	FR/SC	11	100% Unknown	Kept for chemistry

APPENDIX B, TABLE 9

Detailed fish capture data for the EARMP technical program, 2011, 2012 and 2015.

Waterbody	Method	Site	Set Date	Catch Date	Species	Fish Number	Length (cm)	Weight (g)	Sex	Released	Maturity	Spawning Condition	Age Structure Collected	Age (years)	Stomach Contents	Comments
Pasfield Lake	GN	GN2-2	19/09/2015 16:49	20/09/2015 8:44	WSU	2	40.8	1120	F	N	A	MT	FR/SC	9	90% Unknown	Kept for chemistry
Pasfield Lake	GN	GN2-2	19/09/2015 16:49	20/09/2015 8:44	WSU	3	39.7	1040	F	N	A	MT	FR/SC	8	100% Unknown	Kept for chemistry
Pasfield Lake	GN	GN2-2	19/09/2015 16:49	20/09/2015 8:44	WSU	4	41	1040	F	N	A	MT	FR/SC	9	100% Unknown	Kept for chemistry
Pasfield Lake	GN	GN2-2	19/09/2015 16:49	20/09/2015 8:44	WSU	5	39.5	1020	U	Y	A	U	-	-	-	-
Pasfield Lake	GN	GN2-2	19/09/2015 16:49	20/09/2015 8:44	WSU	6	39.5	1020	U	Y	A	U	-	-	-	-
Pasfield Lake	GN	GN2-2	19/09/2015 16:49	20/09/2015 8:44	WSU	7	34.5	740	U	Y	A	U	-	-	-	-
Pasfield Lake	GN	GN2-2	19/09/2015 16:49	20/09/2015 8:44	WSU	8	39.2	940	U	Y	A	U	-	-	-	-
Pasfield Lake	GN	GN2-2	19/09/2015 16:49	20/09/2015 8:44	WSU	9	39.6	980	U	Y	A	U	-	-	-	-
Pasfield Lake	GN	GN2-2	19/09/2015 16:49	20/09/2015 8:44	WSU	10	38.8	940	U	Y	A	U	-	-	-	-
Pasfield Lake	GN	GN2-2	19/09/2015 16:49	20/09/2015 8:44	WSU	11	36.6	980	U	Y	A	U	-	-	-	-
Pasfield Lake	GN	GN2-2	19/09/2015 16:49	20/09/2015 8:44	WSU	12	37	820	U	Y	A	U	-	-	-	-
Pasfield Lake	GN	GN2-2	19/09/2015 16:49	20/09/2015 8:44	WSU	13	38.3	900	U	Y	A	U	-	-	-	-
Pasfield Lake	GN	GN2-2	19/09/2015 16:49	20/09/2015 8:44	WSU	14	38.5	1100	U	Y	A	U	-	-	-	-
Pasfield Lake	GN	GN2-2	19/09/2015 16:49	20/09/2015 8:44	WSU	15	38.6	1080	U	Y	A	U	-	-	-	-
Pasfield Lake	GN	GN2-2	19/09/2015 16:49	20/09/2015 8:44	WSU	16	39.4	1100	U	Y	A	U	-	-	-	-
Pasfield Lake	GN	GN2-2	19/09/2015 16:49	20/09/2015 8:44	WSU	17	40.2	1020	U	Y	A	U	-	-	-	-
Pasfield Lake	GN	GN3-1	19/09/2015 14:26	19/09/2015 16:54	NF	-	-	-	-	-	-	-	-	-	-	-
Pasfield Lake	GN	GN3-2	19/09/2015 16:54	20/09/2015 10:29	WSU	1	37.8	1020	U	Y	U	U	-	-	-	-
Pasfield Lake	GN	GN3-2	19/09/2015 16:54	20/09/2015 10:29	WSU	2	41.3	1200	U	Y	U	U	-	-	-	-
Pasfield Lake	GN	GN3-2	19/09/2015 16:54	20/09/2015 10:29	WSU	3	38.7	920	U	Y	U	U	-	-	-	-
Pasfield Lake	GN	GN3-2	19/09/2015 16:54	20/09/2015 10:29	WSU	4	38.4	900	U	Y	U	U	-	-	-	-
Pasfield Lake	GN	GN3-2	19/09/2015 16:54	20/09/2015 10:29	WSU	5	37.5	720	U	Y	U	U	-	-	-	-
Pasfield Lake	GN	GN3-2	19/09/2015 16:54	20/09/2015 10:29	LT	6	63.5	-	M	Y	A	M	-	-	-	-
Pasfield Lake	GN	GN3-2	19/09/2015 16:54	20/09/2015 10:29	LT	7	73.9	4320	F	Y	A	M	-	-	-	-
Pasfield Lake	GN	GN3-2	19/09/2015 16:54	20/09/2015 10:29	LT	8	62.9	2200	F	Y	A	M	-	-	-	-
Pasfield Lake	GN	GN3-2	19/09/2015 16:54	20/09/2015 10:29	LT	9	68.2	3390	F	Y	A	M	-	-	-	-
Pasfield Lake	GN	GN3-2	19/09/2015 16:54	20/09/2015 10:29	LT	10	62.3	2900	F	Y	A	M	-	-	-	-
Pasfield Lake	GN	GN3-2	19/09/2015 16:54	20/09/2015 10:29	LT	11	62.8	3080	F	Y	A	M	-	-	-	-
Pasfield Lake	GN	GN3-2	19/09/2015 16:54	20/09/2015 10:29	WSU	12	39.8	1080	U	Y	U	U	-	-	-	-
Pasfield Lake	GN	GN3-2	19/09/2015 16:54	20/09/2015 10:29	WSU	13	39	1060	U	Y	U	U	-	-	-	-
Pasfield Lake	GN	GN3-2	19/09/2015 16:54	20/09/2015 10:29	WSU	14	34.4	800	U	Y	U	U	-	-	-	-
Pasfield Lake	GN	GN3-2	19/09/2015 16:54	20/09/2015 10:29	WSU	15	37.4	1020	U	Y	U	U	-	-	-	-
Pasfield Lake	GN	GN3-2	19/09/2015 16:54	20/09/2015 10:29	WSU	16	39.9	1100	U	Y	U	U	-	-	-	-
Pasfield Lake	GN	GN3-2	19/09/2015 16:54	20/09/2015 10:29	WSU	17	35.7	1000	U	Y	U	U	-	-	-	-
Pasfield Lake	GN	GN3-2	19/09/2015 16:54	20/09/2015 10:29	WSU	18	39	1060	U	Y	U	U	-	-	-	-
Pasfield Lake	GN	GN3-2	19/09/2015 16:54	20/09/2015 10:29	WSU	19	38.1	1080	U	Y	U	U	-	-	-	-
Pasfield Lake	GN	GN3-2	19/09/2015 16:54	20/09/2015 10:29	WSU	20	38.1	1040	U	Y	U	U	-	-	-	-
Pasfield Lake	GN	GN3-2	19/09/2015 16:54	20/09/2015 10:29	WSU	21	36.7	-	U	Y	U	U	-	-	-	-
Pasfield Lake	GN	GN3-2	19/09/2015 16:54	20/09/2015 10:29	WSU	22	37.3	-	U	Y	U	U	-	-	-	-
Pasfield Lake	GN	GN3-2	19/09/2015 16:54	20/09/2015 10:29	WSU	23	37.1	-	U	Y	U	U	-	-	-	-
Pasfield Lake	GN	GN3-2	19/09/2015 16:54	20/09/2015 10:29	LT	24	70.4	4000	F	N	A	NS	-	-	Empty	-
Pasfield Lake	GN	GN3-2	19/09/2015 16:54	20/09/2015 10:29	LT	25	64	3600	M	N	A	MT	-	-	Empty	-
Pasfield Lake	GN	GN3-2	19/09/2015 16:54	20/09/2015 10:29	LSU	26	36.5	800	F	N	A	MT	FR/SC	12	10% Unknown	Kept for chemistry
Pasfield Lake	GN	GN3-2	19/09/2015 16:54	20/09/2015 10:29	LSU	27	35.6	560	U	N	J	U	FR/SC	10	80% Unknown	Kept for chemistry. Composited with GN5-1 LSU13
Pasfield Lake	GN	GN3-2	19/09/2015 16:54	20/09/2015 10:29	LW	28	48.3	1980	F	N	A	MT	OT/SC	9	Empty	Kept for chemistry
Pasfield Lake	GN	GN3-2	19/09/2015 16:54	20/09/2015 10:29	LW	29	28.9	300	U	N	J	NS	OT/SC	5	50% Unidentified invert remains	Kept for chemistry. Composited with HG2-1 LW16, LW17, LW18, and LW19.
Pasfield Lake	GN	GN3-3	20/09/2015 10:45	20/09/2015 12:50	NF	-	-	-	-	-	-	-	-	-	-	-
Pasfield Lake	GN	GN4-1	19/09/2015 14:34	19/09/2015 17:04	NF	-	-	-	-	-	-	-	-	-	-	-
Pasfield Lake	GN	GN5-1	19/09/2015 18:00	20/09/2015 9:15	WSU	1	38.1	980	U	Y	A	U	-	-	-	-
Pasfield Lake	GN	GN5-1	19/09/2015 18:00	20/09/2015 9:15	WSU	2	37.8	920	U	Y	A	U	-	-	-	-
Pasfield Lake	GN	GN5-1	19/09/2015 18:00	20/09/2015 9:15	LT	3	67.6	3640	F	Y	A	M	-	-	-	-
Pasfield Lake	GN	GN5-1	19/09/2015 18:00	20/09/2015 9:15	LT	4	72.5	4100	F	Y	A	M	-	-	-	-
Pasfield Lake	GN	GN5-1	19/09/2015 18:00	20/09/2015 9:15	LT	5	60.4	2980	F	Y	A	M	-	-	-	-
Pasfield Lake	GN	GN5-1	19/09/2015 18:00	20/09/2015 9:15	WSU	6	37.7	960	U	Y	U	U	-	-	-	-
Pasfield Lake	GN	GN5-1	19/09/2015 18:00	20/09/2015 9:15	LT	7	68.5	3640	F	Y	A	M	-	-	-	-
Pasfield Lake	GN	GN5-1	19/09/2015 18:00	20/09/2015 9:15	WSU	8	40.8	1100	U	Y	U	U	-	-	-	-
Pasfield Lake	GN	GN5-1	19/09/2015 18:00	20/09/2015 9:15	LT	9	64.8	3160	F	Y	A	M	-	-	-	-
Pasfield Lake	GN	GN5-1	19/09/2015 18:00	20/09/2015 9:15	LT	10	70	4400	M	Y	A	M	-	-	-	-
Pasfield Lake	GN	GN5-1	19/09/2015 18:00	20/09/2015 9:15	BB	11	38.7	440	U	Y	U	U	-	-	-	-

APPENDIX B, TABLE 9

Detailed fish capture data for the EARMP technical program, 2011, 2012 and 2015.

Waterbody	Method	Site	Set Date	Catch Date	Species	Fish Number	Length (cm)	Weight (g)	Sex	Released	Maturity	Spawning Condition	Age Structure Collected	Age (years)	Stomach Contents	Comments
Pasfield Lake	GN	GN5-1	19/09/2015 18:00	20/09/2015 9:15	LT	12	58.1	2660	F	N	A	NS	OT/SC	10	Empty	Kept for chemistry
Pasfield Lake	GN	GN5-1	19/09/2015 18:00	20/09/2015 9:15	LSU	13	34.5	600	U	N	J	NS	FR/SC	10	Empty	Kept for chemistry. Composited with GN3-2 LSU27
Pasfield Lake	GN	GN6-1	20/09/2015 9:28	20/09/2015 13:00	NF	-	-	-	-	-	-	-	-	-	-	-
Pasfield Lake	GN	GN7-1	20/09/2015 10:05	20/09/2015 12:58	LW	1	56	2720	F	N	A	MT	OT/SC	24	100% Unidentified invert remains	Kept for chemistry
Pasfield Lake	GN	GN8-1	20/09/2015 10:14	20/09/2015 12:55	NF	-	-	-	-	-	-	-	-	-	-	-
Pasfield Lake	GN	GN9-1	23/09/2015 10:10	23/09/2015 14:20	NF	-	-	-	-	-	-	-	-	-	-	-
Pasfield Lake	HG	HG1-1	19/09/2015 14:00	19/09/2015 17:25	LT	1	63.4	2840	F	Y	A	M	-	-	-	-
Pasfield Lake	HG	HG1-1	19/09/2015 14:00	19/09/2015 17:25	LT	2	63.8	3060	F	Y	A	M	-	-	-	-
Pasfield Lake	HG	HG1-1	19/09/2015 14:00	19/09/2015 17:25	LT	3	69.5	3500	F	Y	A	M	-	-	-	-
Pasfield Lake	HG	HG1-1	19/09/2015 14:00	19/09/2015 17:25	LT	4	68.4	3000	F	Y	A	M	-	-	-	-
Pasfield Lake	HG	HG1-1	19/09/2015 14:00	19/09/2015 17:25	LT	5	64.1	2980	F	Y	A	M	-	-	-	-
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	WSU	1	40.4	1100	F	N	A	MT	FR/SC	8	90% Unknown	Kept for chemistry
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	WSU	2	37.3	820	M	N	A	MT	-	-	-	-
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LSU	3	40.4	900	F	N	A	MT	FR/SC	14	100% Unknown	Kept for chemistry
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LSU	4	40.3	860	F	N	A	MT	FR/SC	15	100% Unknown	Kept for chemistry
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LSU	5	33.6	600	U	N	J	NS	FR/SC	9	100% Unknown	Kept for chemistry. Composited with HG2-1 LSU6
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LSU	6	30.8	400	U	N	J	NS	FR/SC	8	90% Unknown	Kept for chemistry. Composited with HG2-1 LSU5
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	WSU	7	20.4	120	U	N	J	NS	-	-	-	-
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	WSU	8	17.4	60	U	N	J	NS	-	-	-	-
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	WSU	9	22.8	150	U	N	J	NS	-	-	-	-
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LSU	10	15.6	50	U	N	J	NS	-	-	-	-
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LSU	11	16.4	50	U	N	J	NS	-	-	-	-
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LSU	12	16.5	60	U	N	J	NS	-	-	-	-
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LSU	13	15.3	40	U	N	J	NS	-	-	-	-
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LSU	14	16	40	U	N	J	NS	-	-	-	-
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LW	15	56.2	2580	M	N	A	MT	OT/SC	26	50% Unidentified invert remains	Kept for chemistry
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LW	16	23.8	145	U	N	J	NS	OT/SC	4	Empty	Kept for chemistry. Composited with GN3-2, LW29 and HG2-1 LW17, LW18, and LW19.
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LW	17	23	130	U	N	J	NS	OT/SC	4	50% Unidentified invert remains	Kept for chemistry. Composited with GN3-2, LW29 and HG2-1 LW16, LW18, and LW19.
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LW	18	21.3	100	U	N	J	NS	OT/SC	4	100% Unidentified invert remains	Kept for chemistry. Composited with GN3-2, LW29 and HG2-1 LW16, LW17, and LW19.
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LW	19	21.8	135	U	N	J	NS	OT/SC	3	50% Unidentified invert remains	Kept for chemistry. Composited with GN3-2, LW29 and HG2-1 LW16, LW17, and LW18.
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LW	20	21.1	100	U	N	J	NS	OT/SC	-	50% Unidentified invert remains	-
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LW	21	21.9	110	U	N	J	NS	OT/SC	-	20% Unidentified invert remains	-
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LW	22	21.3	105	U	N	J	NS	OT/SC	-	30% Unidentified invert remains	-
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LW	23	20	85	U	N	J	NS	OT/SC	-	100% Unidentified invert remains	-
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LW	24	20.4	85	U	N	J	NS	OT/SC	-	60% Unidentified invert remains	-
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LW	25	19.5	80	U	N	J	NS	OT/SC	-	80% Unidentified invert remains	-
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LW	26	19	80	U	N	J	NS	OT/SC	-	100% Unidentified invert remains	-
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LW	27	19.5	80	U	N	J	NS	OT/SC	-	80% Unidentified invert remains	-
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LW	28	19.7	85	U	N	J	NS	OT/SC	-	50% Unidentified invert remains	-
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LSU	29	21.6	140	U	N	J	NS	-	-	-	-
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LW	30	19	60	U	N	J	NS	-	-	-	-
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LW	31	19.1	70	U	N	J	NS	-	-	-	-
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LW	32	17.8	65	U	N	J	NS	-	-	-	-
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LW	33	18.3	65	U	N	J	NS	-	-	-	-
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LW	34	16.7	50	U	N	J	NS	-	-	-	-
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LW	35	18.1	60	U	N	J	NS	-	-	-	-
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LW	36	17	55	U	N	J	NS	-	-	-	-
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LW	37	16.6	50	U	N	J	NS	-	-	-	-
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LW	38	17.1	55	U	N	J	NS	-	-	-	-
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LW	39	17.7	65	U	N	J	NS	-	-	-	-
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LW	40	17.4	45	U	N	J	NS	-	-	-	-
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LW	41	16.5	55	U	N	J	NS	-	-	-	-
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LW	42	18.7	65	U	N	J	NS	-	-	-	-
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LW	43	17.7	55	U	N	J	NS	-	-	-	-
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LW	44	18	65	U	N	J	NS	-	-	-	-
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LW	45	15.9	50	U	N	J	NS	-	-	-	-
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LW	46	17.2	55	U	N	J	NS	-	-	-	-
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LW	47	16.8	55	U	N	J	NS	-	-	-	-
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LW	48	17.7	45	U	N	J	NS	-	-	-	-

APPENDIX B, TABLE 9

Detailed fish capture data for the EARMP technical program, 2011, 2012 and 2015.

Waterbody	Method	Site	Set Date	Catch Date	Species	Fish Number	Length (cm)	Weight (g)	Sex	Released	Maturity	Spawning Condition	Age Structure Collected	Age (years)	Stomach Contents	Comments
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LT	49	66.5	3540	F	N	A	NS	OT/SC	25	Empty	Kept for chemistry
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LT	50	64.5	3680	F	N	A	ST	OT/SC	26	Empty	Kept for chemistry
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LT	51	59.9	2660	F	N	A	ST	OT/SC	19	80% Unidentified fish remains	Kept for chemistry
Pasfield Lake	HG	HG2-1	19/09/2015 17:45	20/09/2015 8:15	LT	52	61	2680	F	N	A	ST	OT/SC	19	50% Unidentified fish remains	Kept for chemistry
Pasfield Lake	HG	HG3-1	23/09/2015 11:07	23/09/2015 14:15	NF	-	-	-	-	-	-	-	-	-	-	-
Waterbury Lake	AN	AN1-1	17/09/2015 12:15	17/09/2015 12:35	LT	1	57.6	2200	F	N	A	M	OT/SC	13	Empty	Kept for chemistry.
Waterbury Lake	AN	AN1-1	17/09/2015 12:15	17/09/2015 12:35	LT	2	56.9	2020	F	N	A	M	OT/SC	10	Empty	Kept for chemistry.
Waterbury Lake	AN	AN1-1	17/09/2015 12:15	17/09/2015 12:35	LT	3	50.4	1420	M	N	A	M	OT/SC	11	Empty	Kept for chemistry.
Waterbury Lake	AN	AN1-1	17/09/2015 12:15	17/09/2015 12:35	LT	4	45.5	1100	M	N	A	M	OT/SC	7	Empty	Kept for chemistry.
Waterbury Lake	AN	AN1-1	17/09/2015 12:15	17/09/2015 12:35	LT	5	52.5	1480	M	N	A	M	OT/SC	12	Empty	Kept for chemistry.
Waterbury Lake	GN	GN1-1	17/09/2015 11:10	17/09/2015 14:39	LT	1	48.4	1200	F	N	A	NS	-	-	50% Fish	-
Waterbury Lake	GN	GN1-1	17/09/2015 11:10	17/09/2015 14:39	LW	2	32.5	460	F	N	A	MT	OT/SC	10	10% Unidentified invert remains	Kept for chemistry. Composited with GN1-1 LW5.
Waterbury Lake	GN	GN1-1	17/09/2015 11:10	17/09/2015 14:39	LW	3	30	310	U	N	J	NS	OT/SC	7	30% Unidentified invert remains	Kept for chemistry
Waterbury Lake	GN	GN1-1	17/09/2015 11:10	17/09/2015 14:39	LW	4	30	310	U	N	J	NS	OT/SC	8	10% Unidentified invert remains	Kept for chemistry
Waterbury Lake	GN	GN1-1	17/09/2015 11:10	17/09/2015 14:39	LW	5	35.5	580	M	N	A	MT	OT/SC	14	Empty	Kept for chemistry. Composited with GN1-1 LW2.
Waterbury Lake	GN	GN1-2	17/09/2015 15:20	17/09/2015 17:08	LT	1	38.7	620	U	Y	U	U	-	-	-	-
Waterbury Lake	GN	GN1-2	17/09/2015 15:20	17/09/2015 17:08	LW	2	32	500	U	Y	U	U	-	-	-	-
Waterbury Lake	GN	GN1-2	17/09/2015 15:20	17/09/2015 17:08	LW	3	33.1	540	U	Y	U	U	-	-	-	-
Waterbury Lake	GN	GN1-3	17/09/2015 17:28	17/09/2015 9:35	LW	1	21.5	400	U	Y	U	U	-	-	-	-
Waterbury Lake	GN	GN1-3	17/09/2015 17:28	17/09/2015 9:35	LW	2	33	460	U	Y	U	U	-	-	-	-
Waterbury Lake	GN	GN1-3	17/09/2015 17:28	17/09/2015 9:35	LW	3	28.5	245	U	Y	U	U	-	-	-	-
Waterbury Lake	GN	GN1-3	17/09/2015 17:28	17/09/2015 9:35	LW	4	30.9	345	U	Y	U	U	-	-	-	-
Waterbury Lake	GN	GN1-3	17/09/2015 17:28	17/09/2015 9:35	LW	5	27.4	250	U	N	U	U	-	-	-	-
Waterbury Lake	GN	GN1-3	17/09/2015 17:28	17/09/2015 9:35	LW	6	28.6	270	U	N	U	U	-	-	-	-
Waterbury Lake	GN	GN1-3	17/09/2015 17:28	17/09/2015 9:35	LW	7	30	300	U	N	U	U	-	-	-	-
Waterbury Lake	GN	GN1-3	17/09/2015 17:28	17/09/2015 9:35	LW	8	32.7	425	U	N	U	U	-	-	-	-
Waterbury Lake	GN	GN1-3	17/09/2015 17:28	17/09/2015 9:35	LW	9	31.7	335	U	N	U	U	-	-	-	-
Waterbury Lake	GN	GN1-3	17/09/2015 17:28	17/09/2015 9:35	LW	10	32.2	430	U	Y	U	U	-	-	-	-
Waterbury Lake	GN	GN1-3	17/09/2015 17:28	17/09/2015 9:35	LT	11	42.3	840	M	Y	A	M	-	-	-	-
Waterbury Lake	GN	GN1-3	17/09/2015 17:28	17/09/2015 9:35	LT	12	45.8	1040	F	N	A	NS	-	-	-	-
Waterbury Lake	GN	GN1-3	17/09/2015 17:28	17/09/2015 9:35	LW	13	35.5	520	U	N	U	U	-	-	-	-
Waterbury Lake	GN	GN1-3	17/09/2015 17:28	17/09/2015 9:35	LW	14	32	400	U	N	U	U	-	-	-	-
Waterbury Lake	GN	GN1-3	17/09/2015 17:28	17/09/2015 9:35	LW	15	31.5	400	U	N	U	U	-	-	-	-
Waterbury Lake	GN	GN1-3	17/09/2015 17:28	17/09/2015 9:35	LW	16	32.8	365	U	N	U	U	-	-	-	-
Waterbury Lake	GN	GN1-3	17/09/2015 17:28	17/09/2015 9:35	LW	17	35.5	520	U	N	U	U	-	-	-	-
Waterbury Lake	GN	GN1-3	17/09/2015 17:28	17/09/2015 9:35	LW	18	36	600	U	N	U	U	-	-	-	-
Waterbury Lake	GN	GN1-3	17/09/2015 17:28	17/09/2015 9:35	LW	19	35	540	U	N	U	U	-	-	-	-
Waterbury Lake	GN	GN1-3	17/09/2015 17:28	17/09/2015 9:35	LW	20	35	540	U	N	U	U	-	-	-	-
Waterbury Lake	GN	GN1-3	17/09/2015 17:28	17/09/2015 9:35	LW	21	33.5	500	U	N	U	MT	-	-	-	-
Waterbury Lake	GN	GN1-3	17/09/2015 17:28	17/09/2015 9:35	LW	22	38.1	700	U	N	U	MT	-	-	-	-
Waterbury Lake	GN	GN1-3	17/09/2015 17:28	17/09/2015 9:35	LW	23	35.4	580	U	N	U	MT	-	-	-	-
Waterbury Lake	GN	GN1-3	17/09/2015 17:28	17/09/2015 9:35	LW	24	36.2	680	U	N	U	MT	-	-	-	-
Waterbury Lake	GN	GN1-3	17/09/2015 17:28	17/09/2015 9:35	LW	25	37.5	720	U	N	U	MT	-	-	-	-
Waterbury Lake	GN	GN2-1	17/09/2015 11:27	17/09/2015 14:53	LT	1	36.9	540	U	Y	U	U	-	-	-	-
Waterbury Lake	GN	GN2-1	17/09/2015 11:27	17/09/2015 14:53	LT	2	32.9	400	U	Y	U	U	-	-	-	-
Waterbury Lake	GN	GN2-1	17/09/2015 11:27	17/09/2015 14:53	LW	3	35.2	600	M	N	J	NS	OT/SC	15	20% Unidentified invert remains	Kept for chemistry. Composited with GN1-1 LW4.
Waterbury Lake	GN	GN2-1	17/09/2015 11:27	17/09/2015 14:53	LW	4	33.5	540	F	N	A	MT	OT/SC	11	40% Unidentified invert remains	Kept for chemistry. Composited with GN1-1 LW3.
Waterbury Lake	GN	GN2-2	17/09/2015 15:25	17/09/2015 17:20	NF	-	-	-	-	-	-	-	-	-	-	-
Waterbury Lake	GN	GN2-3	17/09/2015 17:23	18/09/2015 10:02	LW	1	34.2	500	U	N	U	U	-	-	-	-
Waterbury Lake	GN	GN2-3	17/09/2015 17:23	18/09/2015 10:02	LW	2	31.5	400	U	N	U	U	-	-	-	-
Waterbury Lake	GN	GN2-3	17/09/2015 17:23	18/09/2015 10:02	LW	3	35.4	465	U	N	U	U	-	-	-	-
Waterbury Lake	GN	GN2-3	17/09/2015 17:23	18/09/2015 10:02	LW	4	32.5	420	U	N	U	U	-	-	-	-
Waterbury Lake	GN	GN2-3	17/09/2015 17:23	18/09/2015 10:02	LW	5	32.7	395	U	N	U	U	-	-	-	-
Waterbury Lake	GN	GN2-3	17/09/2015 17:23	18/09/2015 10:02	LW	6	32.9	450	U	N	U	U	-	-	-	-
Waterbury Lake	GN	GN2-3	17/09/2015 17:23	18/09/2015 10:02	LW	7	34.7	540	U	N	U	U	-	-	-	-
Waterbury Lake	GN	GN2-3	17/09/2015 17:23	18/09/2015 10:02	LW	8	31.7	370	U	N	U	U	-	-	-	White parasite on stomach
Waterbury Lake	GN	GN2-3	17/09/2015 17:23	18/09/2015 10:02	LW	9	32.7	540	U	N	U	U	-	-	-	-
Waterbury Lake	GN	GN2-3	17/09/2015 17:23	18/09/2015 10:02	LW	10	34	500	U	N	U	U	-	-	-	-
Waterbury Lake	GN	GN2-3	17/09/2015 17:23	18/09/2015 10:02	LW	11	37	760	U	N	U	U	-	-	-	-

APPENDIX B, TABLE 9

Detailed fish capture data for the EARMP technical program, 2011, 2012 and 2015.

Waterbody	Method	Site	Set Date	Catch Date	Species	Fish Number	Length (cm)	Weight (g)	Sex	Released	Maturity	Spawning Condition	Age Structure Collected	Age (years)	Stomach Contents	Comments
Waterbury Lake	GN	GN2-3	17/09/2015 17:23	18/09/2015 10:02	LW	12	31.1	400	U	N	U	U	-	-	-	-
Waterbury Lake	GN	GN2-3	17/09/2015 17:23	18/09/2015 10:02	LT	13	92.5	8100	F	N	A	NS	-	-	-	-
Waterbury Lake	GN	GN2-3	17/09/2015 17:23	18/09/2015 10:02	LW	14	40	880	F	N	A	MT	OT/SC	26	Empty	Kept for chemistry
Waterbury Lake	GN	GN2-3	17/09/2015 17:23	18/09/2015 10:02	LW	15	41.5	940	M	N	A	MT	OT/SC	24	50% Unidentified invert remains	Kept for chemistry
Waterbury Lake	GN	GN3-1	17/09/2015 11:35	17/09/2015 15:08	LT	1	50.6	1440	F	N	A	NS	-	-	-	-
Waterbury Lake	GN	GN4-1	17/09/2015 12:05	17/09/2015 15:16	LT	1	54.5	1900	M	Y	A	M	-	-	-	-
Waterbury Lake	GN	GN4-1	17/09/2015 12:05	17/09/2015 15:16	LT	2	52.5	1420	M	Y	A	M	-	-	-	-
Waterbury Lake	GN	GN4-1	17/09/2015 12:05	17/09/2015 15:16	LT	3	54.5	1820	M	Y	A	M	-	-	-	-

Method: AN = angling, HG = half tandard gang gill net, GN = gill net.

Species: NP = northern pike, BB = burbot, WSU = white sucker, LSU = longnose sucker, LT = lake trout, LW = lake whitefish, WE = walleye, YP = yellow perch, NF = no fish.

Sex: M = male, F = female, U = unknown.

Maturity: U = unknown, A = adult, J = juvenile.

Spawning condition: MT = green, M = ripe, SP = ripe+/running ripe, ST = spent, U = unknown, NS = non-spawner.

Ageing: CL = cleithra, FR = fin rays, OT = otolith, SC = scales.

Stomach contents: BI = Benthic invertebrate remains.

APPENDIX B, TABLE 10

Descriptive statistics of fish collected for chemistry for the EARMP technical program, 2011, 2012, and 2015.

Waterbody	Statistic	Longnose Sucker			Lake Trout			Lake Whitefish			Northern Pike			White Sucker			All Species	
		Length (cm)	Weight (g)	Age (years)	Length (cm)	Weight (g)	Age (years)	Length (cm)	Weight (g)	Age (years)	Length (cm)	Weight (g)	Age (years)	Length (cm)	Weight (g)	Age (years)	Length (cm)	Weight (g)
Cochrane River	N	6	6	6	15	15	15	15	15	15	9	9	9	4	4	4	49	49
	Average	39.4	638	13.7	57.9	2258	15.1	45.9	1055	19.8	62.6	1983	7.8	48.8	1468	15.3	52.1	1576
	S.D.	4.1	394	3.1	5.5	807	5.7	2.5	191	6.9	14.2	1646	3.3	1.7	271	1.5	10.5	1022
	Minimum	32.5	140	9	47.8	920	7	41.1	710	8	48.9	840	4	47.2	1160	13	32.5	140
	Maximum	44.2	1210	17	67.7	3480	23	49.4	1380	34	95.7	6250	14	50.5	1720	16	95.7	6250
Crackingstone Inlet	N	-	-	-	15	15	14	15	15	15	10	10	10	-	-	-	40	40
	Average	-	-	-	54.2	1839	15.6	43.0	1184	11.7	64.2	1902	6.3	-	-	-	52.5	1609
	S.D.	-	-	-	3.6	343	4.3	2.7	398	3.3	8.2	859	1.4	-	-	-	9.7	618
	Minimum	-	-	-	50.0	1150	9	39.1	740	6	55.2	1320	5	-	-	-	39.1	740
	Maximum	-	-	-	63.4	2290	24	48.5	2020	19	83.1	4100	9	-	-	-	83.1	4100
Fond du Lac River	N	9	9	9	12	12	12	17	17	17	10	10	10	10	10	10	58	58
	Average	44.8	1206	19.2	55.3	1791	12.1	41.6	960	14.9	58.4	1791	5.6	43.6	1246	14.2	48.2	1363
	S.D.	8.9	526	5.1	4.7	494	4.7	6.0	521	7.7	8.0	988	2.2	2.8	300	5.5	9.2	675
	Minimum	36.2	520	13	49.5	1010	7	30.3	390	5	46.3	800	3	40.5	810	9	30.3	390
	Maximum	62.5	2020	27	63.8	2610	21	53.1	2550	32	71.4	4060	9	49.6	1920	26	71.4	4060
Waterbury Lake	N	10	10	10	15	15	14	16	16	16	9	9	9	4	4	4	54	54
	Average	35.5	1068	10.9	54.8	1810	13.4	39.6	903	14.1	66.2	2328	5.3	33.9	238	6.0	47.1	1374
	S.D.	3.5	1597	2.9	5.9	608	4.9	7.5	622	5.9	16.2	1803	3.3	0.7	51	0.0	14.2	1234
	Minimum	29.4	75	6	45.5	1100	7	30.0	310	7	46.9	540	2	33.4	180	6	29.4	75
	Maximum	39.8	5560	15	66.5	3310	26	53.9	2580	26	89.3	5250	9	34.9	280	6	89.3	5560
Bobby's Lake	N	-	-	-	-	-	-	-	-	-	5	5	5	4	4	4	9	9
	Average	-	-	-	-	-	-	-	-	-	63.1	1522	8.2	45.0	983	12.3	55.0	1282
	S.D.	-	-	-	-	-	-	-	-	-	6.8	672	1.3	2.2	193	1.3	10.8	566
	Minimum	-	-	-	-	-	-	-	-	-	53.1	715	6	42.0	705	11	42.0	705
	Maximum	-	-	-	-	-	-	-	-	-	69.6	2460	9	47.2	1140	14	69.6	2460
Cree Lake	N	23	23	23	15	15	14	24	24	24	10	10	10	15	15	15	87	87
	Average	36.0	636	13.1	56.4	1735	15.3	40.6	752	12.6	80.9	4708	8.2	40.0	975	9.1	46.6	1384
	S.D.	3.2	240	3.7	7.8	632	6.4	5.7	491	5.2	17.4	2573	3.5	2.3	243	2.1	16.0	1563
	Minimum	31.1	360	8	44.5	950	6	33.4	360	4	47.7	840	3	36.7	710	6	31.1	360
	Maximum	45.6	1510	23	73.3	3120	26	55.0	2180	23	106.0	7900	16	44.6	1600	14	106.0	7900
Ellis Bay	N	-	-	-	15	15	15	12	12	12	5	5	5	-	-	-	32	32
	Average	-	-	-	55.9	2083	14.5	40.8	1116	19.9	74.7	2968	8.6	-	-	-	53.2	1859
	S.D.	-	-	-	6.0	637	4.6	4.8	167	8.5	9.0	1162	4.4	-	-	-	13.1	897
	Minimum	-	-	-	48.5	1420	8	32.0	880	10	67.7	1660	5	-	-	-	32.0	880
	Maximum	-	-	-	69.1	3640	23	49.1	1380	33	89.5	4860	16	-	-	-	89.5	4860
Pasfield Lake	N	15	15	15	15	15	14	34	34	34	5	5	5	6	6	6	75	75
	Average	36.2	710	11.7	60.5	2397	19.4	34.0	524	5.6	67.3	2576	5.4	38.3	938	8.0	42.3	1106
	S.D.	5.8	434	5.1	3.7	666	3.8	9.4	627	5.1	21.2	2197	4.4	4.8	331	2.7	15.0	1112
	Minimum	29.1	275	6	53.1	1620	10	21.3	100	2	46.3	660	2	28.5	265	3	21.3	100
	Maximum	49.6	1690	23	66.5	3680	26	62.9	2720	26	93.8	5850	12	41.0	1120	11	93.8	5850

N = number of samples; S.D. = standard deviation.

APPENDIX B, TABLE 11

Detailed fish flesh chemistry data collected from the Cochrane River for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Cochrane River																							
	Longnose Sucker				Lake Trout															Lake Whitefish				
	2011		2012		2011					2012					2015					2011				
	SP6-1		SP3-1	SP3-1, SP5-1	AN1-1					SP3-1				SP4-1	AN2-1	GN6-1	GN2-1	HG1-1		SP6-1			SP8-1	
	LSU04	LSU05	LSU09, LSU10	LSU11, LSU02	LT01	LT02	LT03	LT04	LT05	LT05	LT06	LT07	LT08	LT01	LT01	LT11	LT01	LT01	LT05	LW01	LW02	LW03	LW01	LW02
Metals																								
Aluminum	1.6	2.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Barium	0.31	0.15	0.03	0.05	0.01	0.01	<0.01	<0.01	<0.01	0.01	0.01	0.02	0.01	0.02	0.27	<0.01	0.26	0.1	0.02	0.03	0.09	0.05	0.57	0.04
Boron	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cadmium	<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	<0.002	<0.002	<0.002	<0.002	<0.002
Chromium	<0.1	<0.1	<0.1	<0.1	0.1	0.2	<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
Copper	0.18	0.27	0.23	0.51	0.24	0.28	0.22	0.12	0.25	0.35	0.2	0.17	0.18	0.19	0.24	0.22	0.32	0.33	0.25	0.2	0.12	0.18	0.11	0.17
Iron	3.4	11.0	1.6	3.3	2.2	3.4	2.1	0.7	1.7	2.2	1.6	1.4	2.5	1.8	2.9	1.4	2	1.9	2.3	3.3	3.0	2.2	1.8	2.1
Lead	<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	0.004	<0.002	0.005	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Manganese	1.30	0.41	0.10	0.20	0.06	0.10	0.06	0.05	0.07	0.08	0.07	0.04	0.07	0.10	0.07	0.05	0.06	0.12	0.09	0.06	0.23	0.14	0.07	0.17
Mercury	0.04	0.07	0.01	0.01	0.09	0.10	0.12	0.18	0.30	0.16	0.14	0.20	0.20	0.06	0.24	0.57	0.18	0.15	0.14	0.07	0.05	0.03	0.06	0.05
Molybdenum	<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	<0.02	<0.02	<0.02	<0.02
Nickel	<0.01	0.03	<0.01	<0.01	0.05	0.03	0.02	<0.01	0.03	<0.01	<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	0.02
Selenium	0.40	0.34	0.29	0.31	0.19	0.26	0.21	0.36	0.22	0.24	0.22	0.20	0.27	0.23	0.21	0.26	0.17	0.26	0.18	0.53	0.47	0.31	0.23	0.28
Silver	<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	<0.002	<0.002	<0.002	<0.002	<0.002
Thallium	<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	<0.01	<0.01	<0.01	<0.01
Tin	<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	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Titanium	0.13	0.20	0.06	0.08	0.06	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.07	0.06	0.07	0.05	0.07	0.07	0.06	0.06	0.07	0.08	0.07	0.08
Uranium	0.006	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	0.002	0.002	0.002	0.001
Zinc	4.9	6.4	3.6	5	3.2	3.4	3.2	2.7	2.8	3.6	3.3	2.8	3.3	3.6	3.5	2	4.5	3.2	3.2	3	7.8	4.7	3	5.1
Physical Properties																								
Age (years)	19	16	12, 16	17, 9	18	10	23	23	19	8	15	18	16	7	22	19	10	9	10	32	34	10	17	15
Moisture (%)	77.34	79.75	75.12	77.46	74.01	72.45	69.01	77.64	75.75	74.03	68.41	72.4	66.27	73.59	76.84	76.49	77.05	73.91	69.88	82.51	85.72	77.81	80.67	79.64
Weight (g)	930	970	420, 435	650, 140	2440	2280	3460	3320	2380	1310	2120	2110	1350	920	2280	3100	1580	3480	1740	960	1210	990	1310	1380
Radionuclides																								
Lead-210 (Bq/g)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Polonium-210 (Bq/g)	0.0039	0.0013	0.0006	0.0009	0.0004	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0006	0.0008	0.0032	0.0003	0.0008
Radium-226 (Bq/g)	<0.00006	<0.00006	<0.00008	<0.00007	<0.00005	<0.00006	<0.00007	<0.00006	<0.00006	<0.00007	<0.00006	<0.00008	<0.00009	<0.00006	<0.00007	<0.00005	<0.00006	<0.00006	<0.00006	<0.00006	<0.00006	<0.00007	<0.00006	<0.000005
Thorium-230 (Bq/g)	<0.0001	<0.0001	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0002	<0.0001	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00001
Trace Elements																								
Antimony	<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	<0.02	<0.02	<0.02	<0.02
Arsenic	0.18	0.15	0.17	0.11	0.1	0.13	0.07	0.03	0.06	0.04	0.05	0.05	0.04	0.05	0.02	0.08	0.03	0.03	0.08	0.14	0.18	0.07	0.02	0.07
Beryllium	<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	<0.002	<0.002	<0.002	<0.002	<0.002
Cobalt	0.005	0.005	<0.002	0.003	0.003	<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	0.008	0.003	0.002	0.005	0.008
Strontium	3.4	1.2	0.26	0.22	0.11	0.1	0.04	0.04	0.05	0.1	0.05	0.12	0.05	0.05	0.07	0.03	0.07	0.08	0.18	0.18	1.3	1.1	0.08	0.68
Vanadium	<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	<0.02	<0.02	<0.02	<0.02

APPENDIX B, TABLE 11

Detailed fish flesh chemistry data collected from the Cochrane River for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Cochrane River																						
	Lake Whitefish					Lake Whitefish					Northern Pike									WSU			
	2012					2015					2011					2012				2012			
	SP1-1	SP2-1		SP3-1		HG1-1		GN2-1		GN1-1	AN1-1		AN2-1			SP1-2	SP4-1		SP6-1	SP1-2			SP3-1
	LW01	LW01	LW02	LW01	LW02	LW08	LW09	LW02	LW03	LW02	NP06	NP07	NP01	NP02	NP03	NP01	NP02	NP03	NP01	WSU02	WSU03	WSU04	WSU12
Metals																							
Aluminum	<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	<0.5	<0.5	<0.5
Barium	0.02	0.17	0.02	0.02	0.04	0.02	0.02	0.04	<0.01	<0.01	<0.01	0.05	0.13	0.03	0.01	0.02	0.01	0.02	0.02	0.04	0.04	0.04	0.04
Boron	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cadmium	<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	<0.002	<0.002	<0.002	<0.002
Chromium	<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	<0.1	<0.1	<0.1
Copper	0.15	0.14	0.29	0.15	0.22	0.16	0.13	0.23	0.16	0.15	0.18	0.2	0.17	0.19	0.14	0.35	0.23	0.17	0.16	0.35	0.36	0.34	0.34
Iron	2.3	2.0	1.8	2.4	3.7	2.8	2.6	3.7	1	1.4	11.0	1.5	3.4	1.8	1.3	4.0	1.8	1.5	1.0	4.0	2.8	4.6	2.5
Lead	<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	<0.002	<0.002	<0.002	<0.002
Manganese	0.07	0.08	0.10	0.09	0.14	0.09	0.05	0.14	0.09	0.07	0.19	0.11	0.13	0.09	0.13	0.09	0.10	0.10	0.07	0.10	0.11	0.14	0.08
Mercury	0.03	0.16	0.11	0.04	0.06	0.13	0.23	0.1	0.2	0.12	0.34	0.24	0.04	0.11	0.18	0.06	0.26	0.22	0.15	0.02	0.02	0.02	0.02
Molybdenum	<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	<0.02	<0.02	<0.02
Nickel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	0.06	0.03	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01
Selenium	0.23	0.31	0.27	0.56	0.57	0.26	0.24	0.40	0.21	0.36	0.26	0.22	0.24	0.25	0.23	0.25	0.24	0.28	0.22	0.25	0.26	0.31	0.29
Silver	<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	<0.002	<0.002	<0.002	<0.002
Thallium	<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	<0.01	<0.01	<0.01
Tin	<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	<0.01	<0.01	<0.01
Titanium	0.07	0.08	0.08	0.06	0.06	0.06	0.05	0.06	0.06	0.06	0.08	0.09	0.09	0.09	0.10	0.06	0.07	0.08	0.07	0.08	0.08	0.08	0.07
Uranium	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.018	0.002	<0.001	0.002	0.009	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	3.3	4.2	4.4	3.5	5.3	4.7	7	5.7	4.1	4.3	5.4	6.7	5.9	5.3	6.1	7.3	4.8	5.6	3.8	4.7	3.8	5.4	5.2
Physical Properties																							
Age (years)	18	19	8	22	25	21	21	21	18	16	9	6	4	4	6	8	14	11	8	13	16	16	16
Moisture (%)	77.84	78.36	77.41	80.52	79.83	77.11	80.56	79.42	81.04	76.58	78.49	76.84	77.79	78.47	77.74	78.85	79.51	78.25	80.25	79.93	81.3	82.49	77.99
Weight (g)	1240	1050	890	890	710	1300	940	1060	980	920	1420	1700	1110	840	1180	1480	6250	1820	2100	1320	1670	1160	1720
Radionuclides																							
Lead-210 (Bq/g)	<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	<0.001	<0.001	<0.001
``	0.0003	<0.0002	0.0002	0.0012	0.0008	0.0002	0.0002	0.0003	<0.0002	<0.0002	0.0024	0.0025	0.0023	0.0037	0.0012	0.0042	0.0005	0.0016	0.0039	0.0038	0.001	0.0028	0.0032
Radium-226 (Bq/g)	<0.00006	<0.00007	<0.00006	<0.00008	0.0001	<0.00006	0.00006	0.0001	<0.00007	<0.00008	<0.00008	<0.00006	<0.00007	<0.00007	<0.00006	<0.00007	0.00008	0.0002	<0.00006	<0.00007	<0.00008	<0.00006	<0.00006
Thorium-230 (Bq/g)	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.0001
Trace Elements																							
Antimony	<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	<0.02	<0.02	<0.02
Arsenic	0.02	0.06	0.04	0.14	0.21	0.02	0.01	0.09	0.01	0.04	0.01	0.01	0.02	0.02	0.02	0.03	0.03	0.05	0.05	0.04	0.06	0.11	0.13
Beryllium	<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	<0.002	<0.002	<0.002	<0.002
Cobalt	<0.002	0.002	<0.002	0.003	0.003	0.005	0.003	0.004	<0.002	0.003	<0.002	<0.002	0.003	<0.002	<0.002	0.003	<0.002	<0.002	<0.002	0.003	0.003	0.006	0.003
Strontium	0.05	0.09	0.14	0.06	0.25	0.19	0.2	0.1	0.1	0.13	0.11	0.12	0.19	0.12	0.11	0.07	0.03	0.04	0.03	0.05	0.04	0.05	0.04
Vanadium	<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	<0.02	<0.02	<0.02

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[1] All concentrations are presented on a µg/g wet weight basis, unless specified otherwise.

APPENDIX B, TABLE 12

Detailed fish flesh chemistry data collected from Crackingstone Inlet for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Crackingstone Inlet														
	Lake Trout														
	2011					2012					2015				
	SP1-1					SP2-1					GN1-1				
	LT01	LT02	LT03	LT04	LT05	LT01	LT02	LT03	LT04	LT06	LT01	LT02	LT03	LT04	LT05
Metals															
Aluminum	0.9	<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
Barium	0.03	<0.01	0.04	0.01	<0.01	0.01	0.02	0.02	0.02	0.01	0.05	0.03	0.02	0.01	<0.01
Boron	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cadmium	<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
Chromium	<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
Copper	0.27	0.13	0.2	0.24	0.22	0.3	0.23	0.15	0.22	0.24	0.22	0.68	0.24	0.26	0.22
Iron	5.3	1.9	1.9	2.3	3.4	1.5	2.1	1.2	1.2	1.2	2.5	7.5	2.5	2.6	2.6
Lead	<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
Manganese	0.2	0.06	0.07	0.06	0.09	0.06	0.09	0.08	0.09	0.05	0.06	0.08	0.07	0.06	0.04
Mercury	0.13	0.17	0.18	0.17	0.13	0.08	0.15	0.22	0.08	0.08	0.15	0.42	0.19	0.12	0.087
Molybdenum	<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
Nickel	<0.01	0.01	<0.01	0.02	<0.01	0.07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	0.16	0.15	0.12	0.21	0.18	0.17	0.15	0.14	0.15	0.15	0.11	0.14	0.12	0.13	0.13
Silver	<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
Thallium	<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
Tin	<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
Titanium	0.11	0.07	0.08	0.08	0.08	0.01	0.02	0.01	<0.01	<0.01	0.06	0.07	0.06	0.06	0.06
Uranium	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	6.5	3.4	3.8	2.6	7.8	2.8	2.9	2.6	3.3	2.5	2.9	5.4	3.7	4.5	3.6
Physical Properties															
Age (years)	14	19	14	14	-	13	16	23	13	9	15	24	19	16	10
Moisture (%)	66.65	72.8	72.26	70.93	75.14	74.44	75.35	80.02	75.97	76.17	70.83	75.17	76.09	73.33	73.88
Weight (g)	2280	2160	1780	1950	1680	2290	1720	1850	1310	1150	1920	2220	2040	1780	1460
Radionuclides															
Lead-210 (Bq/g)	<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
Polonium-210 (Bq/g)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Radium-226 (Bq/g)	<0.00007	<0.00006	<0.00007	<0.00006	0.0004	<0.00006	<0.00006	<0.00006	<0.00007	<0.00009	<0.00006	<0.00008	<0.00007	<0.00006	0.00007
Thorium-230 (Bq/g)	<0.0001	0.0002	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0002	<0.0002	<0.0001	<0.0002	<0.0001	<0.0001	<0.0001
Trace Elements															
Antimony	<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
Arsenic	0.11	0.08	0.12	0.07	0.06	0.06	0.05	0.04	0.09	0.05	0.07	0.08	0.04	0.08	0.09
Beryllium	<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
Cobalt	<0.002	<0.002	<0.002	<0.002	0.003	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.003	<0.002	<0.002	<0.002
Strontium	0.17	0.17	0.46	0.07	0.12	0.1	0.04	0.04	0.14	0.1	0.11	0.16	0.29	0.32	0.26
Vanadium	<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

APPENDIX B, TABLE 12

Detailed fish flesh chemistry data collected from Crackingstone Inlet for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Crackingstone Inlet														
	Lake Whitefish														
	2011					2012					2015				
	SP1-1					SP1-1			SP1-3		GN1-1	GN2-1			
	LW06	LW07	LW08	LW09	LW10	LW01	LW02	LW03	LW01	LW02	LW06	LW01	LW02	LW03	LW04
Metals															
Aluminum	<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
Barium	0.63	0.6	0.01	0.17	0.04	0.02	0.01	0.02	0.02	<0.01	0.03	<0.01	0.04	<0.01	<0.01
Boron	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cadmium	<0.002	<0.002	<0.002	<0.002	0.003	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Chromium	<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
Copper	0.19	0.25	0.15	0.19	0.2	0.2	0.17	0.22	0.12	0.2	0.14	0.21	0.21	0.23	0.14
Iron	1.3	2.1	4.4	1.8	4.3	1.4	0.9	1.3	2.6	2	1.7	2	2	3.1	1.3
Lead	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.003	<0.002	<0.002
Manganese	0.09	0.08	0.07	0.11	0.11	0.07	0.07	0.07	0.14	0.08	0.07	0.06	0.1	0.08	0.11
Mercury	0.04	0.04	0.09	0.02	0.02	0.03	0.02	0.03	0.02	0.02	0.03	0.031	0.06	0.033	0.05
Molybdenum	<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
Nickel	<0.01	<0.01	<0.01	<0.01	0.08	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	0.18	0.21	0.58	2.6	0.28	0.37	0.33	0.55	0.85	0.32	0.8	1.8	0.82	0.17	0.36
Silver	<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
Thallium	<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
Tin	<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	<0.01	<0.01
Titanium	0.07	0.07	0.06	0.08	0.07	0.02	0.01	0.01	0.02	0.01	0.06	<0.01	<0.01	0.01	<0.01
Uranium	<0.001	0.007	0.006	0.008	0.012	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.009	<0.001	<0.001	<0.001
Zinc	3.6	4.4	5.3	5	4.1	3.4	3.7	4.2	3	3.2	3.1	4.5	3.4	4.1	2.9
Physical Properties															
Age (years)	14	8	13	14	19	12	12	6	16	13	11	10	11	9	8
Moisture (%)	75.91	75.86	76.21	73.83	74.66	73.3	75.53	76.72	74.93	75.2	74.29	75.24	75.61	73.71	73.08
Weight (g)	1090	1220	1260	1060	1150	905	820	740	780	750	1400	1400	2020	1180	1980
Radionuclides															
Lead-210 (Bq/g)	<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
Polonium-210 (Bq/g)	<0.0002	<0.0002	0.0007	0.0007	<0.0002	0.0006	0.0004	0.0003	0.0007	0.0002	0.0008	0.0004	0.0004	0.0004	0.0002
Radium-226 (Bq/g)	<0.00008	<0.00006	0.0003	<0.00007	<0.00008	<0.00005	0.0002	<0.0001	<0.00008	0.00009	<0.00006	0.0001	0.0001	<0.00009	0.00008
Thorium-230 (Bq/g)	0.0004	<0.0001	<0.0002	<0.0001	<0.0002	<0.0001	<0.0002	<0.0002	0.0006	<0.0002	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001
Trace Elements															
Antimony	<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
Arsenic	0.12	0.05	0.12	0.11	0.11	0.09	0.02	0.03	0.3	0.24	0.03	0.03	0.08	0.1	0.03
Beryllium	<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
Cobalt	<0.002	0.009	0.004	<0.002	0.004	0.002	0.004	<0.002	<0.002	<0.002	0.008	0.007	0.003	0.007	0.003
Strontium	0.22	0.18	0.34	0.75	0.45	0.13	0.08	0.12	0.1	0.17	0.3	0.49	0.27	0.4	0.13
Vanadium	<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

APPENDIX B, TABLE 12

Detailed fish flesh chemistry data collected from Crackingstone Inlet for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	**Crackingstone Inlet**									
	Northern Pike									
	2011					**2012**				
	SP1-1					**AN1-1**				
	NP01	**NP02**	**NP03**	**NP04**	**NP05**	**NP01**	**NP02**	**NP03**	**NP04**	**NP05**
Metals										
Aluminum	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Barium	0.02	0.04	0.01	0.12	<0.01	0.02	0.03	0.02	0.02	0.02
Boron	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cadmium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Chromium	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Copper	0.28	0.25	0.25	0.16	0.17	0.2	0.14	0.13	0.17	0.18
Iron	2.8	2.3	2.4	2	1.3	1.7	1.1	0.7	3.8	1.9
Lead	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Manganese	0.12	0.13	0.11	0.13	0.07	0.1	0.09	0.08	0.12	0.09
Mercury	0.09	0.06	0.05	0.13	0.14	0.16	0.15	0.08	0.06	0.14
Molybdenum	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Nickel	0.04	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	0.64	0.52	0.32	0.36	0.42	0.59	0.4	0.38	0.34	0.66
Silver	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Thallium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Tin	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Titanium	0.09	0.07	0.07	0.09	0.07	0.01	0.01	0.02	0.01	<0.01
Uranium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	6.2	6.6	7.9	6	3.5	5.9	3.3	3.4	8.5	3.8
Physical Properties										
Age (years)	5	5	5	7	9	8	6	6	5	7
Moisture (%)	78.43	78.59	79.09	78.21	77.81	77.48	78.26	77.67	78.08	77.64
Weight (g)	1320	1410	1720	1960	2560	4100	1630	1390	1610	1320
Radionuclides										
Lead-210 (Bq/g)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Polonium-210 (Bq/g)	0.0008	0.001	0.0003	0.001	0.0004	0.0006	0.0013	0.0004	0.0012	0.0018
Radium-226 (Bq/g)	0.00006	<0.00006	<0.00006	<0.00006	<0.00006	<0.00007	<0.00007	<0.00008	<0.00006	<0.0001
Thorium-230 (Bq/g)	0.0003	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002
Trace Elements										
Antimony	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Arsenic	0.05	0.06	0.05	0.05	0.1	0.19	0.08	0.05	0.05	0.06
Beryllium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cobalt	0.002	0.002	0.002	0.002	0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Strontium	0.14	0.27	0.13	0.57	0.09	0.16	0.18	0.09	0.11	0.06
Vanadium	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

[1] All concentrations are presented on a µg/g wet weight basis, unless specified otherwise.

APPENDIX B, TABLE 13

Detailed fish flesh chemistry data collected from the Fond du Lac River for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Fond du Lac River																													
	Longnose Sucker								Lake Trout												Lake Whitefish									
	2011					2012			2011		2012					2015					2011					2012				
	SP5-1		SP4-1	SP6-2		SP7-1			SP5-1	SP7-2	SP1-1		SP4-1	SP6-1	SP7-1	GN2-1					SP4-1					SP1-1	SP3-1		SP3-2	SP7-1
	LSU06	LSU07	LSU11	LSU01	LSU02	LSU05, LSU06	LSU07	LSU08	LT08	LT15	LT01	LT02	LT02	LT01	LT01	LT02	LT03	LT04	LT05	LT06	LW01	LW02	LW03	LW04	LW05	LW03	LW01	LW02, LW03	LW04	LW02
Metals																														
Aluminum	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	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Barium	0.08	0.04	0.05	0.07	0.02	0.04	0.05	0.06	0.02	<0.01	0.02	0.04	0.02	0.02	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	0.02	0.02	0.02	0.01	<0.01
Boron	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cadmium	<0.002	<0.002	<0.002	0.003	<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	0.004	<0.002	0.006	<0.002	<0.002	<0.002	<0.002	0.004	<0.002
Chromium	<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	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Copper	0.26	0.21	0.38	0.27	0.39	0.21	0.23	0.22	0.44	0.19	0.28	0.32	0.42	0.21	0.25	0.31	0.27	0.86	0.32	0.53	0.14	0.15	0.15	0.1	0.16	0.14	0.2	0.18	0.14	0.15
Iron	2	2	3.5	2.7	3.8	2.7	2.7	3.5	4.1	1.9	2.2	3.4	2.6	1.6	2.2	2.7	1.8	6.3	2.3	4.2	1.8	1.7	2.1	1.9	2.2	1.3	2.7	1.9	3	2.4
Lead	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.009	<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
Manganese	0.26	0.12	0.14	0.41	0.09	0.09	0.24	0.22	0.21	0.05	0.07	0.10	0.10	0.10	0.07	0.12	0.1	0.11	0.07	0.07	0.09	0.11	0.10	0.11	0.11	0.08	0.12	0.13	0.08	0.07
Mercury	0.06	0.09	0.04	0.20	0.08	0.04	0.12	0.07	0.42	0.40	0.22	0.17	0.17	0.15	0.21	0.2	0.23	0.18	0.2	0.13	0.08	0.05	0.04	0.07	0.03	0.18	0.09	0.08	0.23	0.23
Molybdenum	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	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Nickel	<0.01	0.04	<0.01	0.02	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	0.05	0.02	<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
Selenium	0.31	0.41	0.32	0.38	0.34	0.24	0.31	0.39	0.25	0.23	0.28	0.2	0.24	0.26	0.17	0.19	0.23	0.21	0.2	0.18	0.64	0.4	0.4	0.78	0.31	0.33	0.23	0.34	0.26	0.26
Silver	<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	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Thallium	<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	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Tin	<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	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Titanium	0.09	0.07	0.07	0.07	0.07	0.05	0.07	0.06	0.07	0.07	0.07	0.08	0.07	0.07	0.07	<0.01	<0.01	<0.01	<0.01	<0.01	0.07	0.06	0.06	0.07	0.06	0.07	0.07	0.07	0.06	0.07
Uranium	<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	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	4.2	4	5.4	3.6	4.9	3	3.5	3	10	3.1	3.1	4.1	3.7	3.4	4.4	3.7	3.1	4.4	3	6.7	3.3	3	3.6	2.6	4.1	6.6	3.7	3.8	3.5	3.5
Physical Properties																														
Age (years)	13	19	16	27	19	14, 16	26	23	21	21	16	9	7	8	10	11	11	10	11	10	16	16	16	26	32	12	9	7, 9	25	21
Moisture (%)	75.91	76.73	76.04	79.62	79.17	76.59	76.21	74.11	72.27	79.61	72.68	65.49	76.75	74	76.05	73.81	73.1	72.99	71.04	72.13	75.91	78.64	79.11	75.83	77.43	74.3	75.85	77.14	83.85	79.16
Weight (g)	840	1450	980	2020	1250	520, 525	1620	1650	2610	1850	2420	1620	1010	1120	1760	1340	1960	1620	1880	2300	1060	1040	1690	2550	1050	910	720	620, 390	1050	980
Radionuclides																														
Lead-210 (Bq/g)	<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	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Polonium-210 (Bq/g)	0.0021	0.0029	0.0034	0.0023	0.0007	0.0005	0.0007	0.0017	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0008	0.0011	<0.0002	0.0004	0.0005	0.0003	<0.0002	<0.0002	0.0004	0.0004
Radium-226 (Bq/g)	<0.00006	<0.00006	<0.00006	0.00009	<0.00006	<0.00007	<0.00006	<0.00006	<0.0001	<0.00007	<0.00006	0.0001	0.0001	0.0002	<0.00006	<0.00008	<0.00006	<0.00006	<0.00007	<0.00006	<0.0002	0.00020	<0.00007	<0.00006	0.00009	0.0001	<0.00006	<0.00006	<0.00006	0.0001
Thorium-230 (Bq/g)	<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	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0003	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Trace Elements																														
Antimony	<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	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Arsenic	0.19	0.22	0.15	0.06	0.1	0.09	0.11	0.11	0.04	0.04	0.02	0.03	0.04	0.04	0.02	0.04	0.03	0.09	0.03	0.04	0.11	0.14	0.19	0.31	0.07	0.03	0.03	0.03	0.05	0.02
Beryllium	<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	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cobalt	0.003	0.002	0.003	0.004	0.003	0.002	0.003	0.003	0.003	<0.002	<0.002	0.003	0.002	<0.002	<0.002	0.002	0.003	0.004	<0.002	0.002	<0.002	0.002	<0.002	0.002	0.006	<0.002	<0.002	<0.002	0.004	<0.002
Strontium	0.51	0.06	0.07	0.55	0.09	0.07	0.27	0.27	0.49	0.03	0.04	0.11	0.22	0.11	0.1	0.42	0.87	0.07	0.08	0.06	0.13	0.09	0.12	0.12	0.11	0.14	0.12	0.1	0.1	0.12
Vanadium	<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	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

APPENDIX B, TABLE 13

Detailed fish flesh chemistry data collected from the Fond du Lac River for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	**Fond du Lac River**																								
	Lake Whitefish					**Northern Pike**										**White Sucker**									
	2015					**2011**					**2012**					**2011**					**2012**				
	GN7-1		**GN4-2**	**GN9-1**	**GN7-1**	**SP4-1**					**SP3-2**		**SP4-1**	**SP5-1**	**SP6-1**	**SP5-1**					**SP3-2**			**SP6-1**	**SP7-1**
	LW19	**LW20**	**LW15**	**LW14**	**LW21** **LW22**	**NP06**	**NP07**	**NP08**	**NP09**	**NP10**	**NP01**	**NP02**	**NP01**	**NP01**	**NP05**	**WSU01**	**WSU02**	**WSU03**	**WSU04**	**WSU05**	**WSU07**	**WSU08**	**WSU09**	**WSU03**	**WSU03**
Metals																									
Aluminum	<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	<0.5	<0.5	<0.5	<0.5	<0.5
Barium	<0.01	<0.01	<0.01	<0.01	<0.01	0.04	0.02	<0.01	0.06	0.04	0.02	<0.01	0.02	0.06	0.04	0.15	0.15	0.02	0.04	0.02	0.02	0.03	0.03	0.03	0.04
Boron	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cadmium	<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	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Chromium	<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	<0.1	<0.1	<0.1	<0.1	<0.1
Copper	0.27	0.3	0.14	0.23	0.24	0.29	0.25	0.18	0.55	0.22	0.17	0.16	0.2	0.15	0.13	0.43	0.65	0.33	0.34	0.28	0.25	0.21	0.28	0.36	0.21
Iron	2.2	2.7	1.9	2.5	2.2	2.3	2.3	1.7	3.7	1.9	2.2	1.5	4.5	1.3	5.8	5.7	8	2.8	2.9	2.5	1.3	2.1	2.2	2.9	3.5
Lead	<0.002	0.003	<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	0.003	<0.002	0.003	0.003	<0.002
Manganese	0.16	0.09	0.1	0.08	0.08	0.37	0.21	0.12	0.34	0.26	0.13	0.09	0.12	0.43	0.25	0.68	0.61	0.10	0.09	0.12	0.09	0.11	0.11	0.09	0.09
Mercury	0.061	0.095	0.077	0.065	0.039	0.06	0.20	0.20	0.09	0.08	0.09	0.16	0.16	0.14	0.08	0.11	0.16	0.06	0.06	0.33	0.03	0.03	0.02	0.04	0.05
Molybdenum	<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	<0.02	<0.02	<0.02	<0.02	<0.02
Nickel	<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	0.02	0.04	0.03	0.03	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	0.32	0.32	0.56	0.36	0.29	0.26	0.31	0.24	0.27	0.28	0.2	0.24	0.25	0.23	0.22	0.32	0.44	0.37	0.27	0.21	0.29	0.26	0.28	0.32	0.26
Silver	<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	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Thallium	<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	<0.01	<0.01	<0.01	<0.01	<0.01
Tin	<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	<0.01	<0.01	<0.01	<0.01	<0.01
Titanium	<0.01	<0.01	<0.01	0.01	<0.01	0.07	0.07	0.06	0.06	0.08	0.05	0.07	0.06	0.06	0.06	0.09	0.09	0.07	0.08	0.07	0.07	0.06	0.06	0.06	0.06
Uranium	<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	0.002	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	4.1	3.6	10	3.5	6.5	5.1	4.2	4	8.3	5.3	10	3.3	5.2	3.8	4.1	5.5	5.9	5.6	3.5	3.5	2.7	3.1	3.3	3.3	2.8
Physical Properties																									
Age (years)	19	16	11	15	5, 5	3	5	9	5	3	8	6	8	6	3	14	20	13	14	26	12	10	9	10	-
Moisture (%)	72.11	72.06	79.62	74.06	76.44	77.94	76.92	78.89	78.56	78.58	79.18	79.34	75.95	71.29	78.47	77.74	78.84	76.68	75.14	78.11	78.89	79.45	79.24	76.88	80.67
Weight (g)	1120	820	720	800	400, 400	910	4060	2550	1380	980	2320	1850	1350	1710	800	1350	1390	1130	1290	1920	1220	1120	930	810	1300
Radionuclides																									
Lead-210 (Bq/g)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.003	<0.001	<0.001	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Polonium-210 (Bq/g)	<0.0002	<0.0002	0.0006	0.0002	0.0002	0.0031	0.0016	0.0011	0.0032	0.0031	0.0014	0.0022	0.0026	0.0029	0.0026	0.002	0.0012	0.0021	0.0025	0.0008	0.0024	0.0012	0.0007	0.002	0.0009
Radium-226 (Bq/g)	<0.00006	<0.00007	<0.00005	<0.00007	<0.00007	<0.00006	0.00010	<0.00007	0.00007	<0.00007	0.0001	<0.00006	0.0001	<0.00006	<0.00007	<0.00006	<0.00006	<0.00007	<0.00006	0.00010	<0.00006	<0.00007	<0.00006	<0.00007	<0.00007
Thorium-230 (Bq/g)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Trace Elements																									
Antimony	<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	<0.02	<0.02	<0.02	<0.02	<0.02
Arsenic	0.14	0.14	0.02	0.15	0.02	0.02	0.03	0.03	0.02	0.02	0.03	0.02	0.02	0.02	0.01	0.05	0.05	0.2	0.08	0.04	0.09	0.04	0.11	0.13	0.05
Beryllium	<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	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cobalt	0.002	0.002	0.004	<0.002	0.002	0.003	0.009	0.004	0.006	0.003	<0.002	<0.002	0.002	<0.002	<0.002	0.006	0.008	0.004	0.003	0.006	<0.002	0.002	<0.002	0.003	0.002
Strontium	0.13	0.18	0.24	0.19	0.21	0.46	0.22	0.07	0.57	0.53	0.18	0.04	0.08	0.41	0.2	1.7	1.1	0.06	0.07	0.07	0.04	0.06	0.03	0.08	0.03
Vanadium	<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	<0.02	<0.02	<0.02	<0.02	<0.02

[1] All concentrations are presented on a µg/g wet weight basis, unless specified otherwise.

APPENDIX B, TABLE 14

Detailed fish flesh chemistry data collected from Waterbury Lake for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Waterbury Lake																				
	Longnose Sucker						Lake Trout														
	2011					2012	2011					2012					2015				
	SP8-1					SP7-1	SP8-1					AN2-1					AN1-1				
	LSU11, LSU12	LSU13	LSU14	LSU15, LSU16	LSU17, LSU18	WSU12, LSU13, LSU23	LT03	LT04	LT05	LT06	LT07	LT01	LT02	LT03	LT04	LT05	LT01	LT02	LT03	LT04	LT05
Metals																					
Aluminum	<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	<0.5
Barium	0.22	0.06	0.07	0.08	0.04	0.15	<0.01	0.01	<0.01	<0.01	<0.01	0.02	<0.01	0.02	0.01	0.02	0.1	0.02	<0.01	0.02	<0.01
Boron	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cadmium	<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	<0.002	<0.002
Chromium	<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	<0.1
Copper	0.11	0.11	0.15	0.24	0.14	0.23	0.27	0.31	0.27	0.22	0.3	0.24	0.24	0.36	0.44	0.39	0.38	0.35	0.42	0.6	0.21
Iron	1.5	0.9	1.2	1.9	1.6	1.9	3.1	2.8	3.5	2.6	2.9	3.2	2.6	2.8	2.6	2.7	4.7	2.6	2.7	2.4	1.7
Lead	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.003	<0.002	<0.002	<0.002	<0.002	0.006	<0.002	<0.002	<0.002	0.018	0.012	0.012	0.011	0.012
Manganese	0.43	0.57	0.99	0.33	0.28	0.26	0.09	0.11	0.09	0.15	0.10	0.07	0.08	0.08	0.10	0.08	0.07	0.08	0.1	0.1	0.07
Mercury	0.03	0.02	0.02	0.02	0.02	0.02	0.19	0.10	0.16	0.16	0.17	0.23	0.09	0.12	0.13	0.07	0.29	0.15	0.14	0.1	0.19
Molybdenum	<0.02	<0.02	0.04	0.02	0.03	<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
Nickel	0.02	<0.01	0.01	<0.01	0.03	<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
Selenium	0.17	0.25	0.21	0.25	0.2	0.17	0.31	0.17	0.14	0.16	0.2	0.23	0.25	0.21	0.2	0.22	0.18	0.2	0.26	0.21	0.23
Silver	<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	<0.002	<0.002
Thallium	<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	<0.01
Tin	<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	<0.01
Titanium	0.06	0.06	0.06	0.08	0.06	0.05	0.08	0.08	0.08	0.08	0.07	0.07	0.08	0.08	0.07	0.08	<0.01	<0.01	<0.01	<0.01	<0.01
Uranium	<0.001	<0.001	0.004	<0.001	<0.001	<0.001	0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Zinc	7.2	3.6	3.6	5.9	3.7	4.8	3.8	4	9.1	7.6	3.3	4	4.3	3.8	3.4	4.1	9.1	3.4	6.2	3.4	3.6
Physical Properties																					
Age (years)	11, 8	13	15	11, 14	13, 10	6, 8, 6	17	11	16	12	20	26	12	12	-	9	13	10	11	7	12
Moisture (%)	80.61	80.66	79.81	78.71	81.03	80.72	78.09	74.57	77.94	74.29	75.83	82.57	79.43	72.73	72.24	73.96	74.68	73.38	73.34	71.52	74.24
Weight (g)	750, 480	800	920	720, 550	560, 450	210, 375, 75	2680	1920	1440	1380	3310	2320	1810	1410	1320	1340	2200	2020	1420	1100	1480
Radionuclides																					
Lead-210 (Bq/g)	<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	0.002	<0.001	<0.001	<0.001	<0.001	<0.001
Polonium-210 (Bq/g)	0.0004	0.0004	0.0003	0.0007	<0.0002	0.0018	<0.0002	0.0003	<0.0002	0.0004	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Radium-226 (Bq/g)	<0.00007	<0.00007	0.00008	<0.00007	<0.00007	<0.00007	<0.00006	<0.00006	<0.00005	<0.00006	0.0001	<0.00008	<0.00006	<0.00006	<0.00006	<0.00007	0.00007	0.00007	<0.00006	0.00007	0.00007
Thorium-230 (Bq/g)	<0.0001	<0.0001	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
Trace Elements																					
Antimony	<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	<0.02
Arsenic	0.03	0.04	0.05	0.08	0.08	0.06	0.02	0.07	0.04	0.03	0.03	0.03	0.02	0.04	0.04	0.02	0.06	0.12	0.04	0.03	0.02
Beryllium	<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	<0.002	<0.002
Cobalt	0.003	<0.002	0.004	<0.002	0.004	<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
Strontium	0.68	0.83	1.4	0.68	0.39	0.38	0.13	0.19	0.17	0.19	0.1	0.23	0.08	0.11	0.09	0.14	0.33	0.15	0.19	0.36	0.26
Vanadium	<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	<0.02

APPENDIX B, TABLE 14

Detailed fish flesh chemistry data collected from Waterbury Lake for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Waterbury Lake																					
	Lake Whitefish													Northern Pike								WSU
	2011			2012					2015					2011			2012					2012
	SP8-1			SP4-1		SP7-1			GN1-1			GN2-3		SP1-1	SP8-1		SP2-1	SP7-1				SP7-1
	LW08	LW09	LW10	LW01	LW03	LW06	LW07	LW08	LW04 LW04 (GN2-1)	LW03 LW03 (GN2-1)	LW02 LW05	LW14	LW15	NP03	NP01	NP02	NP01	NP01	NP02	NP03	NP04, NP05	WSU09, WSU10, WSU11
Metals																						
Aluminum	<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	<0.5	<0.5
Barium	0.01	0.05	0.89	0.04	0.02	0.02	0.02	0.02	0.02	0.1	0.05	0.02	0.02	<0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.08
Boron	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cadmium	<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	<0.002	<0.002	<0.002
Chromium	<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	<0.1	<0.1
Copper	0.17	0.14	0.19	0.20	0.17	0.53	0.18	0.18	0.20	0.14	0.13	0.16	0.20	0.17	0.15	0.17	0.30	0.25	0.20	0.17	0.17	0.24
Iron	2.9	1.9	3.1	5.6	2.1	4.6	1.8	1.5	3.3	3.1	1.9	5.8	4.2	2.1	1.5	1.5	3.1	1.7	2.2	1.3	1.5	2.8
Lead	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.002	<0.002	0.007	0.010	0.010	0.008	0.011	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.007
Manganese	0.14	0.24	0.10	0.26	0.10	0.12	0.13	0.13	0.14	0.15	0.16	0.07	0.14	0.11	0.11	0.17	0.10	0.12	0.10	0.14	0.11	0.18
Mercury	0.08	0.01	0.01	0.06	0.03	0.01	0.01	0.01	0.044	0.02	0.024	0.029	0.039	0.20	0.21	0.14	0.07	0.02	0.19	0.02	0.02	0.01
Molybdenum	<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	<0.02	<0.02
Nickel	<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	0.02	0.03	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	0.8	0.66	1.1	0.22	0.22	0.22	0.25	0.2	0.89	0.57	1	0.8	0.87	0.32	0.28	0.21	0.29	0.24	0.24	0.25	0.21	0.27
Silver	<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	<0.002	<0.002	<0.002
Thallium	<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	<0.01	<0.01
Tin	<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	<0.01	<0.01
Titanium	0.07	0.08	0.07	0.08	0.08	0.08	0.1	0.08	<0.01	<0.01	<0.01	<0.01	<0.01	0.08	0.07	0.07	0.06	0.07	0.07	0.08	0.06	0.05
Uranium	<0.001	0.001	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.003	0.018	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	4.4	4.9	3.7	3.8	3.4	5	5.4	4.4	5.7	4.5	3.7	4.7	3.8	3.9	4.8	4	7.7	5.7	5.4	4.8	7.4	6.3
Physical Properties																						
Age (years)	16	19	12	18	19	8	10	8	8, 11	7, 15	10, 14	26	24	9	8	4	9	3	9	2	2, 2	6, 6, 6
Moisture (%)	79.39	72.53	79.47	78.23	78.64	77.11	52.52	78.17	77.38	78.46	76.65	79.61	77.87	81.23	75.81	78.74	79.47	78.84	80.77	79.01	78.68	81.39
Weight (g)	680	750	560	1910	2580	900	1640	805	310, 540	310, 600	460, 580	880	940	3540	4750	2250	5250	1280	2080	680	540, 580	280, 180, 280
Radionuclides																						
Lead-210 (Bq/g)	<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	<0.001	<0.001
Polonium-210 (Bq/g)	0.0009	0.002	0.0014	0.0003	<0.0002	<0.0002	0.0006	<0.0002	0.004	0.003	0.0032	0.0023	0.0009	0.0004	0.0003	0.0013	0.0017	0.0048	0.0035	0.004	0.004	0.0015
Radium-226 (Bq/g)	0.0001	0.0001	<0.00008	<0.00006	<0.00006	<0.00007	<0.0001	<0.00008	0.0001	<0.00008	<0.00006	<0.00006	0.00008	<0.00006	<0.0002	<0.00006	0.0001	0.0001	0.0002	0.0002	<0.00007	<0.00006
Thorium-230 (Bq/g)	<0.0001	<0.0002	<0.0002	<0.0001	<0.0001	<0.0001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0004	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Trace Elements																						
Antimony	<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	<0.02	<0.02
Arsenic	0.03	0.03	0.03	0.03	0.03	0.05	0.04	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.06
Beryllium	<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	<0.002	<0.002	<0.002
Cobalt	0.003	0.003	<0.002	0.004	<0.002	0.003	<0.002	<0.002	0.003	0.003	<0.002	0.002	<0.002	0.002	<0.002	<0.002	0.002	<0.002	0.003	<0.002	<0.002	0.002
Strontium	0.34	1	0.21	0.16	0.23	0.33	0.24	0.23	0.49	0.44	0.33	0.3	0.52	0.1	0.09	0.31	0.18	0.17	0.13	0.11	0.18	0.92
Vanadium	<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	<0.02	<0.02

[1] All concentrations are presented on a µg/g wet weight basis, unless specified otherwise.

APPENDIX B, TABLE 15

Detailed fish flesh chemistry data collected from Bobby's Lake for the EARMP technical program, 2009.

Parameter[1]	**Bobby's Lake**								
	Northern Pike					**White Sucker**			
	GN4-1		**HG1-1**		**HG2-1**	**GN2-1**	**HG2-1**		
	NP01	**NP02**	**NP01**	**NP02**	**NP01**	**WSU01**	**WSU03**	**WSU04**	**WSU05**
Metals									
Aluminum	0.30	0.21	0.10	0.09	0.20	0.20	0.55	0.15	0.15
Barium	0.04	0.01	<0.01	0.09	0.02	0.01	0.07	0.02	0.03
Boron	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cadmium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Chromium	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Copper	0.32	0.17	0.14	0.38	0.14	0.33	0.24	0.21	0.23
Iron	3.5	1.5	1.7	4.2	2.6	2.7	3.1	3.1	3.1
Lead	0.003	0.002	0.002	0.003	0.004	<0.002	0.01	0.002	0.004
Manganese	0.16	0.10	0.10	0.28	0.10	0.09	0.11	0.12	0.17
Mercury	-[2]	-[2]	-[2]	-[2]	-[2]	-[2]	-[2]	-[2]	-[2]
Molybdenum	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Nickel	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01
Selenium	0.17	0.29	0.19	0.15	0.22	0.32	0.13	0.31	0.17
Silver	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Thallium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Tin	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Titanium	0.07	0.10	0.07	0.07	0.08	0.10	0.07	0.11	0.07
Uranium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001
Zinc	5.9	5.0	5.0	8.4	5.8	3.4	2.7	2.9	2.9
Physical Properties									
Age (years)	6	9	9	8	9	12	14	12	11
Ash (%)	3.1	1.3	1.2	1.2	1.2	1.4	1.1	1.1	1.3
Weight (g)	715	1720	1660	1055	2460	705	1080	1140	1005
Radionuclides									
Lead-210 (Bq/g)	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	``	<0.001
Polonium-210 (Bq/g)	0.0023	0.0008	0.001	0.0004	0.0007	0.0004	0.0003	<0.0002	0.0003
Radium-226 (Bq/g)	<0.0002	<0.00007	0.00008	<0.00006	<0.00006	<0.00007	0.0003	<0.00005	<0.00005
Thorium-230 (Bq/g)	<0.0003	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0003	<0.0001	<0.0001
Trace Elements									
Antimony	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Arsenic	0.01	0.01	0.01	0.01	0.02	0.01	0.01	<0.01	0.02
Beryllium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cobalt	0.002	<0.002	<0.002	0.003	<0.002	0.003	0.003	<0.002	0.002
Strontium	0.33	0.11	0.12	0.99	0.13	0.05	0.06	0.12	0.37
Vanadium	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

[1] All concentrations are presented on a µg/g wet weight basis, unless specified otherwise.

[2] Mercury was not measured as part of the program for which these data were collected. All analyses on mercury, therefore, did not include data from this waterbody.

APPENDIX B, TABLE 16

Detailed fish flesh chemistry data collected from Cree Lake for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Cree Lake																																		
	Longnose Sucker															Lake Trout															Lake Whitefish				
	2011					2012					2015					2011					2012					2015					2011				
	SP9-1					SP1-1			SP1-2	SP1-3	HG1-2		GN5-1	GN7-1	HG1-2	AN1-1				SP1-1	SP3-1		SP4-1			AN2-1				HG1-2	SP1-1, SP3-1	SP6-1	SP7-1, SP9-1	SP9-1	
	LSU07	LSU08, LSU09	LSU10, LSU11	LSU12, LSU13	LSU14, LSU15	LSU08, LSU10	LSU09	LSU11, LSU12	LSU09	LSU03	LSU12	LSU13	LSU05	LSU08 LSU09	LSU14 LSU15	LT01	LT02	LT03	LT04	LT01	LT01	LT02	LT07	LT08	LT09	LT01	LT02	LT03	LT04	LT32	LW02, LW02	LW02	LW02, LW01	LW19	LW20, LW21
Metals																																			
Aluminum	0.5	0.7	<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	<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
Barium	0.08	0.05	0.02	0.06	0.08	0.07	0.12	0.12	0.08	0.08	0.09	0.1	0.09	0.08	0.07	0.60	<0.01	0.02	0.03	0.01	0.02	0.02	0.01	0.01	0.01	0.02	0.08	0.1	0.09	<0.01	0.15	0.57	0.68	0.55	0.60
Boron	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cadmium	0.005	<0.002	0.004	<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	<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
Chromium	<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	<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
Copper	0.34	0.25	0.19	0.26	0.18	0.21	0.26	0.37	0.20	0.21	0.25	0.28	0.25	0.53	0.2	0.18	0.31	0.85	0.33	0.34	0.29	0.27	0.17	0.19	0.13	0.86	0.3	0.32	0.8	0.39	0.32	0.18	0.21	0.26	0.28
Iron	4.6	4.6	1.8	8.5	1.8	1.0	2.3	2.4	1.0	1.2	2.4	3.7	2	4.3	1.8	1.8	3.2	5.8	2.1	2.2	2.8	2.3	3.1	14.0	1.4	7.4	4.7	11	7.5	6.2	2.4	1.6	3.0	2.1	4.4
Lead	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.003	<0.002	<0.002	<0.002	0.007	<0.002	0.002	0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.016	<0.002	<0.002	<0.002	<0.002	0.023	0.003	<0.002	0.004	<0.002	<0.002	<0.002	<0.002
Manganese	0.69	1.40	0.31	2.00	0.71	0.25	1.10	0.66	0.52	0.59	0.71	1.2	0.53	0.21	0.47	0.09	0.15	0.13	0.10	0.11	0.06	0.12	0.08	0.22	0.04	0.12	0.09	0.12	0.05	0.09	0.55	0.08	0.12	0.11	0.14
Mercury	0.04	0.01	0.02	0.01	0.02	0.02	0.02	0.03	0.02	0.02	0.044	0.057	0.032	0.016	0.014	0.04	0.09	0.04	0.06	0.04	0.29	0.14	0.22	0.22	**0.53**	0.14	0.19	0.36	0.18	0.29	0.01	0.02	0.02	0.05	0.02
Molybdenum	<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	<0.02	<0.02	<0.02	<0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Nickel	0.02	0.07	<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	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.04	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	0.05
Selenium	0.27	0.57	0.53	0.32	0.33	0.23	0.28	0.31	0.33	0.3	0.17	0.22	0.22	0.16	0.19	0.22	0.2	0.28	0.24	0.26	0.2	0.25	0.22	0.21	0.15	0.17	0.22	0.18	0.18	0.2	0.28	0.42	0.51	0.29	0.52
Silver	<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	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.006	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Thallium	<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	<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
Tin	<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	<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
Titanium	0.11	0.09	0.08	0.08	0.08	0.01	0.03	0.02	0.01	0.02	0.09	0.06	0.1	0.08	0.07	0.06	0.09	0.07	0.08	0.08	0.01	0.02	0.01	0.1	0.01	0.08	0.08	0.07	0.05	0.07	0.08	0.1	0.07	0.08	0.08
Uranium	0.003	0.002	<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	0.002	<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	0.004	0.002	0.001
Zinc	5.1	5	4.1	4.8	4.8	4.3	4.9	5.6	4.2	4.3	3.7	3.9	3.8	8.2	4.9	2.5	5.5	5.4	3.3	4.7	3.6	3	3	3.9	2.2	3.6	3.6	10	7.3	4.2	12	4.1	6.4	3.9	6.1
Physical Properties																																			
Age (years)	23	14, 14	10, 8	9, 14	13, 10	15, 14	14	15, 14	13	17	18	17	14	10, 8	8, 9	9	17	7	10	6	19	15	23	17	-	14	25	14	26	11	4, 6	9	18, 8	8	12, 9
Moisture (%)	75.72	77.95	77.45	77.03	77.28	79.43	80.05	76.73	78.28	78.16	76.64	76.64	73.73	78.94	79.28	77.12	76.83	72.94	72.92	75.39	82.63	77.19	80.95	79.54	81.46	76.81	73.74	80.55	76.83	78.06	77.79	73.24	77.39	76.93	78.46
Weight (g)	1510	610, 510	600, 520	540, 560	715, 670	600, 530	710	540, 460	660	780	1040	700	720	455, 360	435, 410	1170	1920	1180	1620	950	1080	1520	1520	3120	1910	1880	3000	1520	2100	1540	460, 550	1530	620, 420	950	705, 520
Radionuclides																																			
Lead-210 (Bq/g)	<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	0.003	<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	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Polonium-210 (Bq/g)	0.0007	0.0022	0.0035	0.003	0.0023	0.0005	0.0003	0.0002	0.0004	<0.0002	0.0012	0.0004	0.0006	0.0046	0.0025	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	0.0003	0.0002	<0.0002	0.0008	<0.0002	0.0022	<0.0002	0.0023
Radium-226 (Bq/g)	<0.00007	<0.0001	<0.00006	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.00006	0.00009	<0.00008	<0.00006	<0.00006	0.0001	0.0003	<0.00006	0.00007	0.00009	<0.00007	<0.00006	<0.00007	<0.00004	<0.00006	<0.00006	<0.00006	<0.00006	<0.00006	<0.00006	<0.00008	<0.00007	0.0001	<0.00006	0.00008
Thorium-230 (Bq/g)	<0.0001	<0.0003	<0.00007	<0.0002	<0.0003	<0.0002	<0.0002	<0.0002	<0.0003	<0.0003	<0.0001	<0.0002	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.0001	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001
Trace Elements																																			
Antimony	<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	<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
Arsenic	0.08	0.02	0.02	0.04	0.06	0.03	0.02	0.01	0.02	0.05	0.02	0.02	0.01	0.03	0.01	0.02	0.02	0.03	0.02	0.02	0.01	0.01	<0.01	0.01	<0.01	0.02	0.01	0.01	0.08	0.01	0.02	0.03	0.02	0.06	0.01
Beryllium	<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	<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
Cobalt	0.003	0.006	0.008	0.004	0.005	<0.002	0.005	0.003	<0.002	0.002	0.002	0.004	0.002	0.002	<0.002	<0.002	<0.002	0.004	<0.002	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.003	0.002	0.003	0.002	0.002	0.002	<0.002	0.004	<0.002	0.005
Strontium	0.58	0.37	0.23	0.72	0.8	0.27	1	0.66	0.46	0.62	0.71	0.91	0.55	0.38	0.61	0.18	0.19	0.45	0.16	0.25	0.37	0.09	0.1	0.1	0.1	0.12	0.17	0.54	0.4	0.18	4.3	0.47	0.56	0.25	0.33
Vanadium	<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	<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

APPENDIX B, TABLE 16

Detailed fish flesh chemistry data collected from Cree Lake for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Lake Whitefish										Northern Pike										White Sucker														
	2012					2015					2012					2015					2011					2012					2015				
	SP2-1	SP4-1				GN2-2		GN5-1		GN5-1 GN7-1	SP1-1	SP1-2		SP1-3		AN3-1					SP9-1					SP1-1			SP1-2		GN2-2				
	LW01, LW02	LW01	LW02	LW03, LW04	LW05, LW06	LW17	LW18	LW09 LW10	LW11 LW12	LW13 LW01	NP07	NP07	NP08	NP01	NP02	NP01	NP02	NP03	NP04	NP05	WSU02	WSU03	WSU04	WSU05	WSU06	WSU01	WSU02	WSU03	WSU01	WSU02	WSU09	WSU10	WSU11	WSU12	WSU13
Metals																																			
Aluminum	<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	<0.5	0.6	0.7	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5
Barium	0.01	0.01	0.01	0.02	0.02	<0.01	<0.01	0.02	0.02	<0.01	0.02	0.01	0.02	0.05	0.02	<0.01	0.01	0.02	0.03	0.01	0.04	0.16	0.06	0.04	0.04	0.06	0.04	0.09	0.06	0.06	0.02	0.14	0.07	0.04	0.09
Boron	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cadmium	<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	<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
Chromium	<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	<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
Copper	0.19	0.24	0.15	0.18	0.18	0.18	0.22	0.21	0.37	0.42	0.23	0.20	0.33	0.19	0.17	0.19	0.16	0.2	0.24	0.14	0.36	0.22	0.25	0.20	0.39	0.20	0.20	0.18	0.27	0.22	0.88	0.31	0.41	0.24	0.8
Iron	1.5	2.5	1.0	1.5	2.6	1.9	2.2	2.7	2.4	4	1.9	1.5	3.0	2.6	1.2	1	1	1.2	1.4	0.9	3.7	1.9	5.1	2.4	3.7	6.5	1.7	1.8	2.2	4.2	5.6	5.7	4	2.1	5.1
Lead	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.006	<0.002	<0.002	<0.002	<0.002	0.003	<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	0.003	0.006	<0.002	0.003
Manganese	0.07	0.12	0.09	0.12	0.26	0.07	0.11	0.11	0.1	0.11	0.10	0.10	0.13	0.16	0.13	0.08	0.09	0.1	0.18	0.09	0.28	0.63	0.81	0.23	0.22	0.37	0.11	0.13	0.28	0.21	0.18	1.2	0.1	0.12	0.53
Mercury	0.02	0.02	0.06	0.03	0.02	0.074	0.045	0.04	0.045	0.027	0.14	0.28	0.16	0.02	0.06	0.099	0.1	0.1	0.093	0.14	0.01	0.02	0.01	0.02	0.01	0.02	0.02	0.01	0.01	<0.01	0.02	0.045	0.021	0.011	0.03
Molybdenum	<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	<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
Nickel	<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	<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
Selenium	0.46	0.42	0.29	0.3	0.72	0.27	0.21	0.54	0.5	0.44	0.28	0.26	0.26	0.23	0.24	0.19	0.18	0.24	0.18	0.18	0.21	0.21	0.2	0.18	0.2	0.24	0.19	0.18	0.26	0.2	0.15	0.14	0.14	0.16	0.19
Silver	<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	<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
Thallium	<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	<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
Tin	<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	<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
Titanium	<0.01	0.02	0.01	0.02	0.01	0.06	0.06	0.06	0.06	0.07	0.02	0.01	0.01	0.02	<0.01	0.06	0.06	0.06	0.06	0.06	0.06	0.09	0.08	0.08	0.09	0.02	0.02	0.02	0.03	0.03	0.05	0.06	0.08	0.06	0.06
Uranium	<0.001	<0.001	<0.001	<0.001	0.002	<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	0.002	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	2.9	3.9	4.3	3.8	4.4	3.4	3.5	4.2	3.8	3.8	5.1	4.8	7.9	5.8	8.6	5.2	4.6	3.3	4	3.5	4.1	5.5	4.7	4.3	4.4	4.2	5.1	4.1	3.4	4.3	4.4	4.5	3.4	3.4	9
Physical Properties																																			
Age (years)	11, 23	8	11	21, 7	22, 18	13	13	14, 11	12, 12	19, 14	8	16	11	3	9	5	7	7	7	9	9	7	9	8	9	13	14	9	8	7	8	10	9	6	10
Moisture (%)	77.24	74.15	76.98	78.27	77.02	76.05	73.83	77.48	75.89	77.47	76.53	78.64	76.7	77.05	77.09	86.85	76.74	77.68	75.24	78.36	77.35	76.3	79.19	79.36	73.98	79.34	77.63	77.82	78.33	77.37	78.57	79.29	77.79	79.08	76.29
Weight (g)	360, 380	790	750	450, 460	420, 395	2180	2080	740, 620	780, 620	540, 720	1980	7900	7600	840	2600	4120	6420	4080	3740	7800	810	790	900	855	1165	1000	870	760	730	710	1600	1040	1280	960	1160
Radionuclides																																			
Lead-210 (Bq/g)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.0009	<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	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Polonium-210 (Bq/g)	0.0017	0.0002	<0.0002	<0.0002	0.0008	<0.0002	0.0002	0.0011	0.0013	0.0013	0.0004	<0.0002	0.0008	0.001	0.0004	0.0007	0.0022	0.0008	0.0006	<0.0002	0.002	0.0008	0.002	0.001	0.0006	0.0002	0.0004	0.0003	0.0006	0.0007	0.0022	0.0027	0.0004	0.0018	0.0034
Radium-226 (Bq/g)	<0.0001	<0.00006	<0.00009	<0.00008	<0.00005	0.00008	<0.00006	<0.00008	<0.00006	0.00007	<0.00005	<0.00007	0.00008	<0.0001	<0.00006	<0.00008	<0.00006	<0.00008	0.00009	<0.00005	<0.00008	<0.00009	0.0001	<0.00007	0.0002	0.0002	<0.00009	<0.0001	<0.0001	<0.0001	<0.00006	<0.00006	0.0001	0.00007	<0.00006
Thorium-230 (Bq/g)	<0.0002	<0.0001	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	<0.0002	<0.0001	<0.0002	<0.0001	<0.0002	<0.0001	0.0001	<0.0002	<0.0002	<0.0002	<0.0001	<0.0002	<0.0003	<0.0002	<0.0002	<0.0003	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Trace Elements																																			
Antimony	<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	<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
Arsenic	<0.01	0.02	<0.01	0.04	<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	<0.01	<0.01	<0.01	0.05	0.11	0.06	0.06	0.05	0.05	0.04	0.04	0.02	0.08	0.01	0.04	0.03	0.02	0.01
Beryllium	<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	<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
Cobalt	<0.002	<0.002	<0.002	<0.002	0.002	<0.002	<0.002	0.003	<0.002	0.003	0.002	<0.002	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.003	<0.002	0.005	0.002	0.003	0.002	0.002	<0.002	0.002	0.002	0.003	0.003	0.003	<0.002	0.005
Strontium	0.12	0.36	0.29	0.29	0.19	0.35	0.34	0.19	0.37	0.47	0.26	0.13	0.24	0.69	0.32	0.2	0.18	0.25	0.34	0.25	0.22	1.2	0.54	0.21	0.2	0.32	0.13	0.2	0.4	0.35	0.26	0.3	0.22	0.3	0.36
Vanadium	<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	<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

Bold: values exceeding the mercury guideline of 0.5 µg/g.

[1] All concentrations are presented on a µg/g wet weight basis, unless specified otherwise.

APPENDIX B, TABLE 17

Detailed fish flesh chemistry data collected from Ellis Bay for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Ellis Bay																															
	Lake Trout															**Lake Whitefish**												**Northern Pike**				
	2011					**2012**					**2015**					**2011**					**2012**		**2015**					**2012**				
	SP1-1					**SP1-1**					**AN5-1**	**GN3-1**		**AN5-1**		**SP1-1**					**SP1-1**		**GN3-1**					**AN1-1**				
	LT01	**LT02**	**LT03**	**LT04**	**LT05**	**LT01**	**LT02**	**LT03**	**LT04**	**LT05**	**LT01**	**LT01**	**LT02**	**LT02**	**LT03**	**LW06**	**LW07**	**LW08**	**LW09**	**LW10**	**LW06**	**LW07**	**LW03**	**LW04**	**LW05**	**LW06**	**LW07**	**NP01**	**NP02**	**NP03**	**NP04**	**NP05**
Metals																																
Aluminum	<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	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Barium	0.04	0.01	<0.01	<0.01	<0.01	0.05	0.08	0.02	0.04	0.02	<0.01	0.07	<0.01	0.04	<0.01	<0.01	0.04	0.06	<0.01	<0.01	0.03	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.02	0.02	0.02	<0.01
Boron	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cadmium	<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	<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
Chromium	<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	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Copper	0.52	0.52	0.11	0.32	0.28	0.24	0.28	0.33	0.58	0.21	0.27	0.48	0.28	0.35	0.22	0.12	0.15	0.38	0.11	0.15	0.18	0.18	0.24	0.15	0.36	0.16	0.4	0.39	0.45	0.16	0.17	0.28
Iron	4.5	3.0	1.0	2.2	2.0	1.5	2.7	3.5	5.8	1.6	2.2	4	2.7	2.3	3	1.5	1.2	3.6	1.1	2.2	1.8	3.9	1.6	2.4	3.8	2.3	3.9	2.8	3.2	1.3	0.6	3.2
Lead	<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	<0.002	<0.002	0.003	<0.002	0.002	<0.002	0.004	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Manganese	0.10	0.09	0.09	0.07	0.08	0.06	0.09	0.60	0.08	0.06	0.08	0.06	0.06	0.06	0.09	0.12	0.19	0.13	0.12	0.10	0.11	0.11	0.06	0.12	0.05	0.16	0.12	0.08	0.09	0.08	0.08	0.08
Mercury	0.13	0.20	0.28	0.07	0.18	0.17	0.08	0.06	0.21	0.14	0.29	0.23	0.22	0.16	0.19	0.07	0.06	0.03	0.03	0.02	0.05	0.06	0.039	0.068	0.057	0.043	0.067	0.19	0.13	0.08	0.17	0.24
Molybdenum	<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	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Nickel	0.03	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<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	<0.01	<0.01	<0.01	<0.01
Selenium	0.14	0.18	0.15	0.16	0.18	0.15	0.16	0.15	0.18	0.1	0.13	0.15	0.14	0.16	0.14	0.29	0.25	0.25	0.22	0.25	0.31	0.25	0.13	0.23	0.2	0.23	0.35	0.2	0.17	0.22	0.18	0.19
Silver	<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	<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
Thallium	<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	0.02	<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
Tin	<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	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Titanium	0.07	0.15	0.06	0.07	0.06	0.01	0.02	0.02	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.07	0.07	0.06	0.06	0.07	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.02	0.02	0.02	0.01	0.01
Uranium	0.014	<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	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	11	3.8	2.9	3.8	3.5	2.6	3.2	2.6	10	6.3	3.6	3.8	3.3	3.6	3.8	3	2.8	4.4	3.3	3.1	2.8	3.2	3.7	2.9	4.3	3.1	4.5	4.2	9.8	5.4	4.9	6.5
Physical Properties																																
Age (years)	12	8	23	8	11	19	13	9	20	18	19	1	2	12	16	31	27	22	18	11	30	33	10	18	12	16	11	6	9	5	7	16
Moisture (%)	73.73	71.7	74.1	70.34	67.36	73.93	76.07	75.33	76.29	72.6	72.16	75.0	75.88	71.02	72.67	74.81	78.24	73.86	77.91	76.16	74.12	74.97	74.32	74.26	76.68	74.52	74.8	76.89	77.35	76.06	77.29	79.91
Weight (g)	1490	1480	1920	1420	2480	3640	2920	1420	1760	2560	2540	1860	2140	1680	1940	1250	1260	1380	1120	880	1180	1120	1100	880	940	980	1300	2800	2760	1660	2760	4860
Radionuclides																																
Lead-210 (Bq/g)	<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	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Polonium-210 (Bq/g)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0007	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	0.0002	0.0004	0.0008	0.0003	0.0003
Radium-226 (Bq/g)	<0.00007	<0.00006	0.0002	0.00009	0.0001	<0.00007	<0.00007	<0.00006	<0.00005	<0.00004	<0.00006	0.0002	0.0001	<0.00006	<0.00006	<0.00006	<0.00006	<0.0002	<0.00006	0.0003	<0.00007	<0.00006	0.0002	<0.00007	<0.00006	<0.00006	<0.00007	<0.00006	<0.00007	<0.00008	<0.00006	0.00008
Thorium-230 (Bq/g)	<0.0001	<0.0001	<0.0001	<0.0002	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0003	<0.0001	<0.0001	<0.0001	<0.0002	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0002	<0.003
Trace Elements																																
Antimony	<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	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Arsenic	0.12	0.08	0.12	0.08	0.12	0.06	0.14	0.04	0.06	0.29	0.11	0.09	0.07	0.09	0.05	0.38	0.24	0.36	0.31	0.17	0.37	0.24	0.09	0.27	0.1	0.28	0.09	0.09	0.15	0.09	0.12	0.1
Beryllium	<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	<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
Cobalt	0.003	0.003	<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	0.007	0.002	0.002	<0.002	0.003	0.003	<0.002	0.002	<0.002	0.018	0.003	0.003	<0.002	<0.002	0.003
Strontium	0.3	0.19	0.26	0.2	0.15	0.06	0.13	0.07	0.68	0.65	0.09	0.12	0.09	0.36	0.2	0.15	0.74	1	0.18	0.24	0.15	0.23	0.29	0.52	0.17	0.2	0.26	0.16	0.2	0.18	0.11	0.14
Vanadium	<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	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

[1] All concentrations are presented on a µg/g wet weight basis, unless specified otherwise.

APPENDIX B, TABLE 18

Detailed fish flesh chemistry data collected from Pasfield Lake for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Pasfield Lake																									
	Longnose Sucker											Lake Trout														
	2011			2012			2015					2011					2012					2015				
	SP7-1			SP10-1	SP11-1	SP10-1	HG2-1		GN3-2		HG2-1	AN3-1		SP3-1	SP5-1		SP4-1				SP5-1	HG2-1				GN5-1
	LSU11	LSU12	LSU13	LSU02, LSU03	LSU02	LSU04, LSU05, WSU06	LSU03	LSU04	LSU26	LSU27, LSU13 (GN5-1)	LSU05, LSU06	LT01	LT02	LT01	LT01	LT02	LT01	LT02	LT03	LT04	LT01	LT49	LT50	LT51	LT52	LT12
Metals																										
Aluminum	<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	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Barium	0.04	0.08	0.06	0.09	0.03	0.2	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.69	0.02	0.63	0.02	0.02	0.02	0.02	0.02	<0.01	<0.01	<0.01	<0.01	<0.01
Boron	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cadmium	<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	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Chromium	<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	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Copper	0.26	0.25	0.21	0.34	0.30	0.28	0.39	0.2	0.41	0.23	0.17	0.28	0.71	0.55	0.32	0.32	0.34	0.84	0.20	0.22	0.20	0.36	0.28	0.39	0.26	0.41
Iron	2.2	3.9	2.0	8.0	2.8	2.0	3.1	1.8	3.6	1.3	3.1	3.7	6.8	8.0	3.0	5.0	5.7	7.6	3.3	3.8	2.2	3.9	2.8	3.3	2.1	3.1
Lead	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.003	<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	0.011	<0.002	<0.002
Manganese	0.18	0.33	0.27	0.25	0.12	0.33	0.49	0.11	0.2	0.14	0.39	0.09	0.09	0.08	0.10	0.14	0.08	0.07	0.06	0.09	0.06	0.08	0.06	0.09	0.09	0.08
Mercury	0.01	0.02	0.04	0.01	0.03	<0.01	0.028	0.033	0.022	0.016	0.016	0.09	0.08	0.16	0.04	0.10	0.15	0.17	0.24	0.14	0.16	0.15	0.26	0.17	0.21	0.1
Molybdenum	<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	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Nickel	0.03	0.05	<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	<0.01	<0.01	<0.01	<0.01
Selenium	0.26	0.25	0.25	0.19	0.18	0.2	0.22	0.21	0.22	0.2	0.2	0.35	0.37	0.37	0.35	0.33	0.24	0.24	0.23	0.22	0.25	0.23	0.25	0.24	0.26	0.3
Silver	<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	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Thallium	<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	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Tin	<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	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Titanium	0.06	0.09	0.08	0.06	0.06	0.09	<0.01	<0.01	<0.01	<0.01	<0.01	0.07	0.07	0.08	0.08	0.07	0.05	0.07	0.06	0.05	0.06	<0.01	<0.01	<0.01	<0.01	<0.01
Uranium	<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	<0.001	<0.001	<0.001	<0.001	<0.001	0.002
Zinc	4.4	7.7	4.1	6.4	4	5.4	6.3	4.9	6.1	5	5.5	4.1	4.8	5	4.7	13	3.2	5.8	4	3.4	2.9	4.4	2.7	5	3.7	4.3
Physical Properties																										
Age (years)	10	13	23	7, 10	22	7, 6, 3	14	15	12	10, 10	9, 8	18	19	23	-	21	18	20	17	18	19	25	26	19	19	10
Moisture (%)	72.49	78	72.37	78.95	75.02	77.8	76.02	76.03	76.28	77.15	77.43	77.03	79.44	77.88	74.17	79.65	74.51	78.51	70.46	79.23	79.26	74.24	76.72	75.49	71.7	70.73
Weight (g)	420	800	1690	395, 390	1630	335, 275, 265	900	860	800	560, 600	600, 400	2010	2015	1980	1620	1630	3260	2130	1880	1850	2360	3540	3680	2660	2680	2660
Radionuclides																										
Lead-210 (Bq/g)	<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	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Polonium-210 (Bq/g)	0.0034	0.0016	0.0026	0.0032	0.0013	0.01	0.0019	0.0021	0.004	0.0028	0.0023	<0.0002	0.0002	0.0002	<0.0002	0.0004	<0.0002	0.0004	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	0.0004	<0.0002	0.0002
Radium-226 (Bq/g)	0.0006	0.00007	<0.00006	0.0001	<0.00007	<0.00008	<0.00006	<0.00006	<0.00006	<0.00008	0.00008	<0.00007	0.0002	<0.00006	<0.00007	<0.00006	<0.00006	0.0002	<0.00009	0.00008	<0.00006	<0.00005	0.0001	<0.00005	<0.00006	0.0002
Thorium-230 (Bq/g)	<0.0002	<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	<0.0002	<0.0001	<0.0001	0.0001	<0.0002	<0.0001	<0.0002	<0.0002
Trace Elements																										
Antimony	<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	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Arsenic	0.11	0.14	0.08	0.05	0.13	0.05	0.02	0.05	0.09	0.09	0.07	0.09	0.05	0.03	0.05	0.01	0.01	0.04	0.02	0.02	0.01	0.04	0.03	0.05	0.05	0.08
Beryllium	<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	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cobalt	0.003	0.003	<0.002	<0.002	0.003	<0.002	0.003	0.002	0.004	0.002	<0.002	<0.002	0.006	0.004	0.002	0.003	<0.002	0.003	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.002
Strontium	0.39	2.3	0.92	0.65	0.18	1	1.5	0.44	1.4	0.89	1.2	0.34	0.23	0.45	0.58	1.4	0.15	0.23	0.3	0.16	0.16	0.42	0.09	0.4	0.16	0.53
Vanadium	<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	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

[1] All concentrations are presented on a µg/g wet weight basis, unless specified otherwise.

APPENDIX B, TABLE 18

Detailed fish flesh chemistry data collected from Pasfield Lake for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Pasfield Lake																							
	Lake Whitefish														Northern Pike					White Sucker				
	2011					2012					2015				2011	2012		2015		2015				
	SP7-1					SP10-1	SP11-1				GN3-2	GN3-2	GN7-1	HG2-1	SP2-1	SP11-1	SP8-2	GN10-1		GN2-2				HG2-1
	LW01, LW02	LW03, LW04	LW05, LW06	LW07, LW08	LW09, LW10	LW01	LW07, LW04, LW04 & LW03 of (GN9-1)	LW05, LW06, LW03 (GN8-2)	LW08, LW10, LW12, LW13	LW09, LW11, LW14, LW15	LW28	LW29; LW16, 17, 18, & 19 of (HG2-1)	LW01	LW15	NP02	NP01	NP01	NP01	NP02	WSU01	WSU02	WSU03	WSU04	WSU01
Metals																								
Aluminum	<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	<0.5	<0.5	<0.5	<0.5
Barium	0.71	0.68	0.66	0.06	0.02	0.03	0.04	0.02	0.07	0.02	<0.01	0.08	0.04	0.01	0.01	0.02	0.03	0.07	0.02	0.15	0.05	0.05	0.08	0.06
Boron	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cadmium	<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	<0.002	<0.002	<0.002	<0.002	<0.002
Chromium	<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	<0.1	<0.1	<0.1	<0.1
Copper	0.22	0.19	0.27	0.20	0.27	0.20	0.25	0.34	0.25	0.29	0.59	0.42	0.36	0.14	0.15	0.20	0.32	0.32	0.28	0.8	0.89	0.41	0.23	0.58
Iron	1.4	2.0	3.3	2.5	3.2	9.3	3.1	2.9	2.5	2.9	5.2	3.7	4.3	3.2	1.5	1.6	3.2	1.2	2	5.3	8.5	2.6	1.8	5.3
Lead	<0.002	<0.002	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.006	0.016	0.016	0.012	<0.002	<0.002	<0.002	0.025	0.011	0.008	0.024	0.021	0.014	0.022
Manganese	0.10	0.11	0.11	0.17	0.12	0.16	0.13	0.13	0.14	0.10	0.11	0.11	0.1	0.1	0.11	0.09	0.11	0.13	0.06	0.09	0.06	0.16	0.11	0.18
Mercury	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.022	0.014	0.1	0.098	0.11	0.04	0.08	0.057	0.076	0.028	0.021	0.021	0.038	0.024
Molybdenum	<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	<0.02	<0.02	<0.02	<0.02
Nickel	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.05	<0.01	<0.01	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium	0.26	0.28	0.27	0.27	0.31	0.22	0.24	0.21	0.19	0.18	0.34	0.35	0.4	0.38	0.21	0.2	0.2	0.22	0.23	0.22	0.21	0.2	0.24	0.25
Silver	<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	<0.002	<0.002	<0.002	<0.002	<0.002
Thallium	<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	<0.01	<0.01	<0.01	<0.01
Tin	<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	<0.01	<0.01	<0.01	<0.01
Titanium	0.08	0.08	0.07	0.07	0.08	0.06	0.06	0.05	0.06	0.06	<0.01	<0.01	<0.01	<0.01	0.19	0.06	0.06	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Uranium	<0.001	<0.001	<0.001	<0.001	0.005	<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
Zinc	5.8	5.1	6.5	6.2	5.7	3.5	5.1	4	8	4.9	5.4	8.5	5.8	4.2	6.9	6.9	10	10	6.9	7.3	8.8	3.1	3.6	6.2
Physical Properties																								
Age (years)	5, 5	6, 5	5, 5	5, 5	5, 4	6	4, 5, 5, 4	3, 3, 5	5, 5, 3, 2	4, 3, 3, 3	9	5, 4, 4, 4, 3	24	26	8	3	12	2	2	11	9	8	9	8
Moisture (%)	78.17	77.43	77.92	78.46	78.52	77.93	79.55	80.03	79.17	80.73	73.74	79.04	75.06	73.86	78.45	77.77	78.94	78.08	78.35	75.9	76.29	76.67	75.53	74.83
Weight (g)	580, 410	540, 475	528, 420	460, 460	510, 350	860	285, 295, 170, 290	280, 280, 380	280, 310, 305, 240	255, 270, 250, 255	1980	300, 145, 130, 100, 135	2720	2580	3750	1720	5850	900	660	1060	1120	1040	1040	1100
Radionuclides																								
Lead-210 (Bq/g)	<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	<0.001	<0.001	<0.001	<0.001
Polonium-210 (Bq/g)	0.0058	0.0038	0.008	0.0055	0.0049	0.0008	0.0048	0.0038	0.0078	0.0064	0.0009	0.0053	0.0003	0.0006	0.001	<0.0002	0.0027	0.0029	0.0026	0.0052	0.0077	0.0033	0.004	0.007
Radium-226 (Bq/g)	<0.00007	0.00009	<0.00006	<0.00007	<0.00007	0.00008	0.0001	<0.00008	<0.00006	<0.00006	<0.00008	0.00006	0.00007	<0.00006	<0.0001	0.0002	<0.00006	<0.00006	<0.00007	0.00009	<0.00006	<0.0001	<0.00007	0.00008
Thorium-230 (Bq/g)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.0001	<0.0002	<0.0001	<0.0001	<0.0001	<0.0003	<0.0002	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.0002	<0.0001	<0.0001
Trace Elements																								
Antimony	<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	<0.02	<0.02	<0.02	<0.02
Arsenic	0.08	0.04	0.04	0.07	0.04	0.03	0.04	0.03	0.04	0.04	0.04	0.03	0.02	0.05	0.02	0.02	0.03	0.01	0.01	0.04	0.07	0.06	0.07	0.1
Beryllium	<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	<0.002	<0.002	<0.002	<0.002	<0.002
Cobalt	<0.002	<0.002	0.002	0.003	0.004	<0.002	0.002	<0.002	<0.002	<0.002	0.005	0.004	0.002	0.006	<0.002	0.002	0.002	<0.002	<0.002	0.005	0.006	0.003	0.002	0.004
Strontium	0.72	0.42	1.2	2.2	0.51	0.5	0.78	0.56	1.4	0.53	0.43	1.3	0.72	0.4	0.27	0.31	0.63	1.1	0.42	0.71	0.38	1	0.24	1
Vanadium	<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	<0.02	<0.02	<0.02	<0.02

[1] All concentrations are presented on a µg/g wet weight basis, unless specified otherwise.

APPENDIX B, TABLE 19

Fish flesh chemistry descriptive statistics for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Data	Far-Field Exposure Areas																	
		Cochrane River					Crackingstone Inlet			Fond du Lac River					Waterbury Lake				
		LSU	LT	LW	NP	WSU	LT	LW	NP	LSU	LT	LW	NP	WSU	LSU	LT	LW	NP	WSU
Metals																			
Aluminum	Average	1.25	<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
	S.D.	0.93	0	0	0	-	0.10	0	-	0[3]	0	0	-	-	-	0	0	-	-
	Min	<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
	Max	2.4	<0.5	<0.5	<0.5	<0.5	0.9	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.5
	<MDL	2	15	15	13	4	13	15	10	7	12	15	10	10	6	15	12	8	1
	N	4	15	15	13	4	15	15	10	8	12	15	10	10	6	15	15	8	1
Barium	Average	0.14	0.05	0.08	0.03	0.04	0.02	0.11	0.03	0.05	0.02	0.01	0.03	0.05	0.10	0.02	0.10	0.02	0.08
	S.D.	0.128	0.089	0.142	0.032	0	0.013	0.21	0.032	0.019	0.009	0.005	0.019	0.052	0.068	0.023	0.239	0.005	-
	Min	0.03	<0.01	<0.01	<0.01	0.04	<0.01	0.01	<0.01	0.02	<0.01	<0.01	<0.01	0.02	0.04	<0.01	0.01	<0.01	0.08
	Max	0.31	0.27	0.57	0.13	0.04	0.05	0.63	0.12	0.08	0.04	0.02	0.06	0.15	0.22	0.1	0.89	0.02	0.08
	<MDL	0	11	2	1	0	3	4	1	0	6	10	2	0	0	7	0	1	0
	N	4	15	15	13	4	15	15	10	8	12	15	10	10	6	15	15	8	1
Boron	Average	0.2	<0.2	<0.2	<0.2	0.2	<0.2	0.20	0.2	0.2	<0.2	<0.2	0.2	0.2	0.2	<0.2	0.2	0.2	0.2
	S.D.	-	0	0	0	-	0	0.00	-	-	0	0	-	-	-	0	0	-	-
	Min	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	Max	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	<0.2	<0.2
	<MDL	4	15	15	13	4	15	15	10	8	12	15	10	10	6	15	13	8	1
	N	4	15	15	13	4	15	15	10	8	12	15	10	10	6	15	15	8	1
Cadmium	Average	0.002	<0.002	<0.002	<0.002	0.002	<0.002	0.002	0.002	0.002	<0.002	0.003	0.002	0.002	0.002	<0.002	0.002	0.002	0.002
	S.D.	-	0	0	0.0	-	0	0.0003	-	0.0004	0	0.0012	-	0	-	0	0	-	-
	Min	<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
	Max	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.003	<0.002	0.003	<0.002	0.006	<0.002	0.002	<0.002	<0.002	0.002	<0.002	<0.002
	<MDL	4	15	15	13	4	15	14	10	7	12	12	10	9	6	15	13	8	1
	N	4	15	15	13	4	15	15	10	8	12	15	10	10	6	15	15	8	1
Chromium	Average	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
	S.D.	-	0.03	0	0	-	0	0	-	-	0	0	-	-	-	0	0	-	-
	Min	<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
	Max	<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
	<MDL	4	13	15	13	4	15	15	10	8	12	15	10	10	6	15	13	8	1
	N	4	15	15	13	4	15	15	10	8	12	15	10	10	6	15	15	8	1
Copper	Average	0.298	0.24	0.17	0.21	0.348	0.25	0.19	0.193	0.271	0.37	0.18	0.230	0.334	0.163	0.33	0.20	0.198	0.240
	S.D.	0.146	0.063	0.047	0.068	0.010	0.125	0.037	0.051	0.074	0.184	0.057	0.122	0.131	0.058	0.104	0.102	0.051	-
	Min	0.18	0.35	0.11	0.14	0.34	0.13	0.12	0.13	0.21	0.19	0.10	0.13	0.21	0.11	0.21	0.13	0.15	0.24
	Max	0.51	0.12	0.29	0.35	0.36	0.68	0.25	0.28	0.39	0.86	0.30	0.55	0.65	0.24	0.60	0.53	0.3	0.24
	<MDL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	4	15	15	13	4	15	15	10	8	12	15	10	10	6	15	15	8	1
Iron	Average	4.8	2.0	2.4	2.7	3.5	2.6	2.1	2.0	2.9	2.9	2.2	2.7	3.4	1.5	2.9	3.2	1.9	2.8
	S.D.	4.2	0.65	0.79	2.70	1.0	1.70	1.05	0.9	0.7	1.36	0.44	1.5	2.0	0.4	0.65	1.44	0.6	-
	Min	1.6	0.7	1.0	1.0	2.5	1.2	0.9	0.7	2	1.6	1.3	1.3	1.3	0.9	1.7	1.5	1.3	2.8
	Max	11	3.4	3.7	11.0	4.6	7.5	4.4	3.8	3.8	6.3	3.0	5.8	8	1.9	4.7	5.8	3.1	2.8
	<MDL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	4	15	15	13	4	15	15	10	8	12	15	10	10	6	15	15	8	1
Lead	Average	0.002	0.002	<0.002	<0.002	0.002	0.002	0.002	0.002	0.002	0.003	0.002	0.002	0.002	0.002	0.006	0.005	0.002	0.007
	S.D.	-	0.0009	0	0.0	-	0	0.0003	-	-	0.0020	0.0003	-	0.0005	-	0.0054	0.0038	-	-
	Min	<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	0.007
	Max	<0.002	0.005	<0.002	<0.002	<0.002	0.002	0.003	<0.002	<0.002	0.009	0.003	<0.002	0.003	<0.002	0.018	0.011	<0.002	0.007
	<MDL	4	12	15	13	4	13	14	10	8	9	14	10	7	6	8	6	8	0
	N	4	15	15	13	4	15	15	10	8	12	15	10	10	6	15	15	8	1

APPENDIX B, TABLE 19

Fish flesh chemistry descriptive statistics for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	**Data**	**Far-Field Exposure Areas**																	
		Cochrane River					**Crackingstone Inlet**			**Fond du Lac River**					**Waterbury Lake**				
		LSU	**LT**	**LW**	**NP**	**WSU**	**LT**	**LW**	**NP**	**LSU**	**LT**	**LW**	**NP**	**WSU**	**LSU**	**LT**	**LW**	**NP**	**WSU**
Manganese	Average	0.50	0.07	0.11	0.11	0.11	0.08	0.09	0.10	0.20	0.10	0.10	0.23	0.21	0.48	0.09	0.14	0.12	0.18
	S.D.	0.55	0.022	0.049	0.031	0.03	0.037	0.022	0.02	0.11	0.041	0.024	0.12	0.23	0.28	0.021	0.053	0.02	-
	Min	0.1	0.04	0.05	0.07	0.08	0.04	0.06	0.07	0.09	0.05	0.07	0.09	0.09	0.26	0.07	0.07	0.1	0.18
	Max	1.3	0.12	0.23	0.19	0.14	0.20	0.14	0.13	0.41	0.21	0.16	0.43	0.68	0.99	0.15	0.26	0.17	0.18
	<MDL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	4	15	15	13	4	15	15	10	8	12	15	10	10	6	15	15	8	1
Mercury[4]	Average	0.03	0.19	0.10	0.18	0.02	0.16	0.04	0.11	0.09	0.22	0.09	0.13	0.09	0.02	0.15	0.03	0.11	0.01
	S.D.	0.03	0.122	0.062	0.091	0	0.085	0.019	0.04	0.05	0.092	0.065	0.05	0.09	0.004	0.057	0.022	0.09	-
	Min	0.01	0.06	0.03	0.04	0.02	0.08	0.02	0.05	0.04	0.13	0.03	0.06	0.02	0.02	0.07	0.01	0.02	0.01
	Max	0.07	0.57	0.23	0.34	0.02	0.42	0.09	0.16	0.2	0.42	0.23	0.2	0.33	0.03	0.29	0.08	0.21	0.01
	<MDL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	4	15	15	13	4	15	15	10	8	12	15	10	10	6	15	15	8	1
Molybdenum	Average	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	0.025	<0.02	0.02	0.02	0.02
	S.D.	0	0	0	0	-	0	0	-	0	0	0	-	-	0.008	0	0	-	-
	Min	<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
	Max	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	0.04	<0.02	0.02	<0.02	<0.02
	<MDL	2	15	15	13	4	15	14	10	7	12	15	10	10	3	15	13	8	1
	N	4	15	15	13	4	15	15	10	8	12	15	10	10	6	15	15	8	1
Nickel	Average	0.015	0.016	0.011	0.018	0.013	0.01	0.01	0.015	0.018	0.01	<0.01	0.011	0.018	0.015	<0.01	0.01	0.015	0.01
	S.D.	0.010	0.0118	0.0035	0.0172	0.005	0.016	0.018	0.011	0.012	0.012	0	0.003	0.011	0.008	0	0	0.008	-
	Min	<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
	Max	0.03	0.05	0.02	0.06	0.02	0.07	0.08	0.04	0.04	0.05	<0.01	0.02	0.04	0.03	<0.01	0.01	0.03	<0.01
	<MDL	3	11	12	10	3	12	14	8	5	10	15	9	6	3	15	11	5	1
	N	4	15	15	13	4	15	15	10	8	12	15	10	10	6	15	15	8	1
Selenium	Average	0.335	0.232	0.349	0.245	0.278	0.15	0.68	0.463	0.338	0.22	0.39	0.250	0.302	0.208	0.21	0.6	0.255	0.270
	S.D.	0.048	0.0469	0.1268	0.0203	0.028	0.026	0.675	0.128	0.055	0.034	0.155	0.032	0.065	0.036	0.042	0.34	0.039	-
	Min	0.29	0.170	0.210	0.220	0.25	0.11	0.17	0.32	0.24	0.17	0.23	0.2	0.21	0.17	0.14	0.2	0.21	0.27
	Max	0.4	0.360	0.570	0.280	0.31	0.21	2.60	0.66	0.41	0.28	0.78	0.31	0.44	0.25	0.31	1.1	0.32	0.27
	<MDL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	4	15	15	13	4	15	15	10	8	12	15	10	10	6	15	15	8	1
Silver	Average	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
	S.D.	-	0	0.0	0.0	-	0	0	-	-	0	0	-	-	-	0	0	-	-
	Min	<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
	Max	<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
	<MDL	4	15	15	13	4	15	15	10	8	12	15	10	10	6	15	13	8	1
	N	4	15	15	13	4	15	15	10	8	12	15	10	10	6	15	15	8	1
Thallium	Average	<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
	S.D.	-	0	0	0	-	0	0	-	-	0	0	-	-	-	0	0	-	-
	Min	<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
	Max	<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
	<MDL	4	15	15	13	4	12	15	10	8	12	15	10	10	6	15	13	8	1
	N	4	15	15	13	4	15	15	10	8	12	15	10	10	6	15	15	8	1
Tin	Average	0.010	0.011	<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
	S.D.	-	0	0	0	-	0	0.003	-	-	0	0	-	-	-	0	0	-	-
	Min	<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
	Max	<0.01	0.02	<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	<0.01
	<MDL	4	14	15	13	4	15	14	10	8	12	15	10	10	6	15	13	8	1
	N	4	15	15	13	4	15	15	10	8	12	15	10	10	6	15	15	8	1

APPENDIX B, TABLE 19

Fish flesh chemistry descriptive statistics for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Data	Far-Field Exposure Areas																	
		Cochrane River					Crackingstone Inlet			Fond du Lac River					Waterbury Lake				
		LSU	LT	LW	NP	WSU	LT	LW	NP	LSU	LT	LW	NP	WSU	LSU	LT	LW	NP	WSU
Titanium	Average	0.118	0.065	0.067	0.078	0.078	0.05	0.03	0.045	0.069	0.05	0.05	0.064	0.071	0.062	0.05	0.05	0.070	0.050
	S.D.	0.062	0.0064	0.0098	0.012	0.005	0.032	0.029	0.036	0.011	0.032	0.028	0.008	0.012	0.010	0.033	0.036	0.008	-
	Min	0.06	0.050	0.050	0.060	0.07	<0.01	<0.01	<0.01	0.05	<0.01	<0.01	0.05	0.06	0.05	<0.01	0.01	0.06	0.05
	Max	0.2	0.070	0.080	0.100	0.08	0.11	0.08	0.09	0.09	0.08	0.07	0.08	0.09	0.08	0.08	0.10	0.08	0.05
	<MDL	0	0	0	0	0	2	3	1	0	5	4	0	0	0	5	5	0	0
	N	4	15	15	13	4	15	15	10	8	12	15	10	10	6	15	15	8	1
Uranium	Average	0.0023	0.0012	0.0013	0.0031	0.0010	0.001	0.003	0.0010	0.0010	<0.001	<0.001	0.0010	0.0011	0.0015	0.001	0.001	0.0035	0.0010
	S.D.	0.0025	0.00077	0.00046	0.00499	-	0	0.0038	-	0	0	0	-	0.0003	0.0012	0.0005	0.0003	0.0059	-
	Min	<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
	Max	0.006	0.004	0.002	0.018	<0.001	0.001	0.012	<0.001	0.001	<0.001	<0.001	<0.001	0.002	0.004	0.003	0.002	0.018	<0.001
	<MDL	3	14	8	9	4	14	9	10	7	12	15	10	7	5	13	11	5	1
	N	4	15	15	13	4	15	15	10	8	12	15	10	10	6	15	15	8	1
Zinc	Average	5.0	3.2	4.7	5.6	4.8	3.9	3.9	5.5	4.0	4.4	4.4	5.3	3.9	4.8	4.9	4.4	5.5	6.3
	S.D.	1.1	0.55	1.37	1.13	0.7	1.56	0.73	1.9	0.9	2.04	1.92	2.2	1.2	1.5	2.08	0.71	1.4	-
	Min	3.6	2.0	3.0	3.8	3.8	2.5	2.9	3.3	3	3.0	2.6	3.3	2.7	3.6	3.3	3.4	3.9	6.3
	Max	6.4	4.5	7.8	7.3	5.4	7.8	5.3	8.5	5.4	10.0	10.0	10	5.9	7.2	9.1	5.7	7.7	6.3
	<MDL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	4	15	15	13	4	15	15	10	8	12	15	10	10	6	15	15	8	1
Physical Properties																			
Moisture (%)	Average	77	73.2	79.7	78.7	80	73.9	74.9	78	77	73.3	76.8	78	78	80	75.3	75.8	79	81
	S.D.	2	3.5	2.4	1.0	2	3.07	1.10	0	2	3.43	3.09	2	2	1	3.02	7.24	2	-
	Min	75	66.3	76.6	76.8	78	66.7	73.1	77	74	65.5	72.1	71	75	79	71.5	52.5	76	81
	Max	80	77.6	85.7	80.3	82	80.0	76.7	79	80	79.6	83.9	79	81	81	82.6	79.6	81	81
	<MDL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	4	15	15	13	4	15	15	10	8	12	15	10	10	6	15	15	8	1
Radionuclides																			
Lead-210 (Bq/g)	Average	0.001	0.001	0.001	<0.001	0.001	<0.001	<0.001	0.001	0.001	<0.001	<0.001	0.00150	0.001	0.001	0.001	0.001	0.001	0.001
	S.D.	-	0.00004	0	0	-	0	0	-	-	0	0	0.00108	-	-	0.0003	0	-	-
	Min	<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
	Max	<0.001	0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.004	<0.001	<0.001	0.002	0.001	<0.001	<0.001
	<MDL	4	14	14	13	4	15	15	10	8	12	15	8	10	6	14	13	8	1
	N	4	15	15	13	4	15	15	10	8	12	15	10	10	6	15	15	8	1
Polonium-210 (Bq/g)	Average	0.00168	0.0002	0.0006	0.0025	0.00270	<0.0002	0.0004	0.00088	0.00179	<0.0002	0.0004	0.00238	0.00158	0.00063	0.0002	0.0015	0.00250	0.0015
	S.D.	0.00151	0.00005	0.00078	0.00137	0.00121	0	0.00022	0.00048	0.00108	0	0.00027	0.00077	0.00069	0.00060	0.00006	0.00130	0.00178	-
	Min	0.0006	<0.0002	<0.0002	0.0005	0.001	<0.0002	<0.0002	0.0003	0.0005	<0.0002	<0.0002	0.0011	0.0007	<0.0002	<0.0002	<0.0002	0.0003	0.0015
	Max	0.0039	0.0004	0.0032	0.0042	0.0038	<0.0002	0.0008	0.0018	0.0034	<0.0002	0.0011	0.0032	0.0025	0.0018	0.0004	0.0040	0.0048	0.0015
	<MDL	0	13	3	0	0	15	3	0	0	12	5	0	0	1	12	3	0	0
	N	4	15	15	13	4	15	15	10	8	12	15	10	10	6	15	15	8	1
Radium-226 (Bq/g)	Average	0.00007	0.00006	0.00007	0.00009	0.00007	0.00009	0.00010	0.00007	0.00007	0.00009	0.00009	0.00008	0.00007	0.000072	0.0001	0.00008	0.00012	0.00006
	S.D.	-	0.000011	0.000022	0.000050	-	0.00009	0.00006	0.00001	0.00001	0.00004	0.000048	0.00002	0.00001	0.000004	0.00001	0.00002	0.00007	-
	Min	<0.00006	0.00005	0.000005	<0.00006	<0.00006	0.00006	<0.00005	<0.00006	<0.00006	<0.00006	<0.00005	<0.00006	<0.00006	<0.00007	<0.00005	<0.00006	<0.00006	<0.00006
	Max	<0.00008	0.00009	0.00010	0.00020	<0.00008	0.00040	0.00030	0.0001	0.00009	0.00020	0.0002	0.0001	0.0001	0.00008	0.0001	0.0001	0.0002	<0.00006
	<MDL	4	15	12	9	4	13	9	9	7	9	11	6	9	5	10	9	4	1
	N	4	15	15	13	4	15	15	10	8	12	15	10	10	6	15	15	8	1
Thorium-230 (Bq/g)	Average	0.00013	0.00012	<0.0002	<0.0002	0.00013	0.00013	0.00019	0.00013	0.00010	<0.0002	0.0001	0.00010	0.00010	0.00010	<0.0001	0.0001	0.00014	0.00010
	S.D.	-	0.00004	0.00004	0.00003	-	0.00005	0.00014	0.00007	-	0	0.00006	-	-	0	0	0	-	-
	Min	<0.0001	<0.00001	<0.00001	<0.00001	<0.0001	<0.00001	<0.00001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
	Max	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	0.00020	0.0006	0.0003	<0.0001	<0.0002	<0.0003	<0.0001	<0.0001	0.0001	<0.0002	0.0002	<0.0004	<0.0001
	<MDL	4	14	15	13	4	12	13	9	8	12	15	10	10	5	15	13	8	1
	N	4	15	15	13	4	15	15	10	8	12	15	10	10	6	15	15	8	1

APPENDIX B, TABLE 19

Fish flesh chemistry descriptive statistics for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Data	Far-Field Exposure Areas																	
		Cochrane River					Crackingstone Inlet			Fond du Lac River					Waterbury Lake				
		LSU	LT	LW	NP	WSU	LT	LW	NP	LSU	LT	LW	NP	WSU	LSU	LT	LW	NP	WSU
Trace Elements																			
Antimony	Average	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
	S.D.	-	0	0	0.0	-	0	0	-	-	0	0	-	-	-	0	0	-	-
	Min	<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
	Max	<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
	<MDL	4	15	15	13	4	15	15	10	8	12	15	10	10	6	15	13	8	1
	N	4	15	15	13	4	15	15	10	8	12	15	10	10	6	15	15	8	1
Arsenic	Average	0.153	0.057	0.075	0.031	0.085	0.07	0.10	0.074	0.129	0.04	0.10	0.022	0.084	0.057	0.04	0.02	0.019	0.060
	S.D.	0.031	0.030	0.064	0.015	0.042	0.024	0.080	0.044	0.054	0.018	0.083	0.006	0.051	0.021	0.026	0.013	0.004	-
	Min	0.110	0.020	0.010	0.010	0.04	0.04	0.02	0.05	0.06	0.02	0.02	0.01	0.04	0.03	0.02	0.01	0.01	0.06
	Max	0.180	0.130	0.210	0.050	0.13	0.12	0.30	0.19	0.22	0.09	0.31	0.03	0.2	0.08	0.12	0.05	0.02	0.06
	<MDL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	4	15	15	13	4	15	15	10	8	12	15	10	10	6	15	15	8	1
Beryllium	Average	<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
	S.D.	-	0	0	0.0	-	0	0	-	-	0	0	-	-	-	0	0	-	-
	Min	<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
	Max	<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
	<MDL	4	15	15	13	4	15	15	10	8	12	15	10	10	6	15	13	8	1
	N	4	15	15	13	4	15	15	10	8	12	15	10	10	6	15	15	8	1
Cobalt	Average	0.0038	0.0021	0.0037	0.002	0.0038	0.0021	0.004	0.0020	0.0029	0.002	0.003	0.0035	0.0038	0.0028	0.002	0.003	0.0021	0.0020
	S.D.	0.0015	0.0003	0.0020	0.0004	0.0015	0.0004	0.0025	0	0.0006	0.0007	0.0012	0.0023	0.0021	0.0010	0	0.0007	0.0004	-
	Min	<0.002	0.002	<0.002	<0.002	0.003	<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
	Max	0.005	0.003	0.008	0.003	0.006	0.003	0.009	0.002	0.004	0.004	0.006	0.009	0.008	0.004	0.002	0.004	0.003	0.002
	<MDL	1	11	3	10	0	13	5	5	0	5	7	4	2	3	12	6	5	0
	N	4	15	15	13	4	15	15	10	8	12	15	10	10	6	15	15	8	1
Strontium	Average	1.27	0.08	0.31	0.08	0.05	0.17	0.28	0.18	0.24	0.22	0.14	0.28	0.32	0.73	0.18	0.37	0.16	0.92
	S.D.	1.49	0.040	0.394	0.050	0.01	0.116	0.185	0.15	0.20	0.254	0.044	0.20	0.58	0.37	0.084	0.219	0.07	-
	Min	0.22	0.03	0.05	0.03	0.04	0.04	0.08	0.06	0.06	0.03	0.09	0.04	0.03	0.38	0.08	0.16	0.09	0.92
	Max	3.4	0.18	1.30	0.19	0.05	0.46	0.75	0.57	0.55	0.87	0.24	0.57	1.7	1.4	0.36	1.0	0.31	0.92
	<MDL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	4	15	15	13	4	15	15	10	8	12	15	10	10	6	15	15	8	1
Vanadium	Average	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
	S.D.	0	0	0	0	-	0	0	-	-	0	0	-	-	-	0	0	-	-
	Min	<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
	Max	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
	<MDL	3	15	15	13	4	15	15	10	8	12	15	10	10	6	15	13	8	1
	N	4	15	15	13	4	15	15	10	8	12	15	10	10	6	15	15	8	1

APPENDIX B, TABLE 19

Fish flesh chemistry descriptive statistics for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Data	References															Pooled References				
		Bobby's Lake[2]		Cree Lake					Ellis Bay			Pasfield Lake									
		NP	WSU	LSU	LT	LW	NP	WSU	LT	LW	NP	LSU	LT	LW	NP	WSU	LSU	LT	LW	NP	WSU
Metals																					
Aluminum	Average	0.18	0.26	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
	S.D.	0.09	0.19	0.05	0	0	0	0.06	0	1	-	0	0	0	0	0	0.03	0	0	0	0
	Min	0.09	0.15	<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
	Max	0.30	0.55	0.7	<0.5	0.5	<0.5	0.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	<0.5	0.5	<0.5	0.6
	<MDL	0	0	13	15	15	10	11	15	12	5	11	15	14	5	5	24	45	41	20	16
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	26	45	41	20	20
Barium	Average	0.03	0.03	0.08	0.07	0.18	0.02	0.07	0.03	0.02	0.02	0.05	0.10	0.18	0.03	0.08	0.06	0.07	0.12	0.02	0.07
	S.D.	0.03	0.03	0.025	0.150	0.266	0.012	0.039	0.024	0.016	0.004	0.058	0.227	0.276	0.023	0.042	0.042	0.134	0.186	0.013	0.04
	Min	<0.01	0.01	0.02	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.05	0.02	<0.01	<0.01	<0.01	0.04
	Max	0.09	0.07	0.12	0.6	0.68	0.05	0.16	0.08	0.06	0.02	0.20	0.69	0.71	0.07	0.15	0.16	0.46	0.48	0.05	0.16
	<MDL	1	0	0	2	3	1	0	6	8	1	5	6	1	0	0	5	14	12	2	0
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	26	45	41	20	20
Boron	Average	0.2	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	S.D.	-	-	0	0	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0
	Min	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	Max	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	<MDL	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	26	45	41	20	20
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	26	45	41	20	20
Cadmium	Average	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	0.002
	S.D.	-	-	0.0009	0	0	0	0	0	0	-	0	0	0	0	0	0	0	0	-	0
	Min	<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	<0.002
	Max	<0.002	<0.002	0.005	<0.002	<0.002	<0.002	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.01	<0.002	<0.002	<0.002	<0.002
	<MDL	5	4	12	15	15	10	14	15	12	5	11	15	14	5	5	23.0	45	41	18	19
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	26	45	41	18	20
Chromium	Average	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
	S.D.	-	-	0	0	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0
	Min	<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
	Max	<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
	<MDL	5	4	15	15	14	10	15	15	12	5	11	15	14	5	5	26	45	40	20	20
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	26	45	41	20	20
Copper	Average	0.23	0.25	0.27	0.38	0.24	0.21	0.34	0.33	0.22	0.290	0.28	0.38	0.29	0.25	0.58	0.27	0.36	0.25	0.24	0.25
	S.D.	0.11	0.05	0.091	0.246	0.078	0.053	0.215	0.134	0.105	0.129	0.077	0.186	0.115	0.076	0.272	0.084	0.189	0.10	0.10	0.06
	Min	0.14	0.21	0.18	0.13	0.15	0.14	0.18	0.11	0.11	0.16	0.17	0.20	0.14	0.15	0.23	0.18	0.15	0.13	0.14	0.18
	Max	0.38	0.33	0.53	0.86	0.42	0.33	0.88	0.58	0.40	0.45	0.41	0.84	0.59	0.32	0.89	0.47	0.76	0.47	0.45	0.39
	<MDL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	26	45	41	18	20
Iron	Average	2.7	3.0	2.9	5.0	2.4	1.6	3.7	2.8	2.4	2.2	3.1	4.3	3.5	1.9	4.7	3.0	4.0	2.8	2.3	3.2
	S.D.	1.2	0.2	1.98	3.68	0.91	0.72	1.63	1.25	1.08	1.2	1.82	1.90	1.90	0.78	2.64	1.90	2.28	1.3	1.0	1.4
	Min	1.5	2.7	1.0	1.4	1.0	0.9	1.7	1.0	1.1	0.6	1.3	2.1	1.4	1.2	1.8	1.2	1.5	1.2	0.6	1.7
	Max	4.2	3.1	8.5	14.0	4.4	3.0	6.5	5.8	3.9	3.2	8.0	8.0	9.3	3.2	8.5	8.3	9.3	5.9	4.2	6.5
	<MDL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	26	45	41	18	20
Lead	Average	0.003	0.005	0.003	0.004	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.003	0.005	0.008	0.018	0.002	0.003	0.003	0.002	0.003
	S.D.	0.001	0.004	0.0015	0.0063	0.0011	0.0003	0.0011	0	0.0006	-	0.0003	0.0023	0.0054	0.0101	0.0066	0.0009	0.0029	0.0024	0.0006	0.0022
	Min	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	0.008	<0.002	<0.002	<0.002	<0.002	<0.002
	Max	0.004	0.010	0.007	0.023	0.006	0.003	0.006	0.002	0.004	<0.002	0.003	0.011	0.016	0.025	0.024	0.005	0.012	0.009	0.004	0.010
	<MDL	0	1	11	12	13	8	12	14	9	5	10	13	9	3	0	21	39	31	12	12
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	26	45	41	18	20

APPENDIX B, TABLE 19

Fish flesh chemistry descriptive statistics for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Data	References															Pooled References				
		Bobby's Lake[2]		Cree Lake					Ellis Bay			Pasfield Lake									
		NP	WSU	LSU	LT	LW	NP	WSU	LT	LW	NP	LSU	LT	LW	NP	WSU	LSU	LT	LW	NP	WSU
Manganese	Average	0.15	0.12	0.76	0.10	0.14	0.12	0.36	0.11	0.12	0.08	0.26	0.08	0.12	0.10	0.12	0.51	0.10	0.13	0.12	0.27
	S.D.	0.08	0.03	0.48	0.044	0.121	0.033	0.311	0.136	0.038	0.004	0.121	0.020	0.023	0.026	0.049	0.302	0.067	0.06	0.05	0.21
	Min	0.10	0.09	0.21	0.04	0.07	0.08	0.10	0.06	0.05	0.08	0.11	0.06	0.10	0.06	0.06	0.16	0.05	0.07	0.08	0.09
	Max	0.28	0.17	2.0	0.22	0.55	0.18	1.2	0.60	0.19	0.09	0.49	0.14	0.17	0.13	0.18	1.25	0.32	0.30	0.28	0.81
	<MDL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	26	45	41	18	20
Mercury	Average	-	-	0.02	0.19	0.03	0.12	0.018	0.17	0.05	0.16	0.02	0.15	0.02	0.07	0.026	0.02	0.17	0.04	0.13	0.01
	S.D.	-	-	0.013	0.138	0.018	0.070	0.0098	0.070	0.017	0.06	0.010	0.060	0.032	0.026	0.0071	0.012	0.089	0.022	0.077	0.005
	Min	-	-	0.01	0.04	0.01	0.02	<0.01	0.06	0.02	0.08	<0.01	0.04	<0.01	0.04	0.021	<0.01	0.05	0.02	0.02	<0.01
	Max	-	-	0.06	0.53	0.07	0.28	0.045	0.29	0.07	0.24	0.04	0.26	0.10	0.11	0.038	0.05	0.36	0.08	0.28	0.02
	<MDL	-	-	0	0	0	0	1	0	0	0	1	0	10	0	0	1	0	10	0	1
	N	-	-	15	15	15	10	15	15	12	5	11	15	14	5	5	26	45	41	13	20
Molybdenum	Average	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
	S.D.	-	-	0	0.010	0	0	0	0	0	-	0	0	0	0	0	0	0.003	0.00	-	-
	Min	<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
	Max	<0.02	<0.02	<0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.06	<0.02	<0.02	<0.02
	<MDL	5	4	15	14	15	10	15	15	12	5	11	15	14	5	5	26	44	41	18	20
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	26	45	41	18	20
Nickel	Average	0.01	0.01	0.02	0.01	0.01	<0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.02	<0.01	0.02	0.01	0.01	0.01	0.01
	S.D.	0.01	0.01	0.016	0.008	0.011	0	0	0.006	0.003	-	0.013	0	0.011	0.018	0	0.014	0.005	0.008	0.010	0.003
	Min	<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
	Max	0.03	0.02	0.07	0.04	0.05	<0.01	0.01	0.03	0.02	<0.01	0.05	0.01	0.05	0.05	<0.01	0.06	0.03	0.04	0.05	0.02
	<MDL	4	3	11	13	13	10	14	12	11	5	9	14	12	4	5	20	39	36	16	19
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	26	45	41	18	20
Selenium	Average	0.20	0.23	0.30	0.21	0.41	0.22	0.19	0.15	0.25	0.192	0.22	0.28	0.28	0.21	0.22	0.26	0.22	0.312	0.214	0.214
	S.D.	0.05	0.10	0.118	0.035	0.137	0.038	0.034	0.021	0.055	0.019	0.027	0.056	0.069	0.013	0.021	0.07	0.038	0.09	0.04	0.05
	Min	0.15	0.13	0.16	0.15	0.21	0.18	0.14	0.10	0.13	0.17	0.18	0.22	0.18	0.20	0.20	0.17	0.16	0.17	0.15	0.13
	Max	0.29	0.32	0.57	0.28	0.72	0.28	0.26	0.18	0.35	0.22	0.26	0.37	0.40	0.23	0.25	0.42	0.28	0.49	0.29	0.32
	<MDL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	26	45	41	18	20
Silver	Average	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	0.002
	S.D.	-	-	0	0.0010	0	0	0	0	0	-	0	0	0	0	0	0	0.0003	0	0	0
	Min	<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	<0.002
	Max	<0.002	<0.002	<0.002	0.006	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.006	<0.002	<0.002	<0.002
	<MDL	5	4	15	14	15	10	15	15	12	5	11	15	14	5	5	26	44	41	18	20
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	26	45	41	18	20
Thallium	Average	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
	S.D.	-	-	0	0	0	0	0	0.003	0	-	0	0	0	0	0	-	0.001	0	0	0
	Min	<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
	Max	<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	0.02	<0.01	<0.01	<0.01
	<MDL	5	4	15	15	15	10	15	9	12	5	11	15	14	5	5	26	39	41	18	20
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	26	45	41	18	20
Tin	Average	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
	S.D.	-	-	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0
	Min	<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
	Max	<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
	<MDL	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	26	45	41	20	20
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	26	45	41	20	20

APPENDIX B, TABLE 19

Fish flesh chemistry descriptive statistics for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Data	References															Pooled References				
		Bobby's Lake[2]		Cree Lake					Ellis Bay			Pasfield Lake									
		NP	WSU	LSU	LT	LW	NP	WSU	LT	LW	NP	LSU	LT	LW	NP	WSU	LSU	LT	LW	NP	WSU
Titanium	Average	0.08	0.09	0.06	0.06	0.05	0.04	0.06	0.04	0.04	0.016	0.04	0.05	0.05	0.07	<0.01	0.05	0.05	0.05	0.05	0.06
	S.D.	0.01	0.02	0.034	0.031	0.030	0.025	0.026	0.040	0.028	0.005	0.035	0.029	0.028	0.074	0	0.035	0.033	0.029	0.047	0.032
	Min	0.07	0.07	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	<0.01	<0.01	0.02
	Max	0.10	0.11	0.11	0.10	0.1	0.06	0.09	0.15	0.07	0.02	0.09	0.08	0.08	0.19	<0.01	0.10	0.11	0.08	0.19	0.11
	<MDL	0	0	0	0	1	1	0	6	5	0	5	5	4	2	5	5	11	10	1	5
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	26	45	41	18	20
Uranium	Average	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.0010	<0.001	0.001	0.001	<0.001	<0.001	0.001	0.001	0.001	0.001	0.001
	S.D.	-	0	0.0006	0.0003	0.0008	0.0003	0	0.0034	0.0003	-	0	0.0003	0.0011	0	0	0.0005	0.0013	0.0007	-	0
	Min	<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
	Max	<0.001	0.001	0.003	0.002	0.004	0.002	0.001	0.014	0.002	<0.001	<0.001	0.002	0.005	<0.001	<0.001	0.003	0.006	0.004	<0.001	0.001
	<MDL	5	3	12	13	11	9	14	14	10	5	11	14	13	5	5	23	41	34	18	19
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	26	45	41	18	20
Zinc	Average	6.0	3.0	4.8	4.4	4.7	5.3	4.6	4.5	3.4	6.2	5.4	4.7	5.6	8.1	5.8	5.1	4.5	4.6	6.5	4.0
	S.D.	1.4	0.3	1.09	2.03	2.22	1.75	1.35	2.58	0.64	2.2	1.12	2.44	1.40	1.70	2.43	1.11	2.35	1.4	1.8	0.8
	Min	5.0	2.7	3.7	2.2	2.9	3.3	3.4	2.6	2.8	4.2	4.0	2.7	3.5	6.9	3.1	3.9	2.5	3.1	4.2	2.7
	Max	8.4	3.4	8.2	10.0	12.0	8.6	9.0	11	4.5	9.8	7.7	13	8.5	10	8.8	8.0	11.3	8.3	10	5.5
	<MDL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	26	45	41	18	20
Physical Properties																					
Moisture (%)	Average	-[6]	-[6]	77.6	77.5	76.5	78.1	77.8	73.2	75.4	78	76.1	75.9	77.8	78.3	75.8	76.8	75.6	76.6	77.6	77.7
	S.D.	-[6]	-[6]	1.61	3.04	1.61	3.23	1.49	2.47	1.50	1	2.14	3.20	2.16	0.44	0.71	1.87	2.90	1.8	1.1	1.6
	Min	-[6]	-[6]	73.7	72.9	73.2	75.2	74.0	67.4	73.9	76	72.4	70.5	73.7	77.8	74.8	73.1	70.2	73.6	76.1	74.0
	Max	-[6]	-[6]	80.1	82.6	78.5	86.9	79.4	76.3	78.2	80	79.0	79.7	80.7	78.9	76.7	79.5	79.5	79.1	79.9	79.4
	<MDL	-[6]	-[6]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	-[6]	-[6]	15	15	15	10	15	15	12	5	11	15	14	5	5	26	45	41	13	20
Radionuclides																					
Lead-210 (Bq/g)	Average	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	0.0010	0.0011
	S.D.	0.0004	-	0.0005	0.0003	0	0	0.0003	0	0.0003	-	0	0	0	0	0	0	0.0001	0.0001	0.0000	0.0003
	Min	<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
	Max	0.002	<0.001	0.003	0.002	<0.001	0.001	0.002	<0.001	0.002	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	0.002	0.001	0.002	0.0010	0.0020
	<MDL	4	4	13	14	15	8	14	15	11	5	11	15	13	5	5	24	44	25	18	19
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	26	45	27	20	20
Polonium-210 (Bq/g)	Average	0.0010	0.0003	0.0015	0.0002	0.0009	0.0007	0.0013	0.0002	0.0002	0.00040	0.003	0.0002	0.0042	0.0019	0.0054	0.0024	0.0002	0.0018	0.0010	0.0007
	S.D.	0.0007	0.0001	0.00141	0.00006	0.00076	0.00058	0.00100	0.00013	0.00009	0.00023	0.0024	0.00008	0.00262	0.00121	0.00189	0.00190	0.00009	0.0012	0.0007	0.0006
	Min	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	0.0002	0.001	<0.0002	0.0003	<0.0002	0.0033	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
	Max	0.0023	0.0004	0.0046	0.0004	0.0023	0.0022	0.0034	0.0007	0.0005	0.0008	0.010	0.0004	0.0080	0.0029	0.0077	0.0073	0.0005	0.0036	0.0020	0.0020
	<MDL	0	1	1	11	5	2	0	14	9	0	0	8	0	1	0	1	33	14	3	0
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	26	45	41	20	20
Radium-226 (Bq/g)	Average	0.00009	0.00006	0.00009	0.00008	0.00007	0.00007	0.00010	0.00009	0.00011	0.00007	0.00012	0.00009	0.00007	0.00010	0.00008	0.00010	0.00009	0.00008	0.00008	0.00010
	S.D.	0.00006	-	0.000018	0.00006	0.00002	0.000017	0.000044	0.000049	0.00008	0.00001	0.000160	0.000057	0.000013	0.000059	0.000016	0.00009	0.00006	0.00004	0.00003	0.00005
	Min	<0.00006	<0.00005	<0.00006	<0.00004	<0.00005	<0.00005	<0.00005	<0.00004	<0.00006	<0.00006	<0.00006	<0.00005	<0.00006	<0.00006	<0.00006	<0.00006	<0.00006	<0.0002	<0.0002	<0.00005
	Max	0.00008	<0.00007	0.00010	0.00030	0.00010	0.00010	0.0002	0.00020	0.0003	0.00008	0.00060	0.00020	0.00010	0.00020	0.00010	0.00035	0.00023	0.00017	0.00013	0.00020
	<MDL	4	4	13	11	11	8	10	10	10	4	7	10	9	4	3	20	31	30	16	13
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	26	45	41	20	20
Thorium-230 (Bq/g)	Average	0.0001	0.0001	<0.0002	0.00011	<0.0001	0.0001	<0.0002	<0.0001	<0.0002	0.00072	<0.0001	0.0001	0.0001	0.0002	0.0001	0.0002	0.0001	0.0001	0.0003	0.0002
	S.D.	0.0001	-	0.00008	0.00004	0	0.00005	0.00007	0.00004	0.00007	-	0.00004	0.00005	0.00004	0.00009	0.00005	-	0.00004	0.00005	0.00007	-
	Min	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
	Max	0.0001	<0.0001	<0.0003	0.0002	<0.0001	0.0002	<0.0003	<0.0003	<0.0003	<0.003	<0.0002	0.0002	<0.0002	<0.0003	<0.0002	<0.0003	0.0002	<0.0002	0.0002	<0.0003
	<MDL	4	4	15	14	15	8	15	15	12	5	11	14	14	5	5	26	43	41	18	20
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	26	45	41	20	20

APPENDIX B, TABLE 19

Fish flesh chemistry descriptive statistics for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Data	References															Pooled References				
		Bobby's Lake[2]		Cree Lake					Ellis Bay			Pasfield Lake									
		NP	WSU	LSU	LT	LW	NP	WSU	LT	LW	NP	LSU	LT	LW	NP	WSU	LSU	LT	LW	NP	WSU
Trace Elements																					
Antimony	Average	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
	S.D.	-	-	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0
	Min	<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
	Max	<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
	<MDL	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	26	45	41	20	20
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	26	45	41	20	20
Arsenic	Average	0.01	0.01	0.03	0.02	0.02	0.01	0.04	0.10	0.24	0.110	0.08	0.04	0.04	0.02	0.07	0.05	0.05	0.10	0.05	0.04
	S.D.	0.004	0.005	0.020	0.018	0.014	0	0.027	0.060	0.108	0.025	0.037	0.024	0.016	0.008	0.022	0.029	0.034	0.05	0.01	0.03
	Min	0.01	<0.01	0.01	<0.02	<0.01	<0.01	0.01	0.04	0.09	0.09	0.02	0.01	0.02	0.01	0.04	0.02	0.03	0.06	0.05	<0.01
	Max	0.02	0.02	0.08	0.08	0.06	0.01	0.11	0.29	0.38	0.15	0.14	0.09	0.08	0.03	0.10	0.11	0.15	0.17	0.06	0.11
	<MDL	0	1	0	2	7	7	0	0	0	0	0	0	0	0	0	0	2	7	7	0
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	26	45	41	20	20
Beryllium	Average	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	0.002
	S.D.	-	-	0	0	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0
	Min	<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	<0.002
	Max	<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	<0.002
	<MDL	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	26	45	41	20	20
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	26	45	41	20	20
Cobalt	Average	0.002	0.003	0.003	0.002	0.002	0.002	0.003	0.002	0.004	0.0026	0.003	0.003	0.003	0.002	0.004	0.003	0.002	0.003	0.002	0.003
	S.D.	0.0004	0.0006	0.0018	0.0006	0.0009	0	0.0010	0.0004	0.0047	0.0005	0.0007	0.0011	0.0014	0	0.0016	0.0013	0.0007	0.0023	0.0002	0.0009
	Min	<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	<0.002
	Max	0.003	0.003	0.008	0.004	0.005	0.002	0.005	0.003	0.018	0.003	0.004	0.006	0.006	0.002	0.006	0.006	0.004	0.010	0.002	0.005
	<MDL	3	1	3	8	9	8	3	10	5	2	4	9	6	3	0	7	27	20	13	3
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	26	45	41	20	20
Strontium	Average	0.34	0.15	0.59	0.23	0.59	0.29	0.35	0.24	0.34	0.16	0.99	0.37	0.83	0.55	0.67	0.79	0.28	0.59	0.33	0.31
	S.D.	0.38	0.15	0.223	0.144	1.032	0.155	0.266	0.194	0.271	0.03	0.603	0.321	0.517	0.340	0.349	0.413	0.220	0.607	0.176	0.291
	Min	0.11	0.05	0.23	0.09	0.12	0.13	0.13	0.06	0.15	0.11	0.18	0.09	0.40	0.27	0.24	0.21	0.08	0.22	0.17	0.05
	Max	0.99	0.37	1.0	0.54	4.3	0.69	1.2	0.68	1.0	0.2	2.3	1.4	2.20	1.1	1.0	1.65	0.87	2.50	0.66	1.20
	<MDL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	26	45	41	20	20
Vanadium	Average	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
	S.D.	-	-	0	0	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0
	Min	<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
	Max	<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
	<MDL	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	26	45	41	20	20
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	26	45	41	20	20

S.D.: standard deviation; Min: minimum; Max: maximum; <MDL: number of samples with concentrations measured at less than the method detection limit; N: total number of samples (sample size).

LSU: longnose sucker; LT: lake trout; LW: lake whitefish; NP: northern pike; WSU: white sucker.

For values measured at less than the method detection limit (MDL), all computations were performed with values set at the MDL.

[1] All concentrations and activity levels are presented in µg/g on a wet weight basis, except when specified otherwise.

[2] No fish chemistry data were available for Bobby's Lake in 2011 and 2012; the 2009 fish chemistry data were used as a substitute.

[3] When all values were less than the method detection limit (MDL), standard deviations were not computed.

[4] No mercury data were available for Bobby's Lake.

[5] Standard deviations of 0 signify no variation, not a very small value.

[6] Moisture was not available for Bobby's Lake samples.

APPENDIX B, TABLE 20

Detailed fish bone chemistry data collected from the Cochrane River for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Cochrane River																							
	Longnose Sucker				Lake Trout															Lake Whitefish				
	2011		2012		2011					2012					2015					2011				
	SP6-1		SP3-1	SP3-1, SP5-1	AN1-1					SP3-1				SP4-1	AN2-1	GN6-1	GN2-1	HG1-1		SP6-1			SP8-1	
	LSU04	LSU05	LSU09, LSU10	LSU11, LSU02	LT01	LT02	LT03	LT04	LT05	LT05	LT06	LT07	LT08	LT01	LT01	LT11	LT01	LT01	LT05	LW01	LW02	LW03	LW01	LW02
Metals																								
Aluminum	7	<0.5	<0.5	2.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	0.8	0.7	<0.5	2.8	3.9	0.9	1.8	1.6
Barium	5.8	4.6	1.8	3.4	0.85	0.67	0.86	1.2	0.82	0.67	0.77	0.6	0.85	0.9	1.3	0.96	1.1	0.89	0.88	9	10	3.3	4.6	3.2
Boron	<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	<0.5	<0.5	<0.5	<0.5
Cadmium	<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	<0.01	<0.01	<0.01	<0.01
Chromium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Copper	0.20	0.19	0.29	0.35	0.02	0.05	0.07	<0.02	<0.02	0.13	0.13	0.08	0.11	0.15	0.14	0.12	0.16	0.14	0.14	0.03	0.04	0.07	0.03	<0.02
Iron	18	5.1	4.5	5.2	6.4	3.8	3.1	3.7	5.4	2	3	1.3	2.9	6.8	4.7	2.5	2.8	2.2	2.8	5.1	6.3	7.6	6.4	4.8
Lead	<0.01	<0.01	<0.01	0.09	<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	0.04	0.05	0.02	0.03	0.05
Manganese	20	12	5.6	13	1.2	1.5	1.7	1.6	1.8	1.3	1.4	1.3	1.2	2.1	2.8	1.5	2.1	1.8	1.9	10	11	5.4	12	5.1
Mercury	<0.01	0.01	-[2]	-[2]	0.07	0.03	0.06	0.13	0.14	0.02	0.02	0.03	0.02	0.02	0.06	0.31	0.05	0.03	0.03	0.06	0.04	0.01	0.03	0.02
Molybdenum	0.32	0.23	0.27	0.16	<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
Nickel	0.11	0.11	0.02	0.06	0.13	0.11	0.12	0.12	0.13	0.04	0.04	0.02	0.02	0.03	0.12	0.07	0.1	0.09	0.08	0.12	0.12	0.1	0.12	0.13
Selenium	0.33	0.31	0.28	0.22	0.16	0.2	0.17	0.21	0.19	0.14	0.18	0.13	0.15	0.16	0.19	0.22	0.19	0.21	0.15	0.46	0.42	0.26	0.22	0.21
Silver	<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	<0.01	<0.01	<0.01	<0.01
Thallium	<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	<0.02	<0.02	<0.02	<0.02
Tin	<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	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Titanium	0.34	0.29	0.14	0.23	0.28	0.32	0.25	0.26	0.37	0.24	0.21	0.16	0.22	0.19	0.36	0.26	0.34	0.29	0.24	0.33	0.27	0.29	0.26	0.3
Uranium	0.13	0.03	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	0.07	0.12	0.04	0.17	0.04
Zinc	25	24	18	15	16	20	18	21	21	17	23	17	20	20	25	18	23	22	23	26	23	43	34	38
Physical Properties																								
Age (years)	19	16	12, 16	17, 9	18	10	23	23	19	8	15	18	16	7	22	19	10	9	10	32	34	10	17	15
Moisture (%)	58.6	46.0	55.2	47.0	48.6	51.1	51.6	54.8	49.2	50.4	49.3	51.9	51.8	52.8	55.33	52.55	56.08	52	50.67	63.0	60.4	53.3	54.7	57.2
Radionuclides																								
Lead-210 (Bq/g)	<0.003	<0.002	<0.003	<0.003	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<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
Polonium-210 (Bq/g)	0.004	0.002	0.002	0.002	0.0005	<0.0005	<0.0005	0.0006	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	0.002	0.002	0.007	0.002	0.004
Radium-226 (Bq/g)	<0.001	<0.002	<0.0009	<0.002	<0.005	<0.0008	<0.0009	<0.001	0.002	<0.001	<0.0009	<0.001	<0.001	0.001	<0.0009	<0.0009	0.0008	<0.0008	<0.0008	0.001	0.003	<0.001	<0.001	0.001
Thorium-230 (Bq/g)	<0.002	<0.003	<0.002	<0.003	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.003	0.002
Trace Elements																								
Antimony	<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	<0.05	<0.05	<0.05	<0.05
Arsenic	0.1	0.11	0.14	0.08	0.09	0.11	0.15	0.04	0.06	0.13	0.08	0.05	0.06	0.18	0.06	0.11	0.06	0.05	0.1	0.13	0.13	0.09	0.04	0.04
Beryllium	<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	<0.01	<0.01	<0.01	<0.01
Cobalt	0.02	0.02	<0.01	0.01	0.02	0.02	0.02	0.02	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.02
Strontium	88	81	36	40	40	39	39	46	42	38	42	33	34	37	57	39	53	51	43	113	112	95	89	114
Vanadium	<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	0.18	0.26	0.07	0.09	0.11

APPENDIX B, TABLE 20

Detailed fish bone chemistry data collected from the Cochrane River for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Cochrane River																						
	Lake Whitefish					Lake Whitefish					Northern Pike									White Sucker			
	2012					2015					2011					2012				2012			
	SP1-1	SP2-1		SP3-1		HG1-1		GN2-1		GN1-1	AN1-1		AN2-1			SP1-2	SP4-1		SP6-1	SP1-2			SP3-1
	LW01	LW01	LW02	LW01	LW02	LW08	LW09	LW02	LW03	LW02	NP06	NP07	NP01	NP02	NP03	NP01	NP02	NP03	NP01	WSU02	WSU03	WSU04	WSU12
Metals																							
Aluminum	1.7	1.7	<0.5	1.3	2.2	<0.5	1.3	4.3	1.1	1.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	<0.5
Barium	2.7	4.2	2.4	12	8.2	0.88	4.7	7.9	3	6.4	3.6	2.9	2.8	3.2	3.8	2.7	3.8	3.1	2.5	4.1	6.4	4.8	3.7
Boron	<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	<0.5	<0.5	<0.5
Cadmium	<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	<0.01	<0.01	<0.01
Chromium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.5	0.3	<0.2	<0.2	<0.2	<0.2	<0.2
Copper	0.12	0.13	0.11	0.15	0.11	0.14	0.1	0.17	0.12	0.18	0.2	0.14	0.16	0.21	0.16	0.09	0.11	0.12	0.13	0.22	0.24	0.28	0.28
Iron	6.5	4.8	3.6	3.7	3.8	2.8	3.3	4.8	3.3	4.2	2.5	2.7	4	23	3.9	1.9	4.9	4	2	3.1	3.9	4.7	3.2
Lead	0.03	0.03	<0.01	0.04	0.02	<0.01	0.01	0.04	<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
Manganese	7.6	6	3	13	10	1.9	8.8	19	6.2	12	24	24	21	16	23	9.2	12	15	10	11	17	13	16
Mercury	<0.01	-[2]	0.01	<0.01	0.02	0.03	0.11	0.04	0.07	<0.01	0.07	0.04	0.02	0.03	0.04	<0.01	0.02	0.02	0.01	<0.01	<0.01	<0.01	<0.01
Molybdenum	<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	0.07	0.1	0.18	0.24
Nickel	0.04	0.07	0.03	0.06	0.03	0.08	0.08	0.08	0.05	0.13	0.09	0.09	0.1	0.07	0.09	0.02	0.04	0.03	0.03	0.04	0.06	0.05	0.05
Selenium	0.19	0.2	0.16	0.34	0.3	0.15	0.29	0.09	0.04	0.36	0.19	0.17	0.17	0.2	0.18	0.11	0.1	0.1	0.12	0.16	0.24	0.27	0.23
Silver	<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	<0.01	<0.01	<0.01
Thallium	<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	<0.02	<0.02	<0.02
Tin	<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	<0.02	<0.02	<0.02
Titanium	0.24	0.26	0.21	0.23	0.23	0.24	0.28	0.29	0.29	0.38	0.17	0.21	0.22	0.38	0.31	0.21	0.21	0.22	0.2	0.24	0.3	0.24	0.31
Uranium	0.08	0.02	<0.01	0.08	0.06	<0.01	0.04	0.07	0.04	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.02	0.02	0.02
Zinc	24	42	28	26	19	23	30	38	28	36	61	63	69	55	90	37	24	54	43	15	21	20	21
Physical Properties																							
Age (years)	18	19	8	22	25	21	21	21	18	16	9	6	4	4	6	8	14	11	8	13	16	16	16
Moisture (%)	50.7	56.4	51.5	53.4	49.8	50.67	53.77	54.64	58.04	57.85	59.4	55.3	58.1	61.0	56.5	53.7	52.9	49.2	55.7	47.9	45.5	50.6	35.8
Radionuclides																							
Lead-210 (Bq/g)	<0.002	<0.004	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.003	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Polonium-210 (Bq/g)	0.002	0.002	0.001	0.003	0.002	<0.0005	0.0009	0.002	<0.0005	0.0007	0.002	0.001	0.003	0.002	0.001	0.002	<0.0005	0.0008	0.002	0.005	0.003	0.004	0.005
Radium-226 (Bq/g)	<0.001	<0.001	0.001	<0.001	0.002	<0.0008	<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	0.003	<0.002	<0.001	<0.002
Thorium-230 (Bq/g)	<0.002	<0.002	<0.002	<0.002	<0.003	<0.002	0.003	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.003	<0.002	<0.003	<0.002	<0.003	<0.003	<0.003	<0.003
Trace Elements																							
Antimony	<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	<0.05	<0.05	<0.05
Arsenic	0.03	0.12	0.06	0.1	0.16	0.1	0.02	0.04	<0.02	0.1	0.03	0.04	0.04	0.03	0.04	0.03	0.03	0.04	0.03	0.03	0.05	0.08	0.08
Beryllium	<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	<0.01	<0.01	<0.01
Cobalt	0.01	0.02	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.02	0.02	<0.01	0.01	<0.01	<0.01	0.01	0.01	0.02	0.02
Strontium	80	116	79	118	87	43	90	117	82	86	47	38	43	42	52	34	46	35	34	50	74	60	65
Vanadium	0.1	0.06	<0.05	0.18	0.16	<0.05	<0.05	0.18	<0.05	0.1	<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

[1] All concentrations and activity levels are presented in µg/g on a wet weight basis, except when specified otherwise.

[2] Mercury analyses were not performed on these samples by SRC laboratories due to these samples being disposed of by SRC.

APPENDIX B, TABLE 21

Detailed fish bone chemistry data collected from Crackingstone Inlet for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Crackingstone Inlet														
	Lake Trout														
	2011					2012					2015				
	SP1-1					SP2-1					GN1-1				
	LT01	LT02	LT03	LT04	LT05	LT01	LT02	LT03	LT04	LT06	LT01	LT02	LT03	LT04	LT05
Metals															
Aluminum	<0.5	<0.5	<0.5	<0.5	1.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.8
Barium	1.1	0.76	1.1	0.83	1.1	1.4	0.88	0.78	0.93	1.4	1.5	1.8	1.2	1.2	0.84
Boron	<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
Cadmium	<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
Chromium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Copper	0.18	0.12	0.11	0.17	0.17	0.15	0.15	0.12	0.18	0.16	0.14	0.23	0.16	0.2	0.18
Iron	3.5	2.2	2.2	6	10	7.2	4.8	4.9	2.4	2.9	3.5	9.1	7	4.2	3.6
Lead	<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
Manganese	0.9	0.6	0.89	0.92	0.71	0.53	0.84	0.53	1.3	1.3	1	1.6	1.1	1.1	0.83
Mercury	0.03	0.07	0.03	0.03	0.03	0.01	0.03	0.05	0.02	0.01	0.05	0.09	<0.01	0.05	0.03
Molybdenum	<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
Nickel	0.07	0.08	0.07	0.06	0.08	0.06	0.05	0.06	0.05	0.06	0.07	0.18	0.15	0.13	0.14
Selenium	0.15	0.11	0.09	0.18	0.16	0.13	0.14	0.13	0.15	0.15	0.08	0.12	0.12	0.12	0.12
Silver	<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
Thallium	0.02	0.02	0.02	<0.02	0.03	0.02	0.03	<0.02	0.02	0.02	0.05	0.07	0.03	0.05	0.05
Tin	<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
Titanium	0.17	0.19	0.23	0.15	0.4	0.28	0.24	0.24	0.3	0.32	0.35	0.54	0.35	0.35	0.34
Uranium	<0.01	<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
Zinc	21	19	22	19	23	29	29	22	26	30	24	61	27	30	19
Physical Properties															
Age (years)	14	19	14	14	-	13	16	23	13	9	15	24	19	16	10
Moisture (%)	48.2	47.8	51.1	50.6	49.9	49.0	52.9	51.6	55.8	54.0	43.95	58.14	53.32	53.32	50.7
Radionuclides															
Lead-210 (Bq/g)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.004	<0.002	<0.002	<0.002	<0.002
Polonium-210 (Bq/g)	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Radium-226 (Bq/g)	<0.0009	<0.001	<0.0008	<0.0009	<0.001	<0.001	<0.0009	<0.001	<0.0008	<0.0009	0.001	<0.0008	<0.0009	<0.0009	0.001
Thorium-230 (Bq/g)	<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
Trace Elements															
Antimony	<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
Arsenic	0.26	0.34	0.29	0.26	0.16	0.34	0.39	0.28	0.36	0.19	0.13	0.12	0.13	0.19	0.22
Beryllium	<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
Cobalt	0.01	0.01	0.01	<0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.03	0.02	0.02	0.02
Strontium	77	60	85	49	72	116	74	71	94	120	82	131	102	88	68
Vanadium	<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

Parameter[1]	Crackingstone Inlet														
	Lake Whitefish														
	2011					2012					2015				
	SP1-1					SP1-1			SP1-3		GN1-1	GN2-1			
	LW06	LW07	LW08	LW09	LW10	LW01	LW02	LW03	LW01	LW02	LW06	LW01	LW02	LW03	LW04
Metals															
Aluminum	2.7	1.4	1	1.9	2.6	0.9	1.2	<0.5	2	1.3	0.7	1.1	0.7	0.7	<0.5
Barium	14	9.3	3.4	12	18	13	4.1	3.3	14	12	5.3	14	8	8.4	4.1
Boron	<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
Cadmium	<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
Chromium	0.2	<0.2	0.2	<0.2	<0.2	<0.2	<0.2	0.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Copper	0.12	0.21	0.14	0.13	0.11	0.15	0.18	0.2	0.22	0.14	0.21	0.14	0.13	0.18	0.17
Iron	5.7	6.7	5.7	5.4	7.6	5.7	3.4	6.4	6.4	3.9	6.2	7.5	4.9	5.7	5
Lead	0.08	<0.01	0.01	0.02	0.04	0.02	0.03	0.02	0.04	0.03	0.03	0.02	0.06	0.02	0.01
Manganese	6.6	6.4	4	7.3	13	5.4	9.6	3.2	7.5	4.9	10	7.2	5.6	9.3	3.6
Mercury	<0.01	<0.01	0.04	<0.01	0.02	<0.01	0.01	0.01	<0.01	<0.01	0.01	<0.01	0.02	<0.01	0.02
Molybdenum	<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
Nickel	0.15	0.18	0.17	0.12	0.13	0.06	0.04	0.05	0.05	0.05	0.18	0.2	0.21	0.16	0.17
Selenium	0.15	0.19	0.45	1.8	0.24	0.26	0.2	0.37	0.77	0.18	0.75	1.40	0.70	0.11	0.28
Silver	<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
Thallium	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	0.04	<0.02
Tin	<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
Titanium	0.3	0.31	0.31	0.31	0.37	0.3	0.17	0.22	0.25	0.27	0.37	0.42	0.36	0.39	0.34
Uranium	0.19	0.16	0.4	1.8	0.29	0.25	0.54	0.28	0.96	0.24	3.20	2.30	0.67	0.19	0.27
Zinc	38	49	34	36	37	32	19	52	30	26	38	42	50	40	39
Physical Properties															
Age (years)	14	8	13	14	19	12	12	6	16	13	11	10	11	9	8
Moisture (%)	48.1	56.5	50.4	55.4	55.3	52.1	52.4	62.7	58.0	59.4	47.78	49.56	48.21	50.1	50.52
Radionuclides															
Lead-210 (Bq/g)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.004	<0.002	<0.002	0.004	0.003	<0.002	<0.002	<0.002
Polonium-210 (Bq/g)	0.002	0.001	0.001	0.002	0.0007	0.002	0.002	0.001	0.003	0.004	0.002	0.001	0.001	0.001	0.0009
Radium-226 (Bq/g)	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	0.005	<0.0009	0.003	0.001	0.002	0.005	0.002	0.002	<0.0009
Thorium-230 (Bq/g)	<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
Trace Elements															
Antimony	<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
Arsenic	0.27	0.14	0.16	0.18	0.2	0.25	0.03	0.13	0.48	0.51	0.18	0.02	0.08	0.17	0.05
Beryllium	<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
Cobalt	0.03	0.03	0.02	0.02	0.03	0.02	0.02	0.02	0.02	0.01	0.04	0.04	0.03	0.03	0.03
Strontium	264	233	175	211	286	232	76	155	197	187	196	271	238	213	206
Vanadium	<0.05	<0.05	<0.05	2.00	0.24	0.08	0.05	0.11	1.00	0.10	1.40	0.51	1.00	0.08	<0.05

Parameter[1]	Crackingstone Inlet									
	Northern Pike									
	2011					2012				
	SP1-1					AN1-1				
	NP01	NP02	NP03	NP04	NP05	NP01	NP02	NP03	NP04	NP05
Metals										
Aluminum	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Barium	7.3	6	4.8	6.7	5.6	5.2	8	5.5	4.6	7.8
Boron	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Cadmium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Copper	0.15	0.12	0.16	0.13	0.14	0.12	0.2	0.17	0.22	0.23
Iron	4.9	3.9	2.8	3.9	4	2.5	5.9	3.6	2.2	5.7
Lead	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Manganese	16	12	9	11	9.5	13	13	9.8	8.8	17
Mercury	0.02	<0.01	0.01	0.02	0.02	<0.01	0.02	<0.01	<0.01	0.02
Molybdenum	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nickel	0.09	0.09	0.07	0.12	0.11	0.05	0.08	0.06	0.05	0.05
Selenium	0.32	0.33	0.23	0.24	0.28	0.27	0.28	0.22	0.22	0.42
Silver	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Thallium	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Tin	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Titanium	0.27	0.23	0.21	0.32	0.31	0.25	0.28	0.28	0.26	0.23
Uranium	0.29	0.2	0.05	0.15	0.28	0.21	0.17	0.06	0.09	0.16
Zinc	61	68	70	57	55	42	63	57	65	53
Physical Properties										
Age (years)	5	5	5	7	9	8	6	6	5	7
Moisture (%)	59.1	58.4	55.5	55.3	55.6	55.9	56.7	56.0	53.4	54.8
Radionuclides										
Lead-210 (Bq/g)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.002	<0.002	<0.002
Polonium-210 (Bq/g)	0.001	0.0008	<0.0005	<0.0005	0.0008	0.0006	0.001	<0.0005	<0.0005	0.001
Radium-226 (Bq/g)	0.002	<0.001	<0.001	0.005	0.002	<0.001	0.002	<0.001	<0.001	0.002
Thorium-230 (Bq/g)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.003	<0.003
Trace Elements										
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	0.08	0.17	0.15	0.12	0.14	0.16	0.12	0.13	0.13	0.1
Beryllium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	0.02	0.01	0.01	0.02	0.02	0.01	0.01	0.02	0.01	0.01
Strontium	81	85	86	113	98	75	92	92	80	82
Vanadium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.08	<0.05	<0.05	0.05

[1] All concentrations and activity levels are presented in μg/g on a wet weight basis, except when specified otherwise.

APPENDIX B, TABLE 22

Detailed fish bone chemistry data collected from the Fond du Lac River for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	**Fond du Lac River**																													
	Longnose Sucker								**Lake Trout**												**Lake Whitefish**									
	2011					**2012**			**2011**		**2012**					**2015**					**2011**					**2012**				
	SP5-1			**SP6-2**		**SP7-1**			**SP5-1**	**SP7-2**	**SP1-1**		**SP4-1**	**SP6-1**	**SP7-1**	**GN2-1**					**SP4-1**					**SP1-1**	**SP3-1**		**SP3-2**	**SP7-1**
	LSU06	**LSU07**	**LSU11**	**LSU01**	**LSU02**	**LSU05, LSU06**	**LSU07**	**LSU08**	**LT08**	**LT15**	**LT01**	**LT02**	**LT02**	**LT01**	**LT01**	**LT02**	**LT03**	**LT04**	**LT05**	**LT06**	**LW01**	**LW02**	**LW03**	**LW04**	**LW05**	**LW03**	**LW01**	**LW02, LW03**	**LW04**	**LW02**
Metals																														
Aluminum	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	1.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.9	1.9	4.1	4.5	1.6	0.7	0.5	0.8	1.1	1.1
Barium	2.5	7.3	7.7	3.9	3.5	5.7	3.8	5.1	0.91	0.85	1.2	0.87	1.1	1.2	1.2	0.76	0.9	0.72	0.9	0.68	13	18	14	11	5.9	4.2	3.7	3	4.8	4.8
Boron	<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	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Cadmium	<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	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.3	<0.2	<0.2	<0.2	<0.2
Copper	0.24	0.19	0.2	0.24	0.21	0.33	0.34	0.36	0.1	0.15	0.12	0.18	0.18	0.16	0.14	0.26	0.23	0.19	0.22	0.18	0.1	0.09	0.1	0.07	0.1	0.16	0.19	0.15	0.19	0.11
Iron	3.5	6.6	5.9	4	3.4	3.8	6.1	4.3	2.5	6.1	5.2	2.8	3.3	3.3	3.6	4.9	5.9	4.3	6.8	3.7	5.4	4	4.6	7	7.3	4.9	4.9	6.4	4.7	4.1
Lead	<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	<0.01	0.01	0.02	0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.01
Manganese	8.3	22	29	20	11	14	17	20	2.4	2.3	3.3	1.6	2.2	3.5	2	2.3	1.4	1.4	2	1.3	12	23	19	27	15	5.8	5.3	6.8	7.1	11
Mercury	0.02	0.01	0.01	0.04	0.03	<0.01	0.02	0.01	0.23	0.23	0.05	0.04	0.04	0.03	0.04	0.08	0.09	0.06	0.05	0.03	0.02	0.01	0.02	0.04	0.01	0.03	0.02	0.03	0.08	0.2
Molybdenum	0.23	0.31	0.33	0.16	0.23	0.36	0.28	0.34	<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	<0.05	<0.05
Nickel	0.08	0.2	0.15	0.1	0.08	0.13	0.08	0.1	0.08	0.09	0.1	0.07	0.16	0.06	0.08	0.12	0.13	0.11	0.22	0.16	0.09	0.08	0.09	0.13	0.1	0.09	0.08	0.06	0.08	0.09
Selenium	0.32	0.36	0.32	0.34	0.28	0.25	0.23	0.31	0.15	0.21	0.19	0.09	0.12	0.17	0.16	0.19	0.19	0.13	0.15	0.12	0.42	0.32	0.37	0.55	0.26	0.22	0.2	0.26	0.2	0.21
Silver	<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	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Thallium	<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	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Tin	<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	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Titanium	0.17	0.55	0.34	0.33	0.15	0.29	0.22	0.24	0.25	0.25	0.56	0.31	0.24	0.26	0.32	0.24	0.31	0.35	0.38	0.28	0.25	0.24	0.34	0.29	0.36	0.27	0.2	0.36	0.21	0.28
Uranium	0.02	0.05	0.05	0.03	0.03	0.03	0.03	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	0.06	0.18	0.33	0.13	0.06	0.01	0.01	0.02	0.05	0.22
Zinc	17	37	33	18	17	30	17	23	26	24	19	22	19	21	25	21	20	18	24	20	33	28	28	35	39	52	39	50	32	46
Physical Properties																														
Age (years)	13	19	16	27	19	14, 16	26	23	21	21	16	9	7	8	10	11	11	10	11	10	16	16	16	26	32	12	9	7, 9	25	21
Moisture (%)	46.7	51.0	52.3	49.8	42.5	51.6	44.0	43.1	51.4	58.7	46.9	54.6	56.4	50.6	51.5	53.39	54.47	49.26	47.77	50.37	62.5	57.9	48.5	50.1	56.1	51.2	48.2	52.2	53.7	56.8
Radionuclides																														
Lead-210 (Bq/g)	<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	<0.002	0.002	<0.002	<0.002	0.004	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Polonium-210 (Bq/g)	0.002	0.005	0.003	0.003	0.001	0.002	0.003	0.003	0.001	0.0006	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	0.002	0.002	0.002	0.002	0.004	0.0008	0.001	0.002	0.001	0.002
Radium-226 (Bq/g)	<0.001	<0.001	<0.001	<0.001	<0.002	0.006	<0.001	<0.002	<0.001	<0.001	<0.0009	<0.0008	<0.0009	0.002	<0.001	<0.0008	0.002	0.001	<0.0008	<0.0008	0.002	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0009	<0.001	0.007
Thorium-230 (Bq/g)	<0.002	<0.003	<0.002	<0.003	<0.003	<0.002	<0.003	<0.003	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.003	<0.002	<0.002	<0.002	<0.002	<0.003	<0.002	<0.002	<0.002	<0.002	0.004	<0.002	<0.003	<0.002
Trace Elements																														
Antimony	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	0.18	0.09	0.1	0.09	0.11	0.12	0.1	0.06	0.11	0.05	0.12	0.08	0.07	0.11	0.11	0.13	0.11	0.14	0.09	0.03	0.16	0.19	0.17	0.23	0.09	0.12	0.28	0.17	0.05	0.05
Beryllium	<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	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	0.01	0.03	0.03	0.02	0.01	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.02	0.02	0.03	0.02	0.01	0.01	0.02	0.02
Strontium	45	127	119	61	48	87	57	78	58	58	57	49	48	51	62	39	38	42	44	34	98	122	133	156	121	129	108	95	106	151
Vanadium	<0.05	<0.05	<0.05	<0.05	<0.05	0.08	0.06	0.08	<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	0.18	0.21	0.41	<0.05	<0.05	<0.05	<0.05	0.07	0.08

APPENDIX B, TABLE 22

Detailed fish bone chemistry data collected from the Fond du Lac River for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	**Fond du Lac River**																								
	Lake Whitefish					**Northern Pike**										**White Sucker**									
	2015					**2011**					**2012**					**2011**					**2012**				
	GN7-1		**GN4-2**	**GN9-1**	**GN7-1**	**SP4-1**					**SP3-2**		**SP4-1**	**SP5-1**	**SP6-1**	**SP5-1**					**SP3-2**			**SP6-1**	**SP7-1**
	LW19	**LW20**	**LW15**	**LW14**	**LW21** **LW22**	**NP06**	**NP07**	**NP08**	**NP09**	**NP10**	**NP01**	**NP02**	**NP01**	**NP01**	**NP05**	**WSU01**	**WSU02**	**WSU03**	**WSU04**	**WSU05**	**WSU07**	**WSU08**	**WSU09**	**WSU03**	**WSU03**
Metals																									
Aluminum	1.4	2.6	1.8	2.4	0.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	0.8	<0.5	<0.5	<0.5	<0.5	<0.5
Barium	8.2	8.3	10	7.9	4.4	3.4	3.2	2.8	3.5	3.5	3.4	2.9	4.3	3.2	3.7	4.2	4.1	5.2	4.3	8.3	5.2	4.2	4.4	4.8	5.8
Boron	<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	<0.5	<0.5	<0.5	<0.5	<0.5
Cadmium	<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	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Copper	0.26	0.15	0.16	0.3	0.29	0.17	0.15	0.13	0.14	0.15	0.16	0.18	0.17	0.14	0.17	0.26	0.4	0.28	0.19	0.27	0.32	0.38	0.51	0.33	0.28
Iron	5.2	5.1	6	5.9	5.2	6.4	3.2	3.8	4.4	3.5	3.7	4.6	3.9	3.5	2.7	5.5	3.8	5.4	2.4	6.6	9.4	4.9	5	3.5	5.1
Lead	0.01	0.01	0.01	0.02	0.01	<0.01	<0.01	<0.01	<0.01	0.03	<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
Manganese	15	21	41	13	13	31	21	17	24	23	24	20	27	25	27	17	18	23	19	34	14	14	14	15	20
Mercury	0.02	0.03	0.03	0.02	<0.01	0.01	0.03	0.04	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.02	0.01	0.05	<0.01	<0.01	<0.01	<0.01	<0.01
Molybdenum	<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	0.07	0.1	0.16	0.21	0.09	0.23	0.1	0.16	0.24	0.15
Nickel	0.17	0.14	0.16	0.14	0.13	0.09	0.09	0.09	0.08	0.08	0.09	0.07	0.1	0.08	0.08	0.08	0.08	0.13	0.09	0.12	0.07	0.07	0.08	0.07	0.08
Selenium	0.21	0.24	0.46	0.31	0.19	0.2	0.24	0.17	0.18	0.22	0.14	0.07	0.18	0.18	0.17	0.27	0.31	0.31	0.17	0.2	0.21	0.17	0.21	0.21	0.19
Silver	<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	<0.01	<0.01	<0.01	<0.01	<0.01
Thallium	<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	<0.02	<0.02	<0.02	<0.02	<0.02
Tin	<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	<0.02	<0.02	<0.02	<0.02	<0.02
Titanium	0.33	0.27	0.44	0.27	0.38	0.35	0.27	0.24	0.28	0.24	0.38	0.29	0.29	0.32	0.36	0.31	0.21	0.24	0.21	0.34	0.22	0.2	0.22	0.2	0.23
Uranium	0.13	0.23	0.04	0.11	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.03	0.02	0.08	0.06	0.01	0.02	0.01	0.02	0.02
Zinc	26	17	34	23	54	67	62	62	55	66	63	52	63	54	59	20	17	22	17	26	20	17	18	17	21
Physical Properties																									
Age (years)	19	16	11	15	5, 5	3	5	9	5	3	8	6	8	6	3	14	20	13	14	26	12	10	9	10	-
Moisture (%)	47.82	51.25	64.24	53.78	58.71	56.9	55.9	54.2	60.4	62.7	55.8	52.0	52.8	58.1	48.4	43.0	51.5	45.2	49.7	42.2	38.3	44.7	41.4	45.4	49.0
Radionuclides																									
Lead-210 (Bq/g)	<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	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Polonium-210 (Bq/g)	0.0008	0.001	0.002	0.001	0.0007	0.001	0.001	0.002	0.002	0.003	0.0008	0.001	0.001	0.002	0.002	0.002	0.003	0.005	0.007	0.001	0.004	0.005	0.003	0.006	0.004
Radium-226 (Bq/g)	<0.001	0.001	0.001	0.002	<0.0008	0.002	<0.001	0.001	0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001
Thorium-230 (Bq/g)	<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	<0.003	<0.002	<0.003	<0.002	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Trace Elements																									
Antimony	<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	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	0.16	0.15	0.03	0.16	0.06	0.02	0.07	0.05	0.02	0.03	0.05	<0.02	0.04	0.04	<0.02	0.05	0.05	0.12	0.07	0.04	0.07	0.04	0.08	0.08	0.06
Beryllium	<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	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	0.03	0.02	0.03	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.02	0.03	0.02	0.03	0.02	0.02	0.01	0.02	0.02
Strontium	92	90	171	96	94	51	46	44	48	48	57	47	60	46	55	65	54	77	68	86	69	60	70	65	66
Vanadium	0.1	0.11	0.12	0.09	0.08	<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

[1] All concentrations and activity levels are presented in µg/g on a wet weight basis, except when specified otherwise.

APPENDIX B, TABLE 23

Detailed fish bone chemistry data collected from Waterbury Lake for the EARMP technical program, 2011, 2012, and 2015.

Parameter [1]	Waterbury Lake																				
	Longnose Sucker						Lake Trout														
	2011					2012	2011					2012					2015				
	SP8-1					SP7-1	SP8-1					AN2-1					AN1-1				
	LSU11, LSU12	LSU13	LSU14	LSU15, LSU16	LSU17, LSU18	WSU12, LSU13, LSU23	LT03	LT04	LT05	LT06	LT07	LT01	LT02	LT03	LT04	LT05	LT01	LT02	LT03	LT04	LT05
Metals																					
Aluminum	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	1.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Barium	6.6	5.1	3.7	5.2	4.1	3.5	1.4	1.3	1.3	0.92	1.2	0.83	1.3	1.1	1.4	1.1	1.2	1.3	1.3	1.4	1.3
Boron	<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	<0.5
Cadmium	<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	<0.01
Chromium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Copper	0.2	0.16	0.21	0.22	0.17	0.18	0.14	0.19	0.17	0.18	0.1	0.11	0.14	0.13	0.14	0.22	0.18	0.27	0.24	1.5	0.14
Iron	3.3	3.6	4.5	4.1	2.8	7.2	14	5.9	5.5	3.6	2.7	3.1	2.9	5.9	4	4.3	3.6	3.6	3.9	4	2.8
Lead	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.07	<0.01	<0.01	<0.01	<0.01	<0.01	0.06	<0.01	<0.01
Manganese	97	53	54	49	50	21	3.9	3.8	3.7	2.5	2.7	2.5	3.4	2.2	2.3	2.4	1.7	2.7	3.4	4	2.4
Mercury	<0.01	0.01	<0.01	<0.01	0.01	<0.01	0.1	0.06	0.1	0.08	0.1	0.07	<0.01	0.03	<0.01	<0.01	0.14	0.06	0.04	0.03	0.03
Molybdenum	0.19	0.15	0.43	0.22	0.25	0.13	<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
Nickel	0.09	0.07	0.07	0.07	0.07	0.04	0.11	0.07	0.06	0.07	0.06	0.05	0.04	0.03	0.04	0.04	0.11	0.11	0.15	0.14	0.09
Selenium	0.35	0.25	0.19	0.19	0.2	0.16	0.23	0.14	0.13	0.14	0.15	0.21	0.15	0.12	0.12	0.16	0.14	0.16	0.18	0.19	0.14
Silver	<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	<0.01
Thallium	<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	<0.02
Tin	<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	<0.02
Titanium	0.31	0.21	0.17	0.19	0.2	0.15	0.28	0.27	0.22	0.21	0.31	0.28	0.25	0.18	0.23	0.18	0.32	0.38	0.34	0.33	0.35
Uranium	<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	<0.01	<0.01
Zinc	26	21	21	25	23	19	28	26	23	25	21	25	25	24	24	24	22	24	29	24	21
Physical Properties																					
Age (years)	11, 8	13	15	11, 14	13, 10	6, 8, 6	17	11	16	12	20	26	12	12	-	9	13	10	11	7	12
Moisture (%)	58.6	58.8	54.4	57.0	61.2	57.5	55.0	54.2	53.1	53.1	51.8	52.4	54.1	50.4	50.0	51.7	50.01	52.35	51.68	52.91	51.5
Radionuclides																					
Lead-210 (Bq/g)	<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	<0.002	<0.002
Polonium-210 (Bq/g)	0.001	0.002	0.002	0.002	0.0009	0.006	0.0006	<0.0005	<0.0005	<0.0005	0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Radium-226 (Bq/g)	<0.001	0.004	<0.001	<0.001	<0.001	0.002	0.001	<0.0008	<0.001	0.002	0.001	0.001	<0.001	<0.0009	0.001	<0.0009	<0.0009	<0.0008	<0.0009	0.001	<0.001
Thorium-230 (Bq/g)	<0.002	<0.002	0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<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
Trace Elements																					
Antimony	<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	<0.05
Arsenic	0.04	0.03	0.03	0.06	0.05	0.03	0.05	0.1	0.09	0.1	0.1	0.03	0.05	0.13	0.12	0.1	0.1	0.08	0.07	0.06	0.04
Beryllium	<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	<0.01
Cobalt	0.02	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	0.02	0.02	0.02	0.02	0.02
Strontium	201	143	133	148	128	83	132	129	109	95	111	105	132	119	112	115	125	124	120	124	112
Vanadium	<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	<0.05

APPENDIX B, TABLE 23

Detailed fish bone chemistry data collected from Waterbury Lake for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Waterbury Lake																					
	Lake Whitefish													Northern Pike								White Sucker
	2011			2012					2015					2011			2012					2012
	SP8-1			SP4-1		SP7-1			GN1-1			GN2-3		SP1-1	SP8-1		SP2-1	SP7-1				SP7-1
	LW08	LW09	LW10	LW01	LW03	LW06	LW07	LW08	LW04 LW04 (GN2-1)	LW03 LW03 (GN2-1)	LW02 LW05	LW14	LW15	NP03	NP01	NP02	NP01	NP01	NP02	NP03	NP04, NP05	WSU09, WSU10, WSU11
Metals																						
Aluminum	1.4	2	1.4	<0.5	0.7	0.6	<0.5	<0.5	1.3	1.8	2.4	3.6	2	<0.5	0.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Barium	6.6	6.4	4.3	3.4	4.7	6.5	4.1	4.3	7.1	5.7	6.1	7.9	4.3	4.2	4.1	3.6	3.5	3.6	4.8	2.4	3.4	5
Boron	<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	<0.5	<0.5
Cadmium	<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	<0.01	<0.01
Chromium	<0.2	0.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Copper	0.13	0.03	0.04	0.09	0.1	0.14	0.09	0.16	0.21	0.16	0.16	0.15	0.19	0.17	0.12	0.12	0.16	0.24	0.19	0.24	0.22	0.39
Iron	4	6.3	8.7	3.1	3.3	3.7	2.8	4.8	5.4	6.7	7.6	8.1	13	3.9	2.4	2.7	3.9	4	3.6	2.7	2.6	5.3
Lead	0.02	0.02	0.02	0.01	0.01	<0.01	<0.01	0.01	0.01	0.02	0.02	0.05	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Manganese	15	28	20	16	24	57	19	32	41	31	30	28	22	15	24	21	20	34	27	26	30	39
Mercury	0.02	0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.01	<0.01	0.01	0.02	0.04	0.01	0.01	0.02	0.01	0.04	<0.01	0.01	<0.01
Molybdenum	<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	<0.05	0.36
Nickel	0.07	0.1	0.09	0.03	0.06	0.06	0.05	0.03	0.09	0.1	0.12	0.12	0.08	0.09	0.12	0.1	0.09	0.07	0.08	0.05	0.17	0.06
Selenium	0.59	0.55	0.71	0.14	0.18	0.16	0.17	0.17	0.6	0.74	0.68	0.61	0.62	0.21	0.16	0.14	0.18	0.19	0.18	0.2	0.18	0.16
Silver	<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	<0.01	<0.01
Thallium	<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	<0.02	<0.02
Tin	<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	<0.02	<0.02
Titanium	0.21	0.25	0.3	0.19	0.36	0.3	0.26	0.22	0.28	0.35	0.4	0.33	0.3	0.22	0.28	0.25	0.33	0.35	0.45	0.2	0.22	0.24
Uranium	0.01	0.02	0.01	<0.01	0.02	<0.01	0.01	<0.01	0.01	0.02	0.01	0.02	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc	24	25	27	33	39	55	39	43	24	22	28	21	19	45	51	51	48	66	70	50	44	23
Physical Properties																						
Age (years)	16	19	12	18	19	8	10	8	8, 11	7, 15	10, 14	26	24	9	8	4	9	3	9	2	2, 2	6, 6, 6
Moisture (%)	62.3	58.1	63.7	52.8	44.5	56.4	55.0	52.3	55.46	58.83	52.69	55.84	59.51	53.6	53.2	55.1	56.9	58.6	52.3	58.6	56.7	58.8
Radionuclides																						
Lead-210 (Bq/g)	<0.002	0.004	<0.002	0.002	0.003	<0.002	<0.002	<0.002	0.003	<0.002	<0.002	0.004	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Polonium-210 (Bq/g)	0.003	0.007	0.005	0.003	0.003	0.002	0.002	0.0007	0.007	0.006	0.005	0.005	0.004	0.002	0.001	0.0012	0.001	0.002	0.002	0.002	0.002	0.005
Radium-226 (Bq/g)	<0.001	0.002	<0.0009	0.002	<0.001	<0.001	<0.001	0.001	0.001	0.001	<0.001	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	0.001
Thorium-230 (Bq/g)	<0.002	<0.002	<0.002	<0.002	<0.003	<0.002	<0.002	<0.002	0.005	<0.002	<0.002	<0.002	<0.002	<0.003	<0.002	0.003	<0.002	0.003	<0.003	<0.002	<0.002	0.004
Trace Elements																						
Antimony	<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	<0.05	<0.05
Arsenic	0.02	0.02	0.03	0.03	0.08	0.06	0.13	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	0.03	0.02	0.05	0.02	0.04	<0.02	0.04
Beryllium	<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	<0.01	<0.01
Cobalt	0.01	0.02	0.01	0.01	0.02	0.02	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.02	0.01	0.02	0.01	0.01	0.02
Strontium	191	179	166	168	260	297	230	194	164	176	199	176	136	102	106	116	134	96	129	75	104	167
Vanadium	0.14	0.25	0.18	0.06	0.06	0.08	0.06	0.08	0.2	0.28	0.14	0.19	0.15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

[1] All concentrations and activity levels are presented in µg/g on a wet weight basis, except when specified otherwise.

APPENDIX B, TABLE 24

Detailed fish bone chemistry data collected from Bobby's Lake for the EARMP technical program, 2009.

Parameter[1]	**Bobby's Lake**								
	NP					**WSU**			
	GN4-1		**HG1-1**		**HG2-1**	**GN2-1**	**HG2-1**		
	NP01	**NP02**	**NP01**	**NP02**	**NP01**	**WSU01**	**WSU03**	**WSU04**	**WSU05**
Metals									
Aluminum	0.31	0.22	0.32	0.43	1.00	0.08	0.37	<0.02	0.15
Barium	3.5	5.7	2.0	7.8	4.5	2.0	6.1	1.9	3.9
Boron	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Cadmium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Copper	0.22	0.22	0.39	0.18	0.21	0.35	0.34	0.26	0.32
Iron	3.6	3.9	4.6	4.1	5.5	5.1	5.7	3.9	4.7
Lead	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Manganese	14.0	20.0	8.8	29.0	19.0	45.0	39.0	22.0	22.0
Molybdenum	<0.05	<0.05	<0.05	<0.05	<0.05	0.12	<0.05	0.06	<0.05
Nickel	0.12	0.08	0.08	0.05	0.12	0.10	0.09	0.06	0.07
Selenium	0.12	0.21	0.18	0.13	0.14	0.27	0.10	0.25	0.14
Silver	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Thallium	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Tin	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Titanium	0.17	0.31	0.21	0.32	0.30	0.33	0.23	0.24	0.25
Uranium	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01
Zinc	45	50	51	74	57	20	19	13	16
Physical Properties									
Age (years)	6	9	9	8	9	12	14	12	11
Ash (%)	23.0	22.8	20.8	25.5	22.6	29.0	30.8	26.7	32.3
Radionuclides									
Lead-210 (Bq/g)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Polonium-210 (Bq/g)	0.002	0.0008	0.0007	0.001	<0.0005	0.001	0.0008	0.0006	0.002
Radium-226 (Bq/g)	0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.002	<0.001	<0.002
Thorium-230 (Bq/g)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.003	<0.003	<0.003	<0.003
Trace Elements									
Antimony	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02
Beryllium	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	0.03	0.01	0.01	0.02	0.01	0.02	0.02	0.01	0.02
Strontium	55	90	50	120	96	58	123	50	90
Vanadium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

[1] All concentrations are presented on a µg/g wet weight basis, unless specified otherwise.

APPENDIX B, TABLE 25

Detailed fish bone chemistry data collected from Cree Lake for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Cree Lake																													
	Longnose Sucker															Lake Trout														
	2011					2012					2015					2011					2012					2015				
	SP9-1					SP1-1			SP1-2	SP1-3	HG1-2		GN5-1	GN7-1	HG1-2	AN1-1				SP1-1	SP3-1		SP4-1			AN2-1				HG1-2
	LSU07	LSU08, LSU09	LSU10, LSU11	LSU12, LSU13	LSU14, LSU15	LSU08, LSU10	LSU09	LSU11, LSU12	LSU09	LSU03	LSU12	LSU13	LSU05	LSU08 LSU09	LSU14 LSU15	LT01	LT02	LT03	LT04	LT01	LT01	LT02	LT07	LT08	LT09	LT01	LT02	LT03	LT04	LT32
Metals																														
Aluminum	1.6	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<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	3.3	<0.5	<0.5	<0.5	<0.5	<0.5	0.8	<0.5	<0.5	<0.5
Barium	9.1	10	6.2	5.6	7.1	8.2	9.1	7.3	7.3	14	8	5.9	9	7.7	9.7	1.3	1.6	2.1	2.3	1.8	1.6	1.4	1.9	1.6	1.9	1.7	1.7	1.6	1.8	1.4
Boron	<0.5	<0.5	<0.5	<0.5	<0.5	1.4	<0.5	1.3	1.3	1.2	<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
Cadmium	<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	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Copper	0.21	0.26	0.34	0.26	1	0.22	0.21	0.27	0.52	0.36	0.26	0.2	0.26	0.28	0.29	0.14	0.1	0.24	0.04	0.31	0.13	0.15	0.12	0.08	0.1	0.3	0.17	0.17	0.25	0.23
Iron	5.9	15	12	11	11	4.8	7.9	8.3	3	3.8	4.8	6.5	13	2.9	4.8	6.3	7.3	5.1	4.5	5.1	4.9	3.4	5.3	2.7	4.5	5.9	5.6	3.2	5	11
Lead	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.01	0.01	0.02	<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
Manganese	159	104	38	94	138	87	140	80	93	150	70	93	131	86	116	2.4	3.7	4.6	4.8	3.7	3	1.8	3.7	3	2.5	3	2.1	3.8	2.7	2.7
Mercury	0.02	<0.01	<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	0.04	0.05	0.02	0.02	0.01	0.11	0.02	0.1	0.04	0.23	0.04	0.06	0.2	0.06	0.15
Molybdenum	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nickel	0.13	0.13	0.1	0.06	0.09	0.06	0.08	0.04	0.05	0.08	0.09	0.08	0.13	0.05	0.09	0.11	0.13	0.1	0.13	0.12	0.06	0.05	0.06	0.07	0.07	0.11	0.11	0.1	0.09	0.09
Selenium	0.24	0.25	0.21	0.27	0.28	0.28	0.25	0.27	0.29	0.27	0.21	0.32	0.24	0.19	0.22	0.27	0.17	0.22	0.19	0.22	0.2	0.2	0.24	0.19	0.21	0.19	0.18	0.2	0.18	0.26
Silver	<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	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Thallium	<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	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Tin	<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	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Titanium	0.33	0.45	0.27	0.22	0.26	0.26	0.44	0.24	0.28	0.39	0.25	0.26	0.32	0.16	0.25	0.32	0.29	0.25	0.32	0.3	0.29	0.26	0.29	0.37	0.32	0.34	0.37	0.39	0.33	0.28
Uranium	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	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
Zinc	27	43	27	24	27	30	40	23	24	36	25	21	34	22	25	19	27	27	31	25	26	23	25	22	32	29	23	28	24	23
Physical Properties																														
Age (years)	23	14, 14	10, 8	9, 14	13, 10	15, 14	14	15, 14	13	17	18	17	14	10	8	9	17	7	10	6	19	15	23	17	-	14	25	14	26	11
Moisture (%)	46.2	52.9	49.1	55.5	55.7	51.7	60.8	55.9	55.9	55.3	42.82	49.79	49.01	51.55	54.43	59.6	56.8	54.2	51.4	56.2	59.6	51.3	57.4	51.2	53.9	46.84	49.51	52.61	53.23	51.68
Radionuclides																														
Lead-210 (Bq/g)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.003	<0.003	<0.002	0.004	<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	0.007	<0.002	<0.002
Polonium-210 (Bq/g)	0.003	0.002	0.013	0.005	0.004	0.0008	0.002	0.0005	0.001	0.0008	0.004	0.001	0.002	0.004	0.003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.001	<0.0005	0.0009	0.0005	<0.0005	<0.0005	0.001	<0.0005	<0.0005
Radium-226 (Bq/g)	<0.001	<0.001	0.010	0.001	<0.001	<0.001	0.002	<0.001	0.002	<0.001	0.003	0.002	<0.001	<0.001	0.001	0.001	0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0009	0.002	<0.0008	<0.001
Thorium-230 (Bq/g)	<0.003	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.003	<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	<0.003	<0.002	<0.002	<0.002	<0.002	<0.002
Trace Elements																														
Antimony	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	0.06	0.05	0.06	0.03	0.03	0.03	<0.02	0.02	<0.02	0.03	0.03	0.04	<0.02	0.03	<0.02	0.11	0.03	0.05	0.03	0.06	<0.02	0.06	0.03	0.08	0.02	0.07	0.04	0.03	0.06	0.04
Beryllium	<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	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	0.03	0.03	0.02	0.01	0.02	0.02	0.02	0.01	0.01	0.02	0.02	0.02	0.02	0.01	0.02	0.01	0.02	0.02	0.02	0.02	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.02
Strontium	178	275	182	130	174	181	226	126	164	263	159	124	196	142	204	102	130	136	166	121	112	115	142	173	171	159	146	144	122	109
Vanadium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	<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

APPENDIX B, TABLE 25

Detailed fish bone chemistry data collected from Cree Lake for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	**Cree Lake**																								
	Lake Whitefish															**Northern Pike**									
	2011					**2012**					**2015**					**2012**					**2015**				
	SP1-1, SP3-1	**SP6-1**	**SP7-1, SP9-1**	**SP9-1**		**SP2-1**	**SP4-1**				**GN2-2**		**GN5-1**			**SP1-1**	**SP1-2**		**SP1-3**		**AN3-1**				
	LW02, LW02	**LW02**	**LW02, LW01**	**LW19**	**LW20, LW21**	**LW01, LW02**	**LW01**	**LW02**	**LW03, LW04**	**LW05, LW06**	**LW17**	**LW18**	**LW09 LW10**	**LW11 LW12**	**LW13 LW01 (GN7-1)**	**NP07**	**NP07**	**NP08**	**NP01**	**NP02**	**NP01**	**NP02**	**NP03**	**NP04**	**NP05**
Metals																									
Aluminum	0.6	<0.5	0.9	<0.5	1.6	0.6	0.7	3	2	1.8	0.5	<0.5	1.2	1.7	2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Barium	7.7	3.2	4	5.4	6.2	4.6	7.1	3.8	5.7	5.4	6	4.6	4.5	6.1	6.4	4.6	6.2	6.3	6.7	8.5	5.4	4.2	7.3	5.2	4.4
Boron	<0.5	<0.5	<0.5	<0.5	<0.5	1	1.2	1.4	1.2	1.2	<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
Cadmium	<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	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Copper	0.06	0.05	0.04	0.05	0.05	0.21	0.32	0.28	0.28	0.36	0.11	0.18	0.16	0.17	0.17	0.16	0.24	0.14	0.18	0.21	0.22	0.24	0.18	0.19	0.23
Iron	4.7	8.2	7.5	6.5	14	3.7	4.3	3.6	6.8	5.4	3.2	5.3	7.2	4	7.3	1.8	6.5	3.3	2.5	2.7	4.6	2.8	3.7	2.8	2.4
Lead	0.02	<0.01	0.02	<0.01	0.03	0.01	0.02	0.01	0.03	0.02	0.02	0.02	0.05	0.02	0.03	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Manganese	18	4.5	30	11	39	9.7	34	11	35	25	18	11	25	48	44	16	49	45	18	27	18	24	24	34	8.4
Mercury	<0.01	0.01	0.01	0.02	<0.01	0.01	<0.01	0.01	<0.01	0.02	0.01	0.02	0.02	0.01	0.01	0.01	0.01	0.01	<0.01	0.01	<0.01	0.01	0.01	0.01	0.02
Molybdenum	<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	<0.05	<0.05	<0.05	<0.05	<0.05
Nickel	0.09	0.1	0.09	0.15	0.13	0.06	0.07	0.06	0.06	0.04	0.11	0.08	0.07	0.09	0.11	0.05	0.1	0.09	0.05	0.06	0.11	0.11	0.09	0.12	0.1
Selenium	0.2	0.28	0.39	0.23	0.42	0.27	0.26	0.22	0.55	0.47	0.2	0.21	0.44	0.45	0.4	0.16	0.16	0.16	0.15	0.19	0.13	0.15	0.18	0.16	0.14
Silver	<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	<0.01	<0.01	<0.01	<0.01	<0.01
Thallium	<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	<0.02	<0.02	<0.02	<0.02	<0.02
Tin	<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	<0.02	<0.02	<0.02	<0.02	<0.02
Titanium	0.25	0.22	0.25	0.25	0.33	0.31	0.33	0.23	0.3	0.23	0.4	0.34	0.34	0.29	0.29	0.27	0.44	0.43	0.27	0.36	0.32	0.36	0.31	0.26	0.26
Uranium	<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	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc	60	39	27	52	48	32	60	44	48	29	39	28	28	33	38	52	40	43	59	55	49	42	54	59	35
Physical Properties																									
Age (years)	4, 6	9	18, 8	8	12, 9	11, 23	8	11	21, 7	22, 18	13	13	14, 11	12, 12	19, 14	8	16	11	3	9	5	7	7	7	9
Moisture (%)	62.0	48.7	62.8	51.9	60.1	56.2	56.7	58.0	59.5	54.8	49.61	53.57	55.43	48.66	58.09	52.6	43.9	48.9	62.6	52.4	54.56	51.44	54.87	51.21	48.39
Radionuclides																									
Lead-210 (Bq/g)	<0.002	<0.002	<0.002	<0.002	0.003	<0.002	<0.003	<0.002	<0.002	<0.002	0.003	<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
Polonium-210 (Bq/g)	0.002	0.001	0.007	<0.0005	0.005	0.008	0.005	0.001	0.0019	0.006	0.004	0.002	0.006	0.004	0.004	0.0007	<0.0005	0.001	0.0006	0.0009	0.0006	0.0006	0.0008	0.0009	<0.0005
Radium-226 (Bq/g)	0.001	<0.001	<0.0008	<0.001	0.001	<0.001	0.002	<0.001	<0.001	<0.001	<0.001	<0.0009	<0.0009	<0.001	<0.0009	<0.001	<0.002	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	0.001	0.002
Thorium-230 (Bq/g)	<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	<0.003	<0.003	<0.002	<0.002	<0.002	<0.003	<0.002	<0.002	<0.003
Trace Elements																									
Antimony	<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	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	0.05	0.1	0.02	0.11	0.03	0.09	0.05	0.09	0.03	0.04	0.05	0.13	0.02	0.03	<0.02	0.03	<0.02	<0.02	0.02	0.04	0.03	0.02	0.03	0.02	<0.02
Beryllium	<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	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.02
Strontium	234	225	164	314	215	252	315	206	212	148	294	220	178	234	222	113	159	170	141	133	147	128	171	152	126
Vanadium	<0.05	<0.05	0.1	<0.05	0.13	<0.05	<0.05	<0.05	0.14	0.06	<0.05	<0.05	0.12	0.14	0.28	<0.05	<0.05	<0.05	<0.05	0.1	<0.05	<0.05	<0.05	<0.05	<0.05

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[1] All concentrations and activity levels are presented in µg/g on a wet weight basis, except when specified otherwise.

APPENDIX B, TABLE 25

Detailed fish bone chemistry data collected from Cree Lake for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Cree Lake														
	White Sucker														
	2011					2012					2015				
	SP9-1					SP1-1			SP01-02		GN2-2				
	WSU02	WSU03	WSU04	WSU05	WSU06	WSU01	WSU02	WSU03	WSU01	WSU02	WSU09	WSU10	WSU11	WSU12	WSU13
Metals															
Aluminum	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	1.4	<0.5	0.7	<0.5	0.8	0.7	<0.5	<0.5	<0.5
Barium	16	11	7.7	7.9	8.5	9.6	11	6.2	5.4	5.9	3.7	5.3	6.1	7.7	6.9
Boron	<0.5	<0.5	<0.5	<0.5	<0.5	1.3	1.4	1.3	1.2	1.3	<0.5	<0.5	<0.5	<0.5	<0.5
Cadmium	<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
Chromium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Copper	0.28	0.39	0.28	0.38	0.25	0.59	0.26	0.25	0.65	0.48	0.19	0.27	0.21	0.4	0.27
Iron	26	19	11	13	19	2.2	3	8.9	4.4	2.5	3.2	4.7	3.5	8.6	4.4
Lead	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.02	<0.01	0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01
Manganese	153	74	80	54	90	67	88	28	55	40	32	38	42	83	93
Mercury	<0.01	<0.01	<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
Molybdenum	<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
Nickel	0.19	0.11	0.1	0.12	0.11	0.07	0.09	0.03	0.05	0.04	0.06	0.06	0.06	0.12	0.11
Selenium	0.2	0.16	0.19	0.15	0.15	0.17	0.15	0.14	0.21	0.18	0.13	0.13	0.14	0.15	0.15
Silver	<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
Thallium	<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
Tin	<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
Titanium	0.5	0.33	0.29	0.29	0.4	0.28	0.44	0.2	0.22	0.2	0.2	0.24	0.22	0.41	0.32
Uranium	<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
Zinc	38	30	23	26	32	21	37	16	18	19	13	18	14	25	25
Physical Properties															
Age (years)	9	7	9	8	9	13	14	9	8	7	8	10	9	6	10
Moisture (%)	46.4	45.4	45.9	52.3	44.4	52.8	52.9	54.6	57.7	54.5	47.86	49.92	44.93	52.47	52.47
Radionuclides															
Lead-210 (Bq/g)	<0.002	<0.002	<0.002	<0.004	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.003
Polonium-210 (Bq/g)	0.003	0.003	0.004	0.003	0.002	0.001	0.002	0.002	0.002	0.0009	0.002	0.003	0.001	0.002	0.004
Radium-226 (Bq/g)	<0.001	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	<0.001	0.003
Thorium-230 (Bq/g)	<0.003	<0.003	<0.003	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.003	<0.002	<0.002
Trace Elements															
Antimony	<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
Arsenic	0.04	0.07	0.04	0.05	0.04	0.03	0.04	0.04	0.02	0.04	<0.02	0.02	0.02	0.02	<0.02
Beryllium	<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
Cobalt	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.01	0.01	0.02	0.02	0.02	0.02
Strontium	388	207	179	194	208	168	224	121	126	139	115	107	143	228	193
Vanadium	<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

[1] All concentrations and activity levels are presented in µg/g on a wet weight basis, except when specified otherwise.

APPENDIX B, TABLE 26

Detailed fish bone chemistry data collected from Ellis Bay for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Ellis Bay																															
	Lake Trout															Lake Whitefish												Northern Pike				
	2011					2012					2015					2011					2012		2015					2012				
	SP01-01					SP01-01					AN5-1	GN3-1		AN5-1		SP01-01					SP01-01		GN3-1					AN01-01				
	LT01	LT02	LT03	LT04	LT05	LT01	LT02	LT03	LT04	LT05	LT01	LT01	LT02	LT02	LT03	LW06	LW07	LW08	LW09	LW10	LW06	LW07	LW03	LW04	LW05	LW06	LW07	NP01	NP02	NP03	NP04	NP05
Metals																																
Aluminum	0.6	0.7	1.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	3.3	4.2	2.2	2.2	1.6	2.8	3.3	1.3	3.9	2.6	1.7	1.5	<0.5	<0.5	<0.5	<0.5	<0.5
Barium	1.1	0.7	0.88	1.3	1.1	1.4	1.4	0.83	1.6	0.79	1.7	1.4	0.88	0.92	0.92	10	15	9.2	8	9.4	16	20	13	16	13	9.7	6.7	5.1	5.8	5.6	4.9	5
Boron	<0.5	<0.5	0.8	<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	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Cadmium	<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	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.06	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Copper	0.26	0.18	0.08	0.16	0.1	0.19	0.18	0.19	0.2	0.15	0.15	0.2	0.17	0.22	0.23	0.09	0.19	0.24	0.11	0.09	0.12	0.27	0.18	0.16	0.19	0.16	0.18	0.28	0.19	0.19	0.19	0.21
Iron	5.7	2.6	2.3	4.2	2.2	1.8	3	7.2	3.4	3.3	3.2	6.3	3.6	4.1	6	3.6	4.3	5.5	5.9	4.7	4.6	8.3	3.8	5.5	6.1	3.8	5.4	2.9	1.7	2.9	3.2	1.5
Lead	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	0.03	0.04	0.07	0.02	<0.01	0.03	0.08	0.04	0.03	0.09	<0.01	0.05	<0.01	<0.01	<0.01	<0.01	<0.01
Manganese	0.9	1.1	2	2.1	1.5	0.46	0.74	0.72	0.86	0.64	0.69	0.86	1.8	0.5	0.51	16	29	6.2	20	14	16	15	8.5	13	9.6	11	9.8	12	15	11	8.6	9.6
Mercury	0.04	0.05	0.06	0.02	0.04	0.03	0.02	0.01	0.04	0.04	0.11	0.07	0.06	0.05	0.09	0.01	0.03	0.02	0.01	<0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.02	0.02	<0.01	<0.01	0.02
Molybdenum	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nickel	0.19	0.08	0.07	0.08	0.07	0.06	0.06	0.05	0.05	0.04	0.14	0.17	0.15	0.14	0.14	0.09	0.13	0.07	0.12	0.09	0.06	0.06	0.14	0.14	0.18	0.15	0.19	0.07	0.06	0.06	0.08	0.07
Selenium	0.14	0.13	0.12	0.13	0.13	0.11	0.12	0.16	0.12	0.08	0.09	0.12	0.1	0.12	0.13	0.21	0.24	0.21	0.21	0.21	0.25	0.23	0.1	0.17	0.17	0.18	0.18	0.11	0.12	0.12	0.12	0.11
Silver	<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	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Thallium	<0.02	0.04	<0.02	0.04	<0.02	0.03	0.02	0.03	<0.02	0.02	0.05	0.05	<0.02	0.04	0.04	<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
Tin	<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	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Titanium	0.34	0.2	0.24	0.18	0.21	0.3	0.3	0.27	0.29	0.24	0.3	0.34	0.32	0.29	0.37	0.24	0.44	0.19	0.35	0.27	0.34	0.38	0.33	0.36	0.46	0.27	0.36	0.37	0.26	0.32	0.39	0.3
Uranium	<0.01	<0.01	0.49	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	0.51	0.61	0.26	0.84	0.54	0.87	0.47	0.14	0.22	0.31	0.16	0.27	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc	22	18	16	27	18	25	27	24	28	20	27	27	19	18	22	25	27	21	38	27	28	33	32	24	43	18	38	65	55	61	58	62
Physical Properties																																
Age (years)	12	8	23	8	11	19	13	9	20	18	19	1	2	12	16	31	27	22	18	11	30	33	10	18	12	16	11	6	9	5	7	16
Moisture (%)	45.4	50.4	50.3	50.1	49.2	48.8	51.6	49.2	56.7	50.1	48.07	49.88	47.98	49.42	48.12	50.5	56.9	49.5	52.6	56.2	54.6	52.6	51.0	34.23	35.39	50.2	50.2	54.4	52.8	54.9	50.0	52.7
Radionuclides																																
Lead-210 (Bq/g)	<0.002	<0.002	<0.002	0.003	<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	<0.004	<0.005	<0.002	<0.002	<0.002	<0.002	0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Polonium-210 (Bq/g)	<0.0004	<0.0004	<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	0.002	0.004	0.002	0.0007	0.001	0.001	0.002	0.001	0.0008	0.002	0.001	0.002	<0.0005	<0.0005	<0.0005	<0.0005	0.0007
Radium-226 (Bq/g)	<0.001	<0.0008	<0.0009	<0.001	<0.0008	<0.0009	<0.0009	<0.001	<0.001	<0.0009	0.003	<0.0009	<0.001	<0.0008	<0.0009	<0.001	<0.001	0.002	<0.001	<0.0009	<0.001	<0.001	0.002	0.001	0.001	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Thorium-230 (Bq/g)	<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	<0.002	<0.002	<0.002	<0.002	<0.003	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.003	0.005
Trace Elements																																
Antimony	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	0.21	0.23	0.29	0.16	0.21	0.44	0.2	0.29	0.16	0.27	0.27	0.13	0.14	0.25	0.15	0.41	0.18	0.37	0.29	0.33	0.34	0.36	0.16	0.34	0.13	0.27	0.17	0.12	0.14	0.28	0.1	0.1
Beryllium	<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	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	0.02	<0.01	<0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	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	0.03	0.03	0.02	0.05	0.02	0.01	0.02	0.02	0.02
Strontium	70	54	62	77	82	110	107	87	101	68	96	96	80	60	77	217	287	156	239	191	219	238	170	229	255	175	173	105	95	109	116	106
Vanadium	<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	0.14	0.19	<0.05	0.12	0.12	0.27	0.39	0.31	0.18	0.23	0.1	0.28	<0.05	<0.05	<0.05	<0.05	<0.05

[1] All concentrations and activity levels are presented in µg/g on a wet weight basis, except when specified otherwise.

APPENDIX B, TABLE 27

Detailed fish bone chemistry data collected from Pasfield Lake for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Pasfield Lake																									
	Longnose Sucker											Lake Trout														
	2011			2012			2015					2011					2012					2015				
	SP07-01			SP10-1		SP11-1	HG2-1		GN3-2		HG2-1	AN03-01		SP3-1	SP05-01		SP4-1				SP5-1	HG2-1				GN5-1
	LSU11	LSU12	LSU13	LSU02, LSU03	LSU04, LSU05, WSU06	LSU02	LSU03	LSU04	LSU26	LSU27 LSU13 (GN5-1)	LSU05 LSU06	LT01	LT02	LT01	LT01	LT02	LT01	LT02	LT03	LT04	LT01	LT49	LT50	LT51	LT52	LT12
Metals																										
Aluminum	<0.5	<0.5	<0.5	<0.5	0.7	<0.5	0.6	<0.5	0.8	<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
Barium	5.3	4.1	7.5	4.6	4.7	6.2	10	9	6.3	3.2	6.4	1.2	1.7	1.3	1.5	1.6	1.2	1.5	1.6	1.6	1.6	3	1.7	1.3	1.2	1.3
Boron	<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	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Cadmium	<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	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	<0.2	<0.2	<0.2	<0.2	2.7	<0.2	<0.2	<0.2	<0.2	0.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Copper	0.4	0.24	0.15	0.26	0.32	0.37	0.25	0.31	0.28	0.31	0.3	0.1	0.11	0.04	0.1	0.08	0.17	0.23	0.17	0.21	0.18	0.3	0.22	0.21	0.12	0.18
Iron	6.1	3.4	4.2	2.3	7.1	3.4	16	11	5.6	3.9	11	5.9	5.8	5.8	4.2	5.8	3.6	4.6	3.7	6	4.8	4.8	4.1	3	2.9	3.4
Lead	<0.01	<0.01	0.03	0.01	0.02	0.02	0.05	0.08	0.03	<0.01	0.05	<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
Manganese	30	10	25	22	19	22	60	28	23	11	28	2.5	3.7	1.5	1.5	3.4	3.6	2.2	3.8	6.2	4.1	4.5	1.2	2.8	2.3	1.2
Mercury	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.06	0.05	0.1	0.02	0.08	0.04	0.04	0.14	0.04	0.04	0.02	0.12	0.07	0.06	0.02
Molybdenum	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nickel	0.07	0.08	0.14	0.06	0.06	0.07	0.35	0.22	0.17	0.1	0.12	0.1	0.11	0.11	0.1	0.12	0.12	0.09	0.08	0.09	0.08	0.23	0.12	0.11	0.13	0.11
Selenium	0.28	0.21	0.18	0.18	0.17	0.16	0.18	0.2	0.17	0.16	0.2	0.28	0.32	0.25	0.28	0.29	0.27	0.25	0.24	0.27	0.25	0.25	0.24	0.23	0.22	0.23
Silver	<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	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Thallium	<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	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Tin	<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	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Titanium	0.14	0.21	0.29	0.25	0.24	0.36	0.58	0.44	0.28	0.23	0.34	0.29	0.34	0.3	0.28	0.28	0.25	0.35	0.36	0.34	0.45	0.66	0.43	0.4	0.32	0.31
Uranium	<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	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc	26	23	25	22	23	23	46	42	26	16	27	20	28	21	26	27	29	36	31	29	32	63	24	27	23	23
Physical Properties																										
Age (years)	13	13	23	7, 10	7, 6, 3	22	14	15	12	10, 10	9, 8	18	19	23	-	21	18	20	17	18	19	25	26	19	19	10
Moisture (%)	54.2	51.4	46.1	57.9	57.2	50.4	44.42	48.37	49.54	56.31	55.97	56.1	56.7	57.0	54.7	58.5	49.2	55.6	60.2	54.5	53.1	48.96	53.06	50.19	53.06	53.88
Radionuclides																										
Lead-210 (Bq/g)	<0.002	<0.002	0.003	<0.002	<0.002	0.005	0.013	<0.002	0.011	0.008	0.002	0.003	0.003	<0.002	<0.002	0.004	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.006	<0.002	0.003
Polonium-210 (Bq/g)	0.009	0.006	0.009	0.023	0.021	0.006	0.005	0.004	0.005	0.004	0.006	<0.0005	<0.0005	0.0006	0.001	0.001	0.0007	0.0007	0.001	0.002	0.0008	<0.0005	<0.0005	0.001	<0.0005	<0.0005
Radium-226 (Bq/g)	0.006	<0.001	<0.001	0.001	0.001	0.002	0.001	0.001	0.002	<0.001	0.002	0.001	<0.001	<0.0009	<0.0008	<0.001	<0.001	0.001	<0.0009	<0.0009	<0.001	<0.0009	<0.0009	0.001	<0.0008	<0.0008
Thorium-230 (Bq/g)	<0.002	<0.003	<0.002	<0.002	<0.002	<0.002	<0.003	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Trace Elements																										
Antimony	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	0.05	0.1	0.05	0.05	0.03	0.07	<0.02	0.02	0.07	0.07	0.06	0.06	0.07	0.07	0.06	0.03	0.1	0.07	0.06	0.06	0.1	0.02	0.06	0.06	0.08	0.11
Beryllium	<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	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalt	0.01	0.01	0.02	0.01	0.03	0.02	0.04	0.04	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.02	0.02	0.01	0.04	0.02	0.03	0.02	0.02
Strontium	197	169	233	186	178	181	418	301	216	158	213	163	151	152	170	189	185	182	193	188	189	364	187	186	180	187
Vanadium	<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	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

[1] All concentrations and activity levels are presented in µg/g on a wet weight basis, except when specified otherwise.

APPENDIX B, TABLE 27

Detailed fish bone chemistry data collected from Pasfield Lake for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Pasfield Lake																							
	Lake Whitefish														Northern Pike					White Sucker				
	2011					2012					2015				2011	2012		2015		2015				
	SP07-01					SP10-1	SP11-1				GN3-2		GN7-1	HG2-1	SP02-01	SP11-1	SP08-2	GN10-1		GN2-2				HG2-1
	LW01, LW02	LW03, LW04	LW05, LW06	LW07, LW08	LW09, LW10	LW01	LW07, LW04, LW04 & LW03 of (GN9-1)	LW05, LW06, LW03 (GN8-2)	LW08, LW10, LW12, LW13	LW09, LW11, LW14, LW15	LW28	LW29 (LW16, 17, 18, and 19 (HG2-1))	LW01	LW15	NP02	NP01	NP01	NP01	NP02	WSU01	WSU02	WSU03	WSU04	WSU1
Metals																								
Aluminum	0.6	0.8	0.9	0.8	0.8	0.6	0.6	0.7	1	0.9	1	1.2	1.4	0.9	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Barium	3.9	4.9	3.6	4	4.3	5.2	3.8	5.2	5.6	3.9	4.4	3.9	3.6	3.4	3.8	3.7	5.1	3.3	3.9	3.8	5.3	5	3.9	8.8
Boron	<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	<0.5	<0.5	<0.5	<0.5
Cadmium	<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	<0.01	<0.01	<0.01	<0.01
Chromium	<0.2	<0.2	<0.2	3.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Copper	0.1	0.07	0.16	0.08	0.04	0.25	0.16	0.19	0.16	0.2	0.18	0.31	0.14	0.4	0.12	0.22	0.14	0.26	0.23	0.39	0.3	0.29	0.28	0.31
Iron	3.6	5.3	6	58	15	5.1	5.1	6.2	4	6	5.8	13	7.4	7.1	3.4	3.4	2	2.6	2.4	4.8	7.2	5.9	6.4	16
Lead	0.02	0.03	0.04	0.04	0.04	0.03	0.04	0.03	0.05	0.03	0.04	0.05	0.05	0.06	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.04	0.04	0.03	0.08
Manganese	5.5	7.4	9.9	7.3	8.2	5.9	8.6	8.3	10	5.8	11	10	10	6.1	7.4	12	8	7.9	6.7	11	16	14	12	28
Mercury	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.02	0.02	<0.01	0.01	0.02	0.02	<0.01	<0.01	<0.01	<0.01	<0.01
Molybdenum	<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	<0.05	<0.05	<0.05	<0.05
Nickel	0.09	0.09	0.08	0.31	0.15	0.1	0.06	0.06	0.08	0.06	0.14	0.09	0.14	0.15	0.09	0.09	0.12	0.09	0.1	0.11	0.14	0.12	0.13	0.18
Selenium	0.19	0.33	0.23	0.21	0.23	0.18	0.18	0.23	0.19	0.25	0.28	0.22	0.27	0.28	0.13	0.16	0.12	0.17	0.16	0.17	0.16	0.14	0.16	0.16
Silver	<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	<0.01	<0.01	<0.01	<0.01
Thallium	<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	<0.02	<0.02	<0.02	<0.02
Tin	<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	<0.02	<0.02	<0.02	<0.02
Titanium	0.31	0.24	0.27	0.28	0.27	0.26	0.18	0.28	0.27	0.22	0.33	0.3	0.4	0.42	0.22	0.3	0.67	0.26	0.29	0.34	0.35	0.33	0.28	0.49
Uranium	<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	<0.01	<0.01	<0.01	<0.01
Zinc	37	29	36	38	42	49	48	36	58	70	36	49	30	38	61	71	39	56	51	19	22	18	17	33
Physical Properties																								
Age (years)	5, 5	6, 5	5, 5	5, 5	5, 4	6	4, 5, 5, 4	3, 3, 5	5, 5, 3, 2	4, 3, 3, 3	9	5, 4, 4, 4, 3	24	26	8	3	12	2	2	11	9	8	9	8
Moisture (%)	61.6	63.0	57.0	60.8	63.1	58.4	57.6	58.2	60.9	61.3	54.87	63.32	54.28	47.05	54.8	58.6	50.4	66.32	63.23	49.27	46.56	49.62	45.11	47.09
Radionuclides																								
Lead-210 (Bq/g)	0.005	0.012	0.003	0.003	0.003	0.004	0.003	0.005	0.004	0.007	0.006	0.003	0.002	0.007	<0.002	<0.002	<0.002	<0.002	0.003	0.005	0.004	0.003	0.006	0.002
Polonium-210 (Bq/g)	0.008	0.019	0.011	0.011	0.010	0.006	0.011	0.016	0.013	0.020	0.004	0.009	0.005	0.007	<0.0005	0.0020	0.0007	0.003	0.003	0.008	0.01	0.008	0.009	0.008
Radium-226 (Bq/g)	<0.0009	0.002	0.003	<0.0009	<0.0006	0.002	0.002	0.002	0.002	0.001	<0.0009	<0.0007	<0.001	<0.001	<0.001	<0.0009	<0.001	<0.0007	<0.0008	0.001	<0.001	<0.001	0.001	0.001
Thorium-230 (Bq/g)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.003	<0.001	0.008	<0.002	<0.002	<0.002	<0.003	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Trace Elements																								
Antimony	<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	<0.05	<0.05	<0.05	<0.05
Arsenic	0.05	0.05	0.04	0.06	0.04	0.06	0.05	0.04	0.04	0.08	0.04	0.02	0.02	0.07	0.03	0.03	0.02	<0.02	<0.02	0.04	0.05	0.04	0.03	0.04
Beryllium	<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	<0.01	<0.01	<0.01	<0.01
Cobalt	0.02	0.02	0.01	0.03	0.02	0.02	0.01	0.02	0.01	0.01	0.03	0.02	0.02	0.04	0.02	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.04
Strontium	296	266	260	252	301	343	311	290	356	308	352	222	301	316	164	170	218	134	152	150	217	194	189	312
Vanadium	0.08	0.12	0.11	0.15	0.12	0.17	0.11	0.16	0.21	0.15	0.15	0.2	0.21	0.14	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05

[1] All concentrations and activity levels are presented in µg/g on a wet weight basis, except when specified otherwise.

APPENDIX B, TABLE 28

Fish bone chemistry descriptive statistics for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Data	Far-Field Exposure Areas																	
		Cochrane River					Crackingstone Inlet			Fond du Lac River					Waterbury Lake				
		LSU	LT	LW	NP	WSU	LT	LW	NP	LSU	LT	LW	NP	WSU	LSU	LT	LW	NP	WSU
Metals																			
Aluminum	Average	2.6	0.5	1.8	0.5	0.6	0.6	1.3	0.5	0.6	0.5	1.8	0.5	0.5	0.5	0.6	1.4	0.5	0.5
	S.D.	3.1	0.09	1.11	-	0.1	0.26	0.72	0.0	0.4	0.03	1.19	-	0.1	-	0.258	0.925	0.1	-
	Min	<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
	Max	7	0.8	4.3	<0.5	0.7	1.5	2.7	0.6	1.5	0.6	4.5	<0.5	0.8	<0.5	1.5	3.6	0.8	<0.5
	<MDL	2	12	2	9	3	13	2	9	6	11	0	10	8	6	13	3	7	1
	N	4	15	15	9	4	15	15	10	8	12	15	10	10	6	15	13	8	1
Barium	Average	3.9	0.9	5.5	3.2	4.8	1.1	9.5	6.2	4.9	0.9	8.1	3.4	5.1	4.7	1.2	5.5	3.7	5.0
	S.D.	1.7	0.19	3.24	0.5	1.2	0.30	4.73	1.2	1.9	0.19	4.39	0.4	1.3	1.2	0.17	1.39	0.7	-
	Min	1.8	0.6	0.9	2.5	3.7	0.8	3.3	4.6	2.5	0.68	3	2.8	4.1	3.5	0.83	3.4	2.4	5
	Max	5.8	1.3	12.0	3.8	6.4	1.8	18	8	7.7	1.2	18	4.3	8.3	6.6	1.4	7.9	4.8	5
	<MDL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	4	15	15	9	4	15	15	10	8	12	15	10	10	6	15	13	8	1
Boron	Average	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
	S.D.	-	0	0	-	-	0	0	-	-	0	0	-	-	-	0	0	-	-
	Min	<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
	Max	<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
	<MDL	4	15	15	9	4	15	15	10	8	12	15	10	10	6	15	13	8	1
	N	4	15	15	9	4	15	15	10	8	12	15	10	10	6	15	13	8	1
Cadmium	Average	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
	S.D.	-	0	0	-	-	0	0	-	-	0.00	0.00	0[4]	-	-	0	0	-	-
	Min	<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
	Max	<0.01	<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
	<MDL	4	15	15	9	4	15	15	10	8	12	14	9	10	6	15	13	8	1
	N	4	15	15	9	4	15	15	10	8	12	15	10	10	6	15	13	8	1
Chromium	Average	0.2	0.2	<0.2	0.2	0.2	<0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	S.D.	-	0.03	0	0.1	-	0	0.03	-	-	0.03	0.03	0	-	-	0.052	0.028	0	-
	Min	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	Max	<0.2	0.3	<0.2	0.5	<0.2	<0.2	0.3	<0.2	<0.2	0.3	0.3	0.2	<0.2	<0.2	0.4	0.3	0.2	<0.2
	<MDL	4	14	15	7	4	15	12	10	8	10	14	8	10	6	14	12	7	1
	N	4	15	15	9	4	15	15	10	8	12	15	10	10	6	15	13	8	1
Copper	Average	0.26	0.10	0.10	0.15	0.26	0.16	0.16	0.16	0.26	0.18	0.16	0.16	0.32	0.19	0.26	0.13	0.18	0.39
	S.D.	0.08	0.051	0.052	0.04	0.03	0.032	0.036	0.04	0.07	0.046	0.073	0.02	0.09	0.02	0.347	0.054	0.05	-
	Min	0.19	<0.02	<0.02	0.09	0.22	0.11	0.11	0.12	0.19	0.10	0.07	0.13	0.19	0.16	0.10	0.03	0.12	0.39
	Max	0.35	0.16	0.18	0.21	0.28	0.23	0.22	0.23	0.36	0.26	0.30	0.18	0.51	0.22	1.5	0.21	0.24	0.39
	<MDL	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	4	15	15	9	4	15	15	10	8	12	15	10	10	6	15	13	8	1
Iron	Average	8.2	3.6	4.7	5.4	3.7	4.9	5.7	3.9	4.7	4.4	5.4	4.0	5.2	4.3	4.7	6.0	3.2	5.3
	S.D.	6.54	1.60	1.42	6.7	0.7	2.47	1.16	1.3	1.3	1.40	0.97	1.01	1.9	1.6	2.79	2.90	0.7	-
	Min	4.5	1.3	2.8	1.9	3.1	2.2	3.4	2.2	3.4	2.5	4.0	2.7	2.4	2.8	2.7	2.8	2.4	5.3
	Max	18	6.8	7.6	23	4.7	10.0	7.6	5.9	6.6	6.8	7.3	6.4	9.4	7.2	14	13	4	5.3
	<MDL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	4	15	15	9	4	15	15	10	8	12	15	10	10	6	15	13	8	1
Lead	Average	0.03	<0.01	0.03	0.01	0.01	<0.01	0.03	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.01	0.01
	S.D.	0.04	0	0.015	-	0	0	0.019	-	0	0.00	0.004	0.006	0	-	0.019	0.011	-	-
	Min	<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
	Max	0.09	<0.01	0.05	<0.01	0.01	<0.01	0.08	<0.01	0.01	0.01	0.02	0.03	0.01	<0.01	0.07	0.05	<0.01	<0.01
	<MDL	3	15	3	9	1	15	1	10	7	12	5	9	9	6	13	2	8	1
	N	4	15	15	9	4	15	15	10	8	12	15	10	10	6	15	13	8	1

APPENDIX B, TABLE 28

Fish bone chemistry descriptive statistics for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Data	Far-Field Exposure Areas																	
		Cochrane River					Crackingstone Inlet			Fond du Lac River					Waterbury Lake				
		LSU	LT	LW	NP	WSU	LT	LW	NP	LSU	LT	LW	NP	WSU	LSU	LT	LW	NP	WSU
Manganese	Average	12.7	1.7	8.7	17.1	14.3	0.94	6.9	11.9	17.7	2.1	15.7	23.9	18.8	54.0	2.9	27.9	24.6	39.0
	S.D.	5.9	0.43	4.41	6.0	2.8	0.302	2.70	2.9	6.6	0.70	9.53	4.0	6.1	24.4	0.72	11.36	6.0	-
	Min	5.6	1.2	1.9	9.2	11	0.53	3.2	8.8	8.3	1.3	5.3	17	14	21	1.7	15	15	39
	Max	20	2.8	19	24	17	1.6	13	17	29	3.5	41	31	34	97	4	57	34	39
	<MDL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	4	15	15	9	4	15	15	10	8	12	15	10	10	6	15	13	8	1
Mercury	Average	0.01[5]	0.07	0.03	0.03	0.01	0.04	0.01	0.02	0.019	0.08	0.04	0.022	0.018	0.010	0.06	0.01	0.019	0.010
	S.D.	0[5]	0.077	0.029	0.019	-	0.023	0.008	0.005	0.011	0.072	0.048	0.008	0.013	0	0.040	0.004	0.014	-
	Min	<0.01	0.02	<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
	Max	0.01	0.31	0.11	0.07	<0.01	0.09	0.04	0.02	0.04	0.23	0.20	0.04	0.05	0.01	0.14	0.02	0.04	<0.01
	<MDL	1	0	4	1	4	1	8	4	1	0	1	0	5	4	3	6	1	1
	N	2[5]	15	14	9	4	15	15	10	8	12	15	10	10	6	15	13	8	1
Molybdenum	Average	0.25	<0.05	<0.05	0.05	0.15	<0.05	<0.05	0.05	0.28	<0.05	<0.05	0.05	0.15	0.23	<0.05	<0.05	0.05	0.36
	S.D.	0.07	0	0	-	0.077	0	0	-	0.07	0	0	-	0.06	0.11	0	0	-	-
	Min	0.16	<0.05	<0.05	<0.05	0.07	<0.05	<0.05	<0.05	0.16	<0.05	<0.05	<0.05	0.07	0.13	<0.05	<0.05	<0.05	0.36
	Max	0.32	<0.05	<0.05	<0.05	0.24	<0.05	<0.05	<0.05	0.36	<0.05	<0.05	<0.05	0.24	0.43	<0.05	<0.05	<0.05	0.36
	<MDL	0	15	15	9	0	15	15	10	0	12	15	10	0	0	15	13	8	0
	N	4	15	15	9	4	15	15	10	8	12	15	10	10	6	15	13	8	1
Nickel	Average	0.08	0.08	0.08	0.06	0.05	0.09	0.13	0.08	0.12	0.12	0.11	0.09	0.09	0.07	0.08	0.08	0.10	0.06
	S.D.	0.04	0.042	0.036	0.03	0.01	0.041	0.062	0.03	0.04	0.046	0.033	0.01	0.02	0.02	0.038	0.030	0.04	-
	Min	0.02	0.02	0.03	0.02	0.04	0.05	0.04	0.05	0.08	0.06	0.06	0.07	0.07	0.04	0.03	0.03	0.05	0.06
	Max	0.11	0.13	0.13	0.1	0.06	0.18	0.21	0.12	0.2	0.22	0.17	0.1	0.13	0.09	0.15	0.12	0.17	0.06
	<MDL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	4	15	15	9	4	15	15	10	8	12	15	10	10	6	15	13	8	1
Selenium	Average	0.29	0.18	0.25	0.15	0.23	0.13	0.52	0.28	0.30	0.16	0.29	0.18	0.23	0.22	0.16	0.46	0.18	0.16
	S.D.	0.05	0.028	0.118	0.04	0.05	0.026	0.494	0.06	0.04	0.036	0.110	0.05	0.05	0.07	0.032	0.245	0.02	-
	Min	0.22	0.13	0.04	0.1	0.16	0.08	0.11	0.22	0.23	0.09	0.19	0.07	0.17	0.16	0.12	0.14	0.14	0.16
	Max	0.33	0.22	0.46	0.2	0.27	0.18	1.8	0.42	0.36	0.21	0.55	0.24	0.31	0.35	0.23	0.74	0.21	0.16
	<MDL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	4	15	15	9	4	15	15	10	8	12	15	10	10	6	15	13	8	1
Silver	Average	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
	S.D.	-	0	0	-	-	0	0	-	-	0	0	-	-	-	0	0	-	-
	Min	<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
	Max	<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
	<MDL	4	15	15	9	4	15	15	10	8	12	15	10	10	6	15	13	8	1
	N	4	15	15	9	4	15	15	10	8	12	15	10	10	6	15	13	8	1
Thallium	Average	0.02	<0.02	<0.02	0.02	0.02	0.03	0.02	0.02	0.02	0.02	<0.02	0.02	0.02	0.02	<0.02	<0.02	0.02	0.02
	S.D.	-	0	0	-	-	0.016	0.006	-	-	0	0	-	-	-	0	0	-	-
	Min	<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
	Max	<0.02	<0.02	<0.02	<0.02	<0.02	0.07	0.04	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	<MDL	4	15	15	9	4	2	12	10	8	11	15	10	10	6	15	13	8	1
	N	4	15	15	9	4	15	15	10	8	12	15	10	10	6	15	13	8	1
Tin	Average	0.025	<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
	S.D.	0.010	0	0	-	-	0	0	-	-	0	0	-	-	-	0	0	-	-
	Min	<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
	Max	0.04	<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
	<MDL	3	15	14	9	4	15	15	10	8	12	15	10	10	6	15	13	8	1
	N	4	15	15	9	4	15	15	10	8	12	15	10	10	6	15	13	8	1

APPENDIX B, TABLE 28

Fish bone chemistry descriptive statistics for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Data	Far-Field Exposure Areas																	
		Cochrane River					Crackingstone Inlet			Fond du Lac River					Waterbury Lake				
		LSU	LT	LW	NP	WSU	LT	LW	NP	LSU	LT	LW	NP	WSU	LSU	LT	LW	NP	WSU
Titanium	Average	0.25	0.27	0.27	0.24	0.27	0.30	0.31	0.26	0.29	0.31	0.30	0.30	0.24	0.21	0.28	0.29	0.29	0.24
	S.D.	0.09	0.061	0.044	0.07	0.04	0.100	0.067	0.04	0.13	0.090	0.067	0.05	0.05	0.06	0.063	0.062	0.08	-
	Min	0.14	0.16	0.21	0.17	0.24	0.15	0.17	0.21	0.15	0.24	0.20	0.24	0.2	0.15	0.18	0.19	0.2	0.24
	Max	0.34	0.37	0.38	0.38	0.31	0.54	0.42	0.32	0.55	0.56	0.44	0.38	0.34	0.31	0.38	0.4	0.45	0.24
	<MDL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	4	15	15	9	4	15	15	10	8	12	15	10	10	6	15	13	8	1
Uranium	Average	0.045	<0.01	0.06	0.01	0.02	0.01	0.78	0.166	0.033	0.01	0.11	0.010	0.029	0.010	0.01	0.01	0.010	0.010
	S.D.	0.057	0	0.0423	-	0.005	0.003	0.920	0.083	0.012	0	0.096	-	0.023	-	0.003	0.005	-	-
	Min	0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.16	0.05	0.02	<0.01	0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Max	0.13	<0.01	0.17	<0.01	0.02	0.02	3.2	0.29	0.05	0.02	0.33	<0.01	0.08	<0.01	0.02	0.02	<0.01	<0.01
	<MDL	0	15	2	9	0	12	0	0	0	11	0	10	0	6	14	3	8	1
	N	4	15	15	9	4	15	15	10	8	12	15	10	10	6	15	13	8	1
Zinc	Average	20.5	20.3	30.5	55.1	19.3	27	37	59.1	24.0	22	36	60.3	19.5	22.5	24	31	53.1	23.0
	S.D.	4.8	2.66	7.48	19.2	2.9	10.3	8.9	8.2	8.2	2.6	11.0	5.1	3.0	2.7	2.2	10.5	9.6	-
	Min	15.0	16.0	19.0	24	15	19	19	42	17	18	17	52	17	19	21	19	44	23
	Max	25.0	25.0	43.0	90	21	61	52	70	37	26	54	67	26	26	29	55	70	23
	<MDL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	4	15	15	9	4	15	15	10	8	12	15	10	10	6	15	13	8	1
Physical Properties																			
Moisture (%)	Average	52	51.9	55.0	56	45	51.3	53.1	56	48	52.1	54.2	56	45	58	52	56	56	59
	S.D.	6	2.21	3.79	4	6	3.47	4.56	2	4	3.51	5.09	4	4	2	1.5	4.9	2	-
	Min	46	48.6	49.8	49	36	44.0	47.8	53	43	46.9	47.8	48	38	54	50	44	52	59
	Max	59	56.1	63.0	61	51	58.1	62.7	59	52	58.7	64.2	63	51	61	55	64	59	59
	<MDL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	4	15	15	9	4	15	15	10	8	12	15	10	10	6	15	13	8	1
Radionuclides																			
Lead-210 (Bq/g)	Average	<0.002	<0.002	<0.002	0.0021	0.0020	0.002	0.002	0.0020	0.0020	<0.002	0.002	0.0020	0.0020	0.0020	<0.002	0.002	0.0020	0.0020
	S.D.	-	0	0	-	-	0.0005	0.0007	0	-	0	0.0005	-	-	-	0	0.001	-	-
	Min	<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
	Max	<0.003	<0.002	<0.002	<0.003	<0.002	0.004	0.004	0.002	<0.002	<0.002	0.004	<0.002	<0.002	<0.002	<0.002	0.004	<0.002	<0.002
	<MDL	4	15	15	9	4	14	13	9	8	12	12	10	10	6	15	8	8	1
	N	4	15	15	9	4	15	15	10	8	12	15	10	10	6	15	13	8	1
Polonium-210 (Bq/g)	Average	0.00250	0.0005	0.0021	0.00159	0.00425	0.0005	0.002	0.00072	0.00275	0.0006	0.0016	0.00158	0.00400	0.00232	0.001	0.004	0.00165	0.00500
	S.D.	0.00100	0.00004	0.00165	0.00080	0.00096	0.00003	0.0009	0.00023	0.00116	0.00	0.00	0.00072	0.00183	0.00188	0.0001	0.0020	0.00049	-
	Min	0.0020	<0.0005	<0.0005	<0.0005	0.0030	<0.0005	0.001	<0.0005	0.0010	<0.0005	0.0007	0.0008	0.0010	0.0009	<0.0005	0.0007	0.0010	0.0050
	Max	0.0040	0.0006	0.007	0.0030	0.0050	0.0006	0.004	0.0010	0.0050	0.0010	0.0040	0.0030	0.0070	0.0060	0.0008	0.007	0.0020	0.0050
	<MDL	0	11	2	1	0	14	0	4	0	8	0	0	0	0	13	0	0	0
	N	4	15	15	9	4	15	15	10	8	12	15	10	10	6	15	13	8	1
Radium-226 (Bq/g)	Average	0.00148	0.0013	0.0012	0.00100	0.00200	0.0009	0.0019	0.00180	0.00188	0.001	0.002	0.00110	0.00120	0.00167	0.001	0.001	0.00100	0.00100
	S.D.	-	0.0011	0.0006	-	0.00082	0.00008	0.0014	0.00123	0.00173	0.0004	0.0016	0.00032	-	0.00121	0.0003	0.0004	0	-
	Min	<0.0009	<0.0008	<0.0008	<0.001	<0.001	<0.0008	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
	Max	<0.002	0.0050	0.0030	<0.001	0.003	0.0010	0.0050	0.005	0.006	0.002	0.007	0.002	<0.002	0.004	0.002	0.002	0.001	0.001
	<MDL	4	12	9	9	3	13	7	5	7	9	9	6	10	4	9	7	7	0
	N	4	15	15	9	4	15	15	10	8	12	15	10	10	6	15	13	8	1
Thorium-230 (Bq/g)	Average	0.0025	<0.002	0.002	0.0022	0.0030	<0.002	<0.002	0.0022	0.0026	<0.002	0.002	0.0020	0.0028	0.0020	<0.002	0.002	0.0025	0.0040
	S.D.	-	0	0.0004	-	-	0	0.0000	-	-	0	0.0006	-	-	0	0	0.0009	0.0005	-
	Min	<0.002	<0.002	<0.002	<0.002	<0.003	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.004
	Max	<0.003	<0.002	0.003	<0.003	<0.003	<0.002	<0.002	<0.003	<0.003	<0.003	0.004	<0.002	<0.003	0.002	<0.002	0.005	0.003	0.004
	<MDL	4	15	13	9	4	15	15	10	8	12	14	10	10	5	15	12	6	0
	N	4	15	15	9	4	15	15	10	8	12	15	10	10	6	15	13	8	1

APPENDIX B, TABLE 28

Fish bone chemistry descriptive statistics for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Data	Far-Field Exposure Areas																	
		Cochrane River					Crackingstone Inlet			Fond du Lac River					Waterbury Lake				
		LSU	LT	LW	NP	WSU	LT	LW	NP	LSU	LT	LW	NP	WSU	LSU	LT	LW	NP	WSU
Trace Elements																			
Antimony	Average	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
	S.D.	-	0	0	-	-	0	0	-	-	0	0	-	-	-	0	0	-	-
	Min	<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
	Max	<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
	<MDL	4	15	15	9	4	15	15	10	8	12	15	10	10	6	15	13	8	1
	N	4	15	15	9	4	15	15	10	8	12	15	10	10	6	15	13	8	1
Arsenic	Average	0.11	0.09	0.08	0.034	0.060	0.244	0.190	0.130	0.106	0.10	0.14	0.036	0.066	0.040	0.08	0.04	0.030	0.040
	S.D.	0.025	0.041	0.046	0.005	0.024	0.089	0.1440	0.027	0.035	0.033	0.071	0.017	0.024	0.013	0.030	0.033	0.012	-
	Min	0.08	0.04	<0.02	0.03	0.03	0.120	0.020	0.08	0.06	0.03	0.03	<0.02	0.04	0.03	0.03	<0.02	<0.02	0.04
	Max	0.14	0.18	0.16	0.04	0.08	0.390	0.510	0.17	0.18	0.14	0.28	0.07	0.12	0.06	0.13	0.13	0.05	0.04
	<MDL	0	0	1	0	0	0	0	0	0	0	0	2	0	0	0	5	2	0
	N	4	15	15	9	4	15	15	10	8	12	15	10	10	6	15	13	8	1
Beryllium	Average	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
	S.D.	-	0	0.0000	-	-	0	0	-	-	0	0	-	-	-	0	0	-	-
	Min	<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
	Max	<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
	<MDL	4	15	15	9	4	15	15	10	8	12	15	10	10	6	15	13	8	1
	N	4	15	15	9	4	15	15	10	8	12	15	10	10	6	15	13	8	1
Cobalt	Average	0.02	0.02	0.02	0.01	0.02	0.01	0.03	0.014	0.020	0.01	0.02	0.018	0.021	0.012	0.01	0.02	0.013	0.020
	S.D.	0.006	0.005	0.006	0.004	0.006	0.006	0.008	0.005	0.008	0.005	0.007	0.004	0.006	0.004	0.005	0.005	0.005	-
	Min	<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	0.02
	Max	0.02	0.02	0.03	0.02	0.02	0.03	0.04	0.02	0.03	0.02	0.03	0.02	0.03	0.02	0.02	0.02	0.02	0.02
	<MDL	1	5	0	3	0	1	0	0	0	0	0	0	0	1	0	0	0	0
	N	4	15	15	9	4	15	15	10	8	12	15	10	10	6	15	13	8	1
Strontium	Average	61	42	95	41	62	86	209	88	78	48	117	50	68	139	118	195	108	167
	S.D.	27.0	6.9	20.7	6	10	23.0	51.6	11	31	9.1	25.9	5	9	38	10.5	43.7	19	-
	Min	36	33	43	34	50	49	76	75	45	34	90	44	54	83	95	136	75	167
	Max	88	57	118	52	74	131	286	113	127	62	171	60	86	201	132	297	134	167
	<MDL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	4	15	15	9	4	15	15	10	8	12	15	10	10	6	15	13	8	1
Vanadium	Average	0.050	<0.05	0.113	0.050	0.050	<0.05	0.45	0.053	0.059	<0.05	0.11	0.050	0.050	0.050	<0.05	0.14	0.050	0.050
	S.D.	-	0	0.0647	-	0	0	0.614	0.009	0.014	0	0.095	-	-	-	0	0.074	-	-
	Min	<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	0.06	<0.05	<0.05
	Max	<0.05	<0.05	0.26	<0.05	0.05	<0.05	2.0	0.08	0.08	<0.05	0.41	<0.05	<0.05	<0.05	<0.05	0.28	<0.05	<0.05
	<MDL	4	15	4	9	3	15	4	8	5	12	5	10	10	6	15	0	8	1
	N	4	15	15	9	4	15	15	10	8	12	15	10	10	6	15	13	8	1

APPENDIX B, TABLE 28

Fish bone chemistry descriptive statistics for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Data	References															Pooled References				
		Bobby's Lake[2]		Cree Lake					Ellis Bay			Pasfield Lake									
		NP	WSU	LSU	LT	LW	NP	WSU	LT	LW	NP	LSU	LT	LW	NP	WSU	LSU	LT	LW	NP	WSU
Metals																					
Aluminum	Average	0.46	0.16	0.6	0.7	1.2	<0.5	0.6	0.6	2.6	0.5	0.6	0.5	0.9	0.5	<0.5	0.6	0.6	1.5	0.5	0.4
	S.D.	0.31	0.15	0.28	0.72	0.77	0	0.24	0.28	0.97	-	0.10	0	0.23	0.04	0	0.3	0.3	0.66	0.49	0.13
	Min	0.22	<0.02	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.3	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.02
	Max	1.00	0.37	1.6	3.3	3.0	<0.5	1.4	1.6	4.2	<0.5	0.8	0.5	1.4	0.6	<0.5	1.6	1.8	2.9	0.8	1.4
	<MDL	0	1	13	13	12	10	10	12	0	5	8	13	0	4	5	13	38	12	19	16
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	16	45	41	25	24
Barium	Average	4.7	3.48	8.3	1.7	5.4	5.9	7.9	1.1	12.2	5.3	6.1	1.6	4.3	4.0	5.4	7.3	1.5	7.3	5.0	5.6
	S.D.	2.2	1.98	2.08	0.27	1.26	1.38	3.05	0.32	3.98	0.4	2.07	0.44	0.69	0.68	2.03	2.5	0.3	1.98	1.16	2.35
	Min	2.0	1.90	5.6	1.3	3.2	4.2	3.7	0.7	6.7	4.9	3.2	1.2	3.4	3.3	3.8	4.1	1.1	4.4	3.6	3.1
	Max	7.8	6.10	14	2.3	7.7	8.5	16	1.7	20	5.8	10	3	5.6	5.1	8.8	14.0	2.3	11.1	6.8	10.3
	<MDL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	16	45	41	25	24
Boron	Average	0.5	0.5	0.7	<0.5	0.7	<0.5	0.8	0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	0.5	0.7	<0.5	0.6
	S.D.	-	-	0.37	0	0.35	0	0.39	0.08	0	-	0	0	0	0	0	0.4	0	0.12	0	0.40
	Min	<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
	Max	<0.5	<0.5	1.4	<0.5	1.4	<0.5	1.4	0.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.4	0.8	1.4	<0.5	1.4
	<MDL	5	4	11	15	10	10	10	14	12	5	11	15	14	5	5	12	44	36	25	19
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	16	45	41	25	24
Cadmium	Average	0.01	0.010	<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
	S.D.	-	-	0	0	0	0	0	0	0.014	-	0	0	0	0	0	0	0	0	0	0
	Min	<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
	Max	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.06	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01
	<MDL	5	4	15	15	15	10	15	15	11	5	11	15	14	5	5	16	45	40	25	24
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	16	45	41	25	24
Chromium	Average	0.2	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	0.44	0.21	0.44	<0.2	<0.2	0.4	0.2	0.4	<0.2	<0.2
	S.D.	-	-	0	0	0	0	0	0	0	-	0.751	0.026	0.853	0	0	0.63	0	0.28	0	0
	Min	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	Max	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	2.7	0.3	3.4	<0.2	<0.2	2.7	0.3	3.4	<0.2	<0.2
	<MDL	5	4	15	15	15	10	15	15	12	5	9	14	12	5	5	15	44	39	25	24
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	16	45	41	25	24
Copper	Average	0.24	0.32	0.33	0.17	0.2	0.20	0.34	0.18	0.17	0.21	0.29	0.16	0.17	0.19	0.31	0.34	0.17	0.17	0.21	0.32
	S.D.	0.08	0.04	0.202	0.081	0.11	0.034	0.138	0.046	0.056	0.04	0.067	0.069	0.097	0.061	0.044	0.20	0.07	0.087	0.054	0.074
	Min	0.18	0.26	0.20	0.04	0.04	0.14	0.19	0.08	0.09	0.19	0.15	0.04	0.04	0.12	0.28	0.15	0.05	0.06	0.16	0.24
	Max	0.39	0.35	1.0	0.31	0.36	0.24	0.65	0.26	0.27	0.28	0.4	0.3	0.4	0.26	0.39	1.00	0.29	0.34	0.29	0.46
	<MDL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	16	45	41	25	24
Iron	Average	4.3	4.9	7.6	5.3	6.1	3.3	8.9	3.9	5.1	2.4	6.7	4.6	10.5	2.8	8.06	6.8	4.6	7.3	3.2	7.3
	S.D.	0.7	0.8	3.89	1.97	2.72	1.36	7.36	1.65	1.31	0.8	4.25	1.11	14.03	0.62	4.523	3.8	1.6	6.02	0.88	4.21
	Min	3.6	3.9	2.9	2.7	3.2	1.8	2.2	1.8	3.6	1.5	2.3	2.9	3.6	2	4.8	2.3	2.5	3.5	2.2	3.6
	Max	5.5	5.7	15	11	14	6.5	26	7.2	8.3	3.2	16	6	58	3.4	16	15.0	8.1	0.7	4.7	15.9
	<MDL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	16	45	41	25	24
Lead	Average	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.04	0.01	0.03	0.01	0.04	<0.01	0.04	0.01	0.01	0.03	0.01	0.02
	S.D.	-	-	0.003	0	0.011	0	0.004	0.005	0.026	-	0.023	0	0.011	0	0.023	0.006	0	0.016	0	0.013
	Min	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01
	Max	<0.01	<0.01	0.02	0.01	0.05	0.01	0.02	0.03	0.09	<0.01	0.08	0.01	0.06	<0.01	0.08	0.03	0.01	0.07	0.01	0.05
	<MDL	5	4	11	14	2	8	11	13	2	5	3	14	0	5	0	11	42	4	23	15
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	16	45	41	25	24

APPENDIX B, TABLE 28

Fish bone chemistry descriptive statistics for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Data	References															Pooled References				
		Bobby's Lake[2]		Cree Lake					Ellis Bay			Pasfield Lake									
		NP	WSU	LSU	LT	LW	NP	WSU	LT	LW	NP	LSU	LT	LW	NP	WSU	LSU	LT	LW	NP	WSU
Manganese	Average	18.2	32.0	105.3	3.2	24.2	26.3	67.8	1.0	14.0	11.2	25.3	3.0	8.1	8.4	16.2	75.7	2.4	15.5	16.0	38.7
	S.D.	7.5	11.8	33.26	0.87	13.69	12.91	32.47	0.55	6.09	2.5	13.21	1.41	1.86	2.08	6.87	52.6	0.9	7.21	6.25	17.05
	Min	8.8	22.0	38	1.8	4.5	8.4	28	0.46	6.2	8.6	10	1.2	5.5	6.7	11	10.0	1.2	5.4	8.1	20.3
	Max	29.0	45.0	159	4.8	48	49	153	2.1	29	15	60	6.2	11	12	28	159.0	4.4	29.3	26.3	75.3
	<MDL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	16	45	41	25	24
Mercury	Average	-[6]	-[6]	0.01	0.08	0.01	0.01	0.01	0.05	0.01	0.016	0.01	0.06	0.01	0.02	<0.01	0.01	0.06	0.01	0.01	0.01
	S.D.	-[6]	-[6]	0.004	0.068	0.005	0.003	0.003	0.027	0.007	0.005	0	0.036	0.004	0.005	0	0.003	0.04	0.005	0.005	-
	Min	-[6]	-[6]	<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
	Max	-[6]	-[6]	0.02	0.23	0.02	0.02	0.02	0.11	0.03	0.02	0.01	0.14	0.02	0.02	<0.01	0.02	0.16	0.02	0.02	0.01
	<MDL	-[6]	-[6]	8	0	4	2	14	0	1	2	10	0	12	1	5	11	0	17	5	19
	N	-[6]	-[6]	15	15	15	10	15	15	12	5	11	15	14	5	5	16	45	41	20	20
Molybdenum	Average	0.05	0.07	<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	0.07
	S.D.	-	0.03	0	0	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0.011
	Min	<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
	Max	<0.05	0.12	<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	0.12
	<MDL	5	2	15	15	15	10	15	15	12	5	11	15	14	5	5	16	45	41	25	22
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	16	45	41	25	24
Nickel	Average	0.09	0.08	0.08	0.09	0.09	0.09	0.09	0.10	0.12	0.07	0.13	0.11	0.11	0.10	0.14	0.08	0.10	0.11	0.09	0.10
	S.D.	0.03	0.02	0.029	0.026	0.029	0.026	0.041	0.050	0.044	0.01	0.089	0.036	0.065	0.013	0.027	0.03	0.04	0.046	0.019	0.029
	Min	0.05	0.06	0.04	0.05	0.04	0.05	0.03	0.04	0.06	0.06	0.06	0.08	0.06	0.09	0.11	0.04	0.06	0.05	0.06	0.07
	Max	0.12	0.10	0.13	0.13	0.15	0.12	0.19	0.19	0.19	0.08	0.35	0.23	0.31	0.12	0.18	0.14	0.18	0.22	0.11	0.16
	<MDL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	16	45	41	25	24
Selenium	Average	0.16	0.19	0.25	0.21	0.33	0.16	0.16	0.12	0.20	0.12	0.19	0.26	0.23	0.15	0.16	0.24	0.20	0.25	0.14	0.17
	S.D.	0.04	0.08	0.035	0.029	0.117	0.018	0.025	0.020	0.040	0.01	0.034	0.027	0.044	0.022	0.011	0.04	0.03	0.067	0.021	0.040
	Min	0.12	0.10	0.19	0.17	0.20	0.13	0.13	0.08	0.1	0.11	0.16	0.22	0.18	0.12	0.14	0.16	0.16	0.16	0.12	0.12
	Max	0.21	0.27	0.32	0.27	0.55	0.19	0.21	0.16	0.25	0.12	0.28	0.32	0.33	0.17	0.17	0.29	0.25	0.38	0.17	0.22
	<MDL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	16	45	41	25	24
Silver	Average	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
	S.D.	-	-	0	0	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0
	Min	<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
	Max	<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
	<MDL	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	16	45	41	25	24
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	16	45	41	25	24
Thallium	Average	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	0.02	0.02	<0.02	<0.02	0.02	<0.02	<0.02	0.02	0.03	0.02	0.02	<0.02
	S.D.	-	-	0	0	0	0	0	0.012	0.000	0	0	0	0	0	0	-	0.004	0	0	0
	Min	<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
	Max	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.05	0.02	0.02	<0.02	<0.02	0.02	<0.02	1.02	<0.02	0.05	0.02	0.02	<0.02
	<MDL	5	4	15	15	15	10	15	5	11	4	11	15	13	5	5	16	35	39	24	24
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	16	45	41	25	24
Tin	Average	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
	S.D.	-	-	0	0	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0
	Min	<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
	Max	<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
	<MDL	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	16	45	41	25	24
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	16	45	41	25	24

APPENDIX B, TABLE 28

Fish bone chemistry descriptive statistics for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Data	References															Pooled References				
		Bobby's Lake[2]		Cree Lake					Ellis Bay			Pasfield Lake									
		NP	WSU	LSU	LT	LW	NP	WSU	LT	LW	NP	LSU	LT	LW	NP	WSU	LSU	LT	LW	NP	WSU
Titanium	Average	0.26	0.26	0.29	0.31	0.29	0.33	0.30	0.28	0.33	0.33	0.31	0.36	0.29	0.35	0.36	0.29	0.32	0.30	0.32	0.31
	S.D.	0.07	0.05	0.081	0.041	0.052	0.068	0.096	0.055	0.079	0.05	0.122	0.101	0.064	0.183	0.079	0.08	0.07	0.065	0.093	0.074
	Min	0.17	0.23	0.16	0.25	0.22	0.26	0.20	0.18	0.19	0.26	0.14	0.25	0.18	0.22	0.28	0.14	0.23	0.20	0.23	0.24
	Max	0.32	0.33	0.45	0.39	0.40	0.44	0.50	0.37	0.46	0.39	0.58	0.66	0.42	0.67	0.49	0.45	0.47	0.43	0.46	0.44
	<MDL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	16	45	41	25	24
Uranium	Average	0.01	0.01	0.01	<0.01	0.01	<0.01	<0.01	0.04	0.43	0.010	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.04	0.22	0.01	0.01
	S.D.	-	0	0.006	0	0.004	0	0	0.124	0.249	-	0	0	0	0	0	0.003	0.041	0.084	-	0
	Min	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.14	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Max	<0.01	0.01	0.03	<0.01	0.02	<0.01	<0.01	0.49	0.87	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.49	0.45	<0.01	0.01
	<MDL	5	3	12	15	11	10	15	13	0	5	11	15	14	5	5	15	43	25	25	23
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	16	45	41	25	24
Zinc	Average	55.4	17.0	28.5	25.6	40.3	48.8	23.7	22.5	29.5	60.2	27.2	29.3	42.6	55.6	21.8	27.7	25.8	37.5	55.0	20.8
	S.D.	11.2	3.2	6.72	3.50	11.29	8.38	7.84	4.16	7.48	3.8	8.86	10.27	11.26	11.87	6.53	6.4	6.0	10.01	8.8	5.85
	Min	45	13	21	19	27	35	13	16	18	55	16	20	29	39	17	22	18.3	24.7	43.5	13.0
	Max	74	20	43	32	60	59	38	28	43	65	46	63	70	71	33	43	41.0	57.7	67.3	30.3
	<MDL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25.455	0
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	16	45	41	55	24
Physical Properties																					
Moisture (%)	Average	-[7]	-[7]	52.4	53.7	55.7	52.1	50.3	49.7	49.5	53	52.0	54.3	58.7	58.7	47.5	53.5	52.6	54.6	54.6	48.9
	S.D.	-[7]	-[7]	4.54	3.65	4.56	4.91	4.19	2.43	7.27	2	4.64	3.25	4.45	6.38	1.90	4.1	3.1	5.43	4.4	3.04
	Min	-[7]	-[7]	42.8	46.8	48.7	43.9	44.4	45.4	34.2	50	44.4	49.0	47.1	50.4	45.1	46.1	47.1	43.3	48.1	44.8
	Max	-[7]	-[7]	60.8	59.6	62.8	62.6	57.7	56.7	56.9	55	57.9	60.2	63.3	66.3	49.6	60.8	58.9	61.0	61.3	53.7
	<MDL	-[7]	-[7]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	-[7]	-[7]	15	15	15	10	15	15	12	5	11	15	14	5	5	16	45	41	20	20
Radionuclides																					
Lead-210 (Bq/g)	Average	0.002	0.002	0.002	0.002	0.002	<0.002	<0.002	0.002	0.002	0.0020	0.005	0.003	0.005	0.002	0.004	0.002	0.002	0.003	<0.002	0.003
	S.D.	-	-	0.0006	0.0013	0.0004	0	0	0.0003	0.0010	-	0.0041	0.0011	0.0026	0.0004	0.0016	0.0008	0.0009	0.0013	0	0.0008
	Min	<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	<0.002
	Max	<0.002	<0.002	0.004	0.007	0.003	<0.002	<0.004	0.003	0.005	<0.002	0.013	0.006	0.012	0.003	0.006	0.005	0.005	0.007	<0.002	<0.004
	<MDL	5	4	13	14	12	10	15	14	11	5	5	10	0	4	0	14	38	23	24	19
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	16	45	41	25	24
Polonium-210 (Bq/g)	Average	0.0010	0.0011	0.0031	0.0006	0.004	0.0007	0.0023	<0.0004	0.002	0.00054	0.0089	0.0008	0.011	0.002	0.009	0.0066	0.0007	0.0054	0.0010	0.0040
	S.D.	0.0006	0.0006	0.0031	0.00019	0.0023	0.00018	0.00099	0.00000	0.0009	0.00009	0.0067	0.00040	0.005	0.0012	0.0009	0.0070	0.00020	0.0027	0.0005	0.00083
	Min	<0.0005	0.0006	0.0005	<0.0005	<0.0005	<0.0005	0.0009	<0.0004	0.0007	<0.0005	0.0040	<0.0005	0.004	<0.0005	0.008	0.0005	<0.0004	<0.0005	<0.0005	0.0032
	Max	0.0020	0.0020	0.013	0.001	0.008	0.001	0.004	<0.0005	0.004	0.0007	0.0230	0.002	0.020	0.003	0.010	0.0230	0.0015	0.0107	0.0017	0.0053
	<MDL	1	0	0	11	1	2	0	15	0	4	0	6	0	1	0	0	32	1	8	0
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	16	45	41	25	24
Radium-226 (Bq/g)	Average	0.001	0.0015	0.002	0.001	0.001	0.001	0.001	0.0011	0.0012	0.00100	0.002	0.001	0.001	<0.0009	0.0010	0.0021	0.0010	0.0012	0.0011	0.0013
	S.D.	0	-	0.0023	0.0003	0.0003	0.0004	0.0009	0.0005	0.0005	-	0.0015	0.0001	0.001	0	0	0.0025	0.0003	0.00048	0.0001	0.00046
	Min	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0008	<0.0009	<0.001	<0.001	<0.0008	<0.0006	<0.0009	<0.001	<0.001	<0.0008	<0.0006	<0.0009	<0.001
	Max	0.001	<0.002	0.010	0.002	0.002	0.002	0.004	0.003	0.002	<0.001	0.006	0.001	0.003	<0.001	0.0010	0.0100	0.0020	0.0023	0.0015	0.0025
	<MDL	3	4	8	12	12	7	12	14	7	5	3	12	7	5	2	8	38	26	20	18
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	16	45	41	25	24
Thorium-230 (Bq/g)	Average	0.002	0.003	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.0028	<0.002	<0.002	0.002	<0.002	<0.002	0.002	<0.002	0.002	0.0024	<0.003
	S.D.	-	-	0.0004	0.0003	0	0	0	0	0	0.0013	0	0	0.002	0	0	-	0	-	0.0004	0
	Min	<0.002	<0.003	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.002	<0.002	<0.002	<0.001	<0.002	<0.002	<0.002
	Max	<0.002	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.002	<0.002	0.005	<0.003	<0.002	0.008	<0.003	<0.003	<0.003	<0.003	0.002	0.005	<0.003
	<MDL	5	4	15	15	15	10	15	15	12	4	11	15	12	5	5	16	45	39	24	24
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	16	45	41	25	24

APPENDIX B, TABLE 28

Fish bone chemistry descriptive statistics for the EARMP technical program, 2011, 2012, and 2015.

Parameter[1]	Data	References															Pooled References				
		Bobby's Lake[2]		Cree Lake					Ellis Bay			Pasfield Lake									
		NP	WSU	LSU	LT	LW	NP	WSU	LT	LW	NP	LSU	LT	LW	NP	WSU	LSU	LT	LW	NP	WSU
Trace Elements																					
Antimony	Average	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
	S.D.	-	-	0	0	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0
	Min	<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
	Max	<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
	<MDL	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	16	45	41	25	24
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	16	45	41	25	24
Arsenic	Average	0.02	0.02	0.03	0.05	0.06	0.03	0.03	0.23	0.28	0.148	0.05	0.07	0.05	0.02	0.04	0.04	0.11	0.13	0.05	0.03
	S.D.	0.004	-	0.014	0.025	0.037	0.007	0.015	0.081	0.095	0.076	0.024	0.024	0.017	0.005	0.007	0.02	0.04	0.050	0.02	0.011
	Min	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.13	0.13	0.1	0.02	0.02	0.02	0.02	0.03	<0.02	<0.02	0.08	<0.02	<0.02
	Max	0.03	<0.02	0.06	0.11	0.13	0.04	0.07	0.44	0.41	0.28	0.1	0.11	0.08	0.03	0.05	0.10	0.22	0.21	0.10	0.06
	<MDL	4	4	4	1	1	3	2	0	0	0	1	0	0	2	0	2	1	1	9	6
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	16	45	41	25	24
Beryllium	Average	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
	S.D.	-	-	0	0	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0
	Min	<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
	Max	<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
	<MDL	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	16	45	41	25	24
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	16	45	41	25	24
Cobalt	Average	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.018	0.02	0.02	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.02
	S.D.	0.009	0.01	0.006	0.005	0.004	0.004	0.005	0.005	0.009	0.004	0.011	0.008	0.009	0.005	0.009	0.008	0.006	0.007	0.006	0.006
	Min	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	0.02	0.01	<0.01	0.01	0.01	0.01
	Max	0.03	0.02	0.03	0.02	0.02	0.02	0.03	0.02	0.05	0.02	0.04	0.04	0.04	0.02	0.04	0.03	0.03	0.04	0.0225	0.03
	<MDL	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	0	0	0
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	16	45	41	25	24
Strontium	Average	82.2	80.25	181.6	136.5	228.9	144.0	182.7	81.8	212	106	223	191	298	168	212	190	136	246	125	158
	S.D.	29.4	33.33	45.95	23.27	49.26	19.36	69.91	17.42	39.85	8	75.7	49.7	38.6	31.3	60.7	41	30	43	22	54.6
	Min	50.0	50.00	124	102	148	113	107	54	156	95	158	151	222	134	150	126	102	175	98	102
	Max	120.0	123.00	275	173	315	171	388	110	287	116	418	364	356	218	312	275	216	319	156	274
	<MDL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	16	45	41	25	24
Vanadium	Average	0.05	0.05	0.05	<0.05	0.09	0.06	<0.05	<0.05	0.20	0.050	<0.05	<0.05	0.15	<0.05	0.05	0.05	<0.05	0.15	0.05	0.05
	S.D.	-	-	0.003	0	0.064	0.016	0	0	0.100	-	0	0	0.039	0	0	0.002	0	0.068	0.008	0
	Min	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	Max	<0.05	<0.05	0.06	<0.05	0.28	0.10	<0.05	<0.05	0.39	<0.05	<0.05	<0.05	0.21	<0.05	0.05	0.06	<0.05	0.29	0.10	<0.05
	<MDL	5	4	14	15	8	9	15	15	1	5	11	15	0	5	4	15	45	9	24	23
	N	5	4	15	15	15	10	15	15	12	5	11	15	14	5	5	16	45	41	25	24

S.D.: standard deviation; Min: minimum; Max: maximum; <MDL: number of samples with concentrations measured at less than the method detection limit; N: total number of samples (sample size).

LSU: longnose sucker; LT: lake trout; LW: lake whitefish; NP: northern pike; WSU: white sucker.

For values measured at less than the method detection limit (MDL), all computations were performed with values set at the MDL.

[1] All concentrations and activity levels are presented in µg/g on a wet weight basis, except when specified otherwise.

[2] No fish chemistry data were available for Bobby's Lake in 2011 and 2012; the 2009 fish chemistry data were used as a substitute.

[3] When all values were less than the method detection limit (MDL), standard deviations were not computed.

[4] Standard deviations of 0 signify no variation, not a very small value.

[5] Mercury was not measured in two LSU and 1 LW in 2012 in Cochrane River because SRC disposed of the samples without taking these measurements.

[6] No mercury data were available for Bobby's Lake.

[7] Moisture was not available for Bobby's Lake samples.

APPENDIX B, TABLE 29

Correlations of individual COPCs with principal component axis scores for northern pike, longnose sucker, and white sucker flesh and bone chemistry, 2011 to 2015.

COPC[1]	Northern Pike Flesh			
	PC1	PC2	PC3	PC4
Copper	**-0.81**	0.20	-0.06	0.30
Iron	**-0.71**	0.16	0.16	-0.33
Mercury[2]	0.36	0.49	0.59	0.07
Selenium	0.12	**0.64**	-0.33	-0.54
Zinc	**-0.75**	-0.24	-0.39	0.02
Polonium-210[3]	-0.38	-0.15	0.46	**-0.61**
Arsenic	0.02	**0.69**	-0.49	0.05
Cobalt	-0.46	0.49	0.45	0.37
Eigenvalue	2.2	1.5	1.3	1.0
% of Variance	27.8	19.1	16.2	12.7

COPC[1]	Northern Pike Bone			
	PC1	PC2	PC3	PC4
Copper	0.01	-0.34	-0.49	0.20
Iron	-0.22	-0.54	0.15	0.40
Mercury	0.05	**-0.63**	0.48	-0.38
Nickel	-0.07	**-0.63**	-0.28	0.26
Selenium	**-0.72**	-0.22	0.36	0.36
Uranium	**-0.88**	0.16	0.21	0.20
Zinc[3]	-0.41	-0.44	-0.03	**-0.66**
Polonium-210[3]	0.50	-0.33	**0.66**	0.02
Arsenic	**-0.82**	0.26	-0.08	-0.33
Cobalt	-0.08	-0.58	-0.52	-0.11
Eigenvalue	2.5	2.0	1.5	1.1
% of Variance	24.5	19.7	14.7	11.5

COPC[1]	Longnose Sucker Flesh			
	PC1	PC2	PC3	PC4
Copper	**-0.72**	0.35	-0.26	0.07
Iron	**-0.86**	0.02	-0.10	-0.07
Mercury[2]	0.00	-0.04	0.50	**-0.84**
Selenium	-0.30	**-0.83**	-0.02	0.11
Zinc[3]	**-0.69**	0.35	-0.14	-0.21
Polonium-210	-0.58	0.13	0.42	0.13
Arsenic	-0.31	-0.13	**0.72**	0.42
Cobalt	-0.40	**-0.76**	-0.25	-0.20
Eigenvalue	2.4	1.6	1.1	1.0
% of Variance	30.1	19.4	13.9	12.6

COPC[1]	Longnose Sucker Bone			
	PC1	PC2	PC3	PC4
Copper	0.18	-0.33	0.05	**-0.85**
Iron	**0.68**	0.27	0.06	-0.28
Molybdenum	-0.58	**0.64**	-0.08	0.08
Nickel	**0.69**	0.48	-0.20	0.21
Selenium	-0.23	**0.64**	0.53	-0.29
Uranium[2]	-0.13	**0.81**	-0.14	-0.21
Zinc	**0.81**	0.23	0.28	0.14
Polonium-210	0.33	-0.19	**-0.83**	-0.15
Arsenic	-0.51	0.52	-0.50	-0.14
Cobalt	**0.78**	0.41	-0.08	0.03
Eigenvalue	3.0	2.4	1.4	1.0
% of Variance	30.0	24.2	13.7	10.4

COPC[1]	White Sucker Flesh			
	PC1	PC2	PC3	PC4
Copper	**-0.89**	0.17	0.06	-
Iron	**-0.78**	0.30	-0.28	-
Lead	-0.49	-0.33	0.55	-
Mercury[2]	-0.36	-0.27	0.56	-
Selenium[2]	-0.09	**-0.78**	-0.37	-
Zinc	**-0.73**	0.09	-0.34	-
Polonium-210	**-0.71**	-0.36	0.24	-
Arsenic	0.08	**-0.84**	-0.30	-
Cobalt	**-0.81**	0.08	-0.28	-
Eigenvalue	3.5	1.8	1.2	0.8
% of Variance	38.7	19.6	13.1	9.0

COPC[1]	White Sucker Bone			
	PC1	PC2	PC3	PC4
Copper	0.04	-0.03	**-0.82**	-
Iron	**0.76**	0.22	-0.07	-
Molybdenum	-0.10	**-0.87**	0.02	-
Nickel	**0.88**	0.12	0.17	-
Selenium[2]	0.17	**-0.65**	-0.56	-
Uranium[2]	0.05	-0.56	0.41	-
Zinc	**0.79**	0.24	-0.20	-
Polonium-210	0.35	-0.46	0.42	-
Arsenic	0.27	**-0.81**	-0.13	-
Cobalt	**0.80**	-0.04	0.08	-
Eigenvalue	2.9	2.5	1.4	0.8
% of Variance	28.6	24.8	14.3	8.1

[1] All COPC concentrations or activity levels were log-tranformed before the PCA.

[2] Age-adjusted concentrations or activity levels were used after finding a statistically significant decrease in levels with specimen age in this species and tissue.

[3] Age-adjusted concentrations or activity levels were used after finding a statistically significant increase in levels with specimen age in this species and tissue.

Bolded values are COPCs with component loadings greater than 0.60 (disregarding positive or negative signs).

Principal Components (PC) with eigenvalues less than 1.0 or explaining less than 10% of the variance were not computed.

Specimens for which one or more COPC concentrations were not available for a given tissue had to be excluded from the anal

APPENDIX B, TABLE 30

Northern pike, longnose sucker, and white sucker COPC reference ranges and far-field exposure area averages and standard deviations for COPCs strongly correlated with the 3rd or 4th PCA axes.

Species	Tissue	COPC[1]	Reference Range Percentiles[2]			Far-Field Exposure			
			2.5	50	97.5	Area	Year	Average	Standard Deviation
Northern Pike	Flesh	Polonium-210[3]	0.0001	0.0006	0.0030	Cochrane River	2011	0.0022	0.0008
							2012	**0.0033**	0.0017
						Crackingstone Inlet	2011	0.0006	0.0003
							2012	0.0010	0.0006
						Fond du Lac River	2011	0.0018	0.0005
							2012	0.0022	0.0006
						Waterbury Lake	2011	0.0006	0.0003
							2012	0.0029	0.0010
	Bone	Zinc[3]	35.6	53.4	69.9	Cochrane River	2011	65.7	13.6
							2012	43.4	13.3
						Crackingstone Inlet	2011	61.0	4.2
							2012	55.1	7.5
						Fond du Lac River	2011	59.2	5.0
							2012	57.4	7.2
						Waterbury Lake	2011	49.3	3.1
							2012	53.3	14.3
		Polonium-210[3]	0.0004	0.0007	0.0020	Cochrane River	2011	0.0017	0.0007
							2012	0.0016	0.0007
						Crackingstone Inlet	2011	0.0007	0.0002
							2012	0.0007	0.0003
						Fond du Lac River	2011	0.0016	0.0008
							2012	0.0013	0.0004
						Waterbury Lake	2011	0.0015	0.0008
							2012	0.0016	0.0005
Longnose Sucker	Flesh	Mercury[4]	0.008	0.024	0.038	Cochrane River	2011	**0.042**	0.025
							2012	0.011	0.001
						Fond du Lac River	2011	**0.052**	0.013
							2012	0.034	0.005
						Waterbury Lake	2011	0.030	0.013
							2012	**0.047**	-[5]
	Bone	Copper[6]	0.19	0.27	0.49	-[6]	-[6]	-[6]	-[6]
		Polonium-210[6]	0.0003	0.0032	0.0178	-[6]	-[6]	-[6]	-[6]
White Sucker	Flesh	none[7]	-	-	-	-	-	-	-
	Bone	Copper[6]	0.20	0.29	0.64	-[6]	-[6]	-[6]	-[6]

Bolded averages exceed the reference range.

[1] Only the results for which COPCs levels were correlated by > |0.6 | with the 3rd or 4th axes of the PCA are shown here.

[2] The 50th percentile corresponds to the median; the 2.5th and 97.5th percentiles represent the lower and upper bounds of the reference range.

[3] Age-adjusted concentrations or activity levels were used after finding a statistically significant decrease in this COPC's levels with specimen age in this species and tissue.

[4] Age-adjusted concentrations or activity levels were used after finding a statistically significant increase in this COPC's levels with specimen age in this species and tissue.

[5] Only one specimen, therefore no standard deviation could be computed.

[6] No age adjustment was required; see Appendix A, Tables 19 and 28 for unadjusted far-field exposure averages and standard deviation

[7] No COPCs were strongly correlated with either the 3rd or 4th PCA axes.

APPENDIX C

QA/QC METHODS AND RESULTS

APPENDIX C: QA/QC METHODS AND RESULTS

INTRODUCTION

All sample collection and handling procedures, including preservation, shipping, and laboratory analyses followed appropriate Standard Operating Procedures (SOPs) and quality assurance/quality control (QA/QC) protocols. CanNorth's SOPs were developed using methods and procedures described in the Metal Mining Environmental Effects Monitoring (EEM) Guidance Document (EC 2012), in primary literature, in the Environmental Monitoring Guidelines for Operational Monitoring at Uranium and Gold Mining and Milling Operations in Saskatchewan (SEPS 1989), and by standard-setting organizations such as the United States Environmental Protection Agency (U.S. EPA). CanNorth's SOPs are compiled into field manuals, which are carried by the field staff on each survey. All SOPs and field data sheets are reviewed annually to ensure that they contain up-to-date information and that they meet the requirements of our ISO certifications.

All chemistry samples were analyzed by the Saskatchewan Research Council (SRC) Analytical Laboratory in Saskatoon. SRC is certified and accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA). As such, the SRC laboratories adhere to strict QA/QC standards and protocols. With each set of samples run, SRC tests reference materials, duplicates, and spiked samples.

METHODS

Water Quality

Some of the specific QA/QC methods employed during the water quality sampling program included:

- YSI meters underwent calibration by the manufacturer (annually), before each field trip, and weekly while in the field; The following YSI calibrations were completed in the field:
    - pH readings were taken every day using pH 7 and pH 4 standards.
    - Specific conductance was calibrated weekly.
    - Dissolved oxygen was calibrated at each sampling area according to the barometric pressure.

- Back-up surface pH measurements were taken using a Hach kit.
- Samples were discarded if the sampling quality control measures were not met (e.g., water samples were discarded if the sediment was disturbed).
- The Kemmerer water sampler was acid washed by SRC prior to each field survey. Between each water sample taken, the water sampler was triple-rinsed with the water from the sampling station.
- Chain-of-custody forms were used in the transportation of samples so the samples could be tracked from the field to the laboratory.
- The following blanks and field duplicates were collected:
    - A field blank was used to check contamination from all potential sources of contamination in the field (EC 2012). A field blank sample was collected by bringing deionized water in the field that was supplied by the lab. The field blank sample underwent the same sample collection, handling, and processing steps as the test samples.
    - A trip blank sample was used to check contamination from sample bottles, caps, and preservatives during transport, storage, and analyses (EC 2012). The sample bottle was filled with deionized water in the laboratory, and it was preserved in the same manner as the test samples. The trip blank sample was transported to and from the field without modification and was opened at the time of analyses.
    - A field duplicate sample was taken to ensure that sampling and laboratory analyses produced repeatable results (EC 2012). At least one duplicate water sample was collected per field survey.

Sediment Quality

The following are some of the specific QA/QC methods employed during the sediment sampling program:

- Samples were discarded if the sampling quality control measures were not met (e.g., sediment was overflowing out of the top of the core tube).
- Sampling equipment was cleaned prior to the start of sampling (all core tubes were acid washed by SRC) and a new core tube was used at each waterbody.
- Chain-of-custody forms were used in the transportation of samples so the samples could be tracked from the field to the laboratory.

- Field duplicate samples were taken at a frequency of approximately 10% of the samples collected to ensure that sampling and laboratory analyses produced repeatable results (EC 2012).

Water and Sediment QA/QC Data Analyses

For the water and sediment samples, the Relative Percent Difference (RPD) was calculated between the test sample and the duplicate sample. The Data Quality Objective (DQO) for the RPDs was set at 20% for water quality and 40% for sediment quality. The intent of applying this DQO was to provide a benchmark for the initial data screening process, which determined whether the results were acceptable or required further investigation. It is estimated that at concentrations near the detection limit (DL), measurement uncertainty is very high, often approaching 100% at concentrations within five times the DL (J. Zimmer, SRC, pers. comm., 2013). Thus, RPDs of greater than 20% or 40% were only considered a potential issue if the test and duplicate results were greater than five times the DL, outside the range of laboratory precision, and outside of instrument accuracy.

Similarly, parameter concentrations in the field and trip blank samples should be at or below the DL as they are composed of deionized water. Thus, if parameter concentrations were greater than five times the DL in the field and trip blank samples they were further investigated. Notably, the deionized water that was used to prepare the blank samples can absorb carbon dioxide (CO_2) in the air resulting in low pH in the blank samples (J. Zimmer, SRC, pers. comm., 2011). Therefore, discrepancies between pH values measured in the blank samples and the DLs are not considered as errant.

Further investigations involved contacting SRC to re-check values and checking SRC's internal QA/QC results for potential issues with a specific batch of samples. The QA/QC chemistry tables present the DLs, sample precisions, calculated RPDs, identify whether parameter concentrations are higher than five times the DL, and flag parameters that exceed the above mentioned criteria.

Benthic Invertebrate Community

Sample Collection

Some of the specific QA/QC methods employed during the benthic invertebrate community sampling program include the following:

- Samples were discarded if the sampling quality control measures were not met (e.g., sediment was overflowing out of the top of the Ekman dredge).
- Sampling equipment was cleaned prior to the start of sampling.
- The nitex net was thoroughly rinsed and checked to ensure all organisms were collected.
- Chain-of-custody forms were used in the transportation of samples so the samples could be tracked from the field to the laboratory.

Laboratory Analyses

Benthic invertebrate taxonomic identification and enumeration was completed by Dr. Jack Zloty, Professor Emeritus from the University of Calgary based in Summerland, British Columbia. The QA/QC program for the collection of benthic invertebrate community data included a verification of sorting efficiency in approximately 10% of the randomly selected samples as recommended by Glozier et al. (2002) and EC (2002, 2012). This involved a re-examination of the sample residue (here referred to as a "re-sort") for the selected samples under a dissecting microscope to recover any organisms that may have been missed in the initial sorting. The criteria for an acceptable sort are that more than 90% of the total number of organisms is picked during the initial sort (Glozier et al. 2002; EC 2002, 2012). If more than 10% of organisms are found during the re-sort, then all the samples within that particular batch of samples requires re-sorting. Another criterion which requires a re-sort is if the entire taxonomic group of invertebrates was overlooked during the initial sort, even if the number of missed organisms constituted less than 10% of the total number of organisms in a sample. If the sorting efficiency was acceptable (>90%), then the re-sorted organisms were left out of any further analysis because they are not part of the complete sorting process.

The effects of sub-sampling on abundance estimates were examined on approximately 10% of benthic invertebrate samples that underwent sub-sampling. Each randomly selected sample was subdivided into five equal portions and each were sorted in their entirety. The five estimates were then compared to the total actual count and the accuracy of the five estimates was calculated as recommended by EC (2012). Sub-sampling precision was calculated as recommended by EC (2002) to ensure that the variability in counts between sub-samples was acceptable. The DQO for both sub-sampling accuracy and precision was set at <20% as recommended by Glozier et al. (2002) and EC (2002, 2012).

Fish

Fish Chemistry QA/QC Data Analyses

Duplicate samples for fish chemistry were not analyzed as the matrix heterogeneity of biological tissues causes a high degree of variability. Instead, data were compared between samples within a study area to examine unusual patterns and trends. Boxplots were used to help determine if outliers and/or suspicious data were present. Extreme outliers (i.e., values >3 times the data range) were compared to the range of values measured in other study areas and against site-specific historical levels. Anomalous values were reported to SRC for confirmation and/or re-analysis.

Fish Ageing

Fish ageing was completed by North Shore Environmental Services (North Shore) in Thunder Bay, Ontario. The following QA/QC measures were completed by North Shore:

- Each ageing structure was read and assigned a CONF, which is the confidence in the reading on a scale of 1 to 10 (e.g., 7 indicates confidence with the age assessed, 6 means that something was seen to give some concern, and 5 is a fairly low confidence in the age assessed).
- A review of a sub-sample of ages (at least 10%) on secondary ageing structures (for large-bodied fish) was then completed, usually on the fish where the CONF was on the lower end of the scale. For small-bodied fish a blind review of at least 10% of ageing structures was completed.
- All readings were conducted as ‘blind’ (i.e., independent from each other).

Additionally, one of the duplicate structures, from a minimum of 10% of the fish collected, was retained for possible submission to a third party laboratory for confirmation of ages.

RESULTS

Water Quality

All parameters were within the data quality criteria for the sample and duplicate collected during the EARMP technical program (Appendix C, Table 1). In addition, analytical results for the field blank and trip blank samples were low or non-detectable with the exception of aluminum in the field blank. When sample precision is considered the concentration is considered acceptable. SRC concluded that their internal QC results were within their specified limits and were considered acceptable (attached).

Sediment Quality

The sediment chemistry QA/QC results are presented in Appendix C, Table 2. Following initial data screening, sediment samples found to contain parameter concentrations that exceeded the DQO were re-analyzed by SRC. The re-analyses resulted in changes in some parameter concentrations and a revised report was issued (Appendix C, Table 2). The revised data are presented herein.

The revised data set contained nine cases where the DQO were exceeded. These cases were coarse sand content in the Cochrane River, arsenic, vanadium, coarse sand, radium-266, and thorium-230 in Crackingstone Inlet; and sodium, coarse sand, and silt in Pasfield Lake. These numbers were verified by SRC, re-analysis of the results confirmed the results, and it is concluded these parameter concentrations likely varied between samples as a result of sample heterogeneity. It is noted that a large amount of variability in the Crackingstone Inlet replicate samples was also observed.

Benthic Invertebrates

Of the 35 benthic invertebrate samples processed from the EARMP technical program study area, three samples were randomly selected for the re-sort (Appendix C, Table 3). The sorting efficiencies ranged between 97.4% and 98.0%, which met the minimum 90% required by Environment Canada (EC 2012). Thus, these results satisfied the DQO objective of less than 10% of organisms missed in the initial sorting. Sub-sampling accuracy and precision met the DQO of <20% (Glozier et al. 2002; EC 2002, 2012), with accuracy ranging between 0.7% and 6.8% (absolute values) and precision ranging between 0.3% and 14.3% for the sample subjected to the sub-sampling QA/QC assessment (Appendix C, Table 4).

Fish

Fish Chemistry

Fish chemistry data were screened for potential outliers and screened against pervious monitoring data. No outliers were identified.

Fish Ageing

Detailed ageing results, including confidence estimates, are presented in Appendix C, Table 5. There were no issues identified in the ageing results.

LITERATURE CITED

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LIST OF TABLES

APPENDIX C, TABLE 1

QA/QC results for water chemistry data collected in the EARMP study area , September 2015.

Parameter	**Units**	**Fond du Lac River**								**QA/QC**			
		DL	**Sample**	**Duplicate**	**RPD (%)**	**>5*DL?[1]**	**>5*DL?[1]**	**Precision**		**Field Blank**	**>5*DL?**	**Trip Blank**	**>5*DL?**
			15-Sep-15	**15-Sep-15**		**Sample**	**Duplicate**	**Sample**	**Duplicate**	**30-Sep-15**		**30-Sep-15**	
Inorganic Ions													
Bicarbonate	mg/L	1	13	13	0	Yes	Yes	3	3	1	No	1	No
Calcium	mg/L	0.1	3.3	3.3	0	Yes	Yes	0.5	0.5	0.1	No	0.1	No
Carbonate	mg/L	1	1	1	0	No	No			1	No	1	No
Chloride	mg/L	0.1	0.3	0.3	0	No	No	0.1	0.1	0.1	No	0.1	No
Hydroxide	mg/L	1	1	1	0	No	No			1	No	1	No
Magnesium	mg/L	0.1	1	1	0	Yes	Yes	0.2	0.2	0.1	No	0.1	No
Potassium	mg/L	0.1	0.4	0.4	0	No	No	0.2	0.2	0.1	No	0.1	No
Sodium	mg/L	0.1	1.3	1.3	0	Yes	Yes	0.3	0.3	0.1	No	0.1	No
Sulphate	mg/L	0.2	3.9	4	3	Yes	Yes	1	0.6	0.2	No	0.2	No
Metals													
Aluminum	mg/L	0.0005	0.0078	0.0086	9.8	Yes	Yes	0.002	0.002	0.0027	Yes	0.0012	No
Barium	mg/L	0.0005	0.0045	0.0044	2	Yes	Yes	0.001	0.001	0.0005	No	0.0005	No
Boron	mg/L	0.01	0.01	0.01	0	No	No			0.01	No	0.01	No
Cadmium	mg/L	0.00001	0.00001	0.00001	0	No	No			0.00001	No	0.00001	No
Chromium	mg/L	0.0005	0.0005	0.0005	0	No	No			0.0005	No	0.0005	No
Copper	mg/L	0.0002	0.0002	0.0002	0	No	No			0.0002	No	0.0002	No
Iron	mg/L	0.0005	0.04	0.041	2.5	Yes	Yes	0.006	0.006	0.0005	No	0.0005	No
Lead	mg/L	0.0001	0.0001	0.0001	0	No	No			0.0001	No	0.0001	No
Manganese	mg/L	0.0005	0.028	0.029	4	Yes	Yes	0.004	0.004	0.0005	No	0.0005	No
Mercury	µg/L	0.01	0.01	0.01	0	No	No			0.01	No	0.01	No
Molybdenum	mg/L	0.0001	0.0008	0.0008	0	Yes	Yes	0.0003	0.0003	0.0001	No	0.0001	No
Nickel	mg/L	0.0001	0.0001	0.0001	0	No	No			0.0001	No	0.0001	No
Selenium	mg/L	0.0001	0.0001	0.0001	0	No	No			0.0001	No	0.0001	No
Silver	mg/L	0.00005	0.00005	0.00005	0	No	No			0.00005	No	0.00005	No
Thallium	mg/L	0.0002	0.0002	0.0002	0	No	No			0.0002	No	0.0002	No
Tin	mg/L	0.0001	0.0001	0.0001	0.0	No	No			0.0001	No	0.0001	No
Titanium	mg/L	0.0002	0.0002	0.0002	0	No	No		0.0002	0.0002	No	0.0002	No
Uranium	µg/L	0.1	0.1	0.1	0	No	No			0.1	No	0.1	No
Zinc	mg/L	0.0005	0.014	0.012	15.4	Yes	Yes	0.002	0.002	0.0005	No	0.0005	No
Nutrients													
Ammonia as nitrogen	mg/L	0.01	0.01	0.01	0	No	No		0.01	0.01	No	0.01	No
Nitrate (calc. from NO2+NO3-N)	mg/L	0.04	0.04	0.04	0	No	No			0.04	No	0.04	No
Organic carbon	mg/L	0.2	3	3.3	10	Yes	Yes	0.8	0.8	0.2	No	0.2	No
Phosphorus	mg/L	0.01	0.01	0.01	0	No	No			0.01	No	0.01	No
Total Kjeldahl nitrogen	mg/L	0.05	0.2	0.17	16.2	No	No	0.1	0.1	0.05	No	0.05	No
Total nitrogen	mg/L	0.05	0.2	0.17	16.2	No	No			0.05	No	0.05	No

APPENDIX C, TABLE 1

QA/QC results for water chemistry data collected in the EARMP study area , September 2015.

Parameter	Units	Fond du Lac River								QA/QC			
		DL	Sample	Duplicate	RPD (%)	>5*DL?[1]	>5*DL?[1]	Precision		Field Blank	>5*DL?	Trip Blank	>5*DL?
			15-Sep-15	15-Sep-15		Sample	Duplicate	Sample	Duplicate	30-Sep-15		30-Sep-15	
Physical Properties													
P. alkalinity	mg/L	1	1	1	0	No	No			1	No	1	No
pH	pH units	0.07	6.75	6.72	0.4	Yes	Yes	0.1	0.1	5.32	Yes	5.1	No
Specific conductivity	µS/cm	1	34	34	0.0	Yes	Yes	3	3	1	No	1	No
Sum of ions	mg/L	1	23	23	0	Yes	Yes	3	3	1	No	1	No
Total alkalinity	mg/L	1	11	11	0	Yes	Yes	6	6	1	No	1	No
Total dissolved solids	mg/L	2	26	27	3.8	Yes	Yes	4	4	1	No	1	No
Total hardness	mg/L	1	12	12	0	Yes	Yes	3	3	1	No	1	No
Total suspended solids	mg/L	1	1	1	0	No	No	1	1	1	No	1	No
Radionuclides													
Lead-210	Bq/L	0.02	0.02	0.02	0	No	No			0.02	No	0.02	No
Polonium-210	Bq/L	0.005	0.005	0.005	0	No	No			0.005	No	0.005	No
Radium-226	Bq/L	0.005	0.005	0.006	18.2	No	No		0.005	0.006	No	0.005	No
Thorium-230	Bq/L	0.01	0.01	0.01	0	No	No			0.01	No	0.01	No
Trace Elements													
Antimony	mg/L	0.0002	0.0002	0.0002	0	No	No			0.0002	No	0.0002	No
Arsenic	µg/L	0.1	0.1	0.1	0	No	No		0.1	0.1	No	0.1	No
Beryllium	mg/L	0.0001	0.0001	0.0001	0	No	No			0.0001	No	0.0001	No
Cobalt	mg/L	0.0001	0.0001	0.0001	0	No	No			0.0001	No	0.0001	No
Fluoride	mg/L	0.01	0.07	0.07	0	Yes	Yes	0.02	0.02	0.01	No	0.01	No
Strontium	mg/L	0.0005	0.013	0.013	0	Yes	Yes	0.002	0.002	0.0005	No	0.0005	No
Vanadium	mg/L	0.0001	0.0001	0.0001	0	No	No			0.0001	No	0.0001	No

DL = Detection Limit; N/A = Not Applicable; dash = no data.

Relative Percent Difference (RPD) = | ((Duplicate - Sample)/((Duplicate + Sample)/2))*100 |.

For calculation of RPDs, values <DL were set equal to the DL.

[1] Ranking of a "yes" used only if both values are >5*DL.

Bolded values indicate exceedances of data quality control limits (RPD >20%, outside sample precision, and both samples >5*DL).

APPENDIX C, TABLE 2

QA/QC results for sediment quality data collected in the EARMP study area , September 2015.

			Cochrane River						Crackingstone Bay					
Parameter	**Units**	**DL**	**Station 5**			**Precision**		**>5*DL?[1]**	**Station 4**			**Precision**		**>5*DL?**
			Sample	**Duplicate**	**RPD**	**Sample**	**Duplicate**		**Sample**	**Duplicate**	**RPD**	**Sample**	**Duplicate**	
Inorganic Ion														
Calcium	µg/g	10	4200	4000	4.88	400	400	Yes	4300	4500	4.55	400	400	Yes
Magnesium	µg/g	10	3200	3300	3.08	300	300	Yes	3100	3200	3.17	300	300	Yes
Potassium	µg/g	10	2800	2800	0.00	300	300	Yes	3500	3200	8.96	400	300	Yes
Sodium	µg/g	10	360	400	10.53	40	40	Yes	390	420	7.41	40	40	Yes
Metals														
Aluminum	µg/g	20	11900	13300	11.11	2000	2000	Yes	12400	14400	14.93	2000	2000	Yes
Antimony	µg/g	0.2	0.2	0.2	0.00	-	-	No	0.2	0.2	0.00	-	-	No
Arsenic	µg/g	0.1	1.8	2	10.53	0.2	0.2	Yes	17	4.4	**117.76**	2	0.4	Yes
Barium	µg/g	0.5	89	90	1.12	9	9	Yes	95	92	3.21	10	9	Yes
Beryllium	µg/g	0.1	0.6	0.6	0.00	0.09	0.09	Yes	0.5	0.5	0.00	0.08	0.08	No
Boron	µg/g	1	5	5	0.00	0.8	0.8	No	14	13	7.41	1	1	Yes
Cadmium	µg/g	0.1	0.4	0.4	0.00	0.06	0.06	No	0.2	0.2	0.00	0.03	0.03	No
Chromium	µg/g	0.5	21	21	0.00	2	2	Yes	29	24	18.87	3	2	Yes
Cobalt	µg/g	0.2	3.8	3.7	2.67	0.4	0.4	Yes	4.7	4.4	6.59	0.5	0.4	Yes
Copper	µg/g	0.5	7.5	7.8	3.92	0.8	0.8	Yes	7.5	6.2	18.98	0.8	0.6	Yes
Iron	µg/g	20	24000	26200	8.76	4000	4000	Yes	19200	18400	4.26	3000	3000	Yes
Lead	µg/g	0.1	9.6	9.7	1.04	1	1	Yes	10	7.1	33.92	1	0.7	Yes
Manganese	µg/g	0.5	310	310	0.00	30	30	Yes	410	490	17.78	40	50	Yes
Molybdenum	µg/g	0.1	6.9	6.5	5.97	0.7	0.6	Yes	1.6	1	46.15	0.2	0.1	Yes
Nickel	µg/g	0.1	10	11	9.52	1	1	Yes	10	9.1	9.42	1	0.9	Yes
Selenium	µg/g	0.1	0.6	0.7	15.38	0.09	0.1	Yes	1.5	1.4	6.90	0.2	0.1	Yes
Silver	µg/g	0.1	0.1	0.1	0.00	-	-	No	0.1	0.1	0.00	-	-	No
Strontium	µg/g	0.5	24	24	0.00	2	2	Yes	55	56	1.80	6	6	Yes
Thallium	µg/g	0.2	0.2	0.2	0.00	-	-	No	0.2	0.2	0.00	-	-	No
Tin	µg/g	0.1	0.7	0.9	25.00	0.1	0.1	Yes	0.7	0.6	15.38	0.1	0.09	Yes
Titanium	µg/g	20	920	1000	8.33	100	200	Yes	800	1000	22.22	100	200	Yes
Uranium	µg/g	0.1	4.5	4.4	2.25	0.4	0.4	Yes	78	61	24.46	8	6	Yes
Vanadium	µg/g	0.1	25	25	0.00	2	2	Yes	141	48	**98.41**	20	5	Yes
Zinc	µg/g	0.5	38	38	0.00	4	4	Yes	23	22	4.44	2	2	Yes
Nutrients														
Carbon, Total Organic	%	0.01	7.6	7.61	0.13	0.8	0.8	Yes	1.82	2.17	17.54	0.2	0.2	Yes
Phosphorus, Total	µg/g	10	1200	1300	8.00	100	100	Yes	750	770	2.63	80	80	Yes
Physical Properties														
Clay	% vol	0.01	13.7	16.3	17.33	1	2	Yes	14.8	11.8	22.56	1	1	Yes
Moisture	%	0.01	89	89.8	0.89	9	9	Yes	60.36	64.61	6.80	6	6	Yes
Fine Sand	% vol	0.01	14.7	5.3	94.00	1	0.5	Yes	25.7	21.3	18.72	2	2	Yes
Gravel	% vol	0.01	0.01	0.01	0.00	-	-	No	0.01	0.01	0.00	-	-	No
Coarse Sand	% vol	0.01	2.4	0.22	**166.41**	0.2	0.03	Yes	2.9	0.21	**172.99**	0.3	0.03	Yes
Loss on Ignition	%	0	17.8	17.89	0.50	-	-	Yes	4.62	5.06	9.09	-	-	Yes
Silt	% vol	0.01	69.2	78.2	12.21	7	8	Yes	56.6	66.7	16.38	6	7	Yes
Radionuclides														
Lead-210	Bq/g	0.04	0.45	0.38	16.87	0.1	0.07	Yes	0.39	0.25	43.75	0.07	0.06	Yes
Polonium-210	Bq/g	0.01	0.36	0.33	8.70	0.05	0.05	Yes	0.34	0.18	61.54	0.05	0.04	Yes
Radium-226	Bq/g	0.01	0.11	0.03	114.29	0.03	0.02	Yes	1.2	0.58	**69.66**	0.1	0.09	Yes
Thorium-230	Bq/g	0.02	0.04	0.02	66.67	0.03	-	No	12	6.1	**65.19**	1	0.6	No

APPENDIX C, TABLE 2

QA/QC results for sediment quality data collected in the EARMP study area , September 2015.

			Pasfield Lake						Waterbury Lake					
Parameter	**Units**	**DL**	**Station 4**			**Precision**		**>5*DL?**	**Station 5**			**Precision**		**>5*DL?**
			Sample	**Duplicate**	**RPD**	**Sample**	**Duplicate**		**Sample**	**Duplicate**	**RPD**	**Sample**	**Duplicate**	
Inorganic Ion														
Calcium	µg/g	10	1500	2000	28.57	200	200	Yes	1200	1300	8.00	100	100	Yes
Magnesium	µg/g	10	610	800	26.95	60	80	Yes	700	690	1.44	70	70	Yes
Potassium	µg/g	10	870	1100	23.35	90	100	Yes	1200	1300	8.00	100	100	Yes
Sodium	µg/g	10	150	290	**63.64**	20	30	Yes	350	380	8.22	40	40	Yes
Metals														
Aluminum	µg/g	20	3800	4600	19.05	600	700	Yes	3300	3900	16.67	500	600	Yes
Antimony	µg/g	0.2	0.2	0.2	0.00	-	-	No	0.2	0.2	0.00	-	-	No
Arsenic	µg/g	0.1	1.4	1.5	6.90	0.1	0.2	Yes	0.8	0.9	11.76	0.1	0.1	Yes
Barium	µg/g	0.5	39	65	50.00	4	6	Yes	44	49	10.75	4	5	Yes
Beryllium	µg/g	0.1	0.1	0.1	0.00	0.02	0.02	No	0.1	0.1	0.00	0.02	0.02	No
Boron	µg/g	1	2	2	0.00	0.3	0.3	No	1	2	66.67	0.2	0.3	No
Cadmium	µg/g	0.1	0.4	0.8	66.67	0.06	0.1	No	0.4	0.3	28.57	0.06	0.04	No
Chromium	µg/g	0.5	5	6.3	23.01	0.5	0.6	Yes	4.4	4.7	6.59	0.7	0.7	Yes
Cobalt	µg/g	0.2	0.8	1.1	31.58	0.1	0.2	No	0.8	0.9	11.76	0.1	0.1	No
Copper	µg/g	0.5	2.5	2.6	3.92	0.4	0.4	No	1.1	1	9.52	0.2	0.2	Yes
Iron	µg/g	20	3100	3970	24.61	500	600	Yes	3900	4000	2.53	600	600	Yes
Lead	µg/g	0.1	7.4	8.5	13.84	0.7	0.8	Yes	3.1	3.3	6.25	0.3	0.3	Yes
Manganese	µg/g	0.5	72	120	50.00	7	10	Yes	490	440	10.75	50	40	Yes
Molybdenum	µg/g	0.1	0.5	0.6	18.18	0.08	0.09	No	1.9	1.8	5.41	0.2	0.2	Yes
Nickel	µg/g	0.1	2.3	2.9	23.08	0.2	0.3	Yes	1.5	1.8	18.18	0.2	0.2	Yes
Selenium	µg/g	0.1	0.2	0.2	0.00	0.03	0.03	No	0.1	0.2	66.67	0.02	0.03	No
Silver	µg/g	0.1	0.1	0.2	66.67	-	0.03	No	0.1	0.1	0.00	-	-	No
Strontium	µg/g	0.5	30	38	23.53	3	4	Yes	24	24	0.00	2	2	No
Thallium	µg/g	0.2	0.2	0.2	0.00	-	-	No	0.2	0.2	0.00	-	-	No
Tin	µg/g	0.1	0.2	0.3	40.00	0.03	0.04	No	0.2	0.3	40.00	0.03	0.04	No
Titanium	µg/g	20	190	280	38.30	20	30	Yes	190	210	10.00	20	20	Yes
Uranium	µg/g	0.1	0.3	0.4	28.57	0.04	0.06	No	0.4	0.3	28.57	0.06	0.04	No
Vanadium	µg/g	0.1	9.4	11	15.69	0.9	1	Yes	5.7	6.5	13.11	0.6	0.6	Yes
Zinc	µg/g	0.5	20	22	9.52	2	2	Yes	7.8	10	24.72	0.8	1	Yes
Nutrients														
Carbon, Total Organic	%	0.01	5.62	8	34.95	0.6	0.8	Yes	2.16	2.89	28.91	0.2	0.3	Yes
Phosphorus, Total	µg/g	10	260	380	37.50	30	40	Yes	210	250	17.39	20	20	Yes
Physical Properties														
Clay	% vol	0.01	3.1	4.7	41.03	0.3	0.5	Yes	6.4	4.7	30.63	0.6	0.5	Yes
Moisture	%	0.01	86.37	92.84	7.22	9	9	Yes	72.66	79.77	9.33	7	8	Yes
Fine Sand	% vol	0.01	22.5	15.4	37.47	2	2	Yes	22.6	33.8	39.72	2	3	Yes
Gravel	% vol	0.01	0.01	0.01	0.00	-	-	No	0.01	0.01	0.00	-	-	No
Coarse Sand	% vol	0.01	42.1	3.6	**168.49**	4	0.4	Yes	33.2	26.6	22.07	3	3	Yes
Loss on Ignition	%	0	12.99	17.84	31.46	-	-	Yes	4.66	6.14	27.41	-	-	Yes
Silt	% vol	0.01	32.3	76.3	**81.03**	3	8	Yes	37.8	34.9	7.98	4	3	Yes
Radionuclides														
Lead-210	Bq/g	0.04	0.25	0.49	64.86	0.06	0.1	Yes	0.11	0.11	0.00	0.05	0.05	No
Polonium-210	Bq/g	0.01	0.24	0.38	45.16	0.04	0.06	Yes	0.09	0.11	20.00	0.03	0.03	Yes
Radium-226	Bq/g	0.01	0.02	0.02	0.00	0.02	0.02	No	0.02	0.03	40.00	0.02	0.02	No
Thorium-230	Bq/g	0.02	0.02	0.02	0.00	-	-	No	0.02	0.02	0.00	-	-	No

DL = Detection Limit; N/A = Not Applicable; dash = no data.

Relative Percent Difference (RPD) = | ((Duplicate - Sample)/((Duplicate + Sample)/2))*100 |.

For calculation of RPDs, values <DL were set equal to the DL.

[1] Ranking of a "yes" used only if both values are >5*DL.

Bolded values indicate exceedances of data quality control limits (RPD >40%, outside sample precision, and both samples >5*DL).

APPENDIX C, TABLE 3

Sorting efficiency for benthic invertebrate samples from the EARMP study area, September 2015.

Area	Sample	Number in First Sorting	Number in Re-Sorting	Sorting Efficiency (%)[1]
Pasfield Lake	2	406	11	97.4
Fond du Lac River	2	312	5	98.4
Crackingstone Bay	4	1155	20	98.3
Average	**-**	**-**	**-**	**98.0**

[1] Sorting efficiency (%) = [1-(number in re-sorting / (number in first sorting + number in re-sorting))] * 100.

APPENDIX C, TABLE 4

Subsample count accuracy for benthic invertebrate samples from the EARMP study area, September 2015.

Area and Sample	Subsample[1]	Count	Sample Estimate[2]	Accuracy (%)[3]
Crackingstone Bay Station 1	A	291	1455	0.7
	B	273	1365	6.8
	C	299	1495	-2.0
	D	312	1560	-6.5
	E	290	1450	1.0
Total Actual Number[4]		**1465**	-	-

[1] A subsample consisted of 1/5 of the sample.

[2] Sample estimate = count x 5.

[3] Accuracy (%) = ((total actual number - sample estimate) / total actual number) * 100.

[4] Larger benthic invertebrates were counted in the whole sample without subsampling (n = 531 specimens); smaller invertebrates were counted in subsamples (n = 410 specimens).

Range in subsampling precision = 0.3 % to 14.3 %.

APPENDIX C, TABLE 5

QA/QC results for large-bodied fish age data collected in the EARMP study area, September 2015.

Waterbody	Site	Species/Number	Sex	Ageing Structure	EDGE [1]	CONF [2]	AGEA [3]	QAQC
Cree Lake	GN 5-1	LW9	F	Otolith	++	(7)	14++	
	GN 7-1	LW1	M	Otolith	++	(7)	14++	
	GN 2-2	LW18	F	Otolith	++	(7)	13++	13++
	GN 5-1	LW10	F	Otolith	++	(7)	11++	11++
	GN 5-1	LW12	M	Otolith	++	(7)	12++	
	GN 5-1	LW11	M	Otolith	++	(7)	12++	
	GN 2-2	LW17	F	Otolith	++	(7)	13++	
	GN 5-1	LW13	M	Otolith	++	(6-7)	19++	
	AN 3-1	NP2	M	Cleithra	++	(7)	7++	7++
	AN 3-1	NP1	F	Cleithra	++	(7)	5++	
	AN 3-1	NP3	M	Cleithra	++	(7)	7++	7++
	AN 3-1	NP5	F	Cleithra	++	(6-7)	9++	
	AN 3-1	NP4	F	Cleithra	++	(7)	7++	
	GN 2-2	WSU13	F	Fin Ray	++	(6-7)	10++	
	GN 2-2	WSU10	F	Fin Ray	++	(7)	10++	
	GN 2-2	WSU11	M	Fin Ray	++	(6-7)	9++	
	GN 2-2	WSU12	U	Fin Ray	++	(7)	6++	
	GN 2-2	WSU9	M	Fin Ray	++	(7)	8++	8++
	HG 1-2	LSU14	U	Fin Ray	++	(6)	8++	
	HG 1-2	LSU9	U	Fin Ray	++	(7)	8++	
	HG 1-2	LSU15	U	Fin Ray	++	(6-7)	9++	
	GN 5-1	LSU12	F	Fin Ray	++	(6-7)	18++	
	GN 7-1	LSU13	U	Fin Ray	++	(7)	17++	
	GN 5-1	LSU5	M	Fin Ray	++	(7)	14++	
	GN 7-1	LSU8	U	Fin Ray	++	(7)	10++	
	HG 1-2	LT32	M	Otolith	++	(7)	11++	
	AN 2-1	LT1	M	Otolith	++	(6-7)	14++	
	AN 2-1	LT2	F	Otolith	++	(6)	25++	
	AN 2-1	LT4	M	Otolith	+	(7)	26+	
	AN 2-1	LT3	F	Otolith	++	(7)	14++	14++
Cochrane River	HG 1-1	LT5	M	Otolith	++	(7)	10++	10++
	AN 2-1	LT1	M	Otolith	++	(7)	22++	
	GN 6-1	LT11	M	Otolith	++	(7)	19++	
	GN 2-1	LT1	F	Otolith	++	(7)	10++	
	HG 1-1	LT1	F	Otolith	++	(7)	9++	
	GN 1-1	LW2	F	Otolith	++	(7)	16++	16++
	HG 1-1	LW8	M	Otolith	++	(7)	21++	
	GN 2-1	LW2	M	Otolith	++	(7)	21++	
	HG 1-1	LW9	F	Otolith	++	(7)	21++	
	GN 2-1	LW3	F	Otolith	++	(7)	18++	

APPENDIX C, TABLE 5

QA/QC results for large-bodied fish age data collected in the EARMP study area, September 2015.

Waterbody	Site	Species/Number	Sex	Ageing Structure	EDGE [1]	CONF [2]	AGEA [3]	QAQC
Waterbury Lake	AN 1-1	LT5	M	Otolith	++	(7)	12++	12++
	AN 1-1	LT1	F	Otolith	++	(5-6)	13++	
	AN 1-1	LT2	F	Otolith	++	(7)	10++	
	AN 1-1	LT4	M	Otolith	++	(7)	7++	7++
	AN 1-1	LT3	M	Otolith	++	(6-7)	11++	
	GN 1-1	LW2	F	Otolith	++	(6-7)	10++	10++
	GN 2-1	LW3	M	Otolith	+	(7)	15+	
	GN 2-1	LW4	F	Otolith	+	(7)	11+	
	GN 1-1	LW5	M	Otolith	+	(7)	14+	
	GN 1-1	LW4	U	Otolith	+	(7)	8+	
	GN 1-1	LW3	U	Otolith	+	(6-7)	7+	
	GN 2-3	LW14	F	Otolith	+	(7)	26++	
	GN 2-3	LW15	M	Otolith	++	(7)	24++	
Ellis Bay	AN 5-1	LT1	F	Otolith	++	(5-6)	19++	
	GN 2-1	LT1	F	Otolith	+	(7)	15+	
	GN2-1	LT2	F	Otolith	+	(7)	15+	
	AN 5-1	LT2	M	Otolith	+	(7)	12+	
	AN 5-1	LT3	M	Otolith	++	(7)	16++	
	GN 2-1	LW3	M	Otolith	++	(7)	10++	
	GN 2-1	LW4	F	Otolith	++	(6)	18++	
	GN 2-1	LW5	F	Otolith	++	(7)	12++	
	GN 2-1	LW6	M	Otolith	++	(7)	16++	
	GN 2-1	LW7	M	Otolith	++	(7)	11++	
Crackingstone River	GN 2-1	LW2	F	Otolith	++	(7)	11++	
	GN 2-1	LW3	F	Otolith	++	(7)	9++	
	GN 2-1	LW4	U	Otolith	++	(7)	8++	8++
	GN 1-1	LW6	F	Otolith	++	(7)	11++	
	GN 2-1	LW1	F	Otolith	++	(7)	10++	
	GN 1-1	LT3	F	Otolith	++	(7)	19++	
	GN 1-1	LT2	M	Otolith	++	(6-7)	24++	
	GN 1-1	LT5	M	Otolith	++	(6-7)	10++	
	GN 1-1	LT1	M	Otolith	++	(6-7)	15++	
	GN 1-1	LT4	M	Otolith	+	(7)	16+	
Fond du Lac River	GN 2-1	LT2	M	Otolith	++	(7)	11++	
	GN 2-1	LT3	M	Otolith	++	6-7)		
	GN 2-1	LT3	M	Otolith	++	(6-7)	11++	
	GN 2-1	LT4	M	Otolith	++	(7)	10++	
	GN 2-1	LT5	M	Otolith	++	(7)	11++	
	GN 2-1	LT6	M	Otolith	+	(7)	10++	
	GN 7-1	LW19	M	Otolith	++	(6-7)	19++	
	GN 7-1	LW20	M	Otolith	++	(6)	16++	
	GN 4-2	LW15	U	Otolith	+	(7)	11+	
	GN 9-1	LW14	F	Otolith	+	(7)	15+	
	GN 7-1	LW21	U	Otolith	++	(6-7)	5++	
	GN 7-1	LW22	U	Otolith	++	(7)	5++	

APPENDIX C, TABLE 5

QA/QC results for large-bodied fish age data collected in the EARMP study area, September 2015.

Waterbody	Site	Species/Number	Sex	Ageing Structure	EDGE [1]	CONF [2]	AGEA [3]	QAQC
Pasfield Lake bh9	HG 2-1	LT49	F	Otolith	++	(6)	25++	
	HG 2-1	LT52	F	Otolith	+	(7)	19+	
	GN 5-1	LT12	F	Otolith	+	(6-7)	10+	
	HG 2-1	LT51	F	Otolith	++	(7)	19++	
	HG 2-1	LT50	F	Otolith	++	(6-7)	26++	
	HG 2-1	LSU5	U	Fin Ray	++	(6-7)	9++	
	GN 5-1	LSU13	U	Fin Ray	++	(7)	10++	
	HG 2-1	LSU3	F	Fin Ray	++	(6-7)	14++	
	GN 3-2	LSU27	U	Fin Ray	++	(7)	10++	10++
	HG 2-1	LSU6	U	Fin Ray	++	(7)	8++	
	GN 3-2	LW29	U	Otolith	+	(7)	5+	
	GN 7-1	LW1	F	Otolith	++	(7)	24++	
	HG 2-1	LW15	M	Otolith	++	(7)	26++	
	HG 2-1	LW19	U	Otolith	++	(7)	3++	
	HG 2-1	LW17	U	Otolith	++	(7)	4++	
	HG 2-1	LW18	U	Otolith	++	(7)	4++	
	HG 2-1	LW16	U	Otolith	++	(7)	4++	
	HG 2-1	LSU4	F	Fin Ray	++	(6-7)	15++	
	GN 3-2	LSU26	F	Fin Ray	++	(7)	12++	12++
	GN 10-1	NP1	M	Cleithra	++	(6)	2++	
	GN 10-1	NP1	M	Scales	++	(6-7)	2++	
	GN 10-1	NP2	F	Cleithra	++	(6-7)	2++	
	GN 10-1	NP2	F	Scales	++	(7)	2++	
	GN 2-2	WSU1	F	Fin Ray	++	(6-7)	11++	
	GN 2-2	WSU2	F	Fin Ray	++	(7)	9++	9++
	GN 2-2	WSU3	F	Fin Ray	++	(6-7)	8++	
	GN 2-2	WSU4	F	Fin Ray	++	(7)	9++	
	HG 2-1	WSU1	F	Fin Ray	++	(6-7)	8++	
	GN 3-2	LW28	F	Scales	++	(7)	9++	

[1] EDGE = edge condition outside the last visible annulu; this is an indication of how much growth has occurred on the edge of the tissue outside the last visible annulus this year.

[2] CONF = confidence on a scale of 1 to 10 (7 indicates confidence with the age assessed; 6 means that something was seen to give some concern; 5 is a fairly low confidence in the age assessed).

[3] AGEA = final assessed age (A 2 ++ is a 2 year old fish in its 3rd growing season).

GN = short length gill net; HG = half standard gang gill net; AN = angling; NP = northern pike; WSU = white sucker; LW = lake whitefish; M = male; F = female; J = juvenile; U = unknown.

APPENDIX D

SEDIMENT CORE LOGS

Project Number 1916
Date September 21, 2015
Personnel Patrick Carrier
Equipment Tech-ops Extruder Corer

Waterbody Cochrane River
Area 1
Station 1
Depth (m) 6.9

Core Horizons (cm)	Colour	Consistency	Texture	Organics	Odour	Comments
0-1	Orange Brown	Soft	Flocculent	Present	No	-
1-6	Brown	Soft	Silt	Present	No	-
6-25	Beige	Soft	Silt	Absent	No	-

Project Number 1916
Date September 21, 2015
Personnel Patrick Carrier
Equipment Tech-ops Extruder Corer

Waterbody Cochrane River
Area 1
Station 2
Depth (m) 7.4

Core Horizons (cm)	Colour	Consistency	Texture	Organics	Odour	Comments
0-1	Orange Brown	Soft	Flocculent	Present	No	-
1-6	Brown	Soft	Silt	Present	No	-
6-18	Beige	Soft	Silt	Absent	No	-

Cochrane River, Station 1

Cochrane River, Station 2

Project Number 1916
Date September 21, 2015
Personnel Patrick Carrier
Equipment Tech-ops Extruder Corer

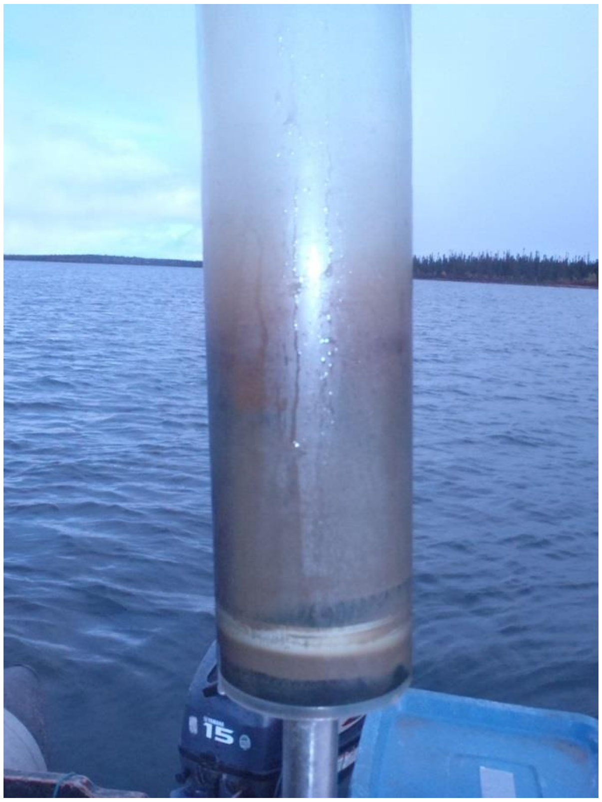
Waterbody Cochrane River
Area 1
Station 3
Depth (m) 6.8

Core Horizons (cm)	Colour	Consistency	Texture	Organics	Odour	Comments
0-1	Orange Brown	Soft	Flocculent	Present	No	-
1-6	Brown	Soft	Silt	Present	No	-
6-15	Beige	Soft	Silt	Absent	No	-

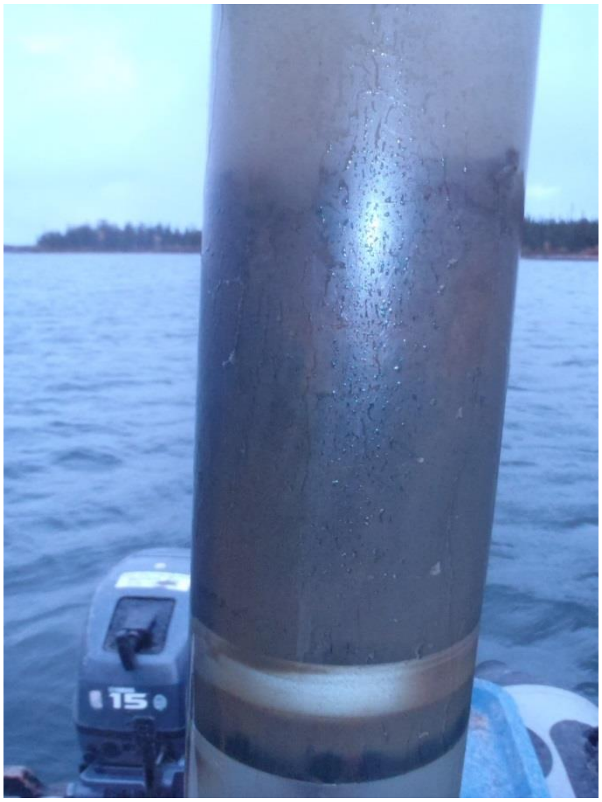
Project Number 1916
Date September 21, 2015
Personnel Patrick Carrier
Equipment Tech-ops Extruder Corer

Waterbody Cochrane River
Area 1
Station 4
Depth (m) 7.3

Core Horizons (cm)	Colour	Consistency	Texture	Organics	Odour	Comments
0-1	Orange Brown	Soft	Flocculent	Present	No	-
1-6	Brown	Soft	Silt	Present	No	-
6-16	Beige	Soft	Silt	Absent	No	-



Cochrane River, Station 3



Cochrane River, Station 4

Project Number	1916	**Waterbody**	Cochrane River
Date	September 22, 2015	**Area**	1
Personnel	Patrick Carrier	**Station**	5
Equipment	Tech-ops Extruder Corer	**Depth (m)**	6.9

Core Horizons (cm)	Colour	Consistency	Texture	Organics	Odour	Comments
0-1	Orange Brown	Soft	Flocculent	Present	No	-
1-5	Brown	Soft	Silt	Present	No	-
5-20	Beige	Soft	Silt	Absent	No	-

Project Number	1916	**Waterbody**	Cochrane River
Date	September 22, 2015	**Area**	1
Personnel	Patrick Carrier	**Station**	5 (QA/QC)
Equipment	Tech-ops Extruder Corer	**Depth (m)**	6.9

Core Horizons (cm)	Colour	Consistency	Texture	Organics	Odour	Comments
0-1	Orange Brown	Soft	Flocculent	Present	No	-
1-5	Brown	Soft	Silt	Present	No	-
5-21	Beige	Soft	Silt	Absent	No	-

Cochrane River, Station 5

Cochrane River, Station 5 QA/QC

Project Number	1916	**Waterbody**	Fond du Lac River
Date	September 15, 2015	**Area**	1
Personnel	Patrick Carrier	**Station**	1
Equipment	Tech-ops Extruder Corer	**Depth (m)**	6.75

Core Horizons (cm)	Colour	Consistency	Texture	Organics	Odour	Comments
0-2	Grey with orange speckles	Soft	Silt	Present	No	-
2-18	Grey	Soft	Silt/Clay	Absent	No	-

Project Number	1916	**Waterbody**	Fond du Lac River
Date	September 15, 2015	**Area**	1
Personnel	Patrick Carrier	**Station**	2
Equipment	Tech-ops Extruder Corer	**Depth (m)**	7.6

Core Horizons (cm)	Colour	Consistency	Texture	Organics	Odour	Comments
0-1	Orange/Grey	Soft	Silt	Present	No	-
1-36	Grey	Soft	Silt/Clay	Absent	No	-

Fond du Lac River, Station 1

Fond du Lac River, Station 2

Project Number	1916	**Waterbody**	Fond du Lac River
Date	September 16, 2015	**Area**	1
Personnel	Patrick Carrier	**Station**	3
Equipment	Tech-ops Extruder Corer	**Depth (m)**	6.6

Core Horizons (cm)	Colour	Consistency	Texture	Organics	Odour	Comments
0-2	Orange/Grey	Soft	Silt	Present	No	-
1-28	Grey	Soft	Silt/Clay	Absent	No	-

Project Number	1916	**Waterbody**	Fond du Lac River
Date	September 16, 2015	**Area**	1
Personnel	Patrick Carrier	**Station**	4
Equipment	Tech-ops Extruder Corer	**Depth (m)**	6.6

Core Horizons (cm)	Colour	Consistency	Texture	Organics	Odour	Comments
0-2	Orange/Grey	Soft	Silt	Present	No	-
1-28	Grey	Soft	Silt/Clay	Absent	No	-

Fond du Lac River, Station 3

Fond du Lac River, Station 4

Project Number	1916	**Waterbody**	Fond du Lac River
Date	September 16, 2015	**Area**	1
Personnel	Patrick Carrier	**Station**	5
Equipment	Tech-ops Extruder Corer	**Depth (m)**	6.6

Core Horizons (cm)	Colour	Consistency	Texture	Organics	Odour	Comments
0-1	Orange/Grey	Soft	Silt	Present	No	Shiny speckles
1-19	Grey	Soft	Silt/Clay	Absent	No	Some coarse sand

Project Number	1916	**Waterbody**	Waterbury Lake
Date	September 17, 2015	**Area**	1
Personnel	Patrick Carrier	**Station**	1
Equipment	Tech-ops Extruder Corer	**Depth (m)**	7.1

Core Horizons (cm)	Colour	Consistency	Texture	Organics	Odour	Comments
0-2	Orange and pale grey	Soft	Silt/Sand	Present	No	-
2-4	Grey	Soft	Clay/Sand	Absent	No	-
4-22	Beige/Grey	Medium-Soft	Clay/Sand	Absent	No	-


Fond du Lac River, Station 5


Waterbury Lake, Station 1

Project Number	1916	**Waterbody**	Waterbury Lake
Date	September 17, 2015	**Area**	1
Personnel	Patrick Carrier	**Station**	2
Equipment	Tech-ops Extruder Corer	**Depth (m)**	7.5

Core Horizons (cm)	Colour	Consistency	Texture	Organics	Odour	Comments
0-2	Orange and pale grey	Soft	Silt/Sand	Present	No	-
2-4	Grey	Soft	Clay/Sand	Absent	No	-
4-22	Beige/Grey	Medium-Soft	Clay/Sand	Absent	No	-

Project Number	1916	**Waterbody**	Waterbury Lake
Date	September 17, 2015	**Area**	1
Personnel	Patrick Carrier	**Station**	3
Equipment	Tech-ops Extruder Corer	**Depth (m)**	6.9

Core Horizons (cm)	Colour	Consistency	Texture	Organics	Odour	Comments
0-2	Orange and beige	Soft	Silt/Sand	Present	No	-
2-17	Pale beige	Soft	Silt/Sand	Absent	No	-

Waterbury Lake, Station 2

Waterbury Lake, Station 3

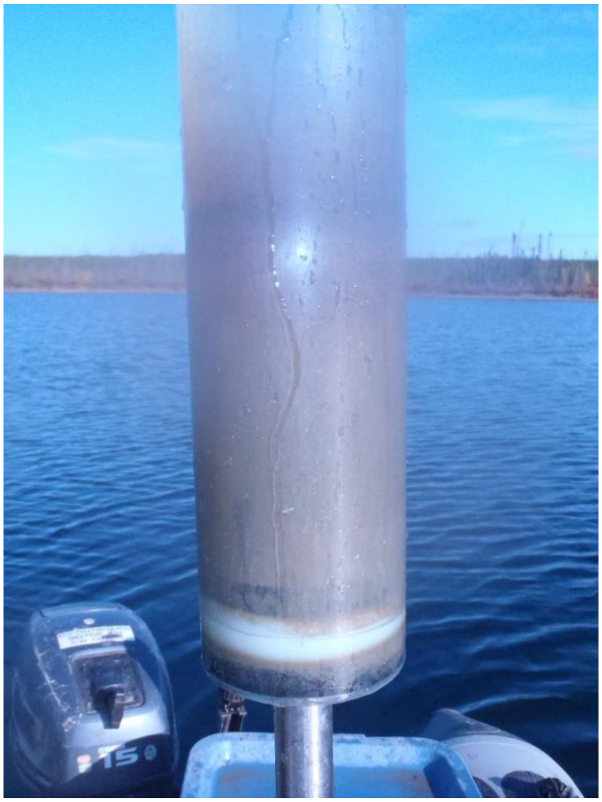
Project Number	1916	**Waterbody**	Waterbury Lake
Date	September 17, 2015	**Area**	1
Personnel	Patrick Carrier	**Station**	4
Equipment	Tech-ops Extruder Corer	**Depth (m)**	6.2

Core Horizons (cm)	Colour	Consistency	Texture	Organics	Odour	Comments
0-2	Orange and beige	Soft	Silt/Sand	Present	No	-
2-21	Pale beige	Soft	Silt/Sand	Absent	No	-

Project Number	1916	**Waterbody**	Waterbury Lake
Date	September 18, 2015	**Area**	1
Personnel	Patrick Carrier	**Station**	5
Equipment	Tech-ops Extruder Corer	**Depth (m)**	6.2

Core Horizons (cm)	Colour	Consistency	Texture	Organics	Odour	Comments
0-2	Orange and beige	Soft	Silt/Sand	Present	No	-
2-20	Pale beige	Soft	Silt/Sand	Absent	No	-


Waterbury Lake, Station 4


Waterbury Lake, Station 5

Project Number	1916	**Waterbody**	Waterbury Lake
Date	September 18, 2015	**Area**	1
Personnel	Patrick Carrier	**Station**	5 (QA/QC)
Equipment	Tech-ops Extruder Corer	**Depth (m)**	6.2

Core Horizons (cm)	Colour	Consistency	Texture	Organics	Odour	Comments
0-2	Orange and beige	Soft	Silt/Sand	Present	No	-
2-17	Pale beige	Soft	Silt/Sand	Absent	No	-

Project Number	1916	**Waterbody**	Crackingstone Inlet
Date	September 23, 2015	**Area**	1
Personnel	Ryan Froess	**Station**	1
Equipment	Tech-ops Extruder Corer	**Depth (m)**	7.0

Core Horizons (cm)	Colour	Consistency	Texture	Organics	Odour	Comments
0-4	Brown	Soft	Silt	Present	No	-
4-8	Dark Brown/Beige	Soft	Silt/Clay	Absent	No	-
8-11	Brown/Grey	Firm	Clay	Absent	No	-

Waterbury Lake, Station 5 QA/QC

Crackingstone Inlet, Station 1

Project Number	1916	**Waterbody**	Crackingstone Inlet
Date	September 23, 2015	**Area**	1
Personnel	Patrick Carrier	**Station**	2
Equipment	Tech-ops Extruder Corer	**Depth (m)**	5.9

Core Horizons (cm)	Colour	Consistency	Texture	Organics	Odour	Comments
0-2.5	Brown/Orange	Loose	Silt	Present	No	-
2.5-6	Dark Brown	Firm	Silt/Sand	Absent	No	-
6-14	Dark Brown/Grey	Firm	Clay/Sand	Absent	No	-

Project Number	1916	**Waterbody**	Crackingstone Inlet
Date	September 23, 2015	**Area**	1
Personnel	Ryan Froess	**Station**	3
Equipment	Tech-ops Extruder Corer	**Depth (m)**	7.3

Core Horizons (cm)	Colour	Consistency	Texture	Organics	Odour	Comments
0-2	Brown/Orange	Soft	Silt	Present	No	-
2-5	Dark Brown/Grey	Soft	Clay/Sand	Absent	No	-
5-11	Grey/Black	Firm	Clay	Absent	No	-

Crackingstone Inlet, Station 2

Crackingstone Inlet, Station 3

Project Number	1916	**Waterbody**	Crackingstone Inlet
Date	September 24, 2015	**Area**	1
Personnel	Ryan Froess	**Station**	4
Equipment	Tech-ops Extruder Corer	**Depth (m)**	7.1

Core Horizons (cm)	Colour	Consistency	Texture	Organics	Odour	Comments
0-2.5	Light Brown/Beige	Loose	Silt	No	No	-
2.5-4	Brown with Black Flecks	Medium Firm	Silt	No	No	-
4-14	Brown/Black/ Grey	Firm	Clay/Silt	No	No	-

Project Number	1916	**Waterbody**	Crackingstone Inlet
Date	September 24, 2015	**Area**	1
Personnel	Ryan Froess	**Station**	5
Equipment	Tech-ops Extruder Corer	**Depth (m)**	7.0

Core Horizons (cm)	Colour	Consistency	Texture	Organics	Odour	Comments
0-2	Brown/Orange	Loose	Silt	Present	No	-
2-10	Light Brown/Grey/ Black	Firm	Clayish	Absent	No	-

Crackingstone Inlet, Station 4

Crackingstone Inlet, Station 5

Project Number	1916	**Waterbody**	Pasfield Lake
Date	September 20, 2015	**Area**	1
Personnel	Patrick Carrier	**Station**	1
Equipment	Tech-ops Extruder Corer	**Depth (m)**	6.2

Core Horizons (cm)	Colour	Consistency	Texture	Organics	Odour	Comments
0-2	Brown	Soft	Flocculent	Present	No	-
2-11	Beige	Firm	Sandy	Absent	No	-

Project Number	1916	**Waterbody**	Pasfield Lake
Date	September 20, 2015	**Area**	1
Personnel	Patrick Carrier	**Station**	2
Equipment	Tech-ops Extruder Corer	**Depth (m)**	6.3

Core Horizons (cm)	Colour	Consistency	Texture	Organics	Odour	Comments
0-2	Brown	Soft	Flocculent	Present	No	-
2-20	Beige	Firm	Sandy	Absent	No	-


Pasfield Lake, Station 1


Pasfield Lake, Station 2

Project Number	1916	**Waterbody**	Pasfield Lake
Date	September 23, 2015	**Area**	1
Personnel	Patrick Carrier	**Station**	3
Equipment	Tech-ops Extruder Corer	**Depth (m)**	6.2

Core Horizons (cm)	Colour	Consistency	Texture	Organics	Odour	Comments
0-1	Brown	Soft	Flocculent	Present	No	-
1-12	Beige	Firm	Sandy	Absent	No	-

Project Number	1916	**Waterbody**	Pasfield Lake
Date	September 23, 2015	**Area**	1
Personnel	Patrick Carrier	**Station**	4
Equipment	Tech-ops Extruder Corer	**Depth (m)**	6.9

Core Horizons (cm)	Colour	Consistency	Texture	Organics	Odour	Comments
0-30	Brown	Soft	Flocculent	Present	No	-
30-35	Beige	Firm	Sandy	Absent	No	-


Pasfield Lake, Station 3


Pasfield Lake, Station 4

Project Number	1916	**Waterbody**	Pasfield Lake
Date	September 23, 2015	**Area**	1
Personnel	Patrick Carrier	**Station**	4 (QA/QC)
Equipment	Tech-ops Extruder Corer	**Depth (m)**	6.9

Core Horizons (cm)	Colour	Consistency	Texture	Organics	Odour	Comments
0-20	Brown	Soft	Flocculent	Present	No	-
20-25	Beige	Firm	Sandy	Absent	No	-

Project Number	1916	**Waterbody**	Pasfield Lake
Date	September 23, 2015	**Area**	1
Personnel	Patrick Carrier	**Station**	5
Equipment	Tech-ops Extruder Corer	**Depth (m)**	6.7

Core Horizons (cm)	Colour	Consistency	Texture	Organics	Odour	Comments
0-25	Brown	Soft	Flocculent	Present	No	-
25-30	Beige	Firm	Sandy	Absent	No	-

Pasfield Lake, Station 4 QA/QC

Pasfield Lake, Station 5

Project Number	1916	**Waterbody**	Cree Lake
Date	September 24, 2015	**Area**	1
Personnel	Patrick Carrier	**Station**	1
Equipment	Tech-ops Extruder Corer	**Depth (m)**	7.7

Core Horizons (cm)	Colour	Consistency	Texture	Organics	Odour	Comments
0-1	Brown	Soft	Flocculent	Present	No	-
1-17	Dark Beige	Medium-Soft	Silt/Sand	Absent	No	-

Project Number	1916	**Waterbody**	Cree Lake
Date	September 24, 2015	**Area**	1
Personnel	Patrick Carrier	**Station**	2
Equipment	Tech-ops Extruder Corer	**Depth (m)**	7.7

Core Horizons (cm)	Colour	Consistency	Texture	Organics	Odour	Comments
0-2	Orange/Brown	Soft	Flocculent	Present	No	-
2-7	Dark Beige	Medium-Soft	Silt/Sand	Absent	No	-

Cree Lake, Station 1

Cree Lake, Station 2

Project Number	1916	**Waterbody**	Cree Lake
Date	September 24, 2015	**Area**	1
Personnel	Patrick Carrier	**Station**	3
Equipment	Tech-ops Extruder Corer	**Depth (m)**	7.9

Core Horizons (cm)	Colour	Consistency	Texture	Organics	Odour	Comments
0-2	Orange/Brown	Soft	Flocculent	Present	No	-
2-20	Dark Beige	Medium-Soft	Silt/Sand	Absent	No	-

Project Number	1916	**Waterbody**	Cree Lake
Date	September 24, 2015	**Area**	1
Personnel	Patrick Carrier	**Station**	4
Equipment	Tech-ops Extruder Corer	**Depth (m)**	7.8

Core Horizons (cm)	Colour	Consistency	Texture	Organics	Odour	Comments
0-2	Orange/Brown	Soft	Flocculent	Present	No	-
2-19	Dark Beige	Medium-Soft	Silt/Sand	Absent	No	-

Cree Lake, Station 3

Cree Lake, Station 4

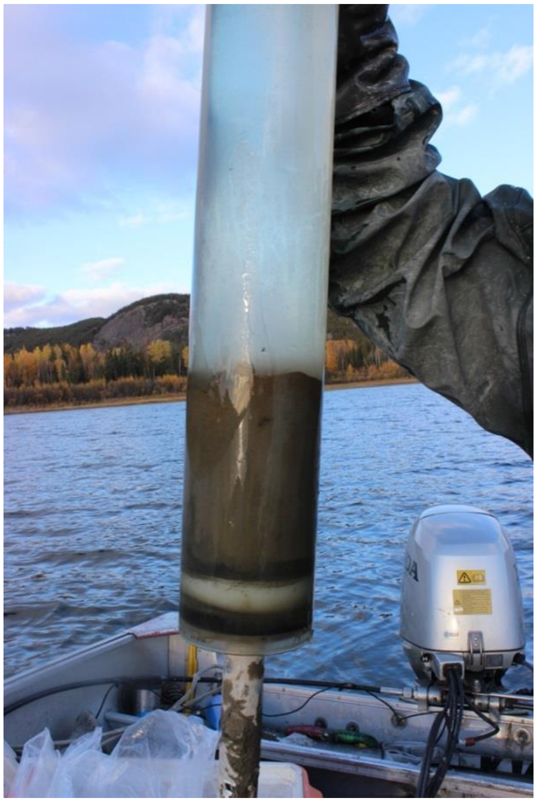
Project Number	1916	**Waterbody**	Cree Lake
Date	September 25, 2015	**Area**	1
Personnel	Patrick Carrier	**Station**	5
Equipment	Tech-ops Extruder Corer	**Depth (m)**	7.2

Core Horizons (cm)	Colour	Consistency	Texture	Organics	Odour	Comments
0-2	Orange/Brown	Soft	Flocculent	Present	No	-
2-19	Dark Beige	Medium-Soft	Silt/Sand	Absent	No	-

Project Number	1916	**Waterbody**	Ellis Bay
Date	September 28, 2015	**Area**	1
Personnel	Ryan Froess	**Station**	1
Equipment	Tech-ops Extruder Corer	**Depth (m)**	6.2

Core Horizons (cm)	Colour	Consistency	Texture	Organics	Odour	Comments
0-1.5	Light Brown	Flocculent	Silt	Present	No	-
1.5-5	Brown/Grey	Medium-Firm	Silt	Absent	No	-
5-13	Brown/Grey	Firm	Clay/Silt	Absent	No	-

Cree Lake, Station 5



Ellis Bay, Station 1

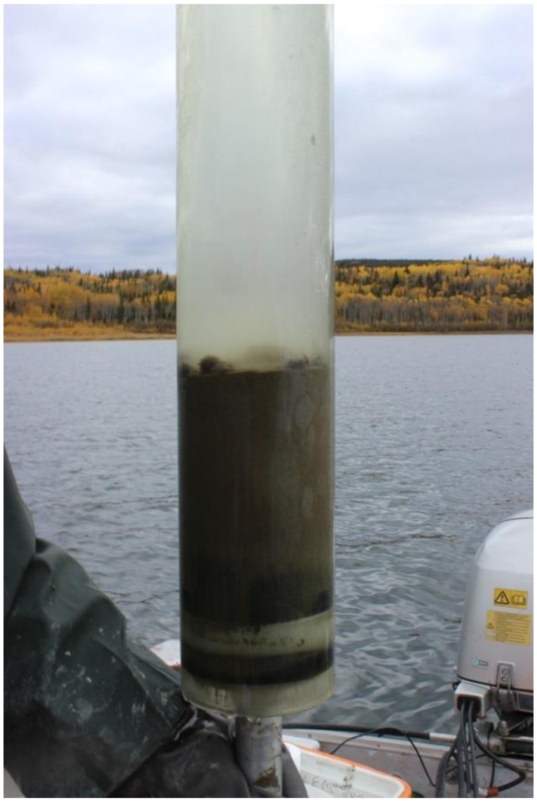
Project Number	1916	**Waterbody**	Ellis Bay
Date	September 28, 2015	**Area**	1
Personnel	Ryan Froess	**Station**	2
Equipment	Tech-ops Extruder Corer	**Depth (m)**	6.4

Core Horizons (cm)	Colour	Consistency	Texture	Organics	Odour	Comments
0-2	Light Brown	Flocculent	Silt	Present	No	-
2-6	Dark Brown/Grey	Medium-Firm	Silt/Clay	Absent	No	-
6-12	Grey/Brown	Firm	Clay	Absent	No	-

Project Number	1916	**Waterbody**	Ellis Bay
Date	September 28, 2015	**Area**	1
Personnel	Ryan Froess	**Station**	3
Equipment	Tech-ops Extruder Corer	**Depth (m)**	6.6

Core Horizons (cm)	Colour	Consistency	Texture	Organics	Odour	Comments
0-8	Light Brown/Orange	Loose	Silt	Present	No	-
8-13	Grey/Brown	Medium-Firm	Silt/Clay	Absent	No	-

Ellis Bay, Station 2



Ellis Bay, Station 3

Project Number	1916	**Waterbody**	Ellis Bay
Date	September 28, 2015	**Area**	1
Personnel	Ryan Froess	**Station**	4
Equipment	Tech-ops Extruder Corer	**Depth (m)**	6.7

Core Horizons (cm)	Colour	Consistency	Texture	Organics	Odour	Comments
0-2.5	Light Brown	Loose	Silt	Present	No	-
2.5-10	Brown/Grey	Medium-Firm	Silt/Clay	Absent	No	-
10-15	Grey	Firm	Clay	Absent	No	-

Project Number	1916	**Waterbody**	Ellis Bay
Date	September 28, 2015	**Area**	1
Personnel	Ryan Froess	**Station**	5
Equipment	Tech-ops Extruder Corer	**Depth (m)**	7.4

Core Horizons (cm)	Colour	Consistency	Texture	Organics	Odour	Comments
0-3	Light Brown	Flocculent	Silt	Present	No	-
3-9	Brown/Grey	Medium-Firm	Silt/Clay	Absent	No	-

Ellis Bay, Station 4

Ellis Bay, Station 5

APPENDIX E

BENTHIC INVERTEBRATE IDENTIFICATION AND ENUMERATION METHODS

BENTHIC INVERTEBRATE IDENTIFICATION AND ENUMERATION METHODS

The individual samples are processed separately. Each sample is divided into the coarse and the fine fractions. The coarse fractions are sorted completely and the fine fractions are subsampled independently using a modification of the subsampling method (Wrona et al. 1982). The basic methodology is provided below.

Pre-Sort Washing

Pour sample into sieves (2 mm, 1 mm, and 0.180 mm) and wash with running water to remove preservative and silt; if there are only small amounts of larger organic material, the 2-mm sieve can be omitted.

Transfer the coarse fraction (contents of the 2-mm and 1-mm sieves) into an individual container and add 70% alcohol. Label container with site number and fraction size. Now this fraction is ready for sorting.

Transfer the fine fraction (contents of 0.180-mm sieve) into a 2-L container for decanting. Add warm water to the 2-L container, swirl, and decant water and organic material into the 0.180-mm sieve, repeating until all organic material is washed out of the sand; then scan container under magnifying glass for heavy-shelled or stone-cased animals and pick them out; then discard sand and gravel. Transfer this fine fraction into an individual container and add 70% alcohol. Label container with site number and fraction size. Now this fraction is ready for sorting.

Sorting the Coarse Fraction

The coarse fraction is sorted in its entirety. Sort out all organisms from the coarse fraction by the “grid method” and place them into properly labelled vials (if there are large numbers of Ephemeroptera, Plecoptera, Trichoptera or any other group, place them in a separate vial). The grid method consists of a Petri dish with a gridded bottom (1 cm x 1 cm). Add small amounts of organic material into the Petri dish and pick out all benthic invertebrates with fine (number five) forceps under a magnification of around 6x, proceeding row by row. Once done with a dish, remix material and quickly rescan to catch any animals that were missed.

Sorting the Fine Fraction

In some situations there is very little organic material in the fine fractions and usually very few organisms, in which case subsampling as described below, is not required for the fine fractions. These samples would be picked in their entirety. When there is a lot of organic material in the fine fractions and/or large numbers of organisms, a subsampling of the fine fractions is to be done based on the Wrona et al. (1982) method:

Pour contents of 0.180-mm fraction container into the Imhoff cone and ensure that all material is transferred from the container. Fill the cone to the 1-L mark with diluted alcohol and allow bubbling for about 5 minutes to ensure thorough mixing. Remove ten 25-ml subsamples from the Imhoff cone with the 25-ml subsampler container and pour into gridded Petri dishes (total volume of 250 ml removed). Examine each 25-ml subsample under the microscope (~12x magnification) and go through each Petri dish twice.

Generally, the recommended portion to subsample is a minimum of one-quarter (250 ml). However, if very large numbers of organisms are present the following guidelines are provided:

- if each 25-ml subsample contains 35 to 50 organisms, then do all ten 25-ml subsamples (total volume of 250 ml);
- if each 25-ml subsample contains 50 to 75 organisms, then do eight 25-ml subsamples (total volume of 200 ml);
- if each 25-ml subsample contains 75 to 100 organisms, then do five 25-ml subsamples (total volume of 125 ml);
- if each 25-ml subsample contains 100 to 150 organisms, then do four 25-ml subsamples (total volume of 100 ml);

For samples with very large number of organisms:

- if each 25-ml subsample contains >150 organisms, contact the project manager for confirmation, prior to doing two 25-ml subsamples (total volume of 50 ml);

For samples with very few organisms:

- if each 25-ml subsample contains less than 35 organisms, then do twenty 25-ml subsamples (total volume 500 ml).

Place the sorted and the unsorted material from the subsamples into separate containers for archiving and label them properly.

Taxonomic Identification

All organisms are identified to the lowest practical taxonomic level (usually genus or species wherever feasible).

In most instances "identification to the lowest taxonomic level" is defined as:

Taxon	Taxonomic Level
Nematoda	Phylum
Oligochaeta	Family
Gastropoda	Genus/Species
Turbellaria	Family
Hirudinea	Species
Mollusca	Genus/Species
Hydracarina	Leave at this level
Cladocera	Family
Copepoda	Order
Ostracoda	Leave at this level
Amphipoda	Genus/Species
Insecta	Genus/Species
Terrestrial	Leave at this level

Organisms that cannot be identified to the desired level of taxonomic precision (e.g., immature or damaged) will be reported as a separate category (at the finest level of taxonomic resolution possible). Organisms which require detailed microscopic examination for identification (e.g., Chironomidae and Oligochaeta) will be mounted onto microscope slides using an appropriate mounting medium (e.g., Canada balsam, Permount, Hohers's). The most common species may be distinguishable on the basis of gross morphology and may require only a few mounts (5 to 10) as checks. All rare or less commonly occurring species are mounted for identification.

A reference collection is provided of all taxa identified from the samples. These collections are retained for taxonomic verification, ensuring consistent taxonomy and for quality control checks. They are stored in individual glass jars with rubber lined metal lids. All organisms will be identified to the desired taxonomic level using current nomenclature and literature. At the present time, the exact level of taxonomic identification has not been decided upon between the two options of:

- identification to no lower than Family; or,
- identification to the lowest practical taxonomic level (usually genus or species wherever feasible).

QA/QC for Benthic Invertebrate Taxonomic Enumeration

Dr. Jack Zloty follows the QA/QC procedures outlined in “Revised guidance for sorting and subsampling protocols for EEM benthic invertebrate community surveys” by Glozier et al. (2002). In addition, reference collections are maintained and recent taxonomic keys are followed in the identification process. Details on the QA/QC methods employed are subsequently provided.

Sorting Efficiency

To assess sorting efficiency, at least 10% of all samples from each study are exhaustively re-examined of the sample residue (here referred to as a "re-sort") and any organisms found on the re-sort are enumerated. The criterion for an acceptable sort is that 90% of the total number of organisms are recovered during the initial sort (EC (2002); Glozier et al. 2002; EC (2012)). If >10% of the total number of organisms are found during the re-sort, then all the samples within the particular group require re-sorting. The sorting efficiency will be calculated and reported for each sample.

Subsampling Accuracy and Precision

Accuracy and precision of subsampling procedures is determined in approximately 10% of the number of samples having been enumerated by subsampling. In the samples selected for subsampling accuracy and precision determination, the totality of the sample is divided into five even subsamples, in each of which benthic invertebrates are systematically enumerated. Each subsample count is multiplied by five to simulate five estimations of sample count via subsampling estimation. Accuracy is the closeness of an estimate to the real value. Each estimate is compared to the systematic count value (actual count) to determine subsampling estimate accuracy using the following formula (EC 2012): accuracy = [1 – (estimated # in sample / actual # in sample)] × 100. Precision signifies repeatability across subsamples. To estimate precision, each estimated count is compared to all four other estimated counts using the following formula (EC 2002; Glozier et al. 2002): precision of count (between estimate A and B, for example) = [1-(estimate A/estimate B)] x 100. The criteria for an adequate estimation is that the error level between the estimates and the actual count (accuracy) must be less than 20%, with the estimate of each of the five subsamples also being less than 20% different from one another. If the error level or the precision is not satisfactory, then either the subsampling technique has to be improved to achieve a 20% level of precision and accuracy, or the sample is sorted in its entirety (EC 2002).

Reference Collection

A reference collection is provided for all taxa identified from the samples. These collections are retained for taxonomic verification, ensuring consistent taxonomy, and for QC checks.

Rare and Damaged Organisms

Organisms that cannot be identified to the desired level of taxonomic precision (e.g., immatures or damaged) are reported as a separate category (at the finest level of taxonomic resolution possible). Organisms that require detailed microscopic examination for identification (e.g., Chironomidae and Oligochaeta) are mounted onto microscope slides using an appropriate mounting medium (e.g., Canada balsam, Permount, Hohers). The most common species may be distinguishable on the basis of gross morphology and may require only a few mounts (5 to 10) as checks. All rare or less commonly occurring species are mounted for identification. A list of references used in taxonomic identification is provided in the table below.

Taxonomic Key	Taxon
Alder et al. 2004	Simulidae (black flies)
Brinkhurst 1986	Oligochaeta (aquatic earthworms)
Clifford 1991	General taxa
Edmunds et al. 1976	Ephemeroptera (mayflies)
Epler 2001	Chironomidae (midges)
Maschwitz and Cook 2000	Polypedilum (midges)
Merritt and Cummins 1996	General taxa
McAlpine et al. 1981	Diptera (flies)
McCafferty and Randolph 1998	Ephemeroptera (mayflies)
Oliver and Roussel 1983	Chironomidae (midges)
Pennak 1989	General taxa
Soponis 1977	Orthocladius (midges)
Stewart and Stark 1993	Plecoptera (stoneflies)
Thorp and Covich 1991	General taxa
Wiederholm 1983	Chironomidae (midges)
Wiggins 1996	Trichoptera (caddisflies)
Westfall and May 1996	Zygoptera (damselflies)
Zloty and Pritchard 1997	Ameletus (mayflies)

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