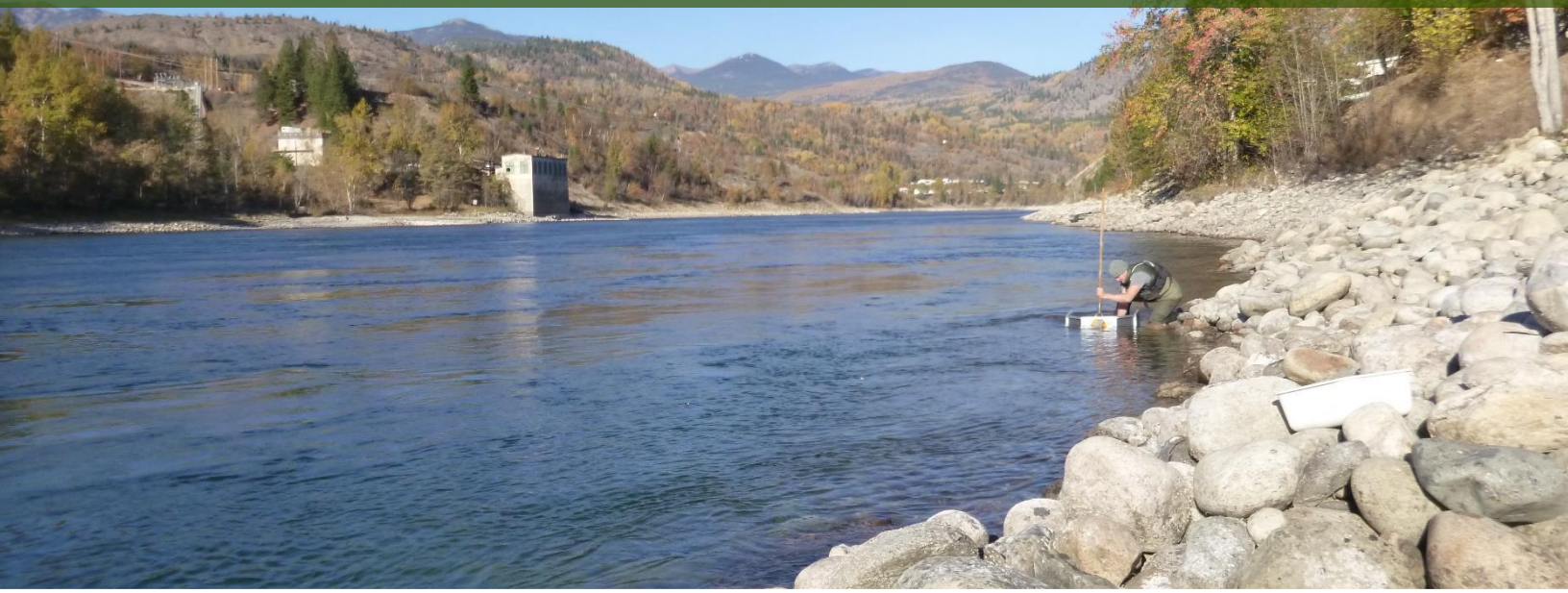
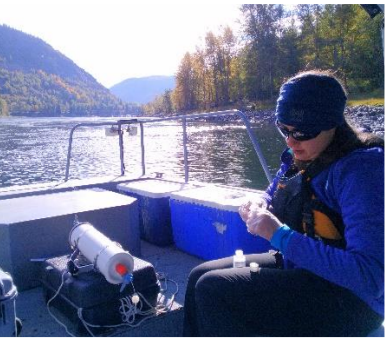
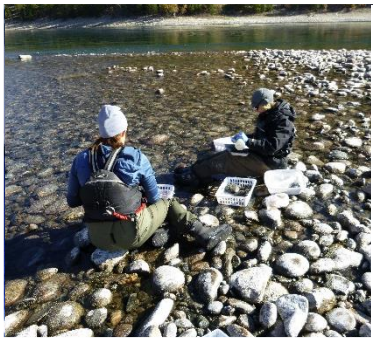
Lower Columbia River Aquatic Receiving Environment Monitoring Program (2015-2016)

Teck Trail Operations







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Trail, B.C.

Lower Columbia River
Aquatic Receiving Environment Monitoring Program
Teck Trail Operations

2015-2016 Data Collection and Interpretation Report

Contract No.: 943249-OS

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May 2019

Ecoscape File No. 15-1438.4

ACKNOWLEDGEMENTS

Ecoscape would like to acknowledge the following companies, organizations, and individuals for their collective support in providing data and technical assistance for this project:

B.C. Hydro, Okanagan Nation Alliance, and Golder Associates for collection of large-bodied fish (Rainbow Trout, Mountain Whitefish, and Walleye) for fish tissue sampling (completed under the BC Hydro annual fish indexing program).

ALS Environmental and CARO Analytical for water, sediment, and tissue analyses.

Sue Salter of Cordillera Consulting for benthic invertebrate taxonomy and community metrics.

Dr. John Stockner, formerly of the University of British Columbia (UBC) contributed valuable QA/QC by providing confirmation of periphyton enumerations.

Carrie Morita (BC Ministry of Environment) for technical input as well as field assistance during water quality sampling.

The following Ecoscape staff biologists and technicians are also recognized for their assistance with field data collection, logistics, and fish processing: Kyle Hawes, Mary Ann Olson-Russello, Rachel Plewes, Michael Schutten, Robert Wagner, Courtney Barr, Tina Deenik, and Renee Lemmond.

Teck Trail Operations's personnel instrumental in review and project oversight include Mark Tinholt, Clare North, and Ryan Cloutier.

LIST OF ACRONYMS

µS	microSiemens
AFDW	Ash Free Dry Weight (Volatile Solids)
Al	Aluminum
AOI	Area of Interest represents the Lower Columbia River from the confluence of the Kootenay River downstream to Waneta – including both reference and exposure areas (downstream of the smelter) assed within the AREMP.
AREMP	Aquatic Receiving Environment Monitoring Program
As	Arsenic
BIR	Birchbank
BC Hydro	British Columbia Hydro and Power Authority
BC MoE	British Columbia Ministry of Environment
Ca	Calcium
CABIN	Canadian Aquatic Biomonitoring Network
Caro Labs	Caro Environmental Laboratories (Kelowna, B.C.)
CCME	Canadian Council of Ministers of the Environment
CII	Teck Metals Ltd. Trail Smelter combined effluent Outfall II
CIII	Teck Metals Ltd. Trail Smelter combined effluent Outfall III
CIV	Teck Metals Ltd. Trail Smelter combined effluent Outfall IV (fertilizer outfall on right bank at Stony Creek)
Cl	Chlorine
Cd	Cadmium
CRIEMP	Columbia River Integrated Environmental Monitoring Program
Chl-a	Chlorophyll-a
Co	Cobalt
CPUE	Catch Per Unit Effort
CRH	Torrent Sculpin (*Cottus rhotheus*)
CSR	Contaminated Sites Regulations
Cu	Copper
DDI	Double Deionized Water
DEP	Depositional area sample site
DEP-EXP	Depositional area sample site situated downstream of the smelter
DEP-REF	Depositional area sample site situated upstream of the smelter
Didymo	*Didymosphenia geminate*
DO	Dissolved Oxygen
EPT	Ephemeroptera, Plecoptera, Tricoptera
ER	Exposure Ratio
ERA	Ecological Risk Assessment
ERO	Erosional area sample site
ERO-EXP	Erosional area sample site situated downstream of the smelter
ERO-REF	Erosional area sample site situated upstream of the smelter
EXP	Indicates sample sites/areas situated downstream of the smelter. These represent exposure area samples.
Fe	Iron
g	Gram
GIS	Geographic Information Systems
GPS	Global Positioning System
GSI	Gonadosomatic Index
HBI	Hilsenhoff Biotic Index
Hg	Mercury

HLK	Hugh L. Keenleyside
HSD	Honest Significant Difference
HSI	Hepatosomatic Index
ICP-MS	Inductively-Coupled Mass Spectrometry
IDZ	Initial dilution (mixing) zone of effluent receiving waters extending downstream from the TML Trail Smelter to Old Bridge.
ISQG	Interim Sediment Quality Guideline
K	Potassium
k	Fulton's Condition Factor
kcfs	Thousands of Cubic Feet Per Second
kg	Kilogram
km	Kilometer
L	Liter
LCR	Lower Columbia River
m ASL	Meters Above Sea Level
m	Meter
max	Maximum Value
MCR	Middle Columbia River
Mg	Magnesium
mg	Milligram
min	Minimum Value
mm	Millimeter
Mn	Manganese
Mo	Molybdenum
MW	Mountain Whitefish (*Prosopium williamsoni*)
N	Nitrogen
n	Sample Size
Na	Sodium
NaCl	Sodium Chloride
NMDS	Non-metric Multidimensional Scaling
NTU	Nephelometric Turbidity Units
Pb	Lead
PCA	Principal Components Analysis
PCOC (PMOC)	Potential Contaminant of Concern (equates to potential metal of concern in this report)
PEL	Possible Effects Level (lower limit usually associated with the potential for adverse effects)
POM	Particulate Organic Material
ppm	Parts per Million
QAQC	Quality Assurance, Quality Control
RB	Rainbow Trout (*Oncorhynchus mykiss*)
REF	Indicates sample sites/areas situated upstream of the smelter. These represent reference area samples.
SALM	Strong Acid Leachable Metals
SD	Standard Deviation
Se	Selenium
Si	Silicon
SO4	Sulphate
TDS	Total Dissolved Solids
Tl	Thallium
T-P	Total Phosphorus

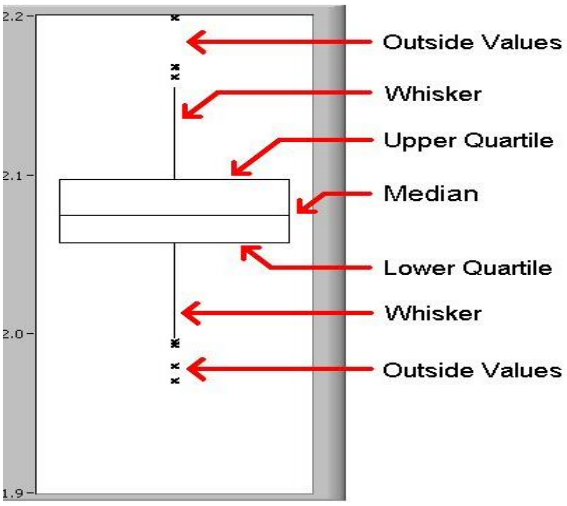
TKN	Total Kjeldahl Nitrogen
TML	Teck Metals Limited
TOC	Total Organic Carbon
TRO	Tissue Residue Objectives
TSS	Total Suspended Solids
TTS	Teck Trail Smelter
UBC	University of British Columbia
USEPA	United States Environmental Protection Agency
UTM	Universal Transverse Mercator
VIF	Variance Inflation Factors
WP	Walleye (*Sander vitreus*)
WQIS	Water Quality Index Station
WUP CC	Columbia River Water Use Plan Consultative Committee
Zn	Zinc

DEFINITIONS

The following terms are briefly defined as they are used in this report. For a fuller explanation, please refer to scientific literature.

Term	Definition
Anaerobic/anoxic	Devoid of oxygen.
Benthic	Organisms that dwell in or are associated with the sediments.
Benthic production	The production within the benthos originating from both periphyton and benthic invertebrates.
Bioaccumulation	Removal of materials from solution by organisms via adsorption, metabolism.
Bioavailable	Available for use by plants or animals.
Biomagnification	A marked increase in a material of interest through successively higher levels of a food chain.
Catastrophic flow	Flow events that have population level consequences of >50% mortality.
Cyanobacteria	Bacteria-like algae having cyanochrome as the main photosynthetic pigment.
Diatoms	Algae that have hard, silica-based "shells" frustules.
Effective Dilution	Ratio of the effluent concentration to the plume concentration
Eutrophic	Nutrient-rich, biologically productive water body.
Exposure Area	The Columbia River within the Initial Dilution Zone and areas downstream of the smelter effluent discharges (to Waneta).
Flow	The instantaneous volume of water flowing at any given time (e.g. 1200 m^3/s).
Functional Feeding group	(FFG) Benthic invertebrates can be classified by mechanism by which they forage, referred to as functional feeding or foraging groups.
Inflow plume	An inflow seeks the layer of matching relative density in the receiving water, diffusing as it travels; High TSS, TDS and low temperature increase water density.
Left Bank	Left bank (river left) when looking downstream.
Light attenuation	Reduction of sunlight strength during transmission through water.
Limitation, nutrient	A nutrient can limit or control the potential growth of organisms e.g. P or N.
Macronutrient	The major constituents of cells: nitrogen, phosphorus, carbon, sulphate, H.
Metal of Interest	In previous studies/reports metals of interest were referred to as Potential Contaminants of Concern (PCOC).
Micronutrient	Small amounts are required for growth; Si, Mn, Fe, Co, Zn, Cu, Mo etc.
Microflora	The sum of algae, bacteria, fungi, *Actinomycetes,* etc., in water or biofilms.
Myxotrophic	Organisms that can be photosynthetic or can absorb organic materials directly from the environment as needed.
Nano plankton	Minute algae that are less than 5 microns in their largest dimension.
Pico plankton	Minute algae that are less than 2 microns in their largest dimension.
PPB or µg/L	1 part per billion (e.g. $1/6^{th}$ of an aspirin tablet in 1 rail car of water (16,000 gal).
Peak biomass	The highest density, biovolume or chl-a attained in a set time on a substrate.
Periphyton	Microflora that are attached to aquatic plants or solid substrates.
Phytoplankton	Algae that float, drift or swim in water columns of reservoirs and lakes.
Redox	The reduction (-ve) or oxidation (+ve) potential of a solution.
Reducing environment	Devoid of oxygen with reducing conditions (-ve redox) e.g. water-covered organic sediments. Negative redox is usually driven by bacterial activity.
Reference Area	The Columbia River within the AOI upstream of Stoney Creek and smelter effluent discharges.
Right Bank	Right bank (river right) when looking downstream.
Riparian	The interface between land and a stream or lake.
Zooplankton	Minute animals that graze algae, bacteria and detritus from a water column.

HOW TO INTERPRET A BOXPLOT



The lower (first) quartile (Q_1) is defined as the middle number between the smallest number and the median of the data set. The second quartile (Q_2) is the median of the data. The upper (third) quartile (Q_3) is the middle value between the median and the highest value of the data set.

An outlier (outside) value is generally defined as any value that is 1.5 times the lower (Q1) and upper (Q3) quartile values. Outlier values can be due to real variability in the sample population, heavy-tailed distributions, or due to errors in sampling equipment or transcription.

WATER QUALITY, SEDIMENT AND TISSUE GUIDELINES

Generalized Water Quality Guidelines and Objectives						
Selected Analytes	Units	LCR Water Quality Objectives		BC		CCME
Water Quality General		Maximum	30-day average	Maximum	30-day average	
pH		6.5 - 8.5	-	6.5 - 9.0	-	6.5 - 9.0
Dissolved oxygen	mg/L	5.5 - 9.5	-	5 - 9 (min)	8 - 11 (min)	5.5 - 9.5
Total organic carbon	mg/L	-	-	-	± 20% of median	-
Suspended solids	mg/L	-	-	± 25	± 5	-
Turbidity	NTU	-	-	± 8	± 2	-
Metals						
Aluminum – diss.	mg/L	-	-	-	0.02	-
Arsenic – total	mg/L	-	0.005	0.005	-	0.005
Cadmium – dissolved Total Hardness = 70mg/L as $CaCO_3$	mg/L	-	-	0.000407	0.000163	0.0015
Chromium – total	mg/L	-	0.001	-	-	-
Chromium III ion	mg/L	-	-	0.009	-	0.0089
Chromium VI ion	mg/L	-	-	0.001	-	0.001
Copper – total	mg/L	0.00717	0.002	Cu calc	-	0.002 - 0.004
Iron – total	mg/L	-	-	0.3	-	0.300
Lead – total	mg/L	0.0379	0.0048	Pb calc	Pb calc	0.001 - 0.007
Mercury – total inorg.	mg/L	-	-	0.0001	0.00002	0.00026
Nickel – total	mg/L	0.0025 - 0.150	-	0.0025 - 0.150	-	0.0025 - 0.150
Selenium – total	mg/L	-	-	0.002	0.001	0.0010
Sodium – total	mg/L	-	-	-	-	-
Silver – total	mg/L	-	-	(0.0001 if hardness <100mg/L) - 0.003	0.00005 (hard <100 mg/L) - 0.0015	0.0001
Thallium – total	mg/L	-	0.0008	0.0003	-	0.0008
Zinc – total	mg/L	0.033	0.0075	Zn calc	Zn calc	0.03
Nutrients						
Ammonia as N	mg/L	-	0.102 - 2.08 temp/pH table	0.752 - 27.7 temp/pH table	0.102 - 2.08 temp/pH table	0.019 un-ionized
Nitrate-N as N	mg/L	-	-	200	40	13
Nitrite-N as N	mg/L	-	-	0.06	0.02	0.06
Total phosphorus as P	mg/L	-	-	0.005 - 0.015 for lakes	-	-
Sulphate	mg/L	-	-		218 calc	-

Parameter/Analyte mg/L	Calculation
Cd max (dis) (2015)	BC Cd short-term $e^{1.03(\ln(\text{hardness})-5.274)}/1000$ CCME WQG (µg/L Cd) = $10^{1.016[\log(\text{hardness})]-1.71}/1000$
Cd 30-day average (dis)	BC $e^{0.736(\ln(\text{hardness})-4.943)}/1000$
Cu total	(0.094(hardness)+2)/1000
Pb max	$e^{1.273(\ln(\text{hardness})-1.46)}/1000$
Pb 30-day average	3.31 + $_e$(1.273 ln(mean hardness) - 4.705) in ug/L
SO_4 (proposed 2013)	Hardness(mg/L) soft (0-30)=128 mg/L SO_4 | moderate (31-75)=218 mg/L SO_4 | hard(76-180) =309 mg/L SO_4 | very hard(181-250)=429 mg/L SO_4
Zn max	(33+0.75(hardness-90))/1000
Zn 30-day average	(7.5+0.75(hardness-90))/1000

Water Quality Guideline References

LCR Objectives: Lower Columbia River from Birchbank to the International Border: Water quality Assessment and Recommended Objectives, MacDonald Envi Services Ltd. 1997

LCR Objectives: Ambient Water Quality Assessment and Objectives for the Lower Columbia River – Birchbank to the US Border. Overview Report. 2000.

BC Water Quality Guidelines. 1999. http://www.env.gov.bc.ca/wat/wq/BCguidelines/zinc/zinc.html

BC Water Quality Guidelines http://www.env.gov.bc.ca/wat/wq/BC guidelines Nagal et al 2006 (plus updates)

CCME 2005 Canadian Council of Ministers of the Environment f http://st-ts.ccme.ca/

http://www.env.gov.bc.ca/wat/wq/BCguidelines/sulphate/pdf/sulphate_final_guideline.pdf

BC MOE. 2015. Ambient Water Quality Guidelines for Cadmium – Technical Report. 114pp.

Sediment quality guidelines						
Selected Analytes	**Units**	**LCR Sediment**	**BC Working Guidelines 2006**		**CCME**	
Sediment Quality		**Objective**	**ISQG**	**PEL**	**ISQG**	**PEL**
Total Metals	**Dry wt.**					
Arsenic	mg/kg	5.7	5.9	17	5.9	17
Cadmium	mg/kg	0.6	0.6	3.5	0.6	3.5
Chromium	mg/kg	36.4	37.3	90	37.3	90
Copper	mg/kg	35.1	35.7	197	35.7	197
Iron	mg/kg	-	21,200 (2%)	43,766 (4%)	-	-
Lead	mg/kg	33.4	35	91.3	35	91.3
Mercury	mg/kg	0.16	0.174	0.486	0.17	0.486
Nickel	mg/kg	-	16	75	-	-
Selenium	mg/kg	-	2	-	-	-
Silver	mg/kg	-	0.5(Ontario)	-	-	-
Thallium	mg/kg	-	-	-	-	-
Zinc	mg/kg	120	123	315	123	315

ISQG = interim sediment quality guideline (mg/kg = µg/g)
PEL = possible effects level
NOTE: It is noted here that the Objectives cited here are more stringent than the Contaminated Sites Regulations (CSR) Schedule 9 standards for sediment.
According to the 2009 BC Lab Manual for sediment samples, the < 2 mm fraction is analyzed

Sediment Guideline References

LCR Objectives: Lower Columbia River from Birchbank to the International Border: Water quality Assessment and Recommended Objectives, MacDonald Envi Services Ltd. 1997
BC Water Quality Guidelines http://www.env.gov.bc.ca/wat/wq/BCguidelines Nagpal et al 2006
CCME Canadian Council of Ministers of the Environment f http://st-ts.ccme.ca/

Tissue metals guidelines for consumers of fish				
	Human Health[1]	**Wildlife[2]**	**CCME**	**BCMOE**
Analyte	µg/g	µg/g	µg/g	µg/g
Arsenic	3.5	0.47		
Cadmium		0.9		
Chromium		0.94		
Lead	0.5	0.16		0.08
Mercury	0.5	0.1	0.033	
Selenium[3]		1		

1. Canadian guidelines for chemical contaminants and toxins in fish and fish products. Based on fish protein (mussel) concentration (Ammend.no.11, 2011). (Can.Food.Insp.Agency 2011)
2. LCR tissue residue objectives (TRO): Lower Columbia River from Birchbank to the International Border: Water quality Assessment and Recommended Objectives (MacDonald Envi Services Ltd. 1997)
3. BCMOE. 2014. Ambient water quality guidelines for Selenium Technical Report Update. Water Protection and Sustainability Branch Environmental Sustainability and Strategic Policy Division British Columbia Ministry of Environment. 270pp.

Suggested Citation:

Hawes, K., H. Larratt, and R. Plewes. 2019. Lower Columbia River Aquatic Receiving Environment Monitoring Program for the Teck Metals Ltd. Trail Smelter – Annual Data Collection and Interpretation Report. Ecoscape Environmental Consultants Ltd. 192pp + Appendices

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EXECUTIVE SUMMARY

Ecoscape Environmental Consultants Ltd. (Ecoscape) was retained by Teck Metals Ltd., Trail Operations (Teck) in 2015 to carry out an aquatic receiving environment monitoring program (AREMP) on the Lower Columbia River (LCR) as per part 3.2 of Effluent Permit PE02753. The purpose of this work is to conduct effluent receiving environment monitoring in the LCR. A secondary purpose of the work is to provide information to Teck to facilitate management decisions for smelter operations.

The AREMP study design consisted of the following components:

1. Water Quality
2. Depositional Habitat
3. Erosional Habitat
4. Small-bodied Fish
5. Large-bodied Fish

Objectives from the current study design for each of these components are summarized in the following table, along with the current status or findings of this annual report.

WATER QUALITY		
Question	**2012 STATUS**	**2016 Status**
1. Are Provincial Water Quality Objectives attained at the downstream end of the IDZ during low flows (less than 40 kfcs) as per long term trend monitoring (e.g. CRIEMP)?	Provincial Water Quality Objectives are attained at the downstream end of the IDZ, or Old Bridge Site, during low flows. The exceptions were mercury and cadmium, which exceeded the objectives or guidelines at some of the reference sites upstream of the smelter as well as below the IDZ. All nutrients were within respective water quality objectives or guidelines throughout the LCR.	No metal exceedances attributable to the smelter were detected in 2015-2016 samples below the IDZ. Provincial Water Quality Objectives were attained at the downstream end of the IDZ, or Old Bridge Site, even during low flows during all 2015 and 2016 sampling events. Nutrient concentrations in the LCR below the IDZ were not significantly altered by the effluent discharges.
2. Does water quality in the study area vary spatially (various locations in the Columbia River including point source, reference sites (both horizontal and vertical), and temporally (between seasons and years) as a result of Teck's point source effluent discharges and if so, describe the variances?	Yes, the plume stays on the right bank (~1/3 channel width) through to the end of the IDZ. Transect water sampling showed that water quality varies in the river cross-section in both horizontal and vertical stations within the IDZ, but not at Waneta. Upstream to downstream trends were detected for many metals including As, Cd, Cr, Cu, Pb, Ni, Se, Tl, and Zn. Within the IDZ, metal sources likely include effluent and groundwater discharges, and Stoney and Trail Creeks. Other	The AREMP transect water quality sampling showed spatial variation in water quality within the IDZ. The effluent plume stays on the right bank (~1/3 channel width or approximately 60m) through to the downstream end of the initial dilution zone. Transect sampling at Waneta indicated the plume was completely diffused/mixed across the channel as demonstrated by homogeneity of most metal concentrations across the channel. Water sampling at Maglios (at the Bear Creek confluence, near Rock Island), indicated that the plume is nearly diffused across the channel about 4.2 km downstream of the IDZ. Between this station and the smelter

	potential sources of metals of interest to the LCR downstream of the smelter include stormwater, historical mining and milling, municipal effluent and naturally high metals in tributaries.	outfalls, the plume follows the right bank and all metals of interest were within the LCR and BC guidelines by the downstream end of the IDZ. Complete mixing of the plume occurred between Maglios and Waneta.
3. Are water quality parameters that are analyzed for the AREMP stations appropriate?	Yes. The overall AREMP water quality study design meets the goals of assessing potential smelter impacts. It focusses on lower flow periods where mixing and dilution are reduced, and water quality impacts are expected to be greatest.	Yes. The AREMP water quality monitoring study conducted in 2015-2016 met all requirements. The existing parameters and their reportable detection limits are appropriate for this study.
DEPOSITIONAL HABITAT		
Question	**2013 STATUS**	**2017 Status**
1. What is sediment quality in the depositional areas upstream and downstream of the smelter?	Metals in downstream depositional areas that exceeded two standard deviations of results from reference sites were: copper, lead and zinc. In 2012, the list of metals exceeding PEL concentrations or sensitive species levels downstream of the smelter was Zn, Pb, Cu, and As.	Most metals of interest in depositional exposure sites exceeded two standard deviations of results from reference sites in all years of study. Every depositional sediment metal concentration metric available show decreasing concentrations of all metals of interest from 2003 to 2012, and from 2012 to 2015. In every exposure site, the number of sediment metal exceedances and the magnitude of those exceedances decreased from 2003 to 2015. In 2015 data, the list of metals exceeding possible effects level concentrations or sensitive species levels was smaller than in earlier years and only included Zn, Pb and Cu.
2. Are benthic invertebrate communities in depositional sediments downstream of the smelter different from upstream communities in terms of abundance, species diversity and species composition?	A community analysis (NMDS) detected no change in invertebrate community structure between samples collected upstream and downstream of the smelter. However, increasing distance downstream from the smelter and sediment zinc and copper concentrations were negatively correlated with invertebrate abundance, species richness, and percent *Chironomidae* in depositional habitats.	There was a small difference in overall species composition between reference and exposure areas in 2015, as there was in 2012. However, community structure differed significantly between years (2012 and 2015). Reference areas had higher abundance and biomass than exposure areas. Maglios (DEP-EXP-2) had the highest sampled species richness as well as the highest mean species richness across the five samples.
3. If differences in benthic communities exist, do these differences suggest adverse effects (i.e. impairment of benthic communities such that they provide poor habitat to upper trophic consumers) and is this linked to current	No change was detected in benthic communities in reference and exposure areas. The depositional habitats at Maglios and Waneta were more similar in community structure to other sites assessed (upstream and downstream of the smelter) than documented in previous studies. This result may be simply due to annual variation in benthic community	Community structure differed significantly between sites and years (2012 and 2015), highlighting natural seasonal and annual variability that can occur in benthic communities. The effect of treatment (reference vs. exposure) was tested on four benthic invertebrate metrics which quantify community composition and productivity.

permitted effluent discharges?	production or variability in habitat quality as it relates to substrate size and stability and other natural physical variables. Given that no significant difference in communities was observed in erosional habitats (including those in the IDZ) it is unlikely that the differences in depositional habitat benthic invertebrate community metrics are linked to current permitted effluent discharge.	Total abundance at reference and exposure sites was not significantly different in depositional habitats (F=0.68, p=0.42). Similarly, treatment did not have a significant effect on percent EPT, percent Chironomidae and effective number of species. The four benthic invertebrate metrics did not differ significantly by year sampled Therefore, it is unlikely that the differences in depositional habitat benthic invertebrate community metrics are linked to current permitted effluent discharge.
EROSIONAL HABITAT		
Question	**2013 STATUS**	**2017 Status**
1. What is the difference in periphyton communities in erosional habitat downstream of the smelter compared to the upstream communities in terms of periphyton community structure, composition, and standing crop biomass?	All metrics and statistical analyses did not detect any differences between periphyton communities in erosional habitats upstream and downstream of the smelter. Diatoms are the most prevalent type of algae in erosional river biofilms. The dominant species lists did not indicate measurable change between the reference and downstream erosional areas. Within the IDZ, where warmer water and comparatively nutrient-rich groundwater can infiltrate the river, a shift to increased concentrations of cyanobacteria and filamentous green algae was detected. This shift did not appear to be in response to metal concentrations.	Periphyton continues to show wide natural variance in abundance within and between sites, including reference and exposure sites. All metrics and statistical analyses conducted on the 2015 data did not detect any impact on erosional periphyton community structure. Diatoms are the most prevalent type of algae in erosional river biofilms and have accounted for an increasing percentage of periphyton production within the IDZ, which is now similar to typical LCR results. The dominant species lists did not indicate measurable change between the erosional reference and exposure sites. Within the IDZ where warm effluent and warm, comparatively nutrient-rich groundwater can infiltrate the river, a shift to increased concentrations of cyanobacteria and filamentous green algae were detected in the past but was subtle in 2015 and did not appear to be in response to metal concentrations. Major driving forces on LCR periphyton communities include flows and localized water velocity, irradiance, nutrient concentrations, algae settling from upstream reservoirs and grazing pressure. Near-field taxonomic results from 2015 confirm the erosional productivity metrics, suggesting that the influence of the smelter on the AOI is diminishing as reclamation treatment proceeds.
2. What is the difference in the benthic invertebrate communities in erosional habitat downstream of the smelter compared to	Overall species richness did not differ between reference and downstream areas and species diversity was also similar. The mean EPT richness and mean %EPT were both higher in downstream areas and mean Hilsenhoff Biotic Index score was less	There was no difference in the structure of benthic macroinvertebrate communities between Reference and Exposure Areas for erosional habitats. Exposure Area 2, situated just downstream of the CIII outfall, had the highest mean

the upstream communities in terms of community structure and composition? If differences in benthic communities exist, do these differences suggest adverse effects (i.e. impairment of benthic communities such that they provide poor habitat to upper trophic consumers) and is this linked to current permitted effluent discharges?	than reference sites - indicating a greater predominance of pollution sensitive species downstream of the smelter. Erosional habitats in exposure areas were documented as having higher mean invertebrate abundance compared to reference sites. The greatest sampled abundance was recorded in the near-field exposure area just downstream of smelter Outfall CIII. No shifts in community composition between reference and exposure areas were documented. Based on comparison with reference sites, benthic invertebrate community health is good in erosional habitats downstream of the smelter. Water velocity is the most important covariate influencing invertebrate abundance, EPT richness, percent EPT, and diversity in LCR erosional habitats.	abundance, biomass, EPT richness, and % EPT. ERO-EXP-2 site 3 had the lowest measured HBI score. EPT taxa are the predominant organisms across all Reference and Exposure areas. Hilsenhoff Biotic Index scores and EPT richness were both significantly different between Reference Areas and Exposure Areas. Exposure Areas had higher EPT richness and lower HBI scores corroborating one another indicating a greater abundance of metal and pollution sensitive species in sites downstream of the smelter. Water velocity and substrate size are the most important variables influencing communities in erosional habitats. Velocity is an important variable for explaining benthic macroinvertebrate abundance, %EPT, and HBI scores. Sites with higher water velocity had higher abundance and %EPT while having lower HBI scores. Exposure Area 2, within the side channel downstream of the CIII outfall had the highest mean velocity of all areas followed by Exposure Area 5 and Exposure Area 3
3. On the basis of qualitative review, is there a trend in periphyton and benthic metrics over time?	There is currently insufficient data available to qualitatively assess whether changes in benthic invertebrate communities are occurring over time. Other studies on the Columbia River upstream of the smelter have documented high annual and seasonal variation in invertebrate community metrics (Larratt et al 2013). Additional sampling in subsequent years (as outlined in the AREMP study plan (Golder 2012a) may help to support a qualitative observation of trends.	Community structure differed significantly between years (2012 and 2015 AREMP data) for both erosional and depositional habitats. However, the Columbia River is known to have high natural annual and seasonal variation in invertebrate community metrics (Larratt et al 2013). Based on this, insufficient data are currently available to qualitatively assess whether changes in benthic invertebrate communities are occurring over time.
SMALL-BODIED FISH TISSUE		
Question	**2013 STATUS**	**2017 Status**
1. Is there a difference in tissue metals composition and concentration in small-bodied fish between reference areas and exposure areas downstream of the smelter?	Differences in concentrations between sculpin collected in reference and exposure areas were relatively low, yet statistically significant in all cases. Fish sampled from exposure areas downstream of the smelter generally had higher lead levels than the other metals.	Sculpin tissue Pb, Tl, As and Cd concentrations at near-field sites were significantly different than at reference sites, while the remaining metals of interest were not different.
2. Do tissue metal concentrations decrease in small	Sculpins sampled in the IDZ downstream of the Combined III outfall had higher tissue metals	Sculpins sampled in the IDZ downstream of the Combined III outfall had higher tissue metals concentrations than those captured upstream

bodied fish as the distance from the smelter effluent discharge increases?	concentrations than those captured upstream of this location. Tissue metals concentrations decreased in sculpins sampled further downstream from the smelter beyond the IDZ.	of this location. Tissue metals concentrations decreased in sculpins sampled further downstream from the smelter beyond the IDZ. This gradient in response at the exposure sites may correlate with progressive dilution moving downstream away from the smelter. In 2015 sculpin samples, tissue concentrations for most metals of interest were below the wildlife TRO guidelines in both the reference and the exposure sites. There was one exceedance of both the arsenic wildlife TRO (0.47 mg/kg ww) and cadmium wildlife TRO (0.9 mg/kg ww) from ERO-EXP-3-1. Whole body lead concentrations exceeded the TRO (0.16 µg/g wet weight) for wildlife in 258 sculpins. All sculpins collected from within and downstream the IDZ had lead concentrations that exceeded the TRO for wildlife and 37 sculpins from Reference sites had lead concentrations that exceeded the TRO. Concentrations drop markedly with increasing distance downstream from New Bridge. Sculpins collected from the right bank adjacent downtown Trail (ERO-EXP-3-2-R) had average lead concentrations that were 3.5 times lower than fish collected just 300 m further upstream from ERO-EXP-3-1-R.
3. Is there a difference in the length, weight, liver weight, gonad weight and condition of fish collected upstream of the smelter and downstream of the smelter?	There was no significant difference in various condition indicators between upstream and downstream areas.	There was no significant difference in condition responses between reference and exposure areas.
4. What is the relationship between the distance from the effluent discharge and tissue metals, condition factor, liver weight (liversomatic index) and gonad weight (gonadosomatic index)?	There was no strong relationship between distance from the smelter effluent discharges and the various conditions metrics that were evaluated.	The hepatosomatic and gonadosomatic indices showed no significant difference with distance from the smelter.
LARGE BODIED FISH TISSUE		
Question	**2013 STATUS**	**2017 Status**
1. How do concentrations of total metals in the tissues of large bodied fish species in the lower Columbia in 2012 compare to concentrations since 2000?	Since 2000 declining trends are evident for arsenic, cadmium, and lead concentrations in fillets of mountain whitefish, Rainbow Trout, and Walleye. No trend is apparent with chromium and mercury with the current data. There is insufficient data from previous years to assess for potential trends of	Declining trends were measured for arsenic, cadmium, and lead. Increased detection capabilities for cadmium since 2004 demonstrate the declining trend in 2005 for Walleye, and in 2012 and 2016 for all three species. However, no trend is apparent with chromium and mercury.

	other metals of interest that may be concentrated in fish tissue.	
2. Do fish tissue concentrations exceed relevant human consumption guidelines?	Concentrations of metals in fish fillets were within the published Canadian guidelines for chemical contaminants and toxins in fish for consumption.	Concentrations of arsenic, chromium, cadmium, lead and selenium in fish fillets were below human consumption guidelines (Canadian Food Inspection Agency 2011). Most muscle and whole fish samples were below the wildlife TRO guidelines. Whole fish concentrations of mercury in Walleye from both reference and exposure areas exceeded the TRO. None of the muscle tissue or whole fish had arsenic, cadmium, or chromium concentrations above the TRO (wildlife) guideline. Only one Rainbow Trout caught in 2016 had a whole-body concentration of lead above the TRO for wildlife. Whole fish concentrations of mercury in Walleye from both reference and exposure areas, and in one Mountain Whitefish from a reference area exceeded the TRO. The TRO guidance specifically states that the values should be compared to a composite sample or average of 6-10 fish, not single samples.
In summary, community-level adverse responses were not detected in this study that would be attributable to influence of the Teck Trail Smelter operations on the Lower Columbia River area of interest. Complex statistical models found that streamflows and the related factors of velocity, substrate size, shear stress, light penetration and particulate suspension exert control over periphyton and benthic macroinvertebrate growth and species assemblages. While the AREMP focuses on studying the effects of effluent discharge on aquatic environments, Larratt et al. (2013) found that key controlling factors of river production shift with season and substrate type/size largely influenced by water velocities and channel character are the primary controlling factors.		

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1.0 INTRODUCTION

Ecoscape Environmental Consultants Ltd. (Ecoscape) was retained by Teck Metals Ltd., Trail Operations (Teck) in 2015 to carry out an aquatic receiving environment monitoring program (AREMP) on the Lower Columbia River (LCR) as per part 3.2 of Effluent Permit PE02753. The purpose of this work is to conduct effluent receiving environment monitoring in the LCR. A secondary purpose of the work is to provide information to Teck to facilitate management decisions for smelter operations.

The Teck Trail Smelter is located adjacent the right bank (looking downstream) of the lower Columbia River in Trail, BC about 11 km due north of the International Border with the United States. The streamline distance from the smelter down to the border is about 18 km (Schedule A).

The primary study area is the lower Columbia River from Stoney Creek to Old Bridge as this area receives the permitted effluent from the smelter along the right bank. Downstream sampling of the smelter outfalls extends from Old Bridge to Waneta just upstream of the confluence with the Pend d'Oreille River just north of the border. Reference study areas include the lower Columbia River, beginning from the Hugh L Keenlyside Dam and the Brilliant Dam on the Kootenay River, extending downstream to Stoney Creek (Schedule A).

There are several sources of metals in the study area, including but not limited to:

- Smelter emissions, for which an Aquatic Ecological Risk Assessment study has been conducted (Golder 2007);
- Groundwater discharge, for which a hydraulic interception and treatment system is currently being commissioned;
- Stoney Creek, which is currently under assessment and remediation;
- Sediment in the Columbia River foreshore area adjacent to downtown Trail, which is currently under investigation;
- Trail Creek, which is currently under investigation in the Annable area of Warfield;
- Non-smelter influences including various mines and mills, storm sewer discharge, pulp mill effluent and municipal sewage effluent; and.
- Naturally occurring metals.

Sources other than permitted Teck discharges, described further below, have a potential influence on the health of the aquatic receiving environment but the evaluation of such influence is outside the scope of this AREMP. Due to the integrating nature of the LCR, any impacts of these sources could not be assessed separately from the effluent discharge, and it is therefore acknowledged that the

AREMP will measure parameters as a result of all influences on the river, not just the Trail Smelter effluent discharge.

The structure of this report is based on the Proposed Study Design for Teck Trail Smelter AREMP (Golder 2012a) and on Recommendations to AREMP, 2015-2017 (Hawes et al. 2015). The requirement to carry out an AREMP was delegated to Teck by BC MoE in 2011 for studies to be conducted in 2012 through 2014 on the Lower Columbia River. AREMP studies involve monitoring of water quality, sediment quality, periphyton communities, benthic invertebrate communities, small-bodied fish and large-bodied fish. The following report describes project objectives, outlines management questions and methods carried out to address the water quality program.

1.1 Background Information

The LCR aquatic environment in Canada has been extensively studied, with data collected over the years by various organizations. Teck has commissioned numerous studies and reports on a wide range of potential effects of past and current smelter operations. These efforts provide historic data and context for this study.

Teck conducted a large-scale Ecological Risk Assessment (ERA) of the Trail smelter operations from 2000 to 2007 (Golder 2007; Golder 2012a). The aquatic ERA study area encompassed the lower Columbia River and its tributaries from downstream of the Hugh L Keenlyside Dam, and the Brilliant Dam on the Kootenay River to the International Border.

Tributaries

Cadmium, silver, and zinc concentrations exceeded criteria at both reference and exposure sites within the tributaries to the lower Columbia. The ERA (Golder 2007) speculated that some elevated metals concentrations in tributaries may be explained by anthropogenic sources other than the smelter – especially true for reference tributaries (Golder 2006). These include forestry, highway run-off, erosion from power and gas rights of way, and run-off from agricultural and urban areas.

Sediment metals in tributaries were elevated from upstream reference sites downstream to Murphy Creek with variable metals concentrations between the smelter and Beaver Creek and then high metals concentrations further downstream at Sheppard Creek (Golder 2006).

Algal biovolume in tributaries was low at most sites and the degree of variability between reference and exposure sites were within the standard error (Golder 2006) and it was concluded there is low risk from smelter emissions to tributary systems (Golder 2012).

Differences in benthic invertebrate community composition were reported for the tributaries studied in the area of influence (AOI) (Golder 2012). These differences reflected the environmental variation relating to water quality and habitat (Golder 2006) with the variability in natural habitat features being the primary determinants of periphyton and benthic community composition (Golder 2012).

Lower Columbia River

The Aquatic ERA (Golder 2007) AOI included 56 km of the lower Columbia River from the Hugh L Keenlyside Dam, and the Brilliant Dam on the Kootenay River downstream to Waneta at the International Border. Assessment endpoints were defined for periphyton community composition, benthic invertebrate community composition, fish population and condition metrics as well as habitat quality.

The sequential assessment of lines of evidence (SALE) of the ERA indicated that the risk management objectives are being met for Mountain Whitefish and Prickly Sculpin. Therefore, an evaluation of the risk management options is not required for these receptors (i.e. large and small-bodied fish) (Golder 2012). The SALE analysis indicated that the risk management objectives were not being met for periphyton in near-field areas at New Bridge within about 250 m downstream of the smelter's combined II outfall along the right bank. In addition, the SALE indicated that the risk management objectives were not being met for the depositional habitat benthic invertebrates at Maglios and Waneta sites. However, the area of depositional habitat in the AOI is only about 0.1%. Therefore, the spatial extent of the physical and chemical effects of slag and sediment quality is small relative to the context of the entire AOI (Golder 2007).

Effluent Plume Overview

A plume delineation model was developed for the Trail smelter effluent in 2012 (Golder 2012) and subsequently validated by water quality sampling and spatial analysis (Hawes and Larratt 2014). Daily effluent flow and total metals concentrations for each of the outfalls was provided by TML. Effluent flow (m^3/s) and concentration data (mg/L) were compared with transect water quality data on corresponding days to assess the % assimilation and spatial attributes of the discharges and compared with the modeled effective dilution.

During spring LCR low flows, the average combined effluent discharge from all three plumes is approximately 0.14% of LCR flows (Hawes and Larratt 2014). An ammonium sulphate groundwater plume flows beneath the smelter, discharging into the LCR from the riverbed. This groundwater plume confounds the effluent plume model because its constituents are also components of the smelter outfalls. The groundwater plume is characterized by elevated nitrogen, sulphate, fluoride, total dissolved solids (TDS), arsenic, cadmium, iron, lead, manganese, and zinc (Golder 2012).

At New Bridge, the measured dilution was less than predicted by the model, ranging from about 2% (As/Se) to over 20% (Cd). This apparent reduced dilution may be explained by the ammonium sulphate groundwater plume (Hawes and Larratt 2014). At Old Bridge, the downstream limit of the initial dilution zone, the plume is about 60 m wide, as opposed to 35 m wide predicted by the model, and the percent dilution is greater than the model-predicted 1% dilution with a mixing ratio of about 200:1 (0.5% dilution) (Hawes and Larratt 2014).

Operational Improvements

Teck and its predecessors have undertaken a series of significant site improvements that include, but are not necessarily limited to:

- 1981: effluent treatment plant
- 1981: stripped zinc electrolyte was routed to fertilizer plant instead of river discharge
- 1982: mercury removal plant constructed
- 1991: construction of a drainage control system to route wash water and stormwater to the effluent treatment plant
- 1993: Heat exchanger installed in lead smelter
- 1994: Phosphate-based fertilizer production was terminated
- 1995: cessation of slag discharge to the LCR
- 1997-98: installation completed and operation of KIVCET flash lead smelter commenced
- 1997-98: seepage collection system along Stoney Creek;
- 2003: a closed industrial landfill was capped with an engineered membrane
- 2005: a permanent storage system was created for wastes containing arsenic.

These improvements have had a positive effect within the receiving environment, such that the Aquatic Ecological Risk Assessment study (Golder 2007c) concluded that there was no compelling evidence of smelter-related risks or impacts on fish, aquatic plants or insects.

1.2 Potential Metal or other PCOC Sources to the LCR Area of Interest

Potential metals of concern identified in earlier studies of the LCR included:

- **Water**: arsenic, cadmium, chromium, copper, lead, zinc, mercury, thallium
- **Groundwater:** Total Dissolved Solids (TDS), ammonia, nitrate, nitrite, sulphate, fluoride, chloride, dissolved metals/metalloids (antimony, arsenic, cadmium, cobalt, copper, iron, lead, manganese, magnesium, selenium, sodium, thallium, uranium, and zinc)
- **Sediment:** arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, thallium, zinc
- **Fish tissue:** zinc, copper

There are many influences on water quality in the LCR. The Aquatic ERA identified non-smelter-related stressors in the vicinity of New Bridge (adjacent downtown Trail) and the Maglios Sites (at the confluence with Bear Creek and the Regional wastewater treatment facility) (Golder 2007).

Table 1-1 summarizes permitted effluent discharges to the Lower Columbia River as of 2006.

Table 1-1: Permitted Effluent Discharges to the Lower Columbia River (2006).

Location	Permit #	Discharge Description	Approximate Discharge (m^3/day)
LCR – between	PE 1272	Zellstoff-Celgar - final industrial effluent	177,000
HLK dam and	PE 7622	Lion's Head Inn -2° treated domestic effluent	20
Castlegar, BC	PE 80	City of Castlegar - treated effluent	2,728
	PE 5594	Pope and Talbot Ltd-treated effluent	>10
	PE 4008	City of Castlegar - treated domestic effluent	1,600
	PE 141	Selkirk College- 2° treated domestic effluent	536
Kootenay River	PE 17354	Skanska-Chant Joint Venture	14.5
upstream of	PE 11702	Kootenay Mobile Home Park domestic effluent	43.6
LCR confluence			
LCR – Trail, BC	PE 02753	Teck Smelter - industrial effluents, cooling water	296,000
LCR –	PE 274	Kootenay Regional District - 2° treated effluent	10,500
downstream of			
Trail, BC	PE 71	Village of Montrose - 2° treated effluent	640
Beaver Creek	PE 133	Village of Fruitvale - treated effluent	910
	PE 2500	Village of Salmo - treated effluent	455

Source: BC MoE Nelson, 2006 (After Golder 2007)

Additional to these permitted effluent discharges, storm water runoff is discharged into the LCR at numerous locations. Urban stormwater from Trail, Rossland, and Warfield discharges to the LCR via Trail Creek (Golder, 2007c). An unknown volume of runoff from highways, roads, railways, mines, mills and transmission lines may also affect the LCR. Furthermore, other industries and agricultural developments have the potential to impact the LCR.

The focus of this study is on potential metals of concern associated with the smelter that may affect the LCR. Metal sources influenced by the smelter are outlined in the following sections.

Outfalls

The Trail smelter has three permitted outfalls (CII, CIII, and CIV). The distribution of the effluent is governed by fluid dynamics. Results from a CORMIX modeling exercise predicted that outfall plumes are diluted by the river flow to metal concentrations near background concentrations within distances outlined in Table 1-2. The model also predicted that the outfall plumes may combine with the

groundwater plume that upwells between CII and CIII along the western bank of the river (Golder 2010).

A Rhodamine-B dye tracer study was conducted in the LCR during low flows in April 1997. The study showed faster attainment of 1% dilution than the CORMIX model predicted, indicating that the CORMIX model results were conservative. This was further validated by Hawes et al. (2015). At the Old Bridge, the model predicted that CII and CIII discharges would be diluted to about 1% (100:1 mixing ratio) and that the plume width would be about 35 m. Field data (2011-2013 water quality) detected metals concentrations over background levels along the right bank as well as shallow and deep sites collected 60 m offshore from the right bank. Thus, the effluent plume at low flows was about 60 m wide as opposed to the predicted 35 m width (from CII). With increased plume diffusion, field measurements indicated a mixing ratio of about 200:1 (0.5% effective dilution) (Hawes et al. 2015).

Table 1-2: Teck Metals Ltd. Trail smelter estimated effluent plume dimensions during Columbia River low flow periods (Golder 2012b).

Discharge Name	Discharge Type under normal LCR Flows	Monitoring Parameters	CORMIX predicted plume dimensions at Low Flow 1% dilution
Combined CII	Multi-port diffuser	Cd,Cu,Hg,Pb,Zn, pH	1300 m long x 35 m wide
Combined CIII	Multi-port diffuser	TSS, Zn, As, Pb, Cd, Hg, Cu, Tl, pH	1700 m long x 20 m wide
Combined CIV	Multi-port diffuser	Hg, NH_3, Zn, pH	25 m long x 9 m wide
Stony Creek	Surface Discharge		130 m long x 8 m wide
Groundwater	Sub-surface plume		near CII and CIII discharges (see Schedule A for maps)

Stoney Creek

Stoney Creek discharges just upstream of the smelter, and it has contributed metals to the LCR (Teck Cominco 1998). The Stoney Creek watershed is affected by historical waste disposal and storage activities that contributed to metal drainage from seepage and surface runoff. This stream also received runoff from an urban area and a historical municipal landfill. Assessment undertaken in Lower Stoney Creek per the Final Remediation Plan (Golder 2012c) resulted in a project to isolate a portion of the stream from historical waste deposits (SNC Lavalin, 2015) and is currently under additional investigation as

Groundwater

Hydrogeological investigations have been undertaken beneath the smelter and surrounding area over a period of more than 15 years. Results of these studies have led to the identification of a groundwater plume. Investigations indicate that shallower portions of the plume discharge to the LCR adjacent to the smelter, shallow/intermediate portions of the plume upwell across the entire width of the river, and finally, while deeper portions of the plume migrate beneath the LCR through the East Trail Aquifer and eventually discharge into riverbed sediments

along the left bank of the river from around the Old Bridge to downstream about 1.3 km (C. North, pers comm. Golder, 2012c). This has been evident in left bank water samples for As, Ammonia, Cu, and Pb collected during the AREMP at New Bridge, (Hawes et al. 2014) and in the 2015-2016 AREMP results.

Groundwater discharge to the river is generally dependent on river stage and appears to be influenced more by the rate of change in river stage rather than by absolute river level (Golder 2010). Falling river levels result in groundwater upwelling to the river whereas rising river levels result in recharge of the aquifer by river water.

A hydraulic interception and treatment system to address the main groundwater plume as per the 2012 Final Remediation Plan (Golder 2012c) is currently being commissioned.

Historic Slag Discharge

Slag is a granulated by-product of the smelting process. It is a particle consisting primarily of silica, calcium and iron, and it contains small amounts of base metals including zinc, lead, copper and cadmium (Golder 2007b). Although grain size is similar to sand (DeBrito and Saikia 2013), slag has a density of >2.9 g/cm^3 (Cox et al. 2005), while coarse sand is lighter, with an average density of 2.65 g/cm^3. Fumed slag from Trail is distinct from slag from other smelters. Discharge of slag to the river began in the early 1920s and was discontinued in 1995.

1.2.1 Flow Regulation

BC Hydro dam flow regulation from the HLK and Brilliant Dams is a key determinant of LCR condition. River flow is a key driver of benthic community development in all flowing waters. In addition to determining dilution, flow affects a range of co-variate parameters including substrate submergence or stranding, velocity, turbulence, sediment transport, light penetration, etc. all of which have been considered in the 2012-13 AREMP report (Hawes et al., 2014) and are further investigated in this report.

2.0 PROJECT SCOPE AND MANAGEMENT QUESTIONS

This project consists of six components plus data management and is presented in Table 2-1.

Table 2-1: Components of the Teck Aquatic Receiving Environment Monitoring Program.

Water Quality
Depositional Habitat
Erosional Habitat
Large-bodied (adult sport fish) fish tissue metals
Small-bodied (sculpin) fish condition and Tissue Metals

2.1 Water Quality

The water quality program is a long-term monitoring program designed to evaluate potential effects of Teck's permitted effluent discharges on the LCR. The Columbia River Integrated Environmental Monitoring Program (CRIEMP) implemented a Lower Columbia River Water Quality Objectives Monitoring Program from 1997-2005 (Hatfield 2008). This program and the Aquatic ERA (Golder 2007) collected significant water quality data, and together with the AREMP begin to document the complex history of the smelter and changing water quality standards, guidelines, and collection and analysis techniques.

Key questions to be answered as part of this program are:

Q1. Are Provincial Water Quality Objectives attained at the downstream end of the Initial Dilution Zone (IDZ) during low flows (less than 40 kfcs/1133 m^3/sec) as per long term trend monitoring (e.g. CRIEMP, BC MoE)?

Q2. Does water quality in the study area vary spatially (various locations in the Columbia River including point source, reference sites (both horizontal and vertical), and temporally (between seasons and years) as a result of Teck's point source effluent discharges and if so, describe the variances?

Q3. Are water quality parameters that are analyzed for the AREMP stations appropriate?

The AREMP study design recommended water sampling near the shoreline as well as within the water column at specified transect locations. Further, the sampling design recommended water sampling throughout different seasons within years and events between years. Finally, to help assess specific effects of the smelter, controls were included in upstream areas such as Birchbank located upstream of any potential influences of the smelter effluent outfalls.

2.2 Depositional Habitats

The objective of the depositional habitat component of the AREMP is to assess potential effects of Teck Trail Operations permitted effluent discharges on depositional benthic communities by comparing benthic invertebrate structure and composition between areas upstream (reference) and downstream (exposure) of the smelter. However, we acknowledge there are other metal sources in the LCR that could affect the depositional areas. Specific study questions for this component include:

Q1. What is the sediment quality in the depositional areas upstream and downstream of the smelter?

Q2. Are the benthic invertebrate communities in depositional sediments downstream of the smelter different from the upstream communities in terms of abundance, species diversity and species composition?

Q3. If differences in benthic communities exist, do these differences suggest adverse effects (i.e. impairment of benthic communities such that they provide poor habitat to upper trophic consumers) and is this linked to current permitted effluent discharges?

For purposes of this study, adverse effects were defined as decreases in abundance, species diversity and species composition to values outside of the normal range such that the benthic communities may be impaired and provide poor nutrition to upper trophic consumers. The normal range is calculated as the variation among reference upstream sites plus/minus two standard deviations of the mean of multiple reference areas. Values outside of this normal range are, for purposes of this report, considered to be outside the range of natural variability and therefore indicative of potential effects on benthic communities (Golder 2012a).

Sediment quality for benthic invertebrates is a key component of this work program and assessments of sediment quality at three reference and seven exposure sites was assessed.

Benthic invertebrates are often used as indicator species because their community structure and diversity are affected by substrate, water quality, velocity, desiccation/drying on regulated systems like the Columbia, distance downstream of a point discharge, etc. Metals are known to have the potential to influence biological communities in riverine ecosystems (Jones and Bennett 1986; Solomon 2008, Luoma et al. 1997).

2.3 Erosional Habitat

Primary objectives of the erosional habitat sampling components are to assess effects of the effluent discharge on benthic invertebrate and periphyton communities in these habitats. Specific study questions are:

Q1. What is the difference in periphyton communities in erosional habitats downstream of the smelter compared to the upstream communities in terms of periphyton community structure, composition, and standing crop biomass?

Q2. What is the difference in the benthic invertebrate communities in erosional habitats downstream of the smelter compared to the upstream communities in terms of community structure and composition?

Q3. On the basis of qualitative review, is there a trend in periphyton and benthic metrics over time?

This aspect of the work program is similar to the depositional habitat program and focuses on identifying potential impacts of the effluent discharge by looking for observed changes in community structure and diversity in periphyton and benthic communities.

2.4 Small Bodied Fish Tissue Monitoring

The small-bodied fish program was developed by Ecoscape (2013) after the original AREMP study design.

The following are the key questions and a brief summary of how the AREMP addresses them:

Q1. Is there a difference in tissue metals concentration in small-bodied fish between reference sites and exposure sites downstream of the smelter?

Q2. Do tissue metal concentrations decrease in small bodied fish as the distance from the smelter effluent discharge increases?

Q3. Is there a difference in the length, weight, liver weight, gonad weight and condition of fish collected upstream of the smelter and downstream of the smelter?

Q4. What is the relationship between the distance from the effluent discharge and tissue metals, condition factor, liver weight (liversomatic index) and gonad weight (gonadosomatic index).

The study attempted to address differences in metal accumulation in small fish tissue based on species with short home ranges. Sample sites coincided with

previous metals analysis work completed for the smelter including benthic analysis, water quality, and large bodied fish tissue analysis.

Age, sex, total length, and weight, and liver and gonad weight are documented for each individual caught.

2.5 Large Bodied Fish Tissue Monitoring

Primary objectives of this component are to assess potential effects of effluent discharge, particularly metals concentrations, on fish tissues (measured in fillets, whole fish samples, and gut contents).

Specific study questions are:

Q1. How do the concentrations of total metals in the tissues of Mountain Whitefish, Rainbow Trout, and Walleye in the lower Columbia in 2012 and 2015 compare to the concentrations since 2000?

Q2. Do fish tissue concentrations exceed relevant human consumption guidelines?

The tissue sampling program is intended to investigate whether accumulations of metals occur in fish as a result of the smelter effluent discharges. Fish aging and condition assessments were a key component of this work program and were completed as part of the Lower Columbia River Fish Indexing Program (Ford and Thorley, 2011).

3.0 METHODS

The study design (Golder 2012) stratified (7) areas within the AREMP Study Area: Reference Area 1, Reference Area 2, and Exposure Areas 1 through 5. Sites were subsequently identified within these larger areas. The sites were the actual locations of sampling. The location of all study areas and sample sites in the LCR area of interest for water quality, sediment quality, small bodied fish, benthic invertebrate sampling etc., are illustrated in the Map Sheets (Schedule A) included at the end of this report.

3.1 Water Quality

The location of all study areas and sample sites in the LCR area of interest for water quality are illustrated in Figure 3-1.

The water quality study focuses on identifying specific effects of effluents on LCR water quality. The study area for the water quality sampling component of the AREMP includes the mainstem Lower Columbia River from Birchbank to the Waneta monitoring station just upstream of the Pend d'Oreille River confluence and the Canada - United States (US) border. Monitoring sites are shown in Figure 3-1 and are consistent with previous monitoring programs (Hawes et al. 2014). The water quality program was developed to evaluate the effects of the permitted effluent discharges by the smelter on the LCR. For this reason, sampling effort is concentrated in the spring low flow period to gather data when dilution of effluents is minimized.

Water quality monitoring sites include:

Birchbank – upstream Reference Site (9.7 km upstream of smelter)

Stoney Creek – 100 m downstream of Stoney Creek confluence and CIV outfall (within the IDZ near upstream end)

New Trail Bridge – Beneath or as close to the Bailey Street bridge as safely practicable, within the IDZ (0.25 km downstream of the CII effluent outfall)

Old Trail Bridge – 20 m upstream of the Old Bridge, marks end of IDZ (1.1 km downstream of CII effluent outfall)

Maglios – 4.2 km downstream of the IDZ. This site was added in the 2014 sampling program to demonstrate near to full mixing of the effluent plume by this location as opposed to Waneta, which is a further 10 km downstream.

Waneta – 15.8 km downstream of smelter, above Pend d'Oreille River confluence

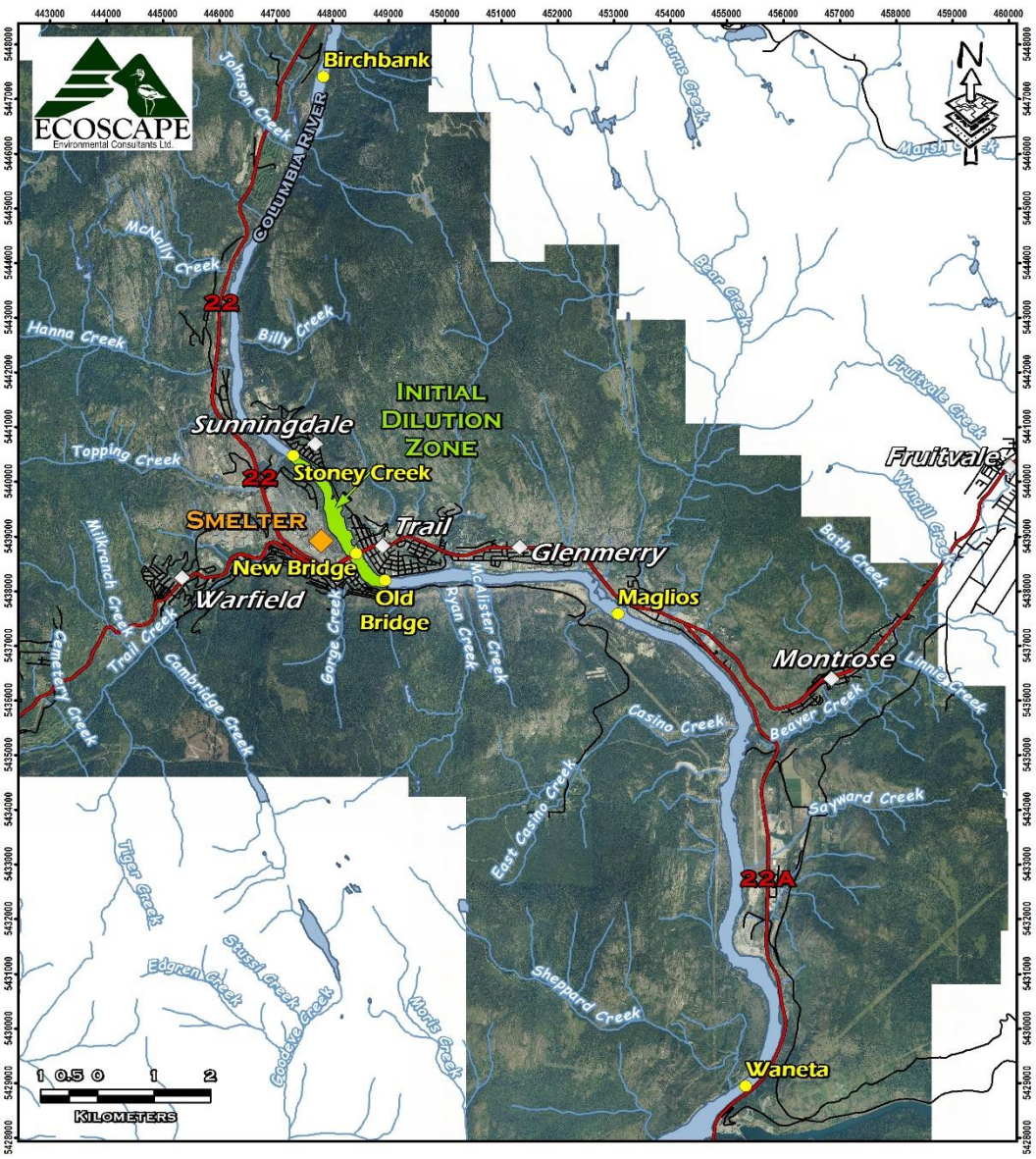

Figure 3-1: Study Area and Sample Sites.

Water quality sampling was conducted from March to October each year. Grab samples, from the right bank shallow location (Figure 3-1), were collected on March 31, April 16, and April 25 of 2015 and on March 9, March 23, and March 30 of 2016.

Transect samples, which included the right bank shallow location, were collected on April 7-8, 2015, April 28, 2015, and October 19-20, 2015, March 15-16, 2016, April 5-6, 2016, and October 4, 2016. During the high flow period of July transect samples were also collected on July 16-17, 2015 and July 26, 2016.

During the 2015-2016 LCR sampling events in March, April, and October flows ranged from 1018 – 1944 m^3/sec, whereas during the July sampling flows ranged from 2851-2869 m^3/sec (Figure 3-3).

All water samples were collected using a Van Dorn bottle - Type Beta Plus designed for sampling trace metals and organics. The purpose of the transect sampling was to evaluate the spatial homogeneity or variability across the river channel. For transect sampling, a series of six samples were collected with two near-shore grab samples, and four mid-channel samples (Figure 3-2). A composite sample at Waneta was collected over the six separate samples since analysis (Hawes et al. 2014) indicated concentration homogeneity across the river channel at this location. This Waneta composite was obtained by combining 3 samples collected evenly across the channel at ½ the wetted depth. For transect sampling, a total of 30 samples plus 3 samples for quality assurance and quality control (QA/QC) were collected during each sampling event.

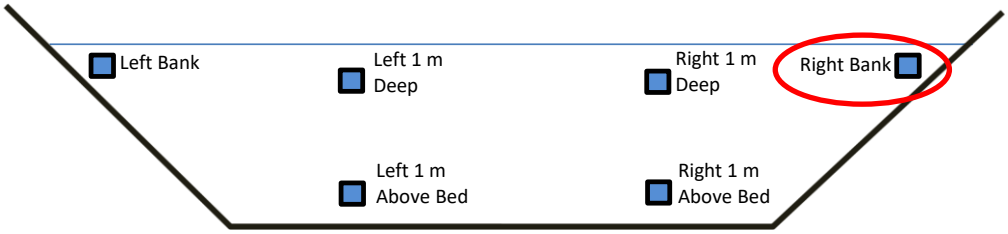

Figure 3-2: Schematic of transect water sample locations across the Columbia River channel (Perspective: Looking downstream). Transects were completed at Birchbank (reference site), Stony Creek, New Bridge, Old Bridge, Maglios, and Waneta. Grab sample events collected a sample from the right bank position (circled red).

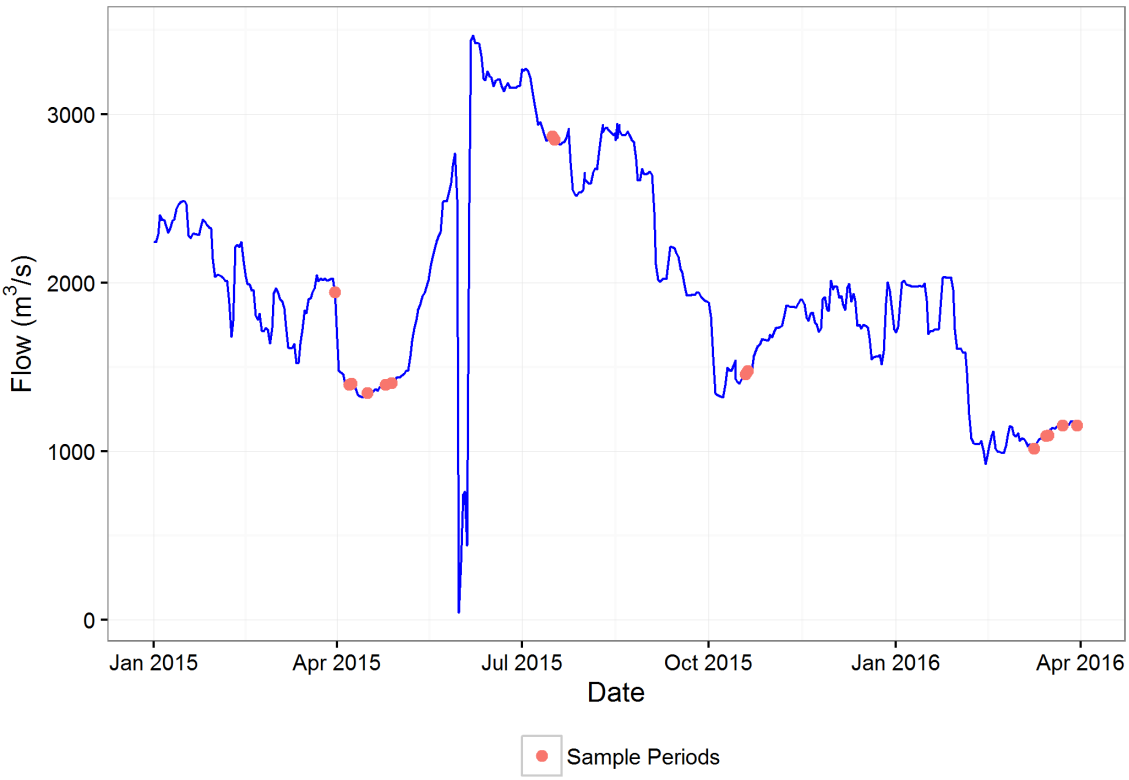

Figure 3-3: Lower Columbia River flows and the 2015 and 2016 spring, summer and fall AREMP water sampling periods (denoted as points above). Flow data used in this report are based on Birchbank flow data from Water Survey of Canada.

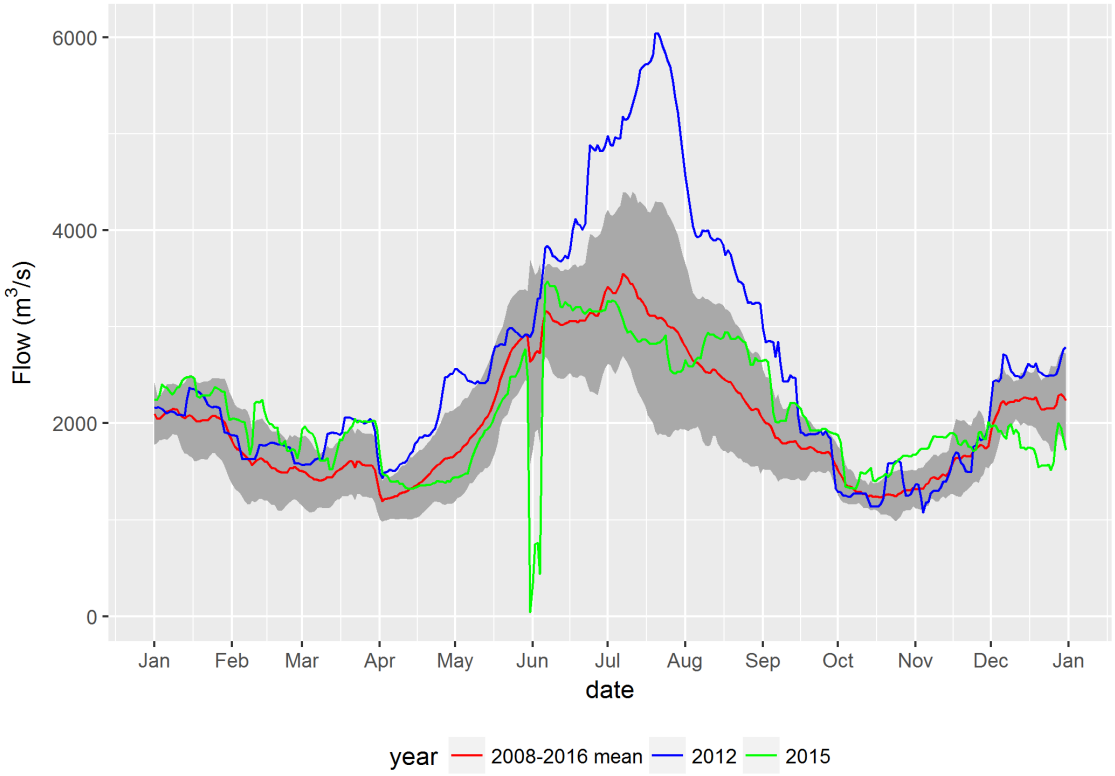

Figure 3-4: Lower Columbia River flows for 2008-2016 the shaded grey area is the standard deviation of daily flows for this time period. Flow data used in this report are based on Birchbank flow data from Water Survey of Canada.

3.1.1 Water Quality Field Parameters

Water quality field parameters were measured with a pre-calibrated Hanna HI 9828 (2015) and a YSI Pro DSS multimeter (2016) by lowering the sonde to the prescribed depth upstream of the sample site, then allowing the boat to drift downstream until the sonde cable was vertical and on site before the reading was recorded in the meter memory. Parameters included: GPS location, temperature, dissolved oxygen, percent dissolved oxygen saturation, pH, conductivity, total dissolved solids, and salinity. The data were downloaded from the meter computer to a stand-alone computer at the end of every sample collection session. Water depths were measured with a boat-mounted Lowrance HDS 7 chartplotter. Back-up field meters included a Hanna HI 9025C multi-meter, a Eutech Instruments pHTestr-20 for pH verification, and a Hanna conductivity meter.

Lab parameters included:

1. Specific conductivity, total alkalinity, hardness, pH, TSS, TDS, BOD_5, TOC, turbidity;

2. Major ions Ca, Mg, K, Na, Br, Cl, F, SO_4;
3. Nutrients including ammonia, nitrate, nitrite, TKN, total phosphorus, dissolved phosphorus ;
4. Total (not filtered) and dissolved (field-filtered) ultra-low metals scans with method detection limits lower than 5 times the BC MoE water quality guideline for the protection of aquatic life by Inductively-Coupled Mass Spectrometry (ICP-MS).

3.1.2 Water Quality Data Analysis

Water quality data were evaluated using a variety of techniques. Data exploration techniques including descriptive statistics (mean, minimum, maximum, standard deviation, etc.) were used to compare reference sites to exposure sites. Data from 2015 and 2016 was plotted to illustrate the range of measured parameter concentrations at each site relative to established Water Quality Objectives and Guidelines. Box plots were then prepared from the data sampled during low flow periods (March, April, and October) to assess and visually display the results from 2015 and 2016 and data sampled during July (high flow) was displayed as points. Data from 2015-2016 were similarly treated in Hawes et al. 2014.

The water quality data were compared to applicable Guidelines and LCR Water Quality Objectives in the Reference areas (Birchbank), the IDZ (Stoney Creek, New Bridge, and Old Bridge), and the downstream areas (Maglios and Waneta). The number of exceedances of the applicable guidelines was calculated for BC 30-day average and maximum. The exceedances for BC 30-day average were calculated in two separate ways. The first method was to align with methods done in previous years, which compared a single sample to the BC 30-day average. The second method calculated the mean from 5 samples collected from right shallow (r-sh) and compared this mean to the 30-day average. Spatial and temporal variations were subsequently described. Non-detectable results are common in metal detection samples. These were treated as half of the detection limit as per Huston and Juarez-Colunga (2009) and Technical Guidance 4; Environmental Management Act Authorizations (January 2016).

3.1.3 Quality Assurance / Quality Control for Water Samples

Quality assurance is a critical aspect of any monitoring program on trace metals because of the ultra-low levels of the analytes and subsequent susceptibility of samples to contamination. QA/QC reports from the labs can be found in Appendix C with the water quality data.

Field Quality Assurance

Prior to transect sampling, sample bottles were pre-labeled and stored in large zip-lock bags, organized by site. The sampling boat and associated gear were pressure-washed prior to launching at Trail to remove road grime that could affect sampling,

and to limit the potential for accidental transport of invasive species. Sampling began at reference sites and progressed downstream. Samples were collected from the prescribed depths and sites in a cleaned, low metals Van Dorn bottle sampler. Sample bottles were provided by ALS Environmental Laboratories and with the appropriate preservatives pre-measured in vials. Sample bottle caps, syringes and filters were triple-rinsed as needed with sample water to minimize contamination from atmospheric deposition. Metals sample bottles were triple-rinsed and immediately field-filtered using rinsed, prescribed syringe filters. All field sample preservation methods prescribed by ALS Lab were observed. Clear un-powdered vinyl gloves were worn for all sample handling except Hg samples, when nitrile gloves were worn. The filled sample bottles were immediately placed on chipped ice and couriered to ALS Labs in Burnaby, B.C. within 48 hours of collection.

Duplicate instruments were used for field parameters where calibration is prone to drift such as pH. Where agreement was within instrument tolerances, the Hanna multi-meter data were taken as correct. When agreement was not within tolerances, the multi-meter was re-calibrated. The data were downloaded from the multi-meter computer to a stand-alone computer at the end of every sample collection session**.**

Lab Quality Assurance

Standard water quality sampling methods were employed, as well as all instructions from the labs.

Every sampling event QA/QC involved 1 travel blank (lab double de-ionized water (DDI) travels unopened), 1 field blank (Lab DDI water handled as sample water) and up to 3 duplicate samples (labels did not tell the lab which samples they duplicate). The minimum number of QA/QC samples is 3 per transect sampling event (10% of samples). Lab reports were checked on receipt of data and queries or requests for sample re-analysis were sent as soon as possible and within the sample hold times. Requests for re-analysis were based on differences between the sample duplicates that exceeded accepted tolerances, generally 20 - 50% difference, or an outlier result that exceeded the range of standard deviation for the applicable results to date. The lab was also directed to retain samples until they were notified that they could dispose of them or until the hold times specified in Standard Methods had expired. Additional QA/QC protocols were also undertaken at ALS.

The lab was asked to report the data electronically in Excel and PDF format.

3.2 Sediment Quality Monitoring

The following are specific data that were collected at 10 depositional sediment sample sites. Each of the sites below were identified in the sediment quality triad (Golder 2007). All samples were collected followed sampling procedures outlined in Clarke (2003) and other standardized, acceptable scientific techniques. Sampling sites were outlined in the AREMP and are (Maps 1-10):

1. Three of the sample sites were in reference areas at Kootenay Eddy, Genelle Eddy, and Birchbank Eddy.
2. Seven exposure sample sites were established at Korpak, Maglios, Casino, Airport Bar, Trimac, Fort Shephard Eddy, and Waneta.

For sediment sampling, 4.35 cm diameter clear Plexiglas™ corers were pushed into the substrate to a depth of 15 cm and the 200 cm^3 core was transferred to a large zip-lock bag. Five cores were added to each bag to create a composite sample from a variety of sub-sample locations within the confines of the designated sample site. The sediment sample was mixed thoroughly and a 500 cm^3 sediment subsample retained and stored in a cooler on ice and delivered to Caro Labs Kelowna for processing.

Supporting data collected at each sediment sample site included:

1. Substrates were assessed using a GIS approach at all 10 sediment sites. Each habitat unit sampled was mapped in GIS. The percentage cover of each type of substrate was developed. This GIS approach allows long-term tracking of sediment erosion and deposition in the river and facilitates documentation of habitat change over time.
2. Water velocity, channel morphology (run, riffle pool, etc.), bankfull width, and sample depth was collected at each site. Velocity at each sample site was collected using a Marsh McBirny or a Swoffer flow meter depending upon water depth. Velocity was collected at three positions in the water column; ~5 cm off of the bed level, 40% column, and at the surface.
3. The percentage of cover of aquatic macrophyte was estimated visually at each sample site.
4. The distance from the point of discharge was determined using GIS as measured from the centerline of the channel to the sample site. This data was useful in assessing potential gradients that may exist from the point of discharge.

All of the above data were collected in a spatial framework using GIS as well as stored in other standard data formats including Microsoft Excel.

In the Larratt Aquatic lab, sediment samples were examined for presence of slag, both wet and dry, in white sorting trays and photographed with a macro lens. The Columbia River samples were compared to slag samples obtained from the smelter. The samples were mixed with distilled water and reviewed under 400 power on an inverted microscope fitted with a second high intensity lamp as a side-light. Several microscope photographs were shot from each sample as an archived record to corroborate observations. Records were kept of: dark silt, possible slag, organic debris, protozoa, small invertebrates, bacteria, fungi, Didymo tubes, algae, vascular debris, pollen, etc.

In the Caro analytical lab, the strong acid leachable metals (SALM) soil procedure was followed, according to the British Columbia Environmental Laboratory Manual 2015 procedure (prescriptive) for total sediment metals. Sub-sampling was done using approximately 50 g of sample for drying. According to the 2015 BC Lab Manual method, the sample is dried, then disaggregated and sieved to < 2 mm (BC MoE, 2015). The < 2 mm fraction was used for analysis because there is a desire to detect slag, if it is present. Slag was identified as an area of interest in the Aquatic ERA (Golder 2007). Collecting the smaller size fraction would likely exclude the larger slag particles if they were present. Large stones, rocks, debris, etc. are excluded from the analyzed sample. This method provides the sample preparation procedure for the analysis of total metals, as referenced within the BC Contaminated Sites Regulations. The method achieves near-complete recoveries of some important metals, but many others are only partially recovered, such as aluminum, barium, beryllium, chromium, strontium, titanium, thallium, and vanadium. Metals not dissolved with this method are unlikely to be of environmental consequence (British Columbia Environmental Laboratory Manual: 2015). This method is applicable to the following parameters:

Aluminum Al-T, Iron Fe-T, Silver Ag-T, Antimony Sb-T, Lead Pb-T Sodium Na-T, Arsenic As-T, Lithium Li-T, Strontium Sr-T, Barium Ba-T, Magnesium Mg-T, Sulfur S-T, Beryllium Be-T, Manganese Mn-T, Thallium Tl-T, Boron B-T, Mercury Hg-T, Thorium Th-T, Cadmium Cd-T, Molybdenum Mo-T, Tin Sn-T, Calcium Ca-T, Nickel Ni-T, Titanium Ti-T,, Chromium Cr-T, Phosphorus P-T, Uranium U-T, Cobalt Co-T, Potassium K-T, Vanadium V-T, Copper Cu-T, Selenium Se-T, and Zinc Zn-T.

Statistical analysis of the highly variable sediment data was restricted. Data analysis relied on comparison to guidelines and to historic values using percent difference. Where statistics were used (for example Pearson's correlation coefficient), we used ½ of the detection limit where specific metal concentrations were below the method detection limit.

3.3 Periphyton Monitoring

3.3.1 Erosional Habitats

Cobble-size substrates were randomly selected from sample areas that had been continuously submerged for at least 10 weeks so that they had well developed periphyton communities. Although sampling in the spring prior to the increasing freshet hydrograph was the preferred sampling window identified by Golder (2012a), the alternative fall sampling was selected. This period was chosen as it is the optimal time for sampling benthic macroinvertebrates since most taxa are in an aquatic life stage at that time of year and are in a later stage (instar) of development to permit the resolution of taxonomy required by the monitoring program. In addition, the fall sampling is synchronized to occur when LCR flows drop to a level that permits sampling of stable substrates and benthic communities that are permanently wetted. Thus, the periphyton program was aligned with the benthic monitoring program.

Sample areas were selected that had similar water depth, flow patterns, velocity, substrate size, macrophyte cover and shading. Adapting the generalized random tessellation stratified spatially-balanced Survey Design (Stevens and Olsen 2004), five randomly chosen near-shore cobbles were obtained from wadeable areas within each of five sample sites potentially exposed to smelter discharges and two upstream reference sites for a total of 35 samples. Additional 'oversamples' but were not needed.

Each sample was composed of five subsamples that were collected from the top of each cobble surface. To minimize natural variation, samples were collected from the apex surface (parallel to the water surface) of smooth cobbles 20-50 cm in diameter. This process was repeated to collect three individual replicate samples, using the methods found in the USEPA Rapid Bioassessment Protocol for Periphyton (Barbour et al. 1999).

Fifteen smooth cobbles (100-200 mm in diameter) were selected and placed on 3 plastic trays (5 rocks /tray) at the river's edge to minimize drying. Each tray was sampled separately for replicate samples from each site. A standard 2" ABS cylinder (inside diameter 50.8 mm) was fitted with a flexible rubber gasket and held firmly on the top of the cobble (Figure 3-5). A scalpel, modified toothbrush, and a squirt bottle filled with filtered river water were used to remove all the periphyton within the sampler diameter (20.26 cm^2). The rock and funnel were rinsed into a beaker to a total volume of 100 ml. Coarser sand and predators were noted but not added to the sample. This was repeated for all 5 rocks of a given sample to give a final volume of 500 mL per replicate. Samples were chilled with ice to 2^oC prior to shipping.

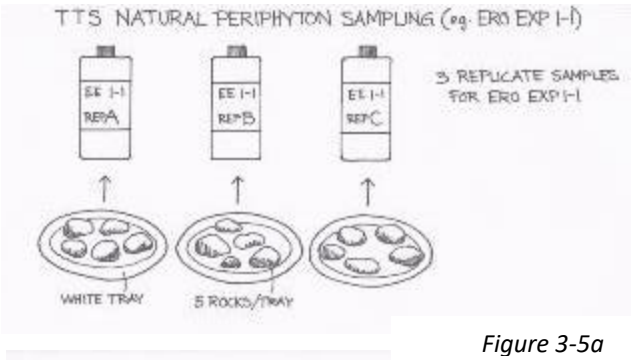

Figure 3-5a

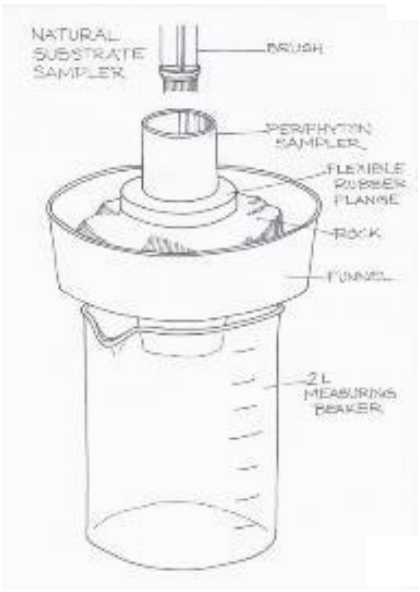

Figure 3-5b

Figure 3-5: Illustration of natural cobble substrate periphyton sampling in the LCR.

In the Larratt Aquatic algae lab, each replicate was agitated, and 200 mL subsampled to a glass jar and preserved with 0.2 mL of Lugol's preservative. These preserved samples were refrigerated to await taxonomic analysis. The remaining sample water (300 mL x 3) was batched in a triple-rinsed 1 L brewers flask shielded with aluminum foil to exclude light. A 500 mL chl-a sample was cut, refrigerated and kept dark until delivery to Caro Labs Kelowna within 24 hours. A total of 35 chl-a samples plus 3 field duplicates were submitted to Caro Labs.

For taxonomy, each 200 mL sample was transferred to a triple-rinsed 600 mL beaker and agitated with a stick blender for 30 seconds before a 10 mL subsample was extracted and allowed to settle in a 5.3 cm diameter settling chamber for 24 hours (periphyton identification description, section 3.3.5).

3.3.2 Periphyton Tissue Metals

Separate from the AREMP, Teck is conducting additional investigations within the IDZ within the context of the provincial Contaminated Sites Regulation (CSR). To support the CSR investigation and to maximize the use of the AREMP data, Teck requested an additional tissue and periphyton sampling program on a one-time basis for the fall 2015/spring 2016 AREMP sampling program.

For this program, filamentous algae were collected from rocks at prescribed sites (Table 3-1). These sites corresponded with additional benthic tissue sample sites. The filamentous algae were collected by samplers wearing un-powdered vinyl gloves, and placed in a new, clean 125 ml glass sample jar. A minimum of 5 g algae was collected at each site. Samples were stored on ice and refrigerated prior to submission to Caro Analytical where samples were homogenized and subsequently assessed for tissue metals.

Periphyton tissue metals of arsenic, cadmium, chromium, copper, lead, mercury, selenium, and silver were graphed according to site. The periphyton tissue metals were log-transformed and compared between reference and exposure sites. The periphyton tissue metals were log-transformed and linear mixed effects model used site as the random effect and treatment as the fixed effect for arsenic, cadmium, chromium, copper, lead, mercury and thallium. Outlier for copper was removed and zinc excluded from the test because site explained 0% of the variation in zinc. Periphyton tissue concentrations of zinc were compared using an ANOVA with treatment as the factor.

Table 3-1: AREMP erosional habitat periphyton tissue metals sampling areas and sites. Refer to Schedule A map sheets for location references.

Area	Site	Bank	Periphyton Community	Benthic Community	Periphyton Tissue	Benthic Tissue	Sculpin Tissue
ERO-REF-1	1	L	ERO-REF-1-1A	ERO-REF-1-1	ERO-REF-1-1-PeriT	ERO-REF-1-1-BenTS	
	2	L	ERO-REF-1-2A	ERO-REF-1-2	ERO-REF-1-2-PeriT	ERO-REF-1-2-BenTS	
	3	L	ERO-REF-1-3A	ERO-REF-1-3	ERO-REF-1-3-PeriT	ERO-REF-1-3-BenTC	
	4	L	ERO-REF-1-4A	ERO-REF-1-4	ERO-REF-1-4-PeriT	ERO-REF-1-4-BenTC	
	5	L	ERO-REF-1-5A	ERO-REF-1-5	ERO-REF-1-5-PeriT	ERO-REF-1-5-BenTS	
ERO-REF-2	1	R	ERO-REF-2-1A	ERO-REF-2-1	ERO-REF-2-1-PeriT	ERO-REF-2-1-BenTC	ERO-REF-2
	2	B	ERO-REF-2-2A	ERO-REF-2-2	ERO-REF-2-2-PeriT	ERO-REF-2-2-BenTC	
	3	B	ERO-REF-2-3A	ERO-REF-2-3	ERO-REF-2-3-PeriT	ERO-REF-2-3-BenTC	
	4	B	ERO-REF-2-4A	ERO-REF-2-4	ERO-REF-2-4-PeriT	ERO-REF-2-4-BenTS	
	5	B	ERO-REF-2-5A	ERO-REF-2-5	ERO-REF-2-5-PeriT	ERO-REF-2-5-BenTS	
ERO-EXP-2	1	R	ERO-EXP-2-1A	ERO-EXP-2-1	ERO-EXP-2-1-PeriT	ERO-EXP-2-1-BenTC	ERO-EXP-2
	2	R	ERO-EXP-2-2A	ERO-EXP-2-2	ERO-EXP-2-2-PeriT	ERO-EXP-2-2-BenTC	
	3	R	ERO-EXP-2-3A	ERO-EXP-2-3	ERO-EXP-2-3-PeriT	ERO-EXP-2-3-BenTC	
	4	R	ERO-EXP-2-4A	ERO-EXP-2-4	ERO-EXP-2-4-PeriT	ERO-EXP-2-4-BenTC	
	5	R	ERO-EXP-2-5A	ERO-EXP-2-5	ERO-EXP-2-5-PeriT	ERO-EXP-2-5-BenTC	
ERO-EXP-3	1	R	ERO-EXP-3-1A	ERO-EXP-3-1	ERO-EXP-3-1-PeriT	ERO-EXP-3-1-BenTC	ERO-EXP-3-1-R
	2	R	ERO-EXP-3-2A	ERO-EXP-3-2	ERO-EXP-3-2-PeriT	ERO-EXP-3-2-BenTS	
	3	L	ERO-EXP-3-3A	ERO-EXP-3-3	ERO-EXP-3-3-PeriT	ERO-EXP-3-3-BenTC	ERO-EXP-3-3-L
	4	R	ERO-EXP-3-4A	ERO-EXP-3-4	ERO-EXP-3-4-PeriT	ERO-EXP-3-4-BenTC	ERO-EXP-3-4-R
	5	L	ERO-EXP-3-5A	ERO-EXP-3-5	ERO-EXP-3-5-PeriT	ERO-EXP-3-5-BenTC	ERO-EXP-3-4-L
	6	R			ERO-EXP-3-6-PeriT	ERO-EXP-3-6-BenTC	ERO-EXP-3-3-R
ERO-CRADT	1	R			ERO-CRADT-3-1-PeriT	ERO-CRADT-3-1-BenTC	ERO-EXP-3-2R
	2	R			ERO-CRADT-3-2-PeriT	ERO-CRADT-3-2-BenTS	
	3	R			ERO-CRADT-3-3-PeriT	ERO-CRADT-3-3-BenTC	
	4	R			ERO-CRADT-3-4-PeriT	ERO-CRADT-3-4-BenTC	
	5	R			ERO-CRADT-3-5-PeriT	ERO-CRADT-3-5-BenTS	
ERO-EXP-4	1	L	ERO-EXP-4-1A	ERO-EXP-4-1	ERO-EXP-4-1-PeriT	ERO-EXP-4-1-BenTS	
	2	L	ERO-EXP-4-2A	ERO-EXP-4-2	ERO-EXP-4-2-PeriT	ERO-EXP-4-2-BenTS	
	3	L	ERO-EXP-4-3A	ERO-EXP-4-3	ERO-EXP-4-3-PeriT	ERO-EXP-4-3-BenTS	
	4	L	ERO-EXP-4-4A	ERO-EXP-4-4	ERO-EXP-4-4-PeriT	ERO-EXP-4-4-BenTC	
	5	R	ERO-EXP-4-5A	ERO-EXP-4-5	ERO-EXP-4-5-PeriT	ERO-EXP-4-5-BenTS	
	6	R			ERO-EXP-4-7-PeriT	ERO-EXP-4-7-BenTC	
	7	R			ERO-EXP-4-8-PeriT	ERO-EXP-4-8-BenTC	
	8	R			ERO-EXP-4-9-PeriT	ERO-EXP-4-9-BenTC	ERO-EXP-4-5-R
ERO-EXP-5	1	L	ERO-EXP-5-1A	ERO-EXP-5-1	ERO-EXP-5-1-PeriT	ERO-EXP-5-1-BenTS	
	2	R	ERO-EXP-5-2A	ERO-EXP-5-2	ERO-EXP-5-2-PeriT	ERO-EXP-5-2-BenTC	
	3	R	ERO-EXP-5-3A	ERO-EXP-5-3	ERO-EXP-5-3-PeriT	ERO-EXP-5-3-BenTComp	
	4	R	ERO-EXP-5-4A	ERO-EXP-5-4	ERO-EXP-5-4-PeriT	ERO-EXP-5-4-BenTS	
	5	R	ERO-EXP-5-5A	ERO-EXP-5-5	ERO-EXP-5-5-PeriT	ERO-EXP-5-5-BenTS	
	6	R			ERO-EXP-5-6-PeriT	ERO-EXP-5-6-BenTC	ERO-EXP-5

3.3.3 Depositional Habitats

Objectives of this assessment were to determine the effects of effluent discharges on depositional habitat periphyton community structure and diversity. Periphyton samples were collected from the same ten depositional sites that were used in the depositional sediment sampling component of this study.

Depositional areas having approximately 20-40 cm of water cover were opportunistically sampled for periphyton using the petri dish sampling method outlined in Barbour et al. (1999). Briefly, sand or silt substrate samples were collected by inverting a large 8.85 cm diameter petri dish, sliding a flat spatula

under the dish, and lifting the surface sediment sample. This 55.4 cm^3 sample was agitated in a plastic sample bottle with 500 mL of 0.45 micron filtered river water and a 250 mL sample promptly decanted into a pre-labeled sample jar. This was repeated three times to get three replicate samples from each depositional area.

For periphyton taxonomy, each 250 mL sample was transferred to a triple-rinsed 600 mL beaker and agitated with a stick blender for 30 seconds before a 10 mL subsample was extracted and allowed to settle in a 22 cm^2 settling chamber for 24 hours (periphyton identification description, section 3.3.5) at the LAC lab.

3.3.4 Non-photosynthetic Microflora

To characterize very small non-photosynthetic members of the periphyton biofilm, 9 biofilm samples were collected in pre-sterilized standard bacterial bottles as follows: 2 samples from depositional reference (DEP-REF) sites, 1 sample from the erosional reference (ERO-REF) site, 2 samples from depositional exposure (DEP-EXP) sites, and 4 samples from erosional exposure (ERO-EXP) sites. Samples were stored on ice and delivered to Caro Labs, Kelowna within 24 hours. At the lab, samples were cultured for heterotrophic bacteria plate count, fungi, yeasts and molds, according to Standard Methods (2005).

3.3.5 Periphyton Identification, Enumeration and Measurements

The following describes periphyton sorting and identification techniques. These methods are consistent with those currently used in similar studies of the Mid and Lower Columbia River for BC Hydro.

1. Samples were settled in counting chambers over 24 hours. Cells were counted along mid-section transects examined at 400×-800× magnification under a phase contrast inverted microscope.
2. Intact cells containing cytoplasm were counted as live, and cells without cytoplasm were counted as dead, to determine a live: dead ratio.
3. Counts continued until 300-500 cells were counted and taxa relative abundance stabilized. Counting continued if taxa relative abundance had not stabilized. Vigorous shaking of the sample did not always break up algae clumps before the subsample was withdrawn. Cells of filamentous and colonial taxa were separated from counts of unicellular taxa because of their clumped distribution.
4. Microscope photographs of typical assemblages were taken from each sample and archived for Teck.
5. Algae cell dimensions were measured to allow for the calculation of biovolumes. Algal cell biovolumes were calculated using published geometric formulae (Hildebrandt et al., 1999; Diaina, et al., 2006). Twenty specimens from each taxa were measured to the nearest 0.1 micron using

ScopePhoto 3.0 image processing software. Median measurements were used to calculate cell biovolumes. Calculated biovolumes were compared to the range of sizes reported in published literature as a QA/QC step.

6. All parts of the microflora were evaluated from the settled samples, noting prevalence of detritus, vascular debris, bacteria, fungi, yeasts, and micro-grazers (protozoa) to accurately estimate productivity.
7. While diatoms usually dominate LCR periphyton, the inclusion of very small members of the periphyton biofilm in the taxa counts, including nano-periphyton (<2 – 20 microns), and pico-periphyton (>0.2 – 2 microns) bacteria and fungi facilitates accurate estimates of productivity as they usually form a significant component of the overall periphyton community (Stockner 1991; Wetzel, 2001). High power (600 – 900×) magnification was used for visual identification of species. Dr. J. Stockner's (UBC) verification of the taxonomy of these small, difficult to identify species was invaluable.
8. All data were recorded in Excel spreadsheets for later analysis.
9. In lieu of the preserved diatom reference samples that have an unfortunately short shelf life, microscope photographs of typical LCR periphyton assemblages were archived from each taxonomic sample. These photos provide a record that is usable at least to the genus level and includes non-diatom components of the periphyton.
10. About 20% of these samples were selected for taxonomic verification by Dr. J. Stockner (UBC). Dr. Stockner used a variety of microscopes to verify identifications, particularly for the nano- and pico-periphyton. Any taxonomic corrections/ nomenclature variations from existing data were clearly identified in a comparison table. All other taxonomic evaluations were performed by H. Larratt, Larratt Aquatic Consulting Ltd.

Phycologist Dr. J. Stockner also compiled a master species list for the Columbia System using current taxonomic nomenclature. In addition to his master-list, keys used during this work include:

References:

Patrick and Reimer; The Diatoms of the United States
Wehr and Sheath Freshwater Algae of North America
Canter-Lund and Lund Freshwater Algae; Their Microscopic World Explored
Prescott; Algae of the Western Great Lakes
Cyanobacteria Image Gallery; http://www-cyanosite.bio.purdue.edu/images/images.html
River Diatoms: a multi-access key; http://craticula.ncl.ac.uk/EADiatomKey/html/taxa.html
Academy of Natural Sciences ANSP Algae Image Database; http://diatom.ansp.org/AlgaeImage/SearchCriteria.asp

Periphyton data were entered into Excel spreadsheets as the samples were read. Computers were backed up daily to an off-site server and hard copy stored at both Ecoscape and Larratt Aquatic offices. Replicate preserved samples were refrigerated at Larratt Aquatic's office as back-up samples and were discarded after six months.

3.3.6 Environmental Impact Prevention

Didymo (*Didymosphenia geminata)* is present in the LCR and can spread readily through transport of contaminated sampling gear. Nuisance blooms have been reported in rivers worldwide. However, evidence indicates that blooms are probably not caused by introductions but, rather, by environmental conditions that promote excessive stalk production (Bothwell, M., et al. 2014).

Irrespective of the factors affecting the spread and proliferation of Didymo, all wader boots used by Ecoscape were soaked for 1 minute in a salt solution containing 70 g NaCl/L before the soles were dried in the sun for several days or frozen for a week (Matheson et al., 2007).

3.3.7 Periphyton Quality Assurance/Quality Control

H. Larratt performed taxonomic investigations on all samples, with about 20% of periphyton samples going out to Dr. J. Stockner for taxonomic verification as part of our QA/QC program. The following four steps were incorporated in the taxonomic investigations for this AREMP. These steps match the practices currently used by H. Larratt and Dr. Stockner in MCR and LCR investigations, and include:

1. Documenting the live: dead ratios of diatoms prevent an overestimation of the standing crop and provide insights into the nutritional value of the periphyton.
2. Inclusion of very small members of the periphyton biofilm in the taxa counts, including nano-periphyton (<2 – 20 microns), pico-periphyton (>0.2 – 2 microns) bacteria and fungi prevents a significant under-estimate of productivity. Generation time of these small simple forms is a matter of hours, and they are usually a significant component of the overall periphyton community (Stockner 1991; Wetzel, 2001).
3. Algae cell dimensions were measured to allow for the calculation of biovolumes. Biovolume accounts for the huge difference in cell size among algae types and allows the estimation of standing crop.
4. Drift algae samples were collected from sites above and below the smelter to allow accounting for periphyton recruitment from drift as it affects periphyton production and community structure.

3.4 Benthic Invertebrate Monitoring

The focus of the benthic invertebrate monitoring program was to assess impacts of the permitted effluent discharges on the quality of benthic habitats, together with the resultant benthic communities. Physical elements of the habitat formed an important component of this assessment.

Sampling was carried out in upstream reference and downstream exposure areas as outlined in the AREMP study plan (Golder 2012a), and an attempt was made to standardize field conditions at each site, including substrate size, macrophyte cover, etc. Study areas and sample sites within are shown in map sheets 1-10 (Schedule 1).

Two of the study areas were in upstream reference areas identified as Reference Area 1 (left bank opposite Stoney Creek and CIV outfall) and Reference Area 2 (Birchbank).

Five downstream exposure areas were sampled at sites identified as downstream Exposure Area 1 through Exposure Area 5. Sites within each of the upstream and downstream areas were randomly chosen using ArcGIS spatial tools. No additional sample sites were added as oversamples because all designated areas were effectively sampled.

3.4.1 Erosional Habitat Sampling

At each sample site, a series of 5 area-based samples (Figure 3-6) were collected from undisturbed river bed (moving in upstream direction). The sample net had a mesh size of 400 microns in accordance with standard CABIN protocols (Env.Can. 2012). The 5 samples were combined to form one composite sample. The sampler quadrat was 0.56 m^2. Thus, once combined, the total area sampled at each site was 2.8 m^2. Biophysical information recorded for each was included:

- Substrate composition (general) – the percent composition of each substrate type (e.g., boulder, cobble, gravel, sand etc.). The subsequent more detailed characterization is described below;
- Water velocity - velocity measurements were collected (using a Swoffer 2100 flow meter) at three positions (~5 cm above river bed, 40% column and, at the surface).
- Sample depth and broader channel morphology (run, riffle pool, etc.).
- In situ water quality – Using a YSI Pro DSS (temperature, dissolved oxygen, total dissolved solids, turbidity, pH, specific conductivity, salinity, redox).

- The distance from the three smelter effluent outfalls (CII, CIII, and CIV) was determined using GIS as measured from the centerline of the channel to the sample site.

Figure 3-6: Sampling benthic invertebrates using an area-based approach with a modified surber/CABIN kicknet sampler (devised for area-based sampling in large river system with coarse substrates). The area shown is Ero-Exp-2 situated on the right bank within initial dilution zone.

Substrate Characteristics

The composition of stream bed material is important in characterizing the type of habitat available to aquatic organisms. In addition, the substrate composition is integral to understand the hydrological characteristics of that site.

The standard CABIN (Env.Can. 2012) pebble count was used carried out to characterize substrate size and composition at each sample site. Substrate measurements within the sampling area were taken once all other sampling components were complete. While zigzagging through the sample area, substrates (i.e. boulder, cobble, pebble, gravel) were randomly selected every two steps following CABIN (Env.Can. 2012). If possible, the substrate material was extracted from the water and its intermediate axis (diameter perpendicular to the longest axis) was measured in cm. If the substrate could not be dislodged, it was measured in place. The fraction of embeddedness for all rocks measured was also recorded.

3.4.2 Invertebrate Tissue Metals Analysis

During the development of the 2015-2016 study design, Teck requested a one-time investigation of invertebrate tissue metals concentrations in the fall 2015 AREMP sampling program. While outside of the recommended AREMP scope, this single data collection period was intended to inform a separate Contaminated Sites Regulation investigation by Teck within the IDZ unrelated to the AREMP. This investigation focused on the IDZ and reference locations to determine the potential bioavailability and uptake of metals from this area. Caddisflies (Order: Trichoptera) had been documented to account for about 90% of invertebrate abundance in erosional habitats (Hawes et al. 2014) and are a primary component of benthic-feeding fish diets (e.g. Mountain Whitefish and Rainbow Trout). Therefore, the collection of benthic invertebrates for tissue metals analysis targeted caddisflies at each of the sites. Where insufficient caddisflies were encountered, the predominant taxa for that site were instead used (e.g. Snails: Family: Lymnaeidae, or Planorbidae).

Organisms were collected by use of a kick net and overturning larger boulder and picking the invertebrates from the underside. Invertebrates were placed in 1000 mL plastic jars labeled for the site and filled to 500 mL with fresh river water. Jars were then placed in a cooler with ice packs to keep the samples cool and invertebrates alive. Collected invertebrates were held alive in chilled sample jars for a minimum of 12 hours to allow defecation and clean-out of the stomach contents, which could confound results (i.e. gut contents may contain sediment and solid phase metals, which are not biologically available and otherwise pass through the organism).

Benthic invertebrates tissue metals of arsenic, cadmium, chromium, copper, lead, mercury, selenium, silver, thallium and zinc were graphed according to site and benthic group. A linear mixed effects model with site as the random effect, the fixed effects were benthic group (Caddisflies or Snails) and treatment (reference or exposure). The benthic tissue metals were log transformed. Mercury, thallium, silver and chromium were omitted from the analysis because of a high number of non-detects.

Table 3-2: AREMP erosional habitat benthic invertebrate tissue metals sampling areas and sites. Refer to Schedule A map sheets for location references.

Area	Site	Bank	Periphyton Community	Benthic Community	Periphyton Tissue	Benthic Tissue	Sculpin Tissue
ERO-REF-1	1	L	ERO-REF-1-1	ERO-REF-1-1	ERO-REF-1-1-PeriT	ERO-REF-1-1-BenTS	
	2	L	ERO-REF-1-2A	ERO-REF-1-2	ERO-REF-1-2-PeriT	ERO-REF-1-2-BenTS	
	3	L	ERO-REF-1-3A	ERO-REF-1-3	ERO-REF-1-3-PeriT	ERO-REF-1-3-BenTC	
	4	L	ERO-REF-1-4A	ERO-REF-1-4	ERO-REF-1-4-PeriT	ERO-REF-1-4-BenTC	
	5	L	ERO-REF-1-5A	ERO-REF-1-5	ERO-REF-1-5-PeriT	ERO-REF-1-5-BenTS	
ERO-REF-2	1	R	ERO-REF-2-1A	ERO-REF-2-1	ERO-REF-2-1-PeriT	ERO-REF-2-1-BenTC	ERO-REF-2
	2	B	ERO-REF-2-2A	ERO-REF-2-2	ERO-REF-2-2-PeriT	ERO-REF-2-2-BenTC	
	3	B	ERO-REF-2-3A	ERO-REF-2-3	ERO-REF-2-3-PeriT	ERO-REF-2-3-BenTC	
	4	B	ERO-REF-2-4A	ERO-REF-2-4	ERO-REF-2-4-PeriT	ERO-REF-2-4-BenTS	
	5	B	ERO-REF-2-5A	ERO-REF-2-5	ERO-REF-2-5-PeriT	ERO-REF-2-5-BenTS	
ERO-EXP-2	1	R	ERO-EXP-2-1A	ERO-EXP-2-1	ERO-EXP-2-1-PeriT	ERO-EXP-2-1-BenTC	ERO-EXP-2
	2	R	ERO-EXP-2-2A	ERO-EXP-2-2	ERO-EXP-2-2-PeriT	ERO-EXP-2-2-BenTC	
	3	R	ERO-EXP-2-3A	ERO-EXP-2-3	ERO-EXP-2-3-PeriT	ERO-EXP-2-3-BenTC	
	4	R	ERO-EXP-2-4A	ERO-EXP-2-4	ERO-EXP-2-4-PeriT	ERO-EXP-2-4-BenTC	
	5	R	ERO-EXP-2-5A	ERO-EXP-2-5	ERO-EXP-2-5-PeriT	ERO-EXP-2-5-BenTC	
ERO-EXP-3	1	R	ERO-EXP-3-1A	ERO-EXP-3-1	ERO-EXP-3-1-PeriT	ERO-EXP-3-1-BenTC	ERO-EXP-3-1-R
	2	R	ERO-EXP-3-2A	ERO-EXP-3-2	ERO-EXP-3-2-PeriT	ERO-EXP-3-2-BenTS	
	3	L	ERO-EXP-3-3A	ERO-EXP-3-3	ERO-EXP-3-3-PeriT	ERO-EXP-3-3-BenTC	ERO-EXP-3-3-L
	4	R	ERO-EXP-3-4A	ERO-EXP-3-4	ERO-EXP-3-4-PeriT	ERO-EXP-3-4-BenTC	ERO-EXP-3-4-R
	5	L	ERO-EXP-3-5A	ERO-EXP-3-5	ERO-EXP-3-5-PeriT	ERO-EXP-3-5-BenTC	ERO-EXP-3-4-L
	6	R			ERO-EXP-3-6-PeriT	ERO-EXP-3-6-BenTC	ERO-EXP-3-3-R
ERO-CRADT	1	R			ERO-CRADT-3-1-PeriT	ERO-CRADT-3-1-BenTC	ERO-EXP-3-2R
	2	R			ERO-CRADT-3-2-PeriT	ERO-CRADT-3-2-BenTS	
	3	R			ERO-CRADT-3-3-PeriT	ERO-CRADT-3-3-BenTC	
	4	R			ERO-CRADT-3-4-PeriT	ERO-CRADT-3-4-BenTC	
	5	R			ERO-CRADT-3-5-PeriT	ERO-CRADT-3-5-BenTS	
ERO-EXP-4	1	L	ERO-EXP-4-1A	ERO-EXP-4-1	ERO-EXP-4-1-PeriT	ERO-EXP-4-1-BenTS	
	2	L	ERO-EXP-4-2A	ERO-EXP-4-2	ERO-EXP-4-2-PeriT	ERO-EXP-4-2-BenTS	
	3	L	ERO-EXP-4-3A	ERO-EXP-4-3	ERO-EXP-4-3-PeriT	ERO-EXP-4-3-BenTS	
	4	L	ERO-EXP-4-4A	ERO-EXP-4-4	ERO-EXP-4-4-PeriT	ERO-EXP-4-4-BenTC	
	5	R	ERO-EXP-4-5A	ERO-EXP-4-5	ERO-EXP-4-5-PeriT	ERO-EXP-4-5-BenTS	
	6	R			ERO-EXP-4-7-PeriT	ERO-EXP-4-7-BenTC	
	7	R			ERO-EXP-4-8-PeriT	ERO-EXP-4-8-BenTC	
	8	R			ERO-EXP-4-9-PeriT	ERO-EXP-4-9-BenTC	ERO-EXP-4-5-R
ERO-EXP-5	1	L	ERO-EXP-5-1A	ERO-EXP-5-1	ERO-EXP-5-1-PeriT	ERO-EXP-5-1-BenTS	
	2	R	ERO-EXP-5-2A	ERO-EXP-5-2	ERO-EXP-5-2-PeriT	ERO-EXP-5-2-BenTC	
	3	R	ERO-EXP-5-3A	ERO-EXP-5-3	ERO-EXP-5-3-PeriT	ERO-EXP-5-3-BenTComp	
	4	R	ERO-EXP-5-4A	ERO-EXP-5-4	ERO-EXP-5-4-PeriT	ERO-EXP-5-4-BenTS	
	5	R	ERO-EXP-5-5A	ERO-EXP-5-5	ERO-EXP-5-5-PeriT	ERO-EXP-5-5-BenTS	
	6	R			ERO-EXP-5-6-PeriT	ERO-EXP-5-6-BenTC	ERO-EXP-5

3.4.3 Depositional Habitats

A total of five benthic invertebrate samples were collected from each of the thirteen depositional areas discussed above using an Eckman dredge (sample area = 0.0225 m^2). The position of each of the dredges was randomly selected. Previous assessments determined that a sample size of 5 is sufficient to describe benthic variability (Golder, 2007c). Samples were then sieved in a wash bucket with 400-micron mesh (Env.Can. 2012) and transferred in a labeled sample bottle. The five dredge samples were not combined but rather represented replicates for that area.

3.5 Benthic Taxonomy

Benthic invertebrate samples were field-processed by filtering samples and storing them in 70% ethanol. Fixed benthic invertebrate samples were transported to Cordillera Consulting in Summerland BC. Samples were sorted and identified to the genus-species level where possible. Benthic invertebrate identification and biomass calculations followed standard procedures. Field samples had organic portions removed and rough estimates of invertebrate density were calculated to determine if sub-sampling was required. After samples were sorted, all macro-invertebrates were identified to species and all micro portions were identified following the Standard Taxonomic Effort lists compiled by the Xerces Society for Invertebrate Conservation for the Pacific Northwest. A reference sample was kept for each representative taxon found. A sampling efficiency of 95% was used for benthic invertebrate identification and was determined through independent sampling.

Numerous metrics of benthic community structure including diversity, richness, community representation, and foraging guild are considered as raw data (Appendix H) and were compiled as part of our assessment.

3.5.1 Quality Assurance / Quality Control for Benthic Invertebrates

Lab reports on sediment and benthic samples were reviewed within two working days of receipt, and requests for re-analysis made if results were outside the 99th percentile without apparent cause. The lab reports were compared to all relevant standards and guidelines, with unusual results flagged.

3.6 Analysis of Periphyton and Benthic Invertebrate Community Response

A number of response variables were used to assess the relative effects of metals concentrations and habitat on periphyton and benthic communities in the LCR. Periphyton response variables included: 1) abundance, 2) biovolume, 3) Effective Number of Species, and 4) chlorophyll-a production. Benthic invertebrate response variables included: 1) richness of Ephemeroptera, Plecoptera, and Trichoptera taxa (EPT richness), 2) abundance, 3) % of samples made up of EPT taxa (% EPT), 4) % of sample made up of Chironomid taxa (% Chironomidae), 5) Effective Number of Species, 6) Hilsenhoff biotic index, and 7) Total Biomass.

In addition to our primary explanatory variables of effluent exposure (above or below CIII outflow), we also considered the effects of distance from HLK outflow, and several environmental variables: water temperature, water velocity, and substrate size (D90). The substrate metric D90 is the size of the 90th percentile of the intermediate substrate diameter; it was highly correlated with D50 which is the median substrate diameter. The final set of explanatory variables was selected

based on based on variance inflation factors (VIF) <5 and correlation coefficients (< 0.7).

Only 2015 productivity and community metrics for invertebrate and periphyton from erosional sites were included in linear mixed-effects models that used maximum likelihood fitting (Zuur et al. 2009). For 2015 erosional models, site was the random effect and the fixed effects included velocity, water temperature, substrate size (D90), treatment (exposure and reference) and distance to Hugh Keenleyside Dam.

We compared these candidate models through Akaika information criterion corrected for small sample size (AICc) based on Δ AICc values and AICc weights (w_i) which ranks models based upon the principal of parsimony, balancing model fit with complexity, in which the best models have the lowest Δ AICc and highest W_i. In this approach the overall relative model performance is determined, rather than assessing the significance of individual parameters or models through p-values. Because numerous models performed similarly based on these criteria, we also assessed the relative support for the effects of different explanatory variables using multi-model averaging (Burnham and Anderson 2002; Anderson 2008). In this latter approach, model averaged parameter estimates with 95% confidence intervals (direction, variability, and size of effects) and relative variable importance (RVI: sum of W_i for all models containing a variable of interest) were calculated for each explanatory variable from 95% confidence sets of models (Burnham and Anderson 2002; Grueber et al. 2011).

Variables with 95% confidence intervals that did not span zero, and with RVI values > 0.5, were considered to be of high importance in describing variation in response variables (e.g., Burnham and Anderson 2002). We also calculated pseudo R^2 for high ranking models (derived from regressions of the observed data versus fitted values), which gives an indication of the proportion of the variance in response variables explained by an individual model (see Cox and Snell 1989; Magee 1990; Nagelkerke 1991; Piñeiro et al. 2008 for details).

In order to interpret and compare among all parameters which varied widely in scale, we conducted the above analyses after standardizing continuous explanatory variables by subtracting global means from each value (centering) and dividing by two times the SD (scaling) (Gelman 2008). Total abundance for both periphyton and benthic invertebrates, total biomass, and total biovolume in erosional and depositional sites were also log transformed to meet model assumption of normality.

While these models generally followed assumptions of multiple linear mixed-effects models, and many performed well, individual relationships among response and explanatory variables were not always linear based on scatter plots of the data and so interpretations of effects should be limited to general direction and size, but not shape of relationships. Following this, these models are not appropriate for

predictive use. All mixed-effects modeling of periphyton and benthic communities were done in the lmer package, and competed and averaged using the MuMIn package version 1.15.6 (Barton, 2016), both implemented in R.

For the depositional sites, the invertebrate and periphyton metrics were calculated by summing all five samples that were collected at each site. For the periphyton metrics of effective number of species, total abundance and total biovolume were compared using a two-way ANOVA with year (2012 and 2015) and treatment (reference and exposure) along with the interaction term. Total biovolume and abundance were log transformed. The benthic invertebrate metrics of total abundance, percent EPT, percent chironomidae and effective species numbers were compared with year and treatment without an interaction term. Total abundance, percent Chironomidae and percent EPT were log transformed to meet model assumption of normality.

Non-metric multidimensional scaling (NMDS) using Bray-Curtis dissimilarity was used to explore variation in periphyton and benthic invertebrate community composition. Often in ecological research, we are interested not only in comparing univariate descriptors of communities, but also in how the constituent species—or the composition—changes from one community to the next. One common tool used to understand and visualize community composition is NMDS. The goal of NMDS is to collapse information from multiple dimensions (e.g, multiple species abundance or habitat values) into fewer dimensions so that they can be visualized and more easily interpreted. Unlike other ordination techniques that rely on (primarily) Euclidean distances, such as Principal Coordinates Analysis, NMDS uses rank orders, and thus is an extremely flexible technique that can accommodate a variety of different kinds of data (Leftcheck 2018).

The NMDS for periphyton used Bray Curtis transformed periphyton biovolumes, whereas the NMDS for benthic invertebrates used abundances. Unlike 2012, a separate NMDS analysis was conducted for erosional and depositional sites. Separating erosional from depositional sites allowed taxonomic differences within a given habitat type to be tested. To eliminate the effects of rare taxa, taxa that occurred at less than 5% of all sites were removed from analysis. A PERMANOVA was used to determine if groups (Year, Reference vs. Mine Influenced Sites) were significantly different in community composition. NMDS was run at the genus taxonomic levels for both periphyton and benthic invertebrates to investigate the effects of small- and large-scale taxonomic community differences. Finally, species were related to the community differences by fitting them to the ordination plot as factors using Envfit (Oksanen, 2016). Only species that were significant ($p<0.05$) were considered. These species describe the most observed variation between sites. All community analysis used the R package vegan version 2.3-5 (Okansen, 2016).

An ANOVA was used to compare the five periphyton metrics among areas and all metrics were log transformed to better meet model assumptions. Levene's test was

performed to determine if all sites had periphyton metrics with equal variances. If the ANOVA determined there were significant differences among areas, the Tukey's Honest Significant Difference (HSD) test was used to identify key areas that had different periphyton productivity or community composition.

3.7 Small Bodied Fish Condition and Tissue Metals Monitoring

An effects-based design was adapted to measure biological variables in small-bodied fish (Sculpins). The overall objective of this study was to determine what potential effect (positive, negative, or neutral) effluent discharges may have on fish tissue metals concentrations, condition, and overall growth characteristics by comparing small fish collected from upstream reference sites to downstream exposure sites.

Arciszewski et al. (2010) discusses the importance of selecting suitable species as sentinels, including the following characteristics: abundant, sedentary, high site fidelity and measurable life history characteristics relevant for the assessment. Based on this, the approach adapted for the AREMP small-bodied fish study, contained the following key assumptions:

- The species is representative of the receiving environment
- The species does not migrate between reference and exposure areas
- There are minimal habitat differences between reference and exposure areas

Three reference areas and five exposure areas were sampled for this program. These areas are identified in Schedule 1 map sheets. Five sub-areas were sampled in Exposure Area 3 and 4 that were further divided by left and right banks (Table 3-3). The objective was to assess nearfield biological responses with respect to distance downstream from the outfalls and to investigate differences in small bodied fish responses between the right and left bank and explore the relationships that exists between plume dilution, and periphyton and benthic invertebrate metal uptake.

Table 3-3: Recommended preliminary refinement to the small-bodied fish (sculpin sp.).

Treatment	Area	Sample plan overview	No. Fish
Reference	Area 1 – Kootenay River	Fish collected from gravel bar along backwater	30
	Area 2 – Birchbank	Fish collected from gravel bar along both left and right banks	30
	Area 3 - Genelle	Fish collected from gravel bar along both left and right banks	30
Exposure	Area 1 – CIV to CIII outfall	Fish collected from right bank only downstream of CIV outfall.	30

Area 2 – CIII to CII outfall	Fish collected from right bank only in side channel between CIII and CII outfalls.	30
Area 3-4 - left bank from CII d/s to Maglios	Subdivided into 5 sections and 10 fish collected from each subsection	50
Area 3-4 - right bank from CII d/s to Maglios	Subdivided into 5 sections and 10 fish collected from each subsection	50
Area 5 – Maglios to Waneta	Fish collected from both left and right banks	30

Reference site selection considered the following important factors (Env.Can. 2012):

- Reference site habitat is comparable to the exposure site habitats;
- Reference sites are free from the influence of the effluent or other potential sources of effluent like substances (i.e. other stressors or metals pollution sources); and
- Reference and exposure sites should have similar fish species compositions.

The following information was collected at each sample site:

Table 3-4: Information collected during small-bodied fish sampling.

General Information	Sampling Information	Habitat Information
Project	Water Temperature	Substrate composition
Site Name	pH	Embeddedness
Date	Electrical Conductivity	Water Velocity
Time	Dissolved Oxygen	Wetted depth
Crew	Average Wetted Depth	Bank Characteristics
Weather	Sampling Method	Habitat Condition
UTM Coordinates	Effort	
Photo Numbers	Species Sampled	
	Total Length	
	Weight	
	Gender	
	Physical condition	

3.7.1 Species Selection

Torrent Sculpin (*C. rhotheus*) were the target species for condition assessments and whole fish metals analysis. This species possesses ideal characteristics for a sentinel species in that they are abundant, sedentary, have high site fidelity, and have measurable life history characteristics.

3.7.2 Sample Timing

Timing of fish capture or sampling is determined by a number of factors including migratory behavior, gonadal development and flow conditions (Environment Canada 2013). Since gonad weights were to be used as a test parameter, sample timing was focused on when species are sexually mature. General spawning for sculpin in the Lower Columbia River has been estimated by AMEC (2012) to range from the end of May to late July when daily average water temperatures are

between 9°C to 15°C. Therefore, optimal timing to sample for both mature males and females would be early to mid-May just prior to spawning. Based on this, sampling was carried out April 26-30, 2016.

3.7.3 Sampling Methods

Fish were sampled under the Provincial Collection Permit: CB16-228261. Fish capture was completed along the riverbank (depths of 0.1 - 1.0 m) with use of a backpack electrofisher and pole seine to collect stunned fish being carried downstream by the current.

Figure 3-7: Collection of sculpins with backpack electrofisher during spring 2016 small-bodied fish data collection program.

Field personnel referred to various species identification keys but relied primarily on one that was developed specifically for sculpins and dace of the lower Columbia River (adapted from McPhail 2007). This modified key identifies several key diagnostic features that greatly improves sculpin species identification in the field.

Measurements recorded during electrofishing surveys included: electrofishing start/end time; electrofishing seconds; electrofisher settings as well as the length and width of the area electrofished. These data were used to calculate a catch-per-unit-effort (CPUE).

Fish were placed in a holding bucket where they were anesthetized using Tricaine mesylate or TMS as per the Canadian Council on Animal Care's guidelines for the Care and Use of Fish in Research, Teaching and Testing (CCAC 2005).

All collected fish (i.e., sculpin, dace, shiners etc.) were identified and lengths, weights, and comments recorded, until the target number of sculpins had been collected at each site. Fish not preserved for subsequent analysis were live-released after measurements had been recorded.

Retained sculpins were placed in individual, clean re-sealable bags. Once inside the sealed bag, the fish were euthanized. The bag was labeled with indelible marker and placed on ice in a cooler and later frozen until post-processing and dissection in the lab.

3.7.4 Processing and Endpoint Analysis

Sculpins retained for tissue metals analysis and condition assessments had the following parameters measured.

- Total Length (mm)
- Weight (± 0.001 g)
- Age
- Sex
- Gonad Weight
- Liver Weight
- Fulton Condition (k)
- Gonadosomatic index (GSI)
- Hepatosomatic index (HSI)
- Tissue Metals
- General external and internal condition (i.e., presence of tumors etc.)

Fish were examined externally and internally for the presence of abnormalities, lesions, tumors, and parasites.

Fish were weighed (± 0.001 g) and measured for total length (mm). The gender of individuals was determined externally by the presence of genital papilla (on mature males) and confirmed during dissection.

High-carbon stainless steel filleting knives and stainless high carbon steel utensils (scissors, forceps etc.) were used for processing fish. Instruments and cutting boards were washed with soap (critical cleaning liquid detergent) and then rinsed thoroughly with de-ionized water between each fish. Non-powdered vinyl gloves were worn by all personnel handling fish, and utensils to minimize contamination of samples.

The sampling process is outlined below:

1. The processor put on a clean pair of non-powdered vinyl gloves prior to handing the fish. New gloves were used for each fish to minimize cross contamination.
2. The thawed fish was removed from the bag and irrigated using de-ionized water to remove dirt and debris that may have been introduced during fish collection.
3. The clean fish was placed on a fresh sheet of wax paper on a cleaned vinyl cutting board. The head was cross cut (using surgical scissors) vertically posterior to the eye to expose the brain case and otoliths were extracted using tweezers and placed into a scale envelope labeled with fish catalog number and capture date for subsequent aging.
4. The liver, gonads, and guts were extracted and weighed (± 0.001 g) and examined for abnormalities. The guts were subsequently preserved separately in labeled vials containing an alcohol fixative.
5. The liver, gonads, and whole fish were placed together in a new sterile plastic bag, labeled, and frozen on dry ice for subsequent tissue metals analysis by Caro Analytical Kelowna, BC. Fish samples were homogenized by Caro and subsequently analyzed for percent moisture, total lipids, trace metals, and major ions.

3.7.5 Calculation of Sculpin Condition

Physiological responses to stress in fish can be assessed by calculating the ratio of body weight to length, as well as that of the weight of certain organs relative to the total body weight or length. Declines in these indices of condition may indicate decreased energy storage, metabolism, feeding activity, or reproduction associated with environmental stressors (Barton et al. 2002). Although these indices are insensitive to short-term changes they can be useful in the detection of long-term trends in fish exposed to chronic stressors. We considered three such condition indices:

Fulton-type condition factor (k) is the relationship between body weight and body length that is commonly used to infer physical condition of fish, and can be calculated using the following formula:

- Condition (k) = $(10^5 \times \text{body weight (g)})/\text{length (mm)}^3$

The gonadosomatic index and hepatosomatic index are calculations of the respective organ mass as a proportion of the total body mass and infer reproductive output and energy storage respectfully. Respective formulae are as follows:

- Gonadosomatic index = 100 × (gonad weight/gutted weight)
- Hepatosomatic index = 100 × (liver weight/gutted weight)

3.7.6 Fish Aging

Fish aging was undertaken by Darren Filipic, R.P.Bio. Otolith aging was conducted using a dissecting microscope.

Age structures were interpreted using John Casselman's quantitative approach to fish aging:

- O, +, or ++ are assigned based on the observation of otolith growth or not since the last annulus was formed.
- 0 is assigned when the annulus is not quite complete
- + is less than half a year's growth (relative to previous year)
- ++ is more than half a year's growth (relative to previous year)

3.8 Large-Bodied Fish Tissue Monitoring

The AREMP Study Design (Golder 2012) specified the species, sample size, and types of tissue analysed, and method of interpretation. Rainbow, Mountain Whitefish, and Walleye were used to stay consistent with historical data collection and because they are the most commonly caught and consumed by anglers (Golder 2012).

3.8.1 Field Data Collection

Fish for the large-bodied fish tissue monitoring program were obtained in coordination with the BC Hydro Lower Columbia Fish Indexing program (consistent with the 2012 AREMP). Fish collection was carried out by the Okanagan Nation Alliance and Golder Associates using a boat electrofisher. The timing of collection was September 26 – November 2, 2016. Collection was carried out under a Provincial Collection Permit (Track No: 100180026).

Collected fish were pooled into 'upper' and 'lower' areas, respectively. The upper (Reference) area extended from the Hugh L. Keenleyside Dam downstream to Castlegar above the Tin Cup Rapids, and the lower (Exposure) area extended from Beaver Creek to Waneta (Figure 3-8). Target species included Mountain Whitefish (*Prosopium williamsoni*), Rainbow Trout (*Oncorhynchus mykiss*), and Walleye (*Sander vitreus*).

The target sample size was 20 fish per species per sample area, for a total of 60 fish per area, and 120 fish in all. Adult-size fish (i.e., those targeted by anglers) were targeted for analysis since one of the primary objectives was to assess the

concentrations of tissue metals relevant to human consumption guidelines. Therefore, sampling was biased toward obtaining catchable-size fish (>200 mm).

Data were recorded in duplicate using water proof field paper and a hand-held GPS data logger. The GPS enabled spatial documentation of where in the river fish were collected.

At the time of fish collection, fish condition was documented and included: Presence of physical abnormalities or parasites, fork length (mm), total length (mm), total body weight (g), age class, and gender.

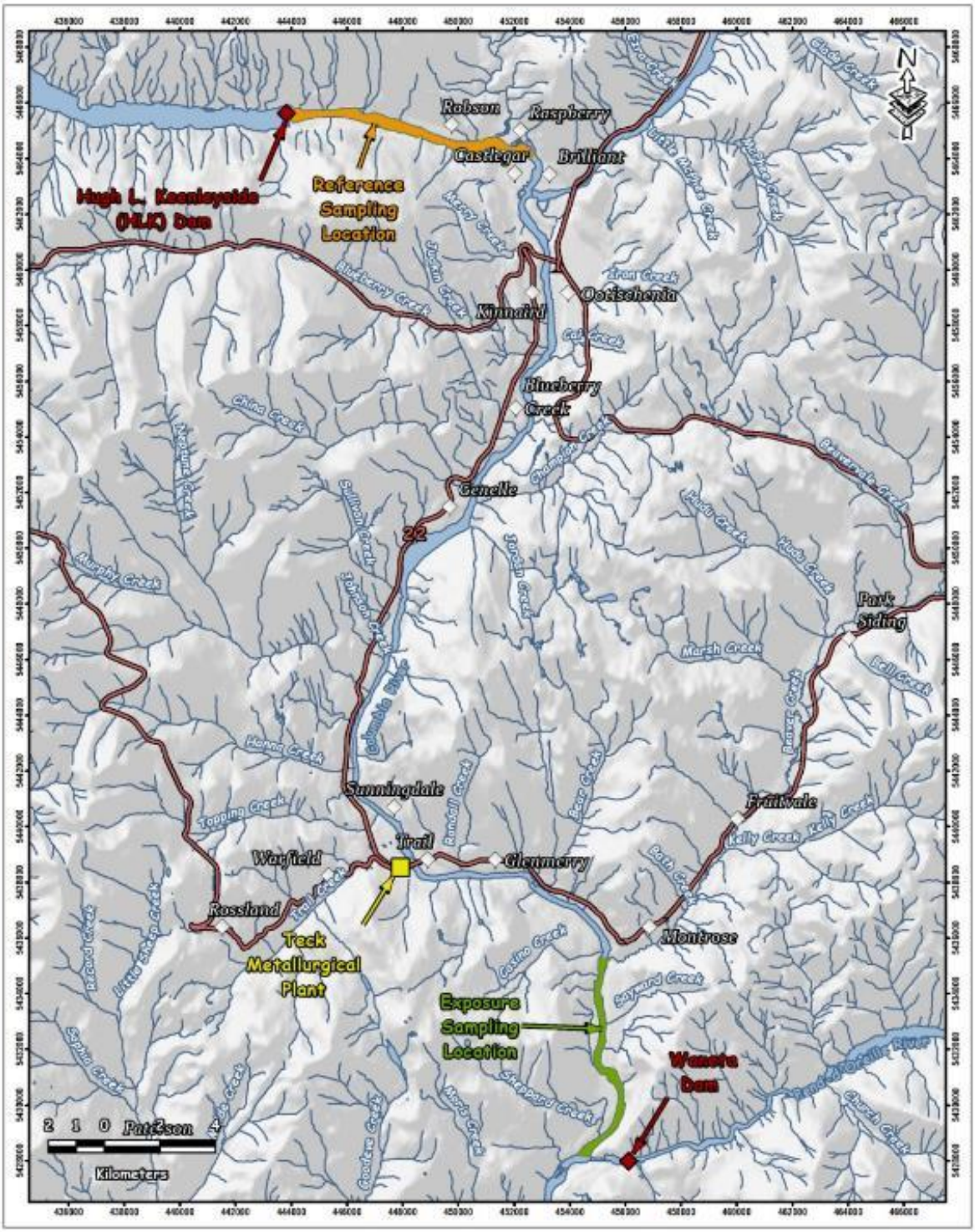

Figure 3-8: Large-bodied fish reference and exposure collection areas. Fish collection was carried out by Okanagan Nation Alliance and Golder Associates as part of Lower Columbia River Fish Indexing Project (BC Hydro CLBMON-45).

Each fish was assigned a catalog number and photographed. Physical abnormalities were noted when observed and additional close-up photos were taken. The fork length of each fish was measured, and the weight of the fish was documented.

Fish were placed in individual bags and euthanized in the bag to prevent potential tissue contamination. During euthanization, care was taken not to puncture the bag. The fish were then placed on ice and transferred to a deep freezer upon returning to shore after each evening of sampling.

Large-Bodied Fish Processing

Frozen fish were transported to Kelowna and processed at Ecoscape, where a clean process room was prepared to minimize the risk of contamination from extraneous metal sources during tissue preparation. Frozen fish were thawed prior to dissections. Only as many fish as could be processed on a given occasion were thawed.

Of the 120 fish collected, half were analyzed as skin-on fillets. The other half were analyzed as whole fish with guts removed (Table 3-5). The guts were then analyzed separately. The selection of fish for whole samples and fillet sampling was done randomly prior to initiation of processing.

Table 3-5: Large-bodied fish collection and processing summary.

			Tissue Metals Analysis		
Collection Area	Species	Total fish collected	Fillets	Whole fish (guts removed)	Gut contents
Reference Area	Mountain Whitefish	20	10	10	10
	Rainbow Trout	20	10	10	10
	Walleye	20	10	10	10
Exposure Area	Mountain Whitefish	20	10	10	10
	Rainbow Trout	20	10	10	10
	Walleye	20	10	10	10
Sample size		120	60	60	60

Sampling methods were consistent with previous studies (Golder 2007) and British Columbia Field Sampling Manual: for Continuous Monitoring and Collection of Air, Air-emission, Water, Wastewater, Soil, Sediment and Biological Sampling (Clarke et al. 2003).

The following parameters were included in the endpoint analysis:

- Fork Length (mm)
- Weight (± 0.001 g)
- Age
- Sex

- Gonad Weight
- Liver Weight
- Fulton Condition (k)
- Gonadosomatic index (GSI)
- Hepatosomatic index (HSI)
- Tissue Metals
- General external and internal condition (i.e., presence of tumors etc.)

Fish were examined externally and internally for the presence of abnormalities, lesions, tumors, and parasites.

High-carbon stainless steel filleting knives and stainless high carbon steel utensils (i.e., scissors, forceps etc.) were used for processing fish. Instruments and cutting boards were washed with soap (critical cleaning liquid detergent) and then rinsed thoroughly with de-ionized water between each fish. Non-powdered vinyl gloves were worn by all personnel handling fish, and utensils to minimize contamination of samples.

The sampling process is outlined below:

1. The processor put on a clean pair of non-powdered vinyl gloves prior to handing the fish. New gloves were used for each fish to minimize cross contamination.
2. The thawed fish was removed from the bag and irrigated using de-ionized water to remove dirt and debris that may have been introduced during fish collection.
3. The clean fish was placed on a fresh sheet of wax paper on a cleaned vinyl cutting board. The head was cross cut vertically posterior to the eye to expose the brain case and otoliths were extracted using tweezers and placed into a scale envelope labeled with fish catalog number and capture date for subsequent aging.
4. The liver, gonads, and guts were extracted and weighed (± 0.001 g) and examined for abnormalities.
5. <u>For fish designated as fillet samples</u>: A single fillet was removed (skin on), weighed (± 0.001 g), and placed in a new, clean, pre-labeled sealable plastic bag. Each bag was labeled with the fish catalog number, date and analysis type.
6. <u>For fish designated as whole samples</u>: The liver, gonads, and whole fish were placed together in one new sterile plastic bag and the guts placed in a separate bag. Each bag was labeled with the fish catalog number, date and analysis type.

7. All samples were frozen on dry ice for subsequent tissue metals analysis by Caro Analytical (Kelowna, BC). Fish samples were homogenized by Caro and subsequently analyzed for percent moisture, total lipids, trace metals, and major ions.

Figure 3-9: Rainbow Trout prior to processing (left); processing gravid female Mountain Whitefish (right).

3.8.2 Quality Assurance / Quality Control for Large-bodied Fish Analysis

To ensure precision in metals testing, 10% of the fillet samples were analyzed in duplicate. Duplicates were submitted to the lab as blind samples. When evaluating the results, duplicates needed to be 5 times the detection limit for acceptability criteria to apply (USEPA 2000). If the relative percent difference for duplicates were within 20% of each other they were accepted. If the calculated relative percent differences were greater than 50%, a quantification problem was suspected, which may have included possible contamination or lack of sample representativeness. In such instances, the lab was notified of the discrepancy and data were re-checked and samples re-run if necessary. Relative percent difference was calculated as follows:

$$\frac{\text{(sample result - duplicate result)*100}}{\text{(sample result + duplicate result)/2}}$$

The accuracy of data entry was assessed with a second person checking a minimum of 10% of the data for completeness, data entry errors, transcription error and invalid data. If errors were found, then all data underwent a zero tolerance quality assurance check.

3.8.3 Fish Aging

Fish aging was undertaken by Darren Filipic, R.P.Bio. Otolith aging was conducted using a dissecting microscope.

Age structures were interpreted using John Casselman's quantitative approach to fish aging:

- 0, +, or ++ are assigned based on the observation of otolith growth or not since the last annulus was formed.
- 0 is assigned when the annulus is not quite complete
- + is less than half a year's growth (relative to previous year)
- ++ is more than half a year's growth (relative to previous year)

3.9 Large and small-bodied Analysis of tissue metals and condition Indices

Concentrations of arsenic, cadmium, chromium, copper, iron, lead, mercury, selenium, thallium, and zinc in large body fish tissues were graphed for each tissue (muscle/whole body/gut) according to year sampled (2013 and 2016), treatment, and species (Rainbow Trout, Mountain Whitefish, and Walleye) combination. Small bodied fish (sculpin) whole body samples from 2016, were graphed in downstream order according to site and river bank.

Analysis of covariance (ANCOVA) was used to assess the effects of exposure (above or below CIII outfall), species, sex, year, and individual fork length on metal concentrations in large bodied fish species. Because the range and level of metal concentrations differed considerably in gut samples relative to muscle and whole body, these analyses were conducted for each tissue type separately. Large bodied fish metal concentrations below the limit of detection were included in analysis by taking the minimum limit of detection for the analyte (metal) and dividing by 2.

Whole body sculpin metal concentrations were compared using an ANCOVA by sex, treatment (above or below CIII outfall), and total length. A second ANCOVA, was conducted without far field sites, any area downstream of ERO-EXP-3-2-L. This ANCOVA was conducted to see if smelter effects on whole body metal concentrations were detectable in areas closer to the smelter.

In all cases tissue metal concentrations were log transformed and outliers were removed from data to meet model assumptions of normally distributed residuals. The results of the ANCOVA models with all samples in and leverage and outliers excluded were compared. However, all results reported are of the ANCOVA models with leverage and outlier samples removed. Some ANCOVA models did not meet model assumptions primarily because of the large number of samples below the limit of detection, these models were not run. In the interpretation of ANCOVA results, significance of overall models and individual parameters within them were determined through p-values at a 0.05 significance level, and direction of explanatory variable effects are determined from model parameter estimates.

Linear mixed effects models were used to assess the effect of treatment (reference or exposure) on 2016 whole body sculpin metal concentrations of arsenic, cadmium, chromium, copper, iron, lead, mercury, selenium, thallium, and zinc.

Linear mixed effects models with site as the random effect and treatment as fixed effects was performed with log transformed tissue metals concentrations. The model for concentrations of mercury included total length as a fixed effect. Chromium was omitted from the analysis because of there was a high number on non-detects.

Differences in the relationship between adjusted body weight and total length, and liver or gonad weight with total body weight between treatments, for each sex, were also tested through linear mixed effects models using site as a random effect for the sculpins. The only model that did not use site as a random effect was the female gonad weight model. This model used a simpler linear regression. Adjusted body weight was calculating by subtracting the gut weight from the total body weight. Weight and length variables were log transformed in several cases to meet assumptions of normally distributed residuals or because relationships were clearly log-linear. For large body fish differences in the condition factor (k) between reference and exposure sites were tested separately for each species. The effect of sex was not accounted for because there were not enough samples within a species, sex, and treatment group.

4.0 RESULTS AND DISCUSSION

4.1 Water Quality

The following section presents water quality data collected during the 2015 and 2016 sampling years and compares these values to relevant LCR Water Quality Objectives/Guidelines and presents this data together with that collected in previous years (2011-2014) of the monitoring program.

4.1.1 General Water Quality Parameters

General water quality parameters affect numerous chemical and biological processes occurring in rivers. Field-measured parameters that were slightly elevated within the IDZ included conductivity, salinity and pH. These water quality parameters were still within the typical range for the LCR both upstream and downstream of the IDZ (Larratt et al. 2013). In both the IDZ and the entire AOI, none of the general water quality parameters exceeded the LCR Water Quality Objectives in the 2015-2016 data. For example, the pH LCR Objective of 6.5 – 9.0 was met in all 2015 samples including those collected from within the effluent plume in the IDZ. Similarly, percent dissolved oxygen saturation was in the typical range for the LCR and ranged from 68% to 96% and averaged about 89% across all erosional sites during the October 2015 sampling.

Turbidity is usually low in the LCR. Samples collected in 2015 ranged between 0.25 – 0.89 NTU, with and average turbidity of 0.45 ± 0.15 NTU. Similarly, TSS concentrations are typically low in the LCR, ranging from <1 - 2 mg/L. Most samples collected in 2015 had TSS concentrations below the 3.0 mg/L detection limit. Three samples collected on April 28, 2015 at the Birchbank and Stoney Creek sites had measurable concentrations.

There are no approved BC guidelines for the protection of aquatic life or LCR Objectives for specific conductivity or TDS, however there are BC working guidelines for irrigation, set at <0.7 - <5 uS/cm for specific conductivity and <500 - <3500 for TDS. Both parameters that measure the concentrations of ionized constituents in water. The New Bridge r-sh had elevated TDS compared to the TDS measured at Birchbank reference site. However, TDS returned to reference levels by the Old Bridge. Similarly, water temperature was elevated by less than a degree, and dissolved oxygen was slightly elevated in the 2015 field data (Table 4-1, 4-2).

Table 4-1: Averaged Erosional Site Field Measurements, 2015.

	Reference Sites		Exposure Sites				
Parameter	Ero Ref 1 Birchbank	Ero Ref 2 u/s Stoney	Ero Exp 1 CIV-Stoney	Ero Exp 2 CIII	Ero Exp 3 CIII-Korpac	Ero Exp 4 Kor-Mag	Ero Exp 5 Mag-Wan
Conductance µS/cm	137	137	138	192	145	135	136
Salinity PSU units	0.06	0.06	0.07	0.09	0.07	0.06	0.06
pH (s.u.)	7.5	7.5	7.68	7.74	7.62	7.45	7.53
Water temperature ^{o}C	12.48	12.68	12.72	13.24	12.7	12.42	12.43
Dissolved oxygen mg/L	6.93	8.32	9.47	9.45	9.22	9.1	9.3
Dissolved oxygen % sat.	68.26	83.82	93.96	96.24	93.37	91.77	93.2

Table 4-2: Depositional Site Field Measurements, October 2015

	Reference Sites			Exposure Sites						
Parameter	Dep Ref 1 Kootenay Eddy	Dep Ref 2 Genelle Eddy	Dep Ref 3 Birch bank Eddy	Dep Exp 1 Korpac	Dep Exp 2 Maglios	Dep Exp 3 Casino	Dep Exp 4 Airport Bar	Dep Exp 5 Trimac	Dep Exp 6 Ft Shepherd	Dep Exp 7 Waneta
Conductance µS/cm	156	138	137	125	135	143	137	138	143	140
Salinity PSU units	0.07	0.07	0.07	0.06	0.06	0.07	0.06	0.07	0.07	0.07
pH	7.1	7.4	6.7	7.3	7.5	7.7	7.5	7.5	7.5	7.8
Water temperature ^{o}C	14.1	12.1	12.4	12.5	12.4	12.3	12.7	12.6	12.9	12.7
Dissolved oxygen mg/L	9.04	8.04	5.1	8.72	8.69	8.62	8.92	8.06	9.33	9.14
Dissolved oxygen % sat.	92.9	79	50	87.3	88.9	88.9	91.5	80.8	95.2	91.3

4.1.2 Nutrients

Inorganic Nitrogen

There are numerous sources of inorganic nitrogen within the LCR, including municipal effluents, the BC Hydro lake fertilization programs in upstream reservoirs and stormwater inflows (MacDonald 1997; Can-BC 2008). Nitrate and ammonia are key nutrients that are repeatedly consumed, transformed and released in a cycle as water travels downstream. Ammonia and nitrate account for most of the total nitrogen concentrations in the LCR AOI (Figure 4-1). Very low concentrations of nitrite are common in BC waters, as was found here.

None of the 2015 or 2016 samples approached the inorganic nitrogen guidelines for aquatic life (3.0 mg/L nitrate as a 30-day average; 0.02 mg/L nitrite; 0.7 mg/L ammonia) (Figure 4-1, Figure 4-2). In the LCR, the distribution of inorganic nitrogen species has been stable through the years (Olson-Russello et al. 2014). Inorganic nitrogen typically occurs as 86% nitrate and 14% ammonia, with nitrate concentrations related to transport during high flows and ammonia concentrations primarily donated by groundwater throughout the river, with increased donation during low flows (Larratt et al. 2013).

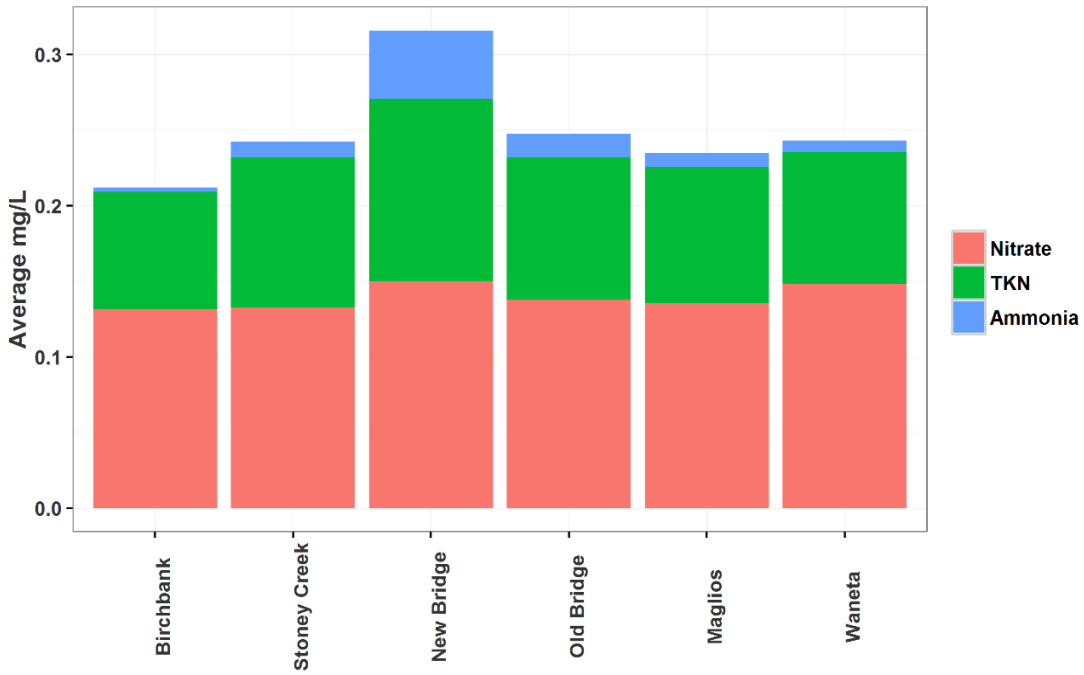

Figure 4-1: Average concentration of the various chemical forms of nitrogen for samples collected along the right bank shallow site (within the effluent plume) of the LCR in 2015 and 2016 during low flows.

Nitrate concentrations were uniform throughout the AOI in 2015 and 2016 and all samples were above the standard detection limit. For example, the average increase in nitrate from the right shallow samples of reference Birchbank site to the IDZ was 0.019 mg/L and from Birchbank to Maglios was 0.004 mg/L.

Nitrite is a transient form of inorganic nitrogen that is usually lower than nitrate concentrations (USEPA)[1], explaining why most nitrite concentrations were below standard detection limits in this study. Eighty percent of the 2015-2016 water quality data had nitrite concentrations below the detection limit. However, very low concentrations were detected on October 19, 2015 and October 4, 2016, in the range of 0.001 to 0.002 mg/L as N. These nitrite concentrations were detected at all sites on October 4, 2016, including the reference Birchbank site. Samples collected from the right bank, including those within the IDZ, were within this range.

Ammonia concentrations increased at the Stoney Creek r-sh location (Figure 4-3). Elevated ammonia concentrations occurred in the shallow samples from both banks primarily in response to effluent and potentially groundwater inflows within the IDZ (Figure 4-3). Ammonia concentrations in both shallow samples declined downstream of the IDZ, and was faster in r-sh than l-sh. All transect samples were equivalent across the river at Maglios. Ammonia guidelines were not exceeded at any of the sample sites (Table 4-3). The 2015-2016 water quality data had 25% of total samples below the limit of detection for ammonia.

The contributions made by organic forms of nitrogen in the AOI measured since 2014 have been small (Figure 4-2). They are measured as TKN, along with ammonia. Elevated TKN in r-sh and l-sh may be related to groundwater influence, likely in the ammonia component of TKN. Organic nitrogen increases slightly in the IDZ and remains elevated downstream, but the net change is small and unlikely to exert a secondary influence on water chemistry or boost primary productivity to nuisance proportions (refer to section 4.3.4).

In 2015-2016 data, average total nitrogen concentration in the water at r-sh New Bridge (right shallow) was elevated above the reference r-sh Birchbank site by about 58% or 0.04 mg/L. However, total nitrogen declined downstream of the IDZ. Increased N may benefit primary producers as it does in nitrogen-limited rivers (Delong et al. 2001; Townsend, 1996). The increase in total nitrogen between Birchbank and Waneta was less than 5%. Gradually increasing nitrogen concentrations as water travels downstream in large rivers is universally observed (Wetzel 2001).

[1] file:///C:/Users/Heather/Downloads/N-P-large-rivers%20(1).pdf

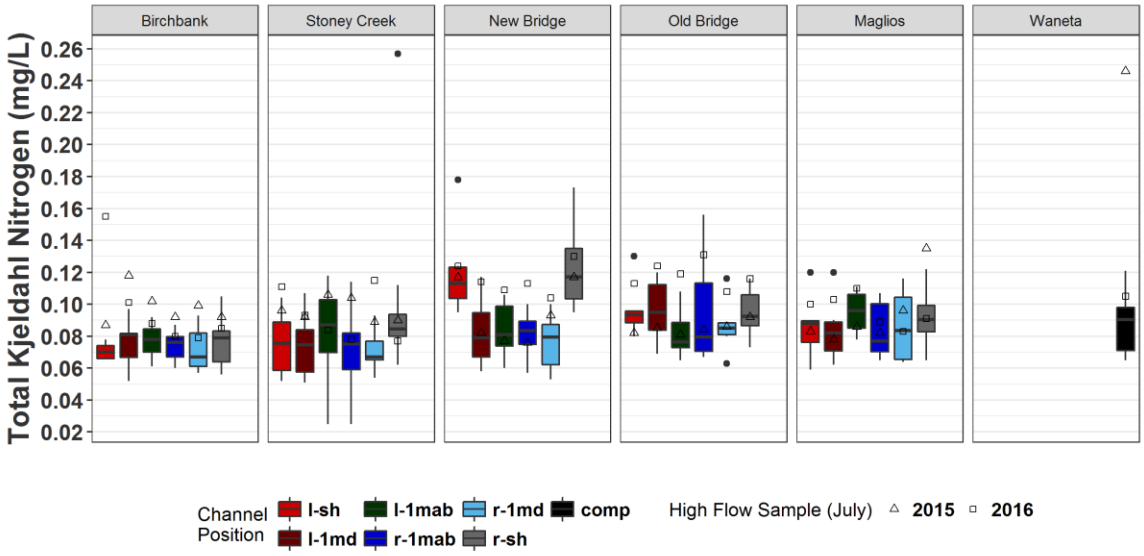

Figure 4-2: Box plots of TKN organic nitrogen measured in the LCR during low flow periods (2015-2016). The channel position designations are l-sh = left-shallow, L-1md = left 1 m deep, L-1mab = left 1 meter above bed, and the same for Right (r). One percent of the samples were below the limit of detection for TKN. ***Note: See pg. vi for explanation of boxplots and guide for interpretation.***

Table 4-3: Nutrient Concentrations at Teck LCR Sample Sites, right bank shallow sample (2015 - 2016).

	BC Guideline or LCR Objective mg/L	Results (mg/L)	Birchbank	Stoney Creek	New Bridge	Old Bridge	Maglios	Waneta
Nitrate (as N)	200 (max)	Mean	0.132	0.133	0.15	0.138	0.135	0.148
	40 (mean)	30-Day Mean	0.144	0.144	0.161	0.149	0.147	0.148
Nitrite (as N)	0.06	Mean	0.0005	0.0006	0.0007	0.0005	0.0006	0.0005
	0.02 (mean)	30-Day Mean	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Ammonia (as N)	0.681 – 27.7	Mean	0.003	0.01	0.045	0.016	0.009	0.008
	0.102 – 2.08	30-Day Mean	0.002	0.01	0.043	0.015	0.009	0.008
TKN*	--	Mean	0.078	0.099	0.121	0.094	0.09	0.087
	--	30-Day Mean	0.075	0.1	0.115	0.092	0.087	0.087
Phosphorus (as P)	--	Mean	0.002	0.003	0.003	0.003	0.002	0.002
	--	30-Day Mean	0.002	0.003	0.003	0.002	0.002	0.002
Potassium	--	Mean	0.619	0.635	0.696	0.642	0.643	0.633
	--	30-Day Mean	0.61	0.63	0.693	0.641	0.638	0.633
Sulphate	--	Mean	11.4	11.5	18.1	12.6	11.9	12.1
	218	30-Day Mean	11.6	11.6	18.3	12.8	12.0	12.1
TOC*	--	Mean	1.2	1.3	1.2	1.2	1.2	1.4
	--	30-Day Mean	1.3	1.3	1.2	1.3	1.3	1.4

‡ 30 day mean based on the average of the 30 day mean from 2015 and 2016 spring sampling. A total of 5 samples were collected during spring low-flow sampling (Mar-Apr).
* TOC was sampled in 2012.

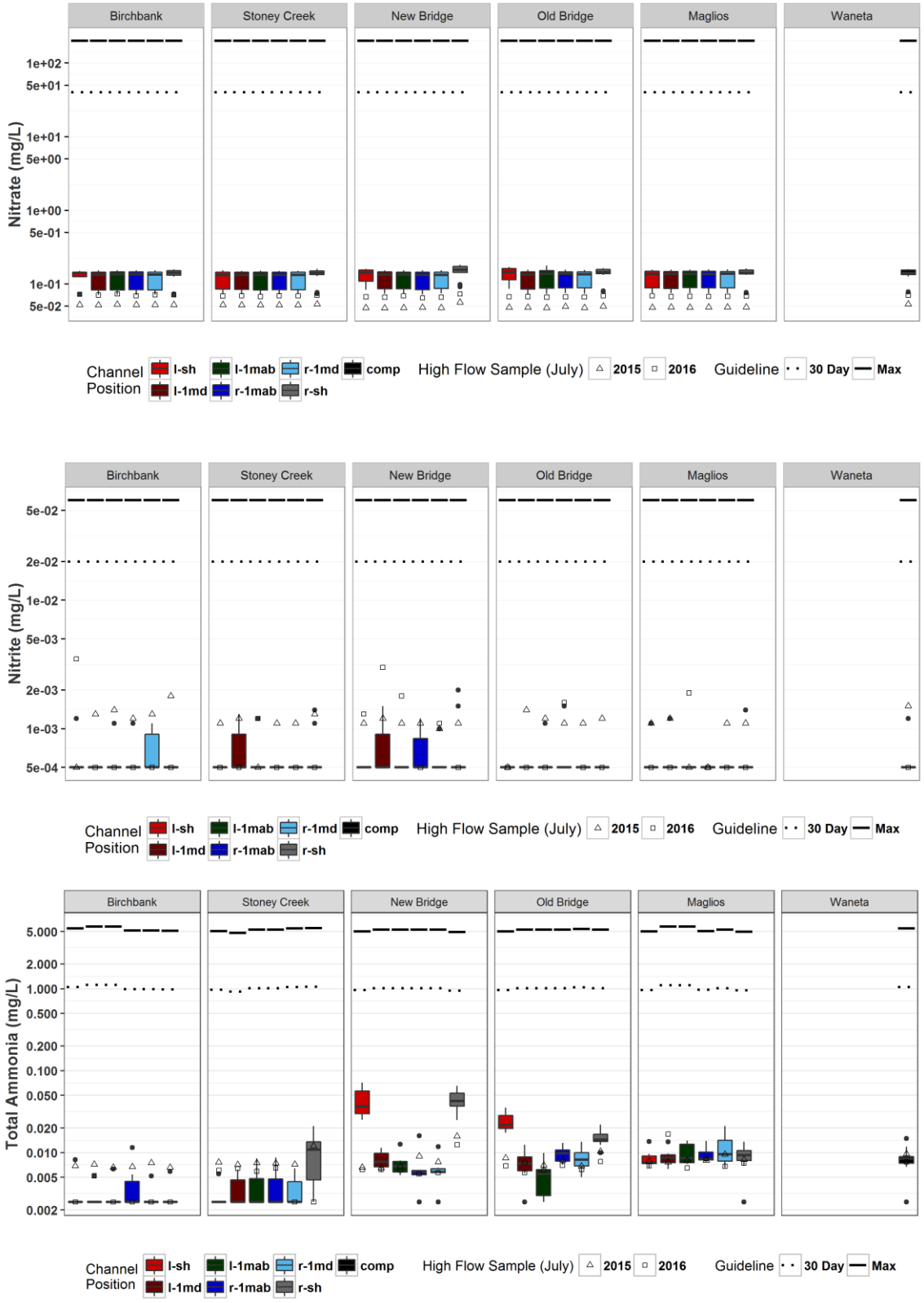

Figure 4-3: Box plots of inorganic nitrogen measured in the LCR during low flow periods (2015-2016). The channel position designations are L-sh = left-shallow, L-1md = left 1 m deep, L-1mab = left 1 meter above bed, and the same for Right (r).

Phosphorus

Phosphorus is a key nutrient that usually controls aquatic productivity. Total phosphorus (T-P) concentrations measured throughout the LCR follow a declining trend over the years, particularly during 1968 - 1978 (Holmes and Pommen 1999; Can.-BC 2008) as outfall water treatment improved throughout the LCR. Phosphorus is added annually as part of the BC Hydro lake fertilization programs in upstream reservoirs. There is no phosphorus objective set for the LCR.

There is no provincial guideline for total phosphorus concentrations in rivers. The guideline value for lakes was therefore considered as a qualitative reference point, although it has not been empirically verified as being suitable for rivers. Total phosphorous concentrations exceeded the BC total phosphorous guideline for lakes (0.005-0.015 mg/L) in 13 of the 221 low flow samples collected in 2015 and 2016 and were measured at every site including the Birchbank reference site (Figure 4-4). The three left-bank Maglios samples from April 28, 2015 had the highest T-P concentrations at 0.011 mg/L. There is a municipal outfall located along the left bank in shallow water, affecting both T-P and T-N (Figure 4-4, Figure 4-3). In 2015 and 2016, right bank concentrations ranged from non-detectable (0.002 mg/L) to 0.0076 mg/L T-P. Based on these data the smelter site does not appear to affect phosphorus concentrations. There was no net change in total phosphorus concentrations between Birchbank and Waneta.

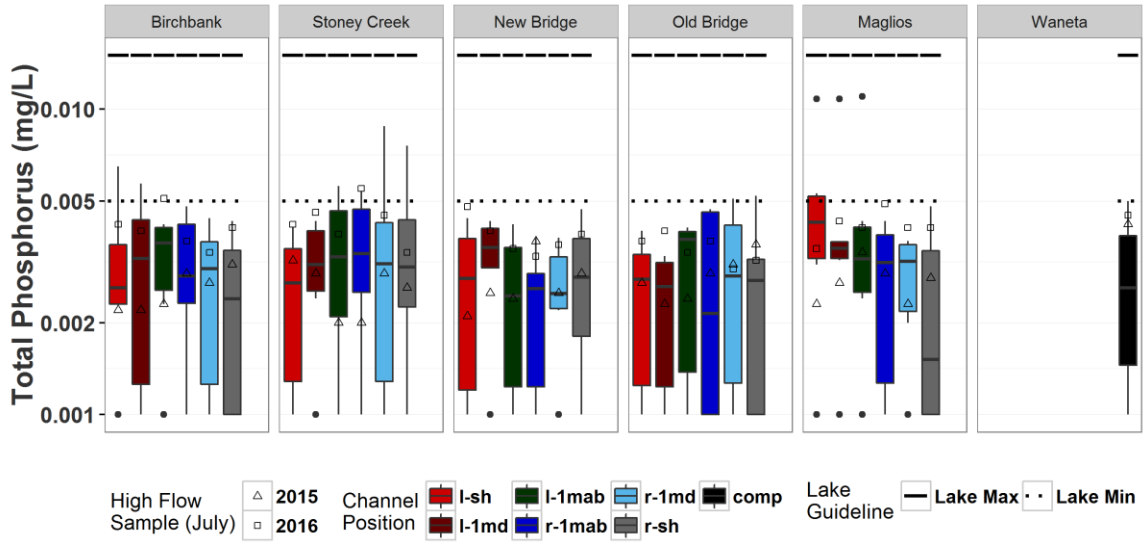

Figure 4-4: Box plot of total phosphorus concentrations measured in the LCR during low flow periods (2015-2016). The channel position designations are L-sh left-shallow, L-1md left 1 m deep, L-1mab left 1 meter above bed, and the same for Right. Twenty-two percent of the samples had T-P concentration below the limit of detection.

Minor Nutrients

Potassium concentrations were elevated at New Bridge r-sh and l-sh and may reflect a potential groundwater contribution (Figure 4-5). There are no BC Guidelines or LCR Objectives established for potassium. Potassium samples from the end of the IDZ were similiar to background reference concentrations. The 4.1% increase in potassium between the right shallow Birchbank and Maglios sites may confer a small benefit to downstream primary producers as it does in other river systems (USEPA 2009). Stormwater and sewage effluent discharged below the smelter would also contribute to the continuing increase in potassium observed in Maglios and Waneta samples.

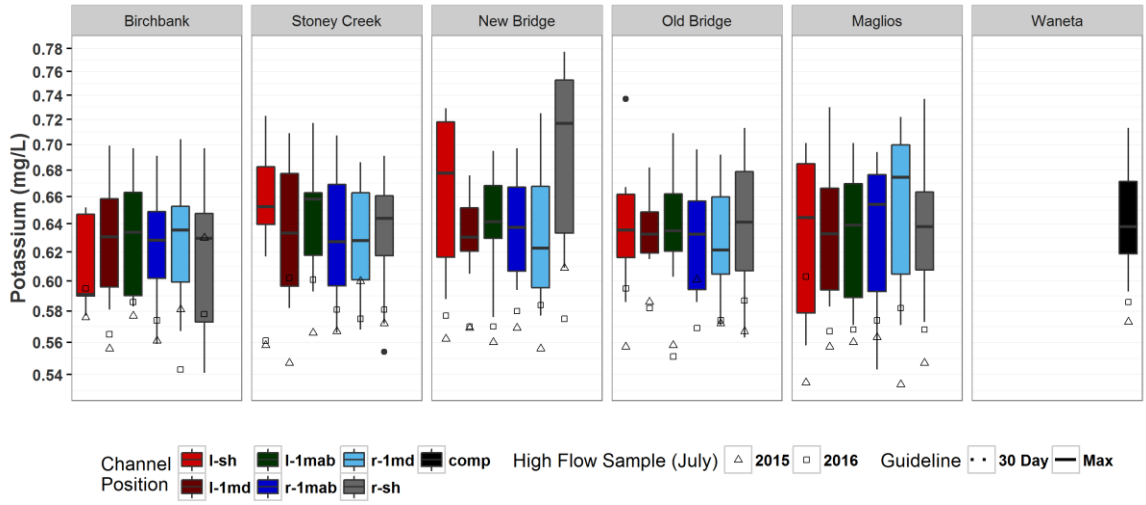

Figure 4-5: Box plot of potassium concentrations measured in the LCR during low flow periods (2015-2016). The channel position designations are L-sh left-shallow, L-1md left 1 m deep, L-1mab left 1 meter above bed, and the same for Right. All samples were above the limit of detection for potassium.

Sulphate is utilized by some algae and bacteria in the periphyton (Wetzel 2001). Sulphate was the dominant anion in the AOI (Hawes et al. 2014) and is a major component of the groundwater plume (Golder 2010). The 30-day average guideline for the protection of aquatic life is 218 mg/L SO_4, in soft to moderately soft waters (31-75 mg/L as $CaCO_3$) typical of the lower Columbia River (Meays and Nordin 2013). This guideline was not exceeded in any 2015 or 2016 samples. However, 30-day average concentrations increased at New Bridge along the right bank (avg. 17.90 mg/L SO_4). Sulphate concentrations returned to within 3.8% of background concentrations by Maglios (Figure 4-6). These sulphate results are similar to those sampled in 2011–2014.

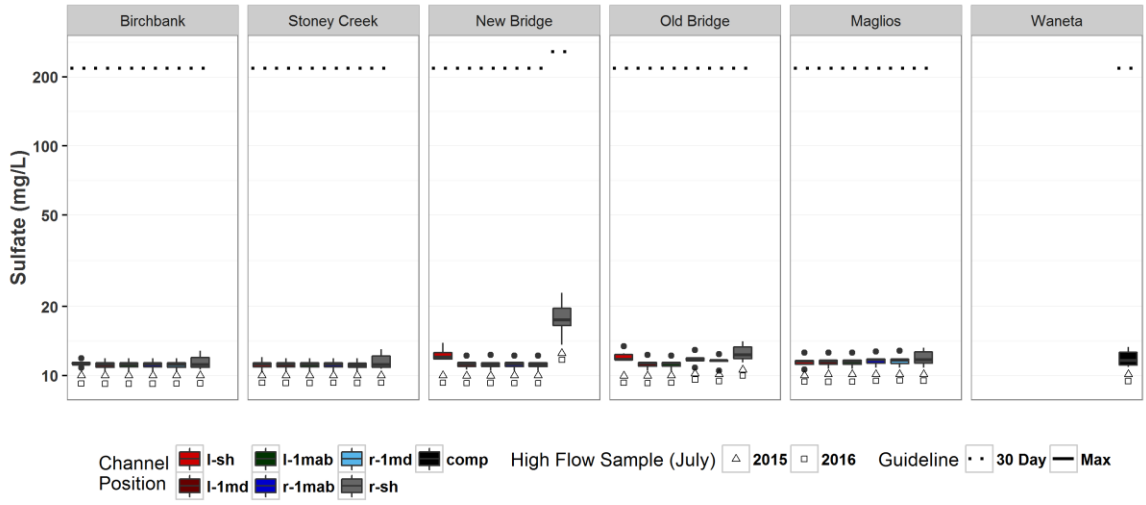

Figure 4-6: Box plot of sulphate concentrations measured in the LCR during low flow periods (2015-2016). The channel position designations are L-sh left-shallow, L-1md left 1 m deep, L-1mab left 1 meter above bed, and the same for Right. All samples were above the limit of detection for sulphate.

Total organic carbon (TOC) provides an indication of organic material available for invertebrate food, and for sequestering metals. TOC is generally low in the LCR. The BC guideline prescribes a 30-day median ± 20% of the median background TOC concentration (MWLAP 2001). Objective levels were set at <0.5 – 0.7 mg/L TOC outside the IDZ and <3.5 mg/L within . With this spread of Objective levels, exceedances occurred throughout the study area outside of the IDZ (including upstream reference locations), but not within it (Figure 4-7). TOC was not elevated in the effluent plume of the smelter outfalls. For example, 2015-2016 TOC data from the upstream reference site averaged 1.3 mg/L and were lowest at Maglios (avg 1.1 mg/L). These 2015-2016 TOC results were nearly identical to the 2011-2014 results. TOC sources are greater upstream of the Birchbank reference site than they are near or below the smelter site, resulting in a declining trend through the area of interest. There was very little difference between the right shallow of Birchbank and Maglios (<1% difference), all below the 20% range prescribed in the BC guideline.

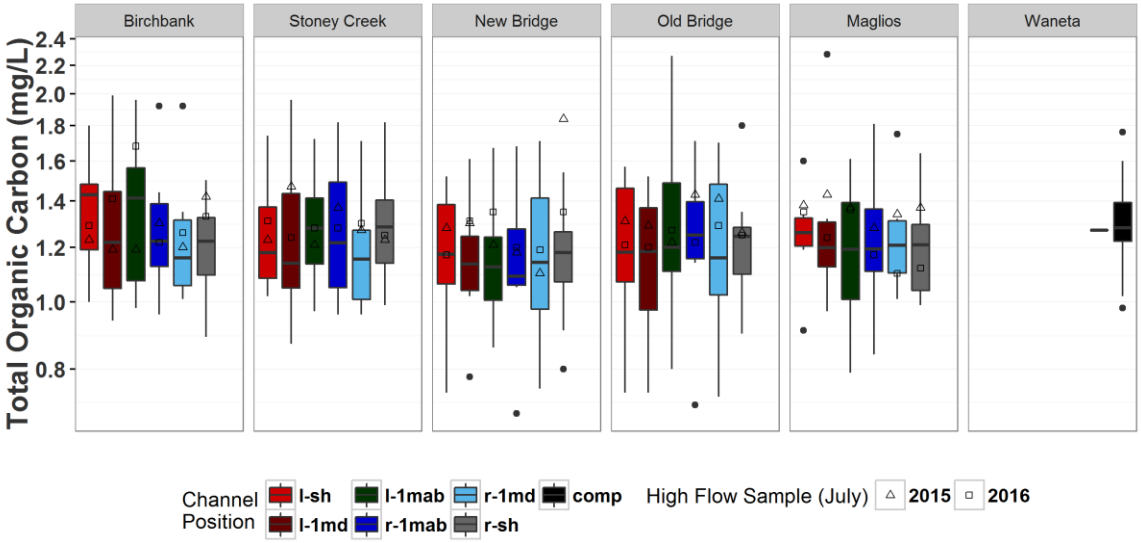

Figure 4-7: Box plot of total organic carbon measured in the LCR during low flow periods (2015-2016). The channel position designations are L-sh left-shallow, L-1md left 1 m deep, L-1mab left 1 meter above bed, and the same for Right. All samples were above the limit of detection for TOC.

4.1.3 Total and Dissolved Metal Concentrations

The choice of transect sampling to detect plume location allowed the calculation of 30-day averages only in the spring low flow period when dilution is low. During the spring low flows, 30-day averages were calculated from five weekly grab samples for the right bank sites within the effluent plume, and this represents a worst-case scenario. The average of the five right bank samples were compared to the average of all samples collected from the right bank in 2015-2016, and showed about a 6% difference in 2015 and a 5% difference in 2016 between both sites and parameter concentrations.

Guidelines are set at levels designed to result in negligible risk to biota, their functions, or any interactions that are integral to sustaining the health of ecosystems and the designated resource uses they support (CCME 2013). Similarly, objectives are site-specific criterion adapted to protect the most sensitive designated water use at a specific location with an adequate degree of safety, taking local circumstances into account (BC MoE 2017). An exceedance of a water quality guideline or objective does not mean that there will be effects on aquatic species. Developing effects benchmarks is a separate exercise and has been conducted by Golder (2003) in the Aquatic Problem Formulation report.

The following discussion of dissolved and total metals is focussed on metals of interest, and the matrix for their determination is provided in Table 4-4.

Table 4-4: Matrix for Determining Water Quality Metals of Interest.

Metal	Metals of interest identified in previous reports	Near-field sites >> reference sites in earlier work (2011-14)	Near-field sites >> reference sites in recent 2015-16 work	Guideline exceedance during past 10 years in LCR AOI
Aluminum				✓
Arsenic	✓	✓		✓
Cadmium	✓	✓	✓	✓
Chromium	✓			✓
Copper	✓	✓		✓
Lead	✓	✓	✓	✓
Mercury	✓	✓	✓	✓
Nickel	✓			✓
Selenium		✓	✓	✓
Silver	✓			
Thallium	✓	✓	✓	
Zinc	✓	✓		✓

(Previous reports: Golder 2003, Hatfield 2008, Golder 2010)
>> signifies a difference of >50% Revised to reflect new cadmium guideline

There were no exceedances of the 30-day Chronic Water Quality Guidelines or LCR Objectives for any metals of interest downstream of the IDZ in 2015 or 2016. Four metals had concentrations above the Water Quality Guidelines/Objectives downstream of the smelter outfalls within the IDZ. By definition, calculations of exceedances do not involve the IDZ. As these elevated concentrations were within the IDZ, they do not constitute non-attainment. The Stoney Creek and New Bridge sites are located within the IDZ where effluents are discharged and elevated metal concentrations are anticipated and permitted. The Old Bridge site represents the downstream limit of the IDZ.

A summary of the number of exceedances identified in the 2015 and 2016 data is illustrated in Figure 4-8. No exceedances occurred outside of the permitted initial dilution zone (IDZ) of the effluent plume. The 2015 data are similar to earlier AREMP data where cadmium, selenium, and zinc exceeded guidelines in the IDZ while infrequent and variable elevated concentrations occurred for mercury and chromium in the LCR area of interest. Overall, both the number and the size of the exceedances have declined over the years as water treatment has improved, bearing in mind that dilution from LCR flows affects the results in any given year (Figure 4-9). For instance, LCR flows during the 2016 water sampling period were roughly 35% lower than flows during the 2014 sampling period. Previous sampling summarized in the 2014 AREMP report noted that at Birchbank, mercury periodically exceed guidelines and at the Waneta site, mercury, and zinc (a single sample) exceeded the guidelines (Hawes et al. 2014). In the 2015-2016 results, there were no exceedances at the downstream Maglios and Waneta sites (Figure 4-8). The number of elevated metals within the IDZ is dependent on flows at the time of sampling.

Reassessment of earlier AREMP samples against both the number and the size, the new Cd guideline indicates that there were no D-Cd or T-Cd exceedances outside of the IDZ for any samples collected for the AREMP from 2011-2014. Similarly, in the 2015 and 2016 results, there were no D-Cd or T-Cd exceedances outside the IDZ. They were confined to the New Bridge site within the effluent plume, where they are expected and permitted. Zinc exceedances did not occur below the IDZ.

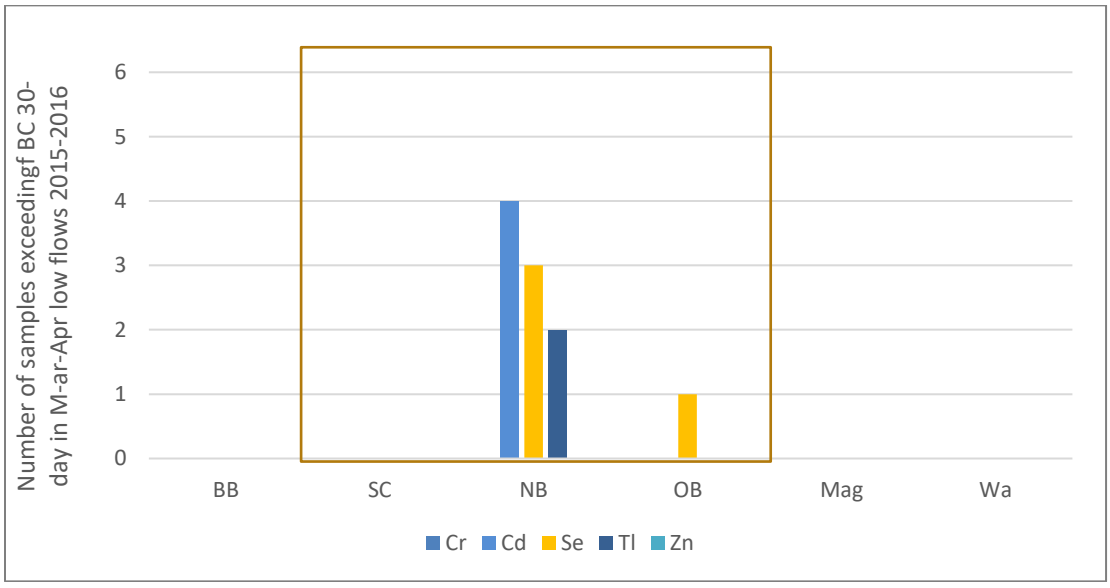

Figure 4-8: Occurrences and frequency of total and dissolved metals exceeding LCR Objectives or BC MoE / CCME 30-day Guidelines during 2015 and 2016 spring low flow sampling (5 sampling events). Exceedances in the IDZ (Stoney Creek to New Old Bridge) do not constitute non-attainment of Water Quality Objectives. IDZ exceedances were measured from samples collected from the right bank of the river within the effluent plume.

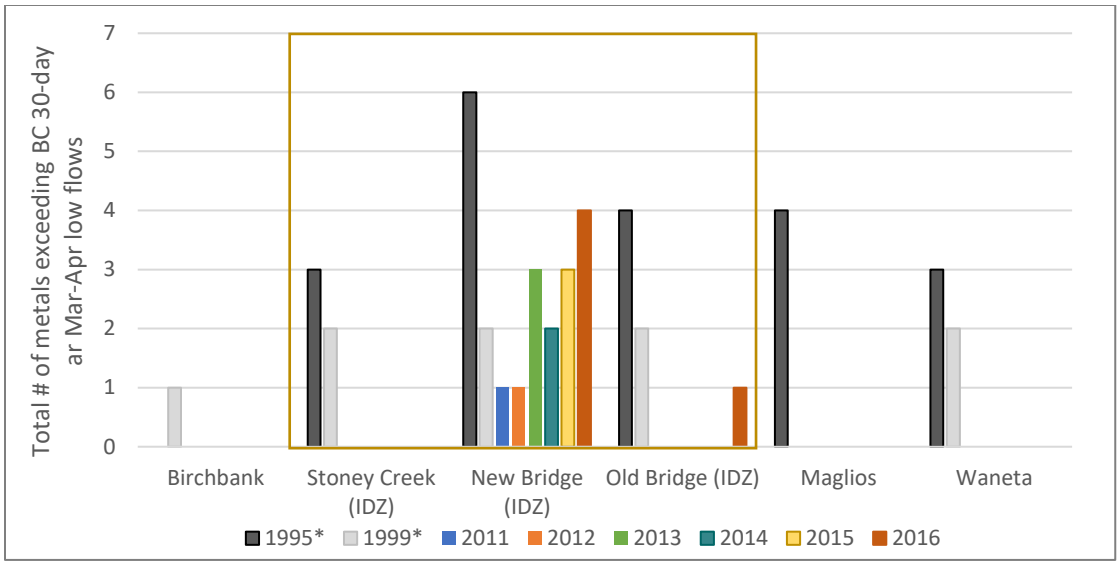

Figure 4-9: Total number of metals exceeding the BC 30-day guideline for the March-April low flow periods from 1995 to 2016. Exceedances in the IDZ (Stoney Creek to New Old Bridge) do not constitute non-attainment of Water Quality Objectives.

Comparison of total versus dissolved metals

Implementation of metals criteria is complex due to the site-specific nature of metals toxicity and variable metal behavior. Canadian guidelines frequently use total metals, which are the sums of dissolved ions and metals associated with particulates or minerals, while the US EPA uses dissolved metals. Some studies have indicated that particulate metals appear to contribute to overall metal toxicity, but their contribution is substantially less than that of dissolved metals (US EPA MoU 1993).

Most figures in this report depict total metal concentrations to align with BC guidelines and LCR objectives; however, metals occurring mainly in particulate phases can frequently have lower potential toxicity. For example, lead and aluminum occurred predominantly in total particulate forms, with a small increase in dissolved lead at the New Bridge site within the IDZ (Table 4-5). Numerous metals occurred predominantly in the dissolved form throughout the LCR but the dissolved form increased within the IDZ, and they include copper, lead, thallium and zinc. Dynamic reactions involving dissolved metals occur at various rates, depending on water pH, total hardness, redox, temperature, availability of particulates with binding sites, and other parameters.

Table 4-5: Distribution metrics for total and dissolved metals of interest in the LCR 2015-2016.

	Average % dissolved metals					
Metal/Site	**BB**	**SC**	**NB**	**OB**	**MA**	**WA**
Aluminum	56%	51%	51%	50%	50%	45%
Arsenic	98%	99%	96%	95%	98%	99%
Cadmium	89%	88%	92%	86%	87%	84%
Copper	94%	93%	96%	96%	92%	89%
Lead	38%	29%	45%	32%	35%	33%
Mercury	99%	90%	84%	98%	80%	84%
Selenium	100%	99%	100%	97%	97%	97%
Silver	100%	100%	100%	99%	100%	100%
Thallium	93%	99%	100%	96%	95%	99%
Zinc	100%	85%	96%	99%	86%	92%

Legend: BB = Birchbank; SC = Stoney Creek; NB = New Bridge; OB = Old Bridge; MA = Maglios; WA = Waneta

The following section presents the results of 2015 and 2016 sampling for total metals of interest and compares the results with data collected from 2011-2014. All other metal concentrations not discussed here met the applicable LCR Objectives and Guidelines. The complete 2015 and 2016 water quality data set is available in Appendix C accomapnied by QA/QC outputs. The box plots below present 2015-2016 low flow sampling data with outliers indicated as solid points. High LCR flow sample events in both 2015 and 2016 are represented in the figures as single, hollow (square and triangle) points.

4.1.4 Aluminum (Al)

The general range of total aluminum in North American Rivers is 0.012 -2.25 mg/L (Jones and Bennett 1986) and the Columbia and Kootenay Rivers fall within the lower end of this range. Aluminum occurs naturally in the area associated with alumino-silicate clays (Brown and Bruland 2009).

Elevated D-Al concentrations were observed in two samples: on March 31, 2015 at Maglios, and on April 5, 2016 at Birchbank (Figure 4-10). There were no exceedances of D-Al concentrations over the 30-day Chronic Objective in 2015-2016 sampling within or below the IDZ. The slight increase in D-Al observed in the IDZ was restored to background concentrations before the Waneta site (Figure 4-10).

Water sampling carried out 2011-2013 indicated that Birchbank had more frequent elevated aluminum concentrations at mid-river positions than the sites downstream of the smelter (Figure 4-10) (Hawes et al. 2014). A declining trend in Al concentrations has been detected throughout the LCR in data collected from 1983-2005 at Birchbank (Can. BC 2008). Although a declining trend was not apparent in the 2015-2016 data. The highest Al concentration during the spring low flow sampling occurred at the reference site (Birchbank), and the lowest at Waneta (Figure 4-10). The highest aluminum concentrations were documented during high river flow periods (i.e. July) when dilution of the effluent would be greatest. This is likely a result of increased aluminum being carried downstream by freshet flows in tributaries associated with increased erosion, channel scour, turbidity, and TDS. No influence of the smelter was detected in the 2011-2013 or the 2015-2016 aluminum data.

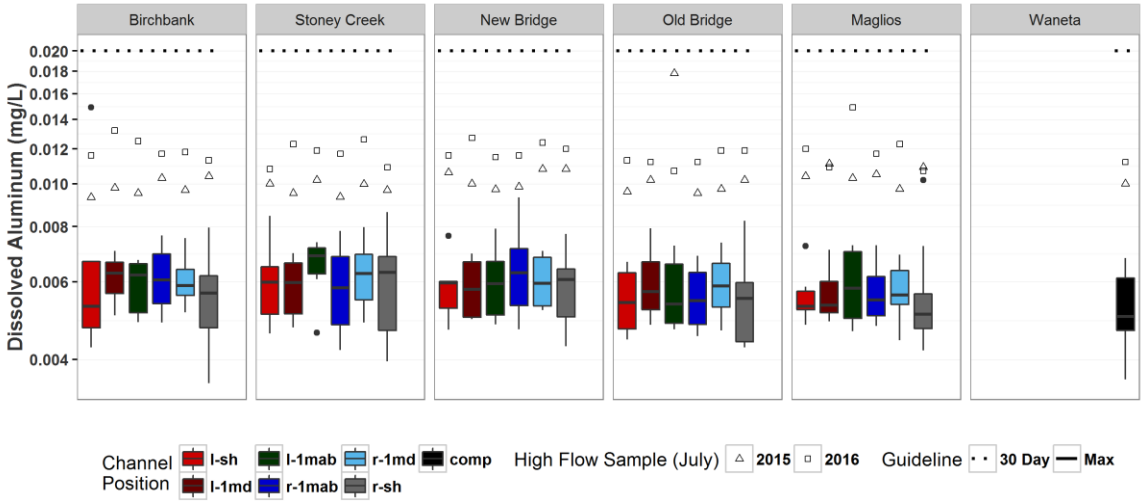

Figure 4-10: Box plots of D-Al measured in the LCR during low flow periods (2015-2016). The channel position designations are L-sh left-shallow, L-1md left 1 m deep, L-1mab left 1 meter above bed, and the same for Right. All samples were above the limit of detection for D-Al.

4.1.5 Arsenic (As)

The 30-day average allowable concentration of arsenic has been set at 0.005 mg/L (5 µg/L) T-As as an Objective for the LCR and elsewhere to protect fish and aquatic life (BC MoE 2005). T-As was elevated over background concentrations measured at Birchbank within the IDZ, notably in the r-sh sites, and are attributable to the effluent plume and possibly groundwater inflows however, no samples exceeded the Objective, even within the IDZ (Figure 4-11).

The ambient concentration of arsenic in Canadian surface and ground waters is very low, usually ranging from 0.001 to 0.002 mg/L, with greater concentrations more common in groundwater, particularly in areas where As occurs in local bedrock (BC MoE). Arsenic results from 2015-2016 were similar to those from 2011-2014. In both data sets, the elevated arsenic concentrations within the IDZ were fully mixed by Maglios and were within 21.4% of the average right shallow reference site concentrations. Most of this arsenic occurred in the dissolved form.

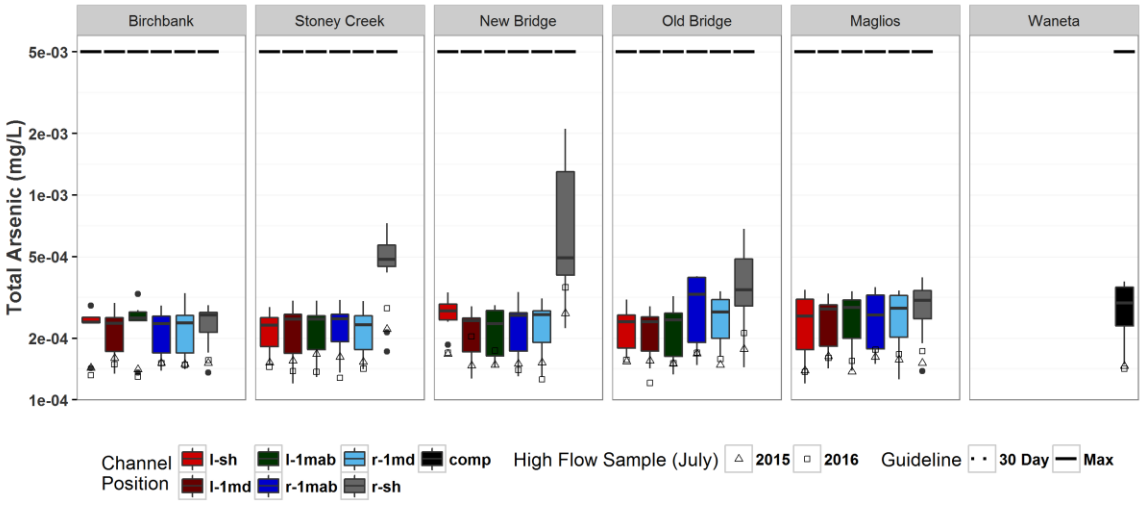

Figure 4-11: Box plots of T-As measured in the LCR during low flow periods (2015-2016). The channel position designations are L-sh left-shallow, L-1md left 1 m deep, L-1mab left 1 meter above bed, and the same for Right. Note, the LCR objective is also 0.005 µg/L and not shown on the above figure. All samples were above the limit of detection for T-As.

4.1.6 Cadmium (Cd)

The new dissolved cadmium (D-Cd) Guideline (BC MOE 2015) was applied to this review of 2015-2016 water quality data (Figure 4-12). Table 4-6 provides a comparison of the calculated Cd guidelines for a range of water hardness. Previously, using the former Canadian guidelines, cadmium had the most frequent exceedances in the LCR, usually at sites below the smelter. However, using the new Guideline (Table 4-6) at mean LCR hardness = 70 mg/L (as $CaCO_3$), there were no exceedances of dissolved Cd below the IDZ (Figure 4-12). As in the 2011-2014 data, the 2015-2016 data showed the highest Cd concentrations in New and Old Bridge right bank samples that are within the effluent outfall plume and inside the IDZ and occur in the dissolved form.

Table 4-6: Comparison of Cadmium Guidelines for LCR Range of Hardness (30-day chronic).

Water hardness mg/L as Ca CO_3	Previous BCWQG Total Cd	USEPA Dissolved Cd	BC MOE (2015) Dissolved Cd (30-d)
30 mg/L	0.01 µg/L	0.11 µg/L	0.09 µg/L
60 mg/L	0.02 µg/L	0.17 µg/L	0.15 µg/L
90 mg/L	0.03 µg/L	0.23 µg/L	0.20 µg/L

NOTE: BC guidelines are based on total Cd while the US EPA uses dissolved Cd. The new BC MOE Guideline (2015) is based on dissolved Cd using the hardness-based formula: $e^{0.736(\ln(\text{hardness})-4.943)}$

In both the 2011-2014 and the 2015-2016 data sets, the elevated dissolved cadmium concentrations from the IDZ were still elevated along the right bank at Maglios, but not by Waneta (Figure 4-12). A similar but more subtle distribution across the Maglios transect was detected for thallium and copper. These metals suggest that the mixing through the channel is close to but not fully complete at the Maglios site. However, water velocity and therefore sediment transport vary across river transects and transect patterns in metal distributions can be observed at the reference Birchbank site. If dissolved Cd, Tl, and Cu are considered the plume is almost completely diffused across the channel by the Maglios site and full diffusal is evident at the Waneta site, where chemical concentrations are homogenous in samples collected across the river channel.

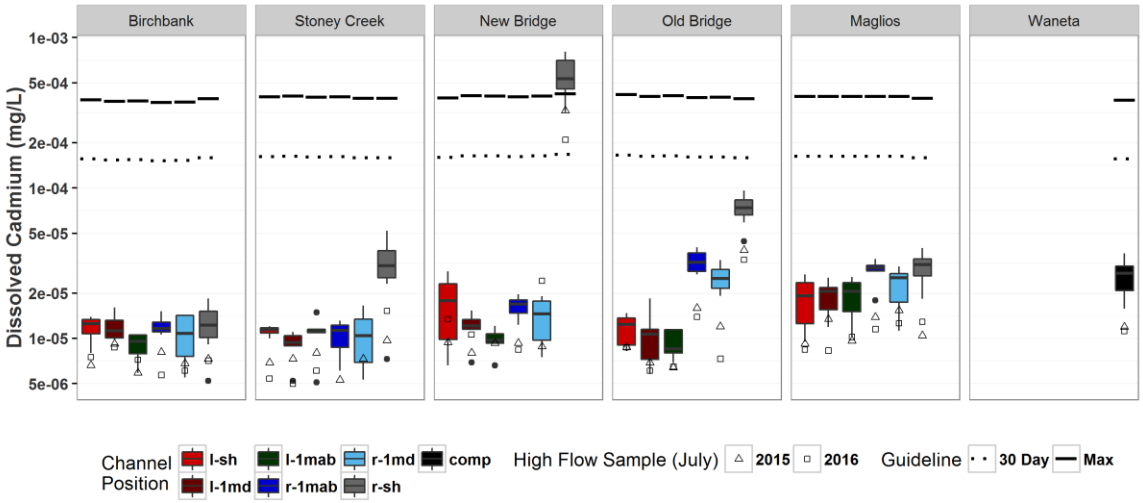

Figure 4-12: Box plots of D-Cd measured in the LCR during low flow periods (2015-2016). The channel position designations are L-sh left-shallow, L-1md left 1 m deep, L-1mab left 1 meter above bed, and the same for Right. Seven percent of the samples were below the limit of detection for D-Cd.

4.1.7 Chromium (Cr)

Like 2011-2014 data, 2015-2016 chromium data were rarely above the ultra-low metal detection limit. Only 4% of the water quality data was above the limit of detection for chromium. There have been no exceedances of the Water Quality Guidelines for Cr in any samples collected in the AREMP from 2011-2014 (Figure 4-13), and the only exceedance in the 2015-2016 data occurred mid-channel at the Birchbank reference site in July 2016. No influence from the smelter was detected in the Cr data from 2011 - 2016.

A 30-day average LCR objective of 0.001 mg/L (1.0 µg/L) for total chromium was set for the protection of fish and aquatic life. No maximum water quality objective was established (BC MoE 1997). The BC water quality guidelines distinguish between chromium III and chromium VI (Cr^{+3} and Cr^{+6}) and provide maximums of 0.009 mg/L and 0.001 mg/L, respectively. Total chromium concentrations have declined in BC MoE data collected at Birchbank between 1983 and 2005 (Can.-BC 2008). Current Waneta T-Cr concentrations were lower than historic concentrations and were mostly below the limit of ultra-low metal detection of 0.0001 mg/L.

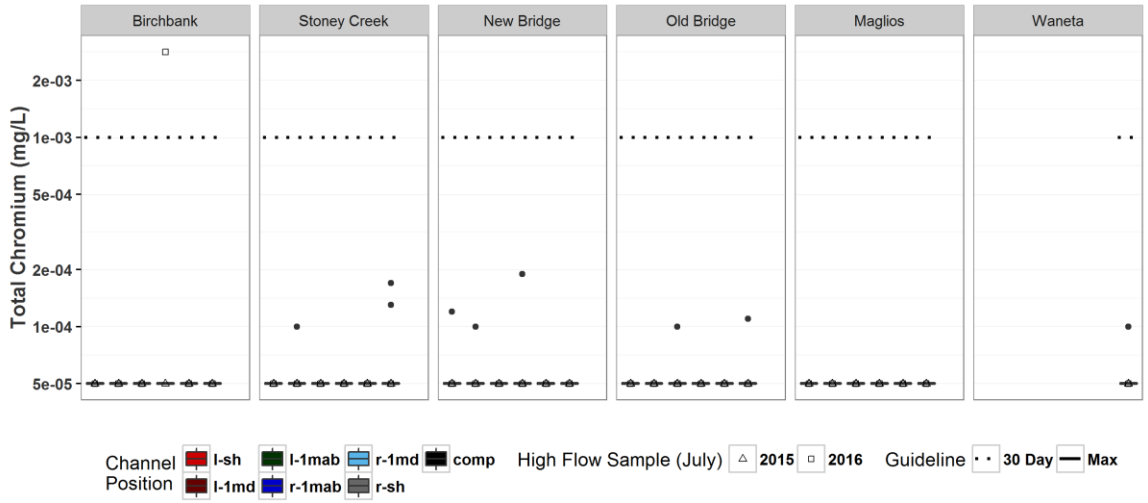

Figure 4-13: Box plot of T-Cr measured in the LCR during low flow periods (2015-2016). The channel position designations are L-sh left-shallow, L-1md left 1 m deep, L-1mab left 1 meter above bed, and the same for Right. Ninety-six percent of the samples were below the limit of detection for T-Cr.

4.1.8 Copper (Cu)

There were no exceedances of total copper (T-Cu) within or outside of the IDZ in 2015-2016 sampling (Figure 4-14) or in the 2011-2012 sampling. The overall copper distribution across the channel was similar to earlier AREMP sampling. Values downstream at Maglios r-sh were within 10.1% of the background levels measured at Birchbank. Both above and below the smelter, copper occurs primarily in the dissolved form. Even within the IDZ, the average 30-day T-Cu concentrations have not exceeded the 30-day Objective since 2011 (Figure 4-14). A 30-day average Water Quality Objective of 0.002 mg/L (2.0 µg/L) for total copper was set for the protection of fish and aquatic life in LCR. The maximum water quality objective of 0.00717 mg/L T-Cu (7.17 µg/L) was established for the protection of fish and aquatic life (BC MoE 1997).

Elevated copper concentrations have been measured on both sides of the river in the IDZ at New Bridge suggesting groundwater influence in addition to the smelter effluent (Figure 4-14). Most of this copper occurs in the dissolved form.

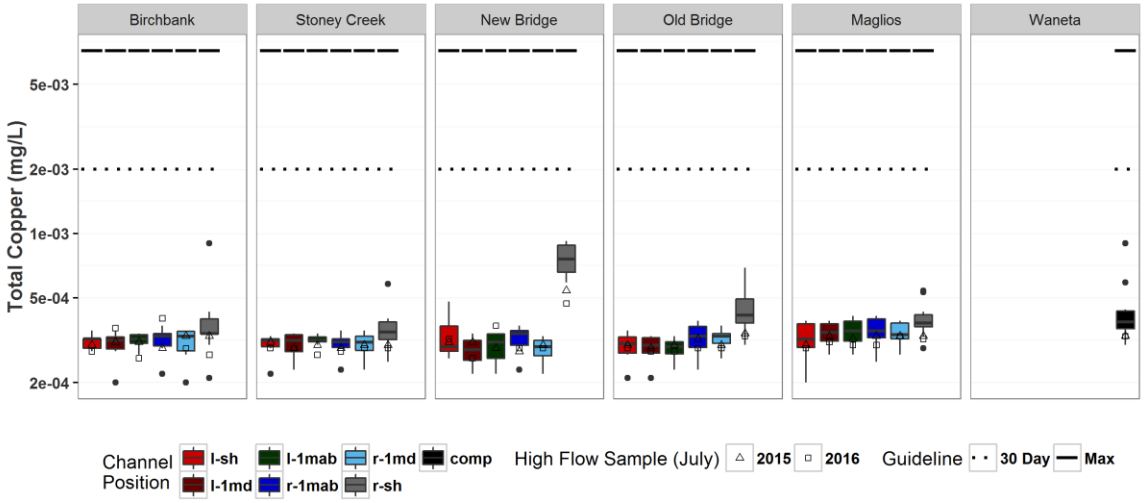

Figure 4-14: Box plot of T-Cu measured in the LCR during low flow periods (2015-2016). The channel position designations are L-sh left-shallow, L-1md left 1 m deep, L-1mab left 1 meter above bed, and the same for Right. All samples were above the limit of detection for T-Cu.

4.1.9 Lead (Pb)

There were no samples that exceeded either the maximum or the 30-day Water Quality Objective for total lead (T-Pb) in the 2015-2016 data. However, there were higher concentrations measured at Stoney Creek, New Bridge, and Old Bridge in this, and in earlier datasets (Figure 4-15). Water Quality Objectives for the LCR set the maximum allowable concentration of total lead at 0.0379 mg/L (37.9 µg/L) to protect fish and aquatic life. The 30-day average T-Pb Objective is 0.0048 mg/L (4.8 µg/L). All AREMP water sampling to date (2011 – 2016) indicate the highest average lead concentrations occur within the IDZ in right bank samples, potentially reflecting effluent and/or groundwater discharge (Figure 4-15). Most of this lead occurred in the less bio-available particulate form. Increased T-Pb also occurred along the l-sh sites within the IDZ, indicating groundwater influence. There is a gradient in lead concentrations in the reference Birchbank transect where r-sh samples are elevated above l-sh samples.

Unlike historic data, no samples have exceeded the BC MoE guideline for maximum or 30-day average for lead or the LCR Water Quality Objectives in the AREMP studies. Similar to 2011-2014 observations (Hawes et al. 2014), average lead concentrations remained elevated at Waneta compared to the Birchbank reference site in 2015-2016.

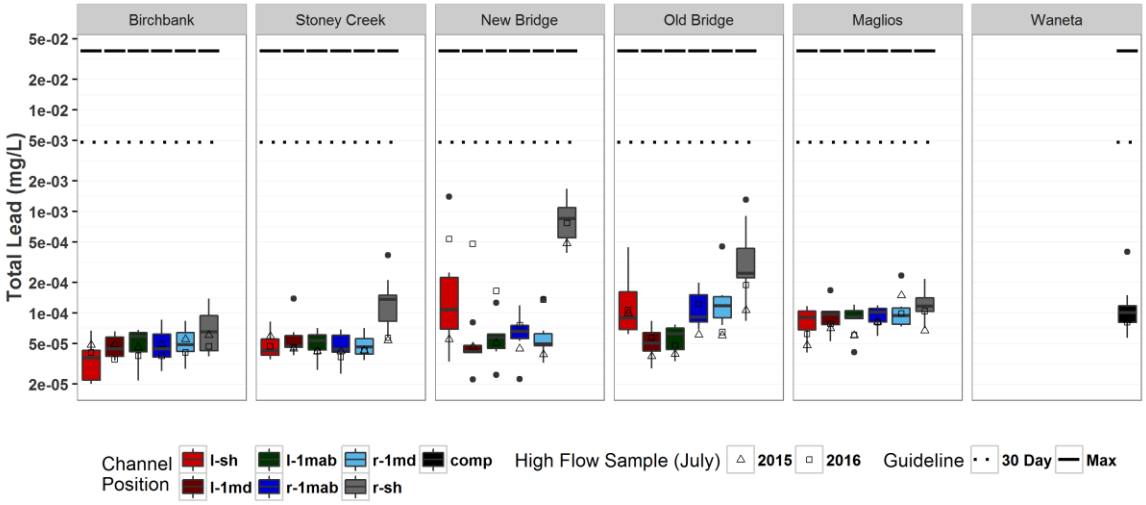

Figure 4-15: Box plots of T-Pb measured in the LCR during low flow periods (2015-2016). The channel position designations are L-sh left-shallow, L-1md left 1 m deep, L-1mab left 1 meter above bed, and the same for Right. All samples were above the limit of detection for T-Pb.

4.1.10 Mercury (Hg)

There were no exceedances of the maximum guideline for total mercury (T-Hg) at any sites and no exceedances of the 30-day chronic guidelines either within or outside of the IDZ (Figure 4-16). In the 2011-2014 data and in the 2015-2016 data, total mercury concentrations were elevated above reference levels in the IDZ but returned to near background levels by Maglios and Waneta (Figure 4-16). Most samples, 82% of samples, had non-detectable (0.0005 µg/L) T-Hg concentrations, even with the ultra-low metal analyses. No Water Quality Objective for mercury was set for the LCR. The BC WQ Guideline (2017) maximum for total mercury was set at 0.0001 mg/L (0.1 µg/L), with a 30-day average guideline of 0.00002 mg/L T-Hg (0.02 µg/L when MeHg = 0.5% of T-Hg). Further analysis needs to be performed to confirm percentage of MeHg in water samples. Like aluminum, mercury concentrations occasionally exceeded the BC maximum guideline both above and below the smelter (Hawes et al. 2014), while in the 2015-2016 data there were no exceedances.

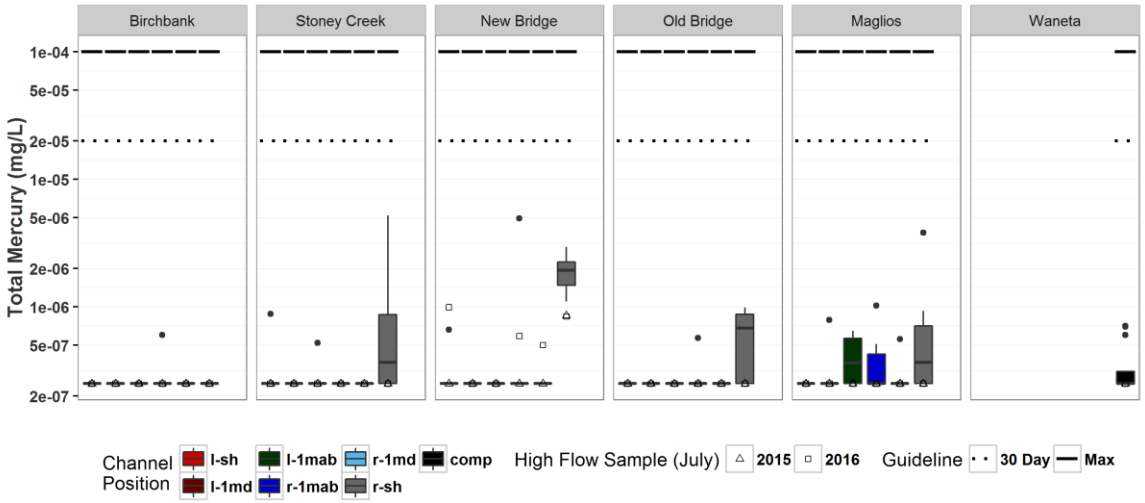

Figure 4-16: Box plots of T-Hg, measured in the LCR during low flow periods (2015-2016). The channel position designations are: L-sh left-shallow, L-1md left 1 m deep, L-1mab left 1 meter above bed, and the same for Right. Eighty-two percent of the samples were below the limit of detection for D-Hg.

4.1.11 Nickel (Ni)

No exceedances were detected in any 2011–2014 or 2015-2016 samples collected above or below the smelter in the LCR area of interest including within the IDZ (Figure 4-17). The hardness calculation-based maximum BC Water Quality Guideline of 0.0025 – 0.105 mg/L T-Ni (2.5 - 105 µg/L) was established for the protection of fish and aquatic life. Total nickel concentrations at Maglios were within 5.4% of the reference Birchbank site in the 2015-2016 data. Most of the nickel in the LCR samples was present in the dissolved form.

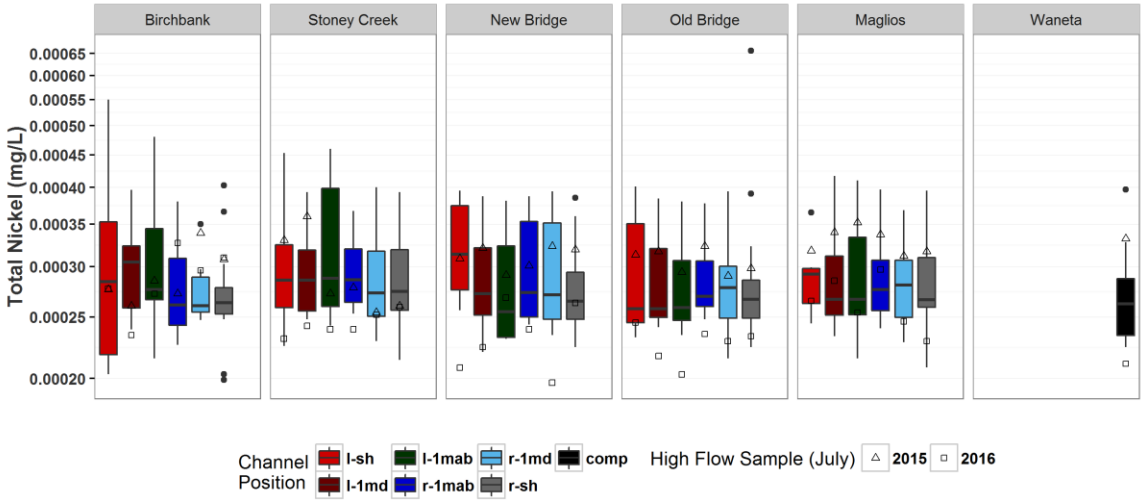

Figure 4-17: Box plots of T-Ni, measured in the LCR during low flow periods (2015-2016). The channel position designations are: L-sh left-shallow, L-1md left 1 m deep, L-1mab left 1 meter above bed, and the same for Right. Note, BC Max guideline of 0.055-0.065 mg/L is not displayed on the graph because samples are far below the guideline. All samples were above the limit of detection for T-Ni.

4.1.12 Selenium (Se)

There were no exceedances of T-Se outside the IDZ in sampling to date. Elevated Se within the IDZ does not constitute a permit exceedance. Within the IDZ in 2016, the 30-day mean of T-Se at the right bank of New Bridge and Old Bridge exceeded the BC MOE 30-day guideline. In 2015, the 30-day mean calculated from the New Bridge right shallow site was the only exceedance. At New Bridge and throughout the LCR, Se occurred mainly in the dissolved form.

When individual samples from 2015-2016 were compared to the maximum BC MOE Objective, there were five exceedances at New Bridge and one exceedance at Old Bridge. Sites with the highest Se concentrations have been New Bridge and Old Bridge on the edge of the IDZ, particularly along the right bank in the plume path (Figure 4-18). Recent revisions have set the water quality guideline for Se at 0.002 mg/L T-Se (2 µg/L) and an alert level at the 30-day average of 0.001 mg/L T-Se (1 µg/L) for the protection of aquatic life (BC MOE 2014). After complete plume mixing at Waneta, the elevation in T-Se between Birchbank and Waneta averaged 0.079 µg/L (0.000079 mg/L) and remained far below the guidelines outside the IDZ.

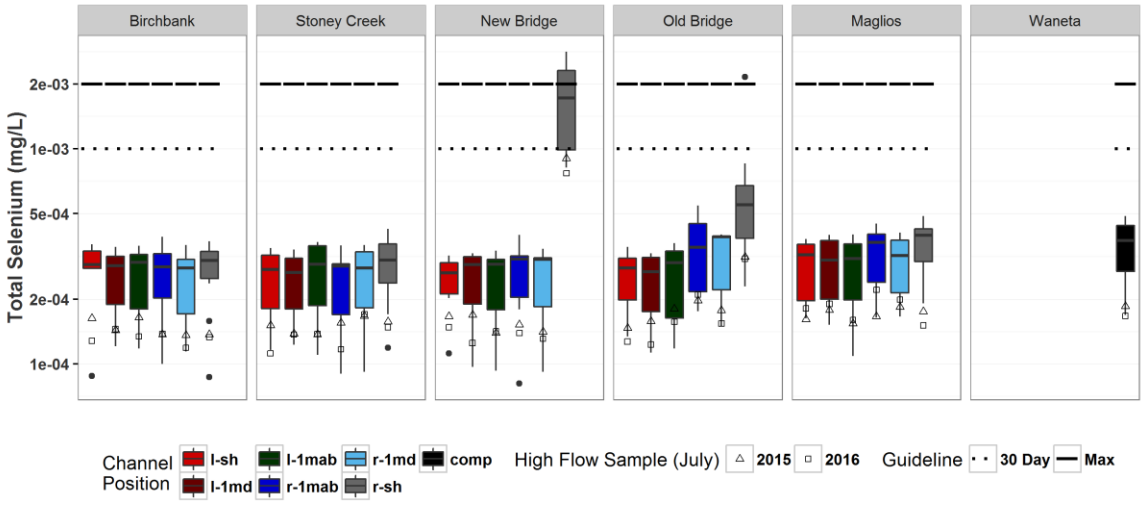

Figure 4-18: Box plots of T-Se measured in the LCR during low flow periods (2015-2016). The channel position designations are: L-sh left-shallow, L-1md left 1 m deep, L-1mab left 1 meter above bed, and the same for Right. All samples were above the limit of detection for T-Se.

4.1.13 Silver (Ag)

Very few 2015-2016 samples (3%) gave measurable silver (T-Ag) results even when analyzed using ultra-low metal analyses. No samples collected from 2011-2016 have exceeded either maximum or chronic 30-day Water Quality Guidelines for silver. The BC maximum guideline for silver is hardness-dependent. For waters with hardness <100 mg [$CaCO_3$]/L, a short-term guideline of 0.0001 mg/L T-Ag (0.1 µg/L), and a long-term (30-day mean) of 0.00005 T-Ag (0.05 µg/L) was recommended by BC MoE (2017) for the protection of freshwater fish and aquatic life. Until a reliable method is developed to measure free silver at concentrations below 0.1 micrograms per litre, silver objectives should be expressed as total silver (BC MoE 1997). Figure 4-19 depicts total silver which includes the free forms.

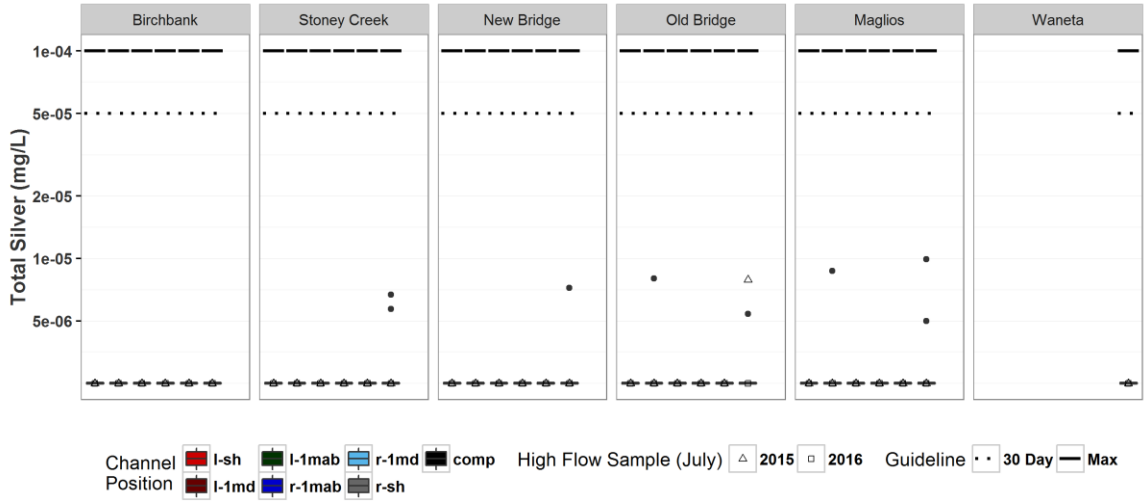

Figure 4-19: Box plots of T-Ag measured in the LCR during low flow periods (2015-2016). The channel position designations are: L-sh left-shallow, L-1md left 1 m deep, L-1mab left 1 meter above bed, and the same for Right. Ninety-seven percent of the samples were below the limit of detection for T-Ag.

4.1.14 Thallium (Tl)

There were no exceedances of 30-day chronic Objective for total thallium (T-Tl) outside the IDZ. However, the calculated 30-day average concentration for 2016 at New Bridge right bank within the plume path occasionally exceeded the Objective value (Figure 4-27). The provisional 30-day chronic LCR Water Quality Objective for total thallium of 0.0008 mg/L (0.8 µg/L) was recommended by BC MoE (1997) for the protection of fish and aquatic life. Similar to 2011-2014 data, elevated T-Tl concentrations were measured at New Bridge and Old Bridge in 2015-2016. These studies have not shown exceedances of the chronic 30-day Objective for T-Tl outside the IDZ (Figure 4-20). Tl was predominantly in the dissolved form.

The distribution of thallium concentrations across the transects was similar in the 2011-2014 data and in the 2015-2016 data, with increased Tl in the plume path, and effective but incomplete mixing by Maglios and full mixing by Waneta (Figure 4-20).

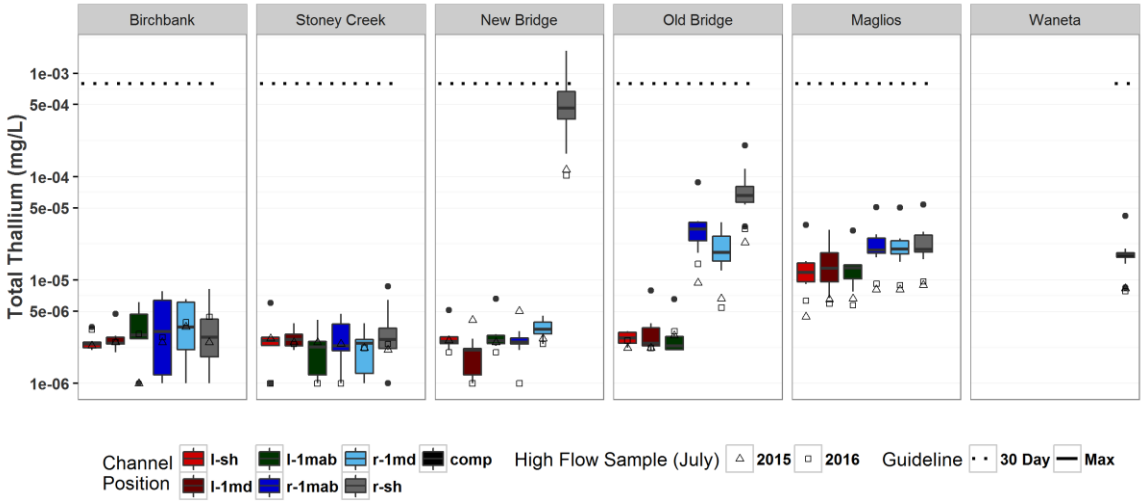

Figure 4-20: Box plots of T-Tl measured in the LCR during low flow periods (2015-2016). The channel position designations are: L-sh left-shallow, L-1md left 1 m deep, L-1mab left 1 meter above bed, and the same for Right. Eight percent of the samples were below the limit of detection for T-Tl.

4.1.15 Zinc (Zn)

In 2015-2016, there were no exceedances of either the maximum or 30-day chronic guidelines for total zinc (T-Zn) at any sites outside the IDZ (Figure 4-21) and there have been no zinc exceedances at any sites outside the IDZ in samples collected from 2011-2016. Elevated T-Zn concentrations are consistently measured along both the right bank and to a lesser extent, the left bank at New Bridge and Old Bridge. However, none of the values measured have exceeded the maximum guideline. Within the IDZ, only the plume at New Bridge exceeded the BC 30-day guideline and since this is within the initial dilution zone, this does not represent non-attainment of the Permit.

The Water Quality Objectives for the LCR, set the maximum allowable concentration of total zinc (T-Zn) at 0.033 mg/L (33 µg/L) to protect fish and aquatic life and other water uses (BC MoE 2005). The 30-day Chronic Guidelines is 0.0075 mg/L T-Zn. Throughout the LCR area of interest, zinc occurs primarily in the dissolved form.

In both the 2011-2014 and the 2015-2016 data, the r-sh samples showed elevated zinc at the upstream Birchbank site (Figure 4-21). An upstream source is indicated. Within the IDZ, the main source of T-Zn is the effluent plume.

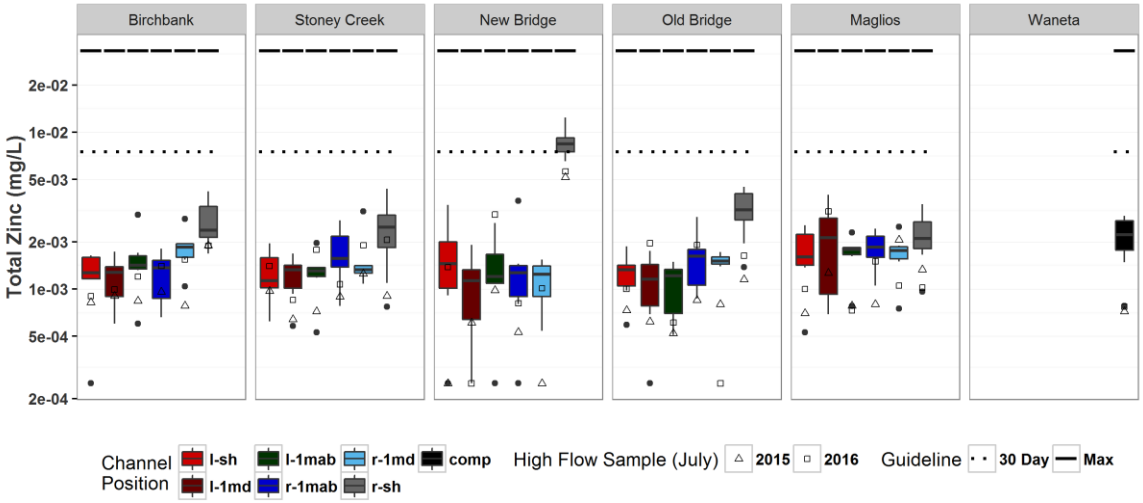

Figure 4-21: Box plots of T-Zn measured in the LCR during low flow periods (2015-2016). The channel position designations are: L-sh left-shallow, L-1md left 1 m deep, L-1mab left 1 meter above bed, and the same for Right. Four percent of the samples were below the limit of detection for T-Zn.

4.1.16 Quality Assurance and Quality Control

In ultra-low metals detection, a small discrepancy between duplicate samples causes a relatively large percentage difference that can exceed the QC assessment criterion of 50%. Discrepancies between the duplicates were flagged to ALS Labs and resulted in a re-run for Zn in the October 4, 2016 samples collected. Overall, the QA/QC assessment (Appendix C) indicated high field and analytical precision for the 2015 and 2016 AREMP water quality monitoring program.

The resulting AREMP analytical values were suitable for addressing water quality objectives of this study. The residual analytical discrepancies do not interfere with data interpretation.

4.2 Depositional Sediment Quality

The hydrodynamics of the Columbia River in the study area create conditions where long-term depositional zones are expected to be rare (Golder 2003). The spatial extent of depositional habitat in the LCR is small, accounting for only 33 ha or 2% of the total area of the LCR between HLK Dam and the Canada - US border. In the study area, the area of depositional habitat was estimated at 0.1% of the total sediment habitat (Golder 2007a). The importance of these diverse depositional areas is restricted by their small contribution to the overall LCR habitat.

The length of time that deposited materials remain in the depositional areas is important to their sediment quality and habitat value. If most depositional zones are short-term with frequent re-suspension during high flows, then there will be less opportunity for metals to accumulate and be retained than if the depositional zones are longer-term (Wetzel, 2001). Larger depositional sites such as Waneta can be expected to have longer sediment storage than small depositional sites (Vietz, et al. 2006). The sediment chemistry of depositional areas in the LCR is distinct from erosional cobble substrates. Depositional sediments tend to develop lower dissolved oxygen, lower redox, high organic components and therefore, unique microflora communities dominated by decomposers.

Each small depositional site had its own character in contrast to the comparatively uniform erosional habitats. For example, the Korpac site can be affected by Trail Creek that carries urban runoff (Table 4-7). Maglios and Waneta sediments produced high-magnitude responses in sediment toxicity tests conducted in 2007 (Golder 2010). Sequential metal extraction from depositional sediments showed that the overall potential for release of copper, lead and zinc from sediments was higher at Maglios, Fort Shepherd and Waneta, in that order (Golder 2007, 2010). Recent sediment metal concentrations do not follow this pattern and are discussed in this report. Depositional areas may still reflect the influences of historical practices as well as current effluent discharges and other inputs. These influences

must be considered when interpreting the sediment and benthic community results collected in this study.

4.2.1 Sediment Condition and Composition

At the depositional sites, coarser consolidated substrates were often encountered below 20 – 50 cm of surficial substrates. It was assumed that these deep sediments were stable and less likely to interact with river ecosystems and therefore were of less interest than the surficial sediments that are discussed below.

Depositional sediments are dynamic. Sediment composition measured at the same LCR sites was variable between years, almost certainly as a function of flow regime. The amount of fines in depositional sites in the silt/clay fraction were generally low, ranging from 0.7 to 36% (Hatfield 2008), 3 – 23 % (Golder 2003), <1 – 9% in 2012. In all studies, the dominant material in the LCR depositional areas was coarse sand (Table 4-7).

The sediment sample sites and depths within a depositional area are unlikely to be precisely matched between the sampling campaigns, but comparing the particle size data over the years showed that sand-sized particles (0.25 – 2 mm) dominated all depositional sediment samples, and suggests that the percentage of fines measured in 2003 was greater before the record 2011/2012 freshets than it is currently (Table 4-7).

Aquatic plants, such as milfoil (*Myriophyllum spp.*) and pondweed (*Potamogeton spp.*), are large contributors of organic material to sediments. The decline in aquatic plant density at all LCR depositional sites between 2003 and 2012 surveys indicates the unstable nature of these depositional areas. Aquatic plant beds had expanded between 2012 and the 2015 surveys, again likely due to the smaller-scale freshets in recent years.

Table 4-7: Sediment composition analysis conducted in 2012 and field meter readings taken in 2015 at the depositional sediment sampling sites.

	Reference Sites			Exposure Sites						
	Dep Ref 1	Dep Ref 2	Dep Ref 3	Dep Exp 1	Dep Exp 2	Dep Exp 3	Dep Exp 4	Dep Exp 5	Dep Exp 6	Dep Exp 7
	Kootenay Eddy	Genelle Eddy	Birchbank Eddy	Korpac	Maglios	Casino	Airport Bar	Trimac	Ft Shepherd	Waneta
Field Measured Parameters (2015)										
Conductance µS/cm	156	138	137	125	135	143	137	138	143	140
pH	7.1	7.4	6.7	7.3	7.5	7.7	7.5	7.5	7.5	7.8
Water temperature °C	14.1	12.1	12.4	12.5	12.4	12.3	12.6	12.6	12.9	12.7
Dissolved oxygen mg/L	9.04	8.04	5.1	8.72	8.69	8.62	8.06	8.06	9.33	9.14
Pore water Redox mv 0-10 cm depth	-45 to -135	-30 to -280		-70 to -190	-80 to -90	-20 to -185	-40 to -175	-155 to -295	-10 to -30	-35 to -125
Pore water Redox mv 15+ cm depth	-75 to -165	-30 to -50		-20 to -5	-65 to -110	-130 to -140	-140 to -350	-125 to -325	-335	-5 to -20
Macrophyte % cover	<1	0		0	<1	10	0	25	<1	10
Lab Measured Parameters (2012)										
% sand	97	92	98	94	98	92	97	95	95	99
% silt	2	5	<2	5	<2	7	2	5	5	<2
% clay	2	3	2	2	2	2	2	<2	<2	<2
Total organic carbon %	0.35	0.5	0.11	0.22	0.09	0.26	0.21	0.14	0.2	0.57
Slag – estimate %	ND	ND		ND	possible 1%	ND	ND	ND	possible <1%	possible <1-5%

Casino Elodea>Myriophyllum>>pondweed
Trimac Elodea>Potamogeton
Waneta Elodea>>Potamogeton>milfoil (deep)
ND = Not detected

In sediment sampling, a strong correlation between decreasing grain size and increasing metal concentrations is expected, making comparison of samples dominated by a sand fraction with one dominated by a silt fraction inappropriate (Wisconsin DoNR, 2003). Since 2012 sediment samples from reference sites contained >94% sand, and the exposure sites contained >92% sand, the reference and exposure samples can be compared.

2015 Field observations and microscope evaluations are summarized in Table 4-8. The microscope evaluation of the depositional sediments in 2012 and 2015 confirmed that the contribution made to the biofilm by algae was small compared to erosional periphyton biofilms, while the contribution made by bacteria and organic debris was much greater (Table 4-8). Together, these depositional sediment components exert an influence on metal concentrations and bioavailability at LCR depositional sites.

The reference depositional areas showed the same order of periphyton productivity in 2012 and 2015, with Kootenay Eddy > Genelle Eddy > Birchbank, although 2015 was a more productive year. The larger depositional areas tended to be the most productive Casino Eddy, Ft. Shepherd, and Trimac were the most productive sites in terms of biovolume and abundance. These three sites were the only sites that exhibited a significantly higher abundance or biovolume with the Korpac site ($p<0.05$). Unfortunately, the reference sites are larger than all but the Waneta exposure site, and this must be accounted for in data interpretation.

It was very difficult to determine slag presence in the field and even with a microscope, differentiating between slag and other dark particulates was challenging, and results should be interpreted with caution. Assumptions made in earlier reports that were based only on visual inspection in the field should be interpreted with caution. Thus, field visual slag identification and microscopic identification of residual slag remaining in the LCR area of interest (AOI) is tentative at best. With these limitations in mind, field estimates of the percent contribution of slag in the depositional sediments appear to be dropping as the years pass since the last slag discharge in 1995. Estimates from depositional areas were higher in 2003 than microscope estimates from 2012 and estimates were lower still in 2015. Dark particulates that appeared to be a slag-type material were also noted in 2015 samples from Ero Exp 2, and to a lesser extent, Ero Exp 3.

Table 4-8: Microscope evaluation of depositional sediments from the LCR AOI in September 2015.

Components of Samples	Dep Ref 1 Kootenay	Dep Ref 2 Birchbank	Dep Ref 3 Genelle	Dep Exp 1 Korpac	Dep Exp 2 Maglios	Dep Exp 3 Casino	Dep Exp 4 Airport Bar	Dep Exp 5 Trimac	Dep Exp 6 Ft Shepherd	Dep Exp 7 Waneta
Field observations	sand>> gravel >organics >pebble	woody organics, H_2S low redox fine sand>silt> >>gravel	woody organics, fine sand >silt>> gravel	orange coarse sand	Some coarse black sand > sand	sand>> gravel > organics	fine sand > sand >> organic, H_2S	fine sand>>s and >> organic no slag seen	fine sand >> sand >> organic trace slag possible	trace slag seen Sandy low organics
Microscope observations										
slag	ND	ND	ND	ND	possible <1%	ND	ND	ND	possible <1%	possible <1%
dark silt	ND	ND	ND	ND	VL	ND	VL	VL	L	L
diatoms	C-D	C-D	C-D	C	C	D	M	D	D	C
cyanobacteria (colonial)	L-C	L	L	L	ND	ND	VL	ND	L	VL
cyanobacteria (filaments)	M	M	M	VL	ND	ND	ND	ND	ND	VL
green algae	ND	ND	ND	ND	P	ND	ND	L	ND	ND
Didymo tubes	ND	ND	ND	VL	ND	ND	ND	ND	ND	P
sponge spicules	ND	ND	ND	ND	ND	ND	VL	ND	ND	ND
bacterial	C	C	C	L	L	L-C	C	C	C	C
fungal filaments	ND	ND	ND	ND	VL	VL	VL	ND	ND	ND
vascular debris	L	L	L	L	ND	ND	ND	ND	P	VL
organic debris	C-D	C	C	C-D	L	C	C	C	C-D	C
protozoa invertebrates	P	ND	ND	ND	ND	VL	P	ND	P	ND

Key to Frequencies				
	Not Detected	ND	not seen	0%
	Present	P	rarely seen	<1%
	Very Low	VL	seen infrequently	1-3%
	Low	L	seen periodically	3-5%
	Moderate	M	seen often	5-10%
	Common	C	seen in all mic fields	10-20%
	Dominant	D	seen most often	>20%

4.2.2 LCR Sediment Metal Content

In the Lower Columbia River, sediments are confined to small depositional areas and to a much lesser extent, interstices between cobbles in erosional areas. Whole, composite sediment samples (excluding >2 mm) were subjected to sediment digestion using the strong acid leachable method (SALM), which is intended to dissolve those metals that may be environmentally available (BC MoE 2017). This method may include metals that are not bioavailable, thus the results may over-represent risk. They are reported as total metals, even though digestion of silicate minerals will be incomplete and may result in partial extraction. The 2012 and 2015 results reported here were treated this way.

Sediment guidelines are generally stated in two ways: safe levels of substances that will protect aquatic life from adverse effects of toxic substance (ISQG), or levels which, if exceeded, can cause severe effects on aquatic life (PEL). These guidelines are not based on cause-effect studies, but on levels of toxic substances found in the sediment where biological effects have been measured. Therefore, caution should be exercised in the application of these working guidelines.

Canadian sediment quality objectives and guidelines are deliberately set to be protective. Therefore, if concentrations of metals of concern are less than the established objectives, potential risks to the receptor groups can be ruled out with confidence. Further, elevated sediment metals do not necessarily indicate effects to the resident plant and animal communities. Depositional sediment samples will include adsorbed forms with limited bioavailability. In addition, sediment metal concentrations, pore water concentrations, and bioavailable metal concentrations may be linked, but they are not necessarily similar in scale or slope.

An important consideration in LCR sediment studies in the AOI is how metal concentrations have the potential to adversely affect the LCR aquatic food web.

For this study, sediment metals of concern were defined as those that either:

- identified as metals of concern in earlier studies (Golder 2003, Hatfield 2008, Golder 2010)
- sediment concentrations at near-field sites that were significantly higher than at reference sites
- metals that exceeded sediment guidelines at depositional sites downstream of the smelter from 1992 - 2015

The resultant metals of interest are identified in Table 4-9.

Table 4-9: Matrix for Determining Sediment Metals of Interest

Metal	Metals of interest from previous reports	Near-field sites >> reference sites 2012 samples	Near-field sites >> reference sites 2015 samples	Guideline sediment exceedances in past 20 years
Aluminum		✓		
Antimony		✓	✓	
Arsenic	✓	✓	✓	✓
Cadmium	✓	✓	✓	✓
Chromium	✓	✓	✓	✓
Copper	✓	✓	✓	✓
Iron		✓	✓	✓
Lead	✓	✓	✓	✓
Manganese		✓	✓	✓
Mercury	✓	✓	✓	✓
Nickel	✓	✓	✓	✓
Selenium		✓		
Silver	✓	✓	✓	✓
Thallium	✓	✓	✓	
Tin		✓	✓	
Zinc	✓	✓	✓	✓

(Golder 2003, Hatfield 2008, Golder 2010)
>> signifies a difference of >50%

In this report, we considered all potential metals of interest, but focused on those most likely to have potential adverse effects and that could have originated in releases from the smelter. Several of the metals listed in Table 4-9 have other important drivers of their distributions. For example, iron and manganese are very common and are mobile in anaerobic sediments. Aluminum is prevalent throughout the LCR, as is mercury. Some metals such as silver exceeded guidelines much more frequently in the past than they did in samples from the last decade.

Table 4-10 provides a comparison of reference sample sites and exposed sites. The overall metal concentrations increase in depositional sediments downstream of the smelter. Like earlier studies on the Lower Columbia, this study shows correlated differences for zinc, copper and lead, and to a lesser extent, Cd and As when all sample sites are considered. At depositional sites downstream of the smelter, sediment concentrations of all metals of interest identified in Table 4-9 exceeded the reference site average concentrations by 2 standard deviations in both 2012 and 2015 (Table 4-10). Of these metals, local high elevation creek sediments from Blueberry, Murphy, Hanna and Topping creeks have concentrations comparable to the depositional sites downstream of the smelter for lead, copper, arsenic and cadmium (Reyes, 2004). Thus, the elevated metal concentrations in sediments downstream of the smelter cannot be attributed to past or present smelter activity alone.

Table 4-10: Average and standard deviation for depositional sediment samples (mg/kg dry) from upstream reference sites and downstream exposure sites collected in 2015.

Number of samples	3	7	
Sediment Sample Site	DEP-REF	DEP-EXP	Exposure Mean/Reference Mean
Antimony	0.167 ± 0.058	22.13 ± 24.4	132.51
Arsenic	0.90 ± 0.10	6.34 ± 3.54	7.04
Cadmium	0.157 ± 0.042	1.059 ± 0.85	6.75
Chromium	12.5 ± 2.85	25.3 ± 6.47	2.02
Copper	5.2 ± 0.17	188 ± 153	36.15
Iron	10303 ± 1647	26914 ± 10102	2.61
Lead	7.03 ± 0.25	105.7 ± 43.5	15.04
Manganese	107.7 ± 1.53	388.8 ± 161.3	3.61
Mercury	<0.05	0.16 ± 0.06	6.40
Nickel	7.2 ± 0.75	11.3 ± 3.2	1.57
Selenium	<0.5	<0.5	-
Silver	<0.2	1.09 ± 1.14	10.90
Thallium	<0.1	0.20 ± 0.07	4.00
Tin	0.367 ± 0.153	21.44 ± 18.91	58.42
Zinc	46.0 ± 14.1	1100.3 ± 680.7	23.92

When only the exposure sediment sites are considered, the correlation between zinc and copper in the sediment data set was high (Pearson r = 0.97) while lead was less correlated to the other two metals. These metals represent the slag signature which, for the LCR and the Trail smelter, contains small amounts of base metals including zinc, lead, copper and cadmium (Golder 2007b).

Sediment collected in exposure sites had higher concentrations of zinc, copper, iron, and arsenic, matching the results of earlier studies (Golder 2007, Hatfield 2008).

Other Sediment Metals of Interest

Figure 4-22 to Figure 4-24 illustrate concentrations of other metals of interest measured in the sediments collected from three reference sites (Kootenay Eddy, Genelle, and Birchbank) and from seven downstream exposure sites (Korpak, Maglios, Casino, Airport Bar, Trimac, Fort Shepherd Eddy, and Waneta). Where they exist, published guidelines are indicated on each figure to illustrate where exceedances may have occurred.

In the 2012 and 2015 sediment concentrations of As, Cd, Cr, Cu, Pb, and Zn were above the limit of detection. Thirty percent of mercury sediment samples were below the limit of detection in 2012, whereas 20% of samples were below the limit of detection in 2015. Selenium had 50% and 90% of samples below the limit of detection in 2012 and 2015, respectively. There were 40% and 50% of samples below the limit of detection for Tl in 2012 and 2015, respectively.

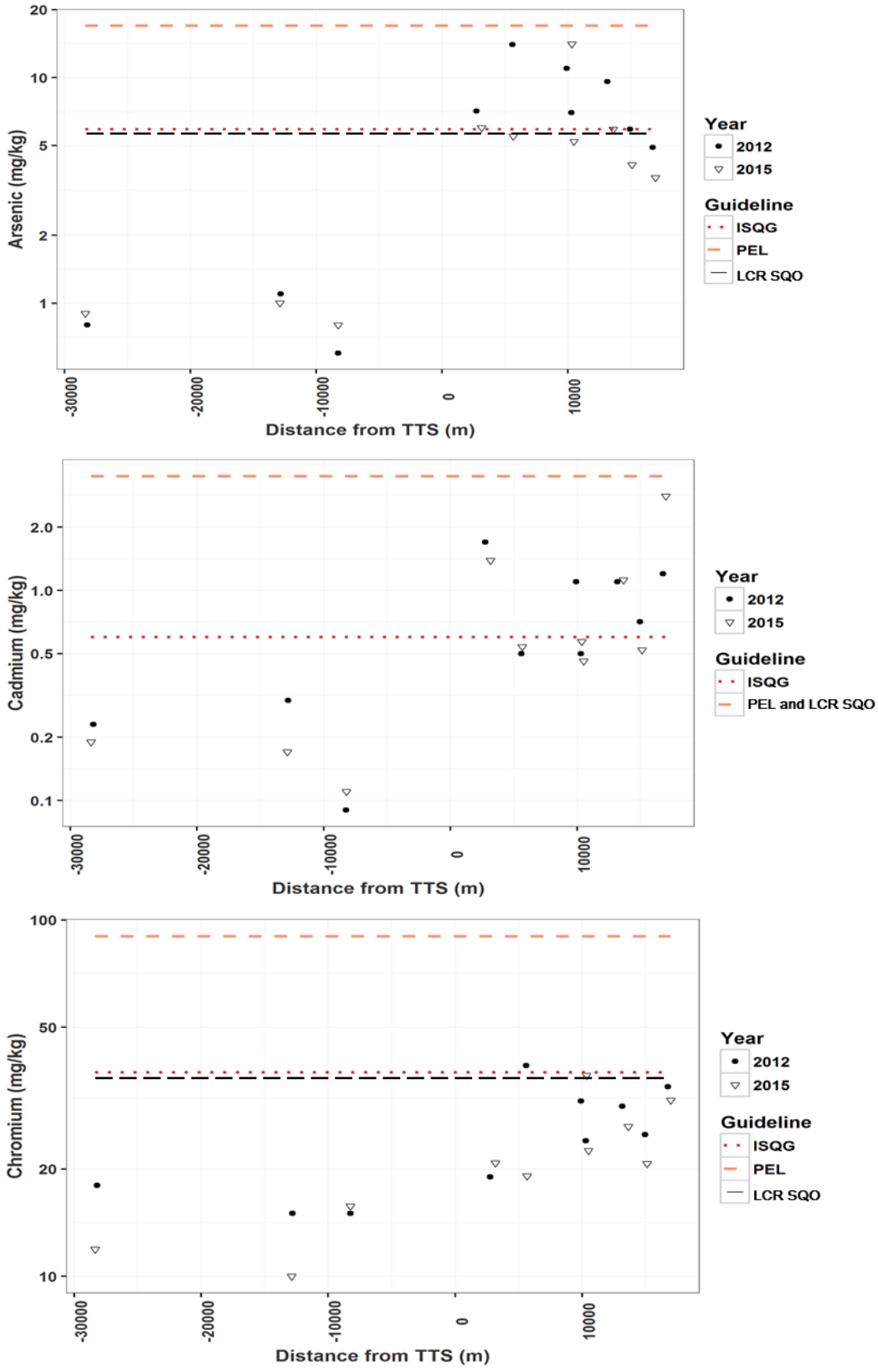

Figure 4-22: Distribution of arsenic, cadmium, and chromium concentrations in depositional sediments with distance from the smelter.

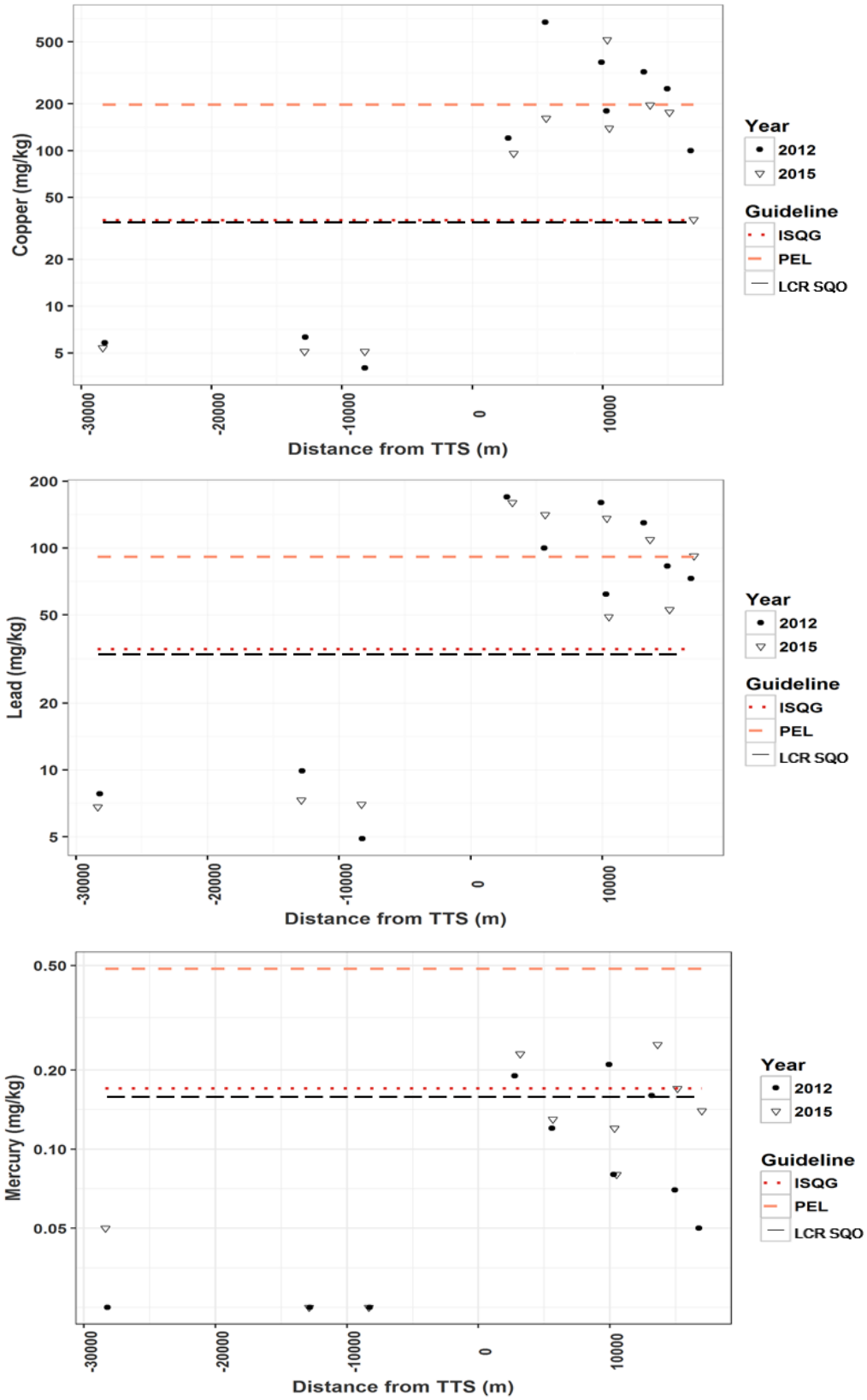

Figure 4-23: Distribution of copper, lead and mercury concentrations in depositional sediments with distance from the smelter.

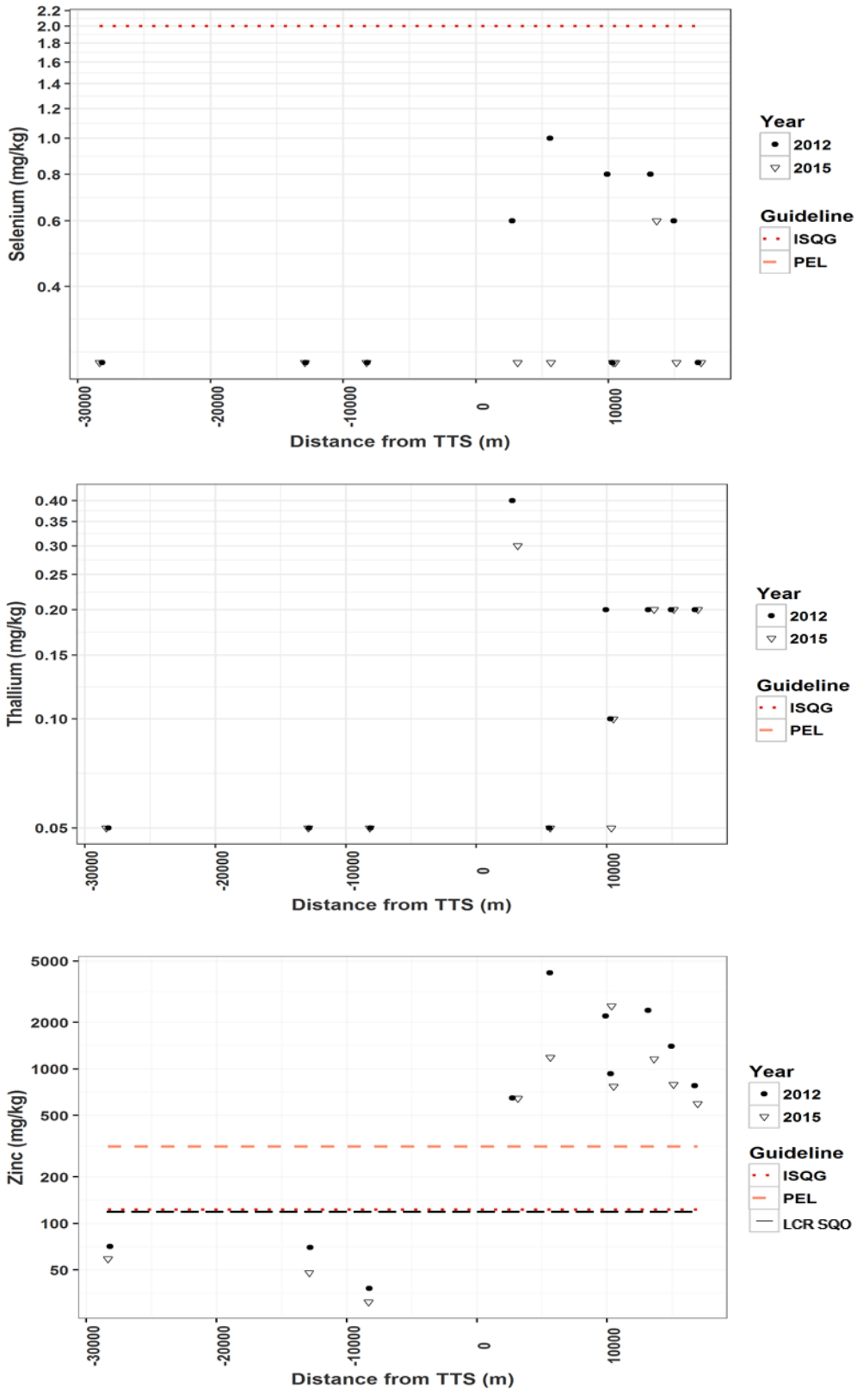

Figure 4-24: Distribution of selenium, thallium and zinc concentrations in depositional sediments with distance from the smelter.

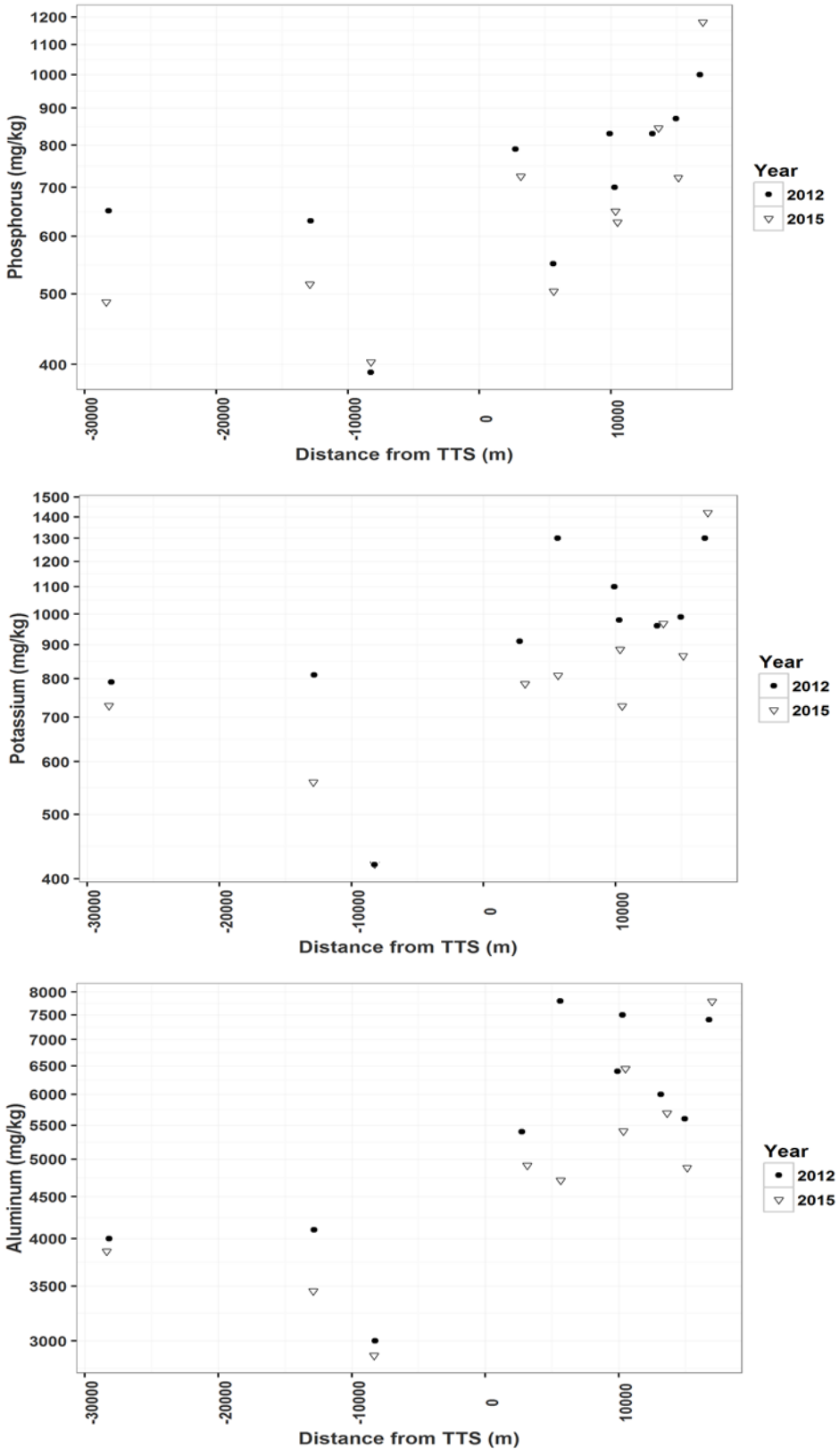

Figure 4-25: Distribution of phosphorus, potassium and aluminum concentrations in depositional sediments with distance from the smelter.

The distance from the smelter was a factor but distance had a non-linear relationship to sediment metal distribution for: arsenic, cadmium, chromium, copper, lead, and zinc, but not aluminum (Figure 4-22 - Figure 4-24). Lead was the only sediment metal in 2015 that consistently decreased with distance from smelter. Arsenic, zinc, and copper behaved similarly, increasing from Korpac (DEP-EXP-1) to Casino (DEP-EXP-3), followed by a decrease of sediment concentrations downstream of Casino. Both Casino Eddy and Trimac are well protected backwater areas and they had elevated sediment metals, while Airport Bar (DEP-EXP-4) did not. In Casino Eddy samples, elevated antimony, arsenic, copper, iron, manganese, silver, tin, and zinc were observed.

Mercury and thallium both decreased as distance of smelter increased until Casino Eddy (DEP-EXP-3). At the Trimac site (DEP-EXP-5) there was a spike in sediment metal concentrations of mercury, selenium, thallium, and chromium. Of the metals that had elevated sediment concentrations at downstream sites, all but chromium are currently associated with smelter effluents (Golder 2003; Intrinsik et al. 2011).

The exposure depositional sites demonstrated sediment metal concentrations above reference site concentrations (Figure 4-22-Figure 4-24). At every exposure site, the number of metals exceeding, and the magnitude of that exceedance dropped from 2003 to 2012 and from 2012 to 2015 (Figure 4-26). Maglios sediments had 8 metals exceeding, of which zinc was prominent (Table 4-11). The non-linear pattern of sediment exceedances as distance from the smelter increases, suggests there are site-specific effects and other metal inputs which may include naturally occurring metal concentrations, historical mining and milling, municipal effluent and stormwater.

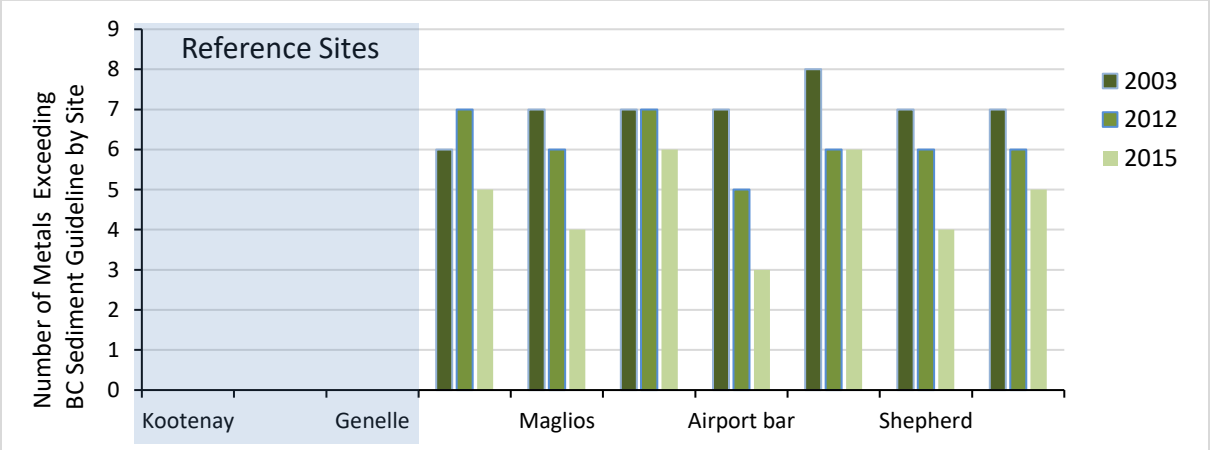

Figure 4-26: Number of sediment metal BC guideline exceedances at depositional sites in the LCR area of interest: 2003, 2012 and 2015.

Metal concentrations continued their observed decline in the 2003 to 2015 data, both in terms of concentration and guideline exceedances. Of the metals of interest in depositional sediment samples from all sample sites, 45 metal concentrations decreased by more than 20% and only 18 increased when 2012 and 2015 are compared (Table 4-11). Sediment metals at the Casino site are not following the same trends as the other depositional sites, with increased sediment arsenic, copper, chromium, silver and zinc, while all other sites had decreased concentrations of these metals. The depositional sites flanking Casino had opposing metal patterns. These results suggest that this site is affected by elevated metals sediments from Casino Creek and likely exacerbated by recreational vehicle disturbance (Reyes et al, 2004).

Metals that exceeded BC/CCME or LCR sediment guidelines in 2003 and 2012 but not in 2015 include:

- arsenic at Maglios, Airport Bar, Fort Shepherd, Waneta
- silver at Korpac, Airport Bar, Waneta
- cadmium at Casino, Fort Shepherd
- chromium and lead at Maglios

The depositional sediment metals that exceeded the possible effects levels (PEL) in 2003 data included Zn, Pb, Cu, As, Hg, and Cd (Table 4-11). In 2012 data, the list of metals exceeding PEL concentrations was limited to Zn, Pb, Cu, and As. In the 2015 data, the list was further reduced to Zn, Pb and Cu. The Casino site had the most PEL exceedances, and these may be influenced by possible reduced scour and sediment redeposition than other sites, inflows from Casino Creek, and the Trail WWTP plume (Schedule A – Mapsheet 7). Casino Creek is named after Big Casino Mine, which was established in 1910. By 1929, a saw mill was also fully operational. These two industries likely contributed to elevated metals found in river sediments, especially in a mineralized watershed such as the Columbia River drainage (Reyes et al, 2004).

The ecological importance of these exceedances is small relative to the context of the entire AOI (Golder 2007), where the area of depositional habitat in the AOI is only about 0.1%. In spite of Casino having the most PEL exceedances, the SALE indicated that the risk management objectives were not being met only at Maglios and Waneta sites (Golder 2007).

Table 4-11: Exceedances of BC/CCME sediment quality guidelines (based on maximum observed concentrations) in depositional sediment samples 2003 - 2015 (numbers in grey were not exceedances and are provided for comparison).

Fall 2003			Reference Sites			Exposure Sites						
Metal µg/g	CCME	BC	Kootenay	Genelle	Birch bank	Korpac	Maglios	Casino	Airport Bar	Trimac	Ft Shepherd	Waneta
Arsenic	5.9	5.7				**10**	**20**	**17**	**8.3**	**7.2**	**20**	**6**
Cadmium	0.6	0.6	0.6			**1.8**	**2.2**	**1.2**	**0.83**	**3.2**	**1.07**	**0.71**
Chromium	37.3	36.4					**56**					**80**
Copper	35.7	35.1				**415**	**1156**	**466**	**338**	**174**	**506**	**1685**
Lead	35	33.4				**173**	**335**	**142**	**122**	**150**	**193**	**126**
Mercury	0.17	0.16						**0.3**	**0.19**	**0.34**	**0.17**	
Nickel	n/a	16								**18**		
Silver	n/a	0.5				**108**	**5.2**	**10**	**1.8**	**1.5**	**3.4**	**1.2**
Zinc	123	120				**2455**	**7746**	**2276**	**1638**	**1067**	**3307**	**17925**

Fall 2012			Reference Sites			Exposure Sites						
Metal µg/g	CCME	BC	Kootenay	Genelle	Birch bank	Korpac	Maglios	Casino	Airport Bar	Trimac	Ft Shepherd	Waneta
Arsenic	5.9	5.7	0.8	1.1	0.6	**7.1**	**14**	**11**	**7**	**9.6**	**5.9**	4.9
Cadmium	0.6	0.6	0.23	0.3	0.09	**1.7**	0.5	**1.1**	0.6	**1.1**	**0.71**	**1.2**
Chromium	37.3	36.4	18	15	15	19	**39**	31	24	30	25	34
Copper	35.7	35.1	5.8	6.3	4	**120**	**670**	**370**	**180**	**320**	**250**	**100**
Lead	35	33.4	7.8	9.9	4.9	**170**	**100**	**160**	**62**	**130**	**83**	**73**
Mercury	0.17	0.16	<0.05	<0.05	<0.05	**0.19**	0.12	**0.21**	0.08	0.16	0.07	0.05
Nickel	n/a	16	9.1	9.7	6.1	10	10	14	12	10	11	**18**
Silver	n/a	0.5	<0.2	<0.2	<0.2	**0.6**	**5.7**	**2.6**	**0.8**	**2.1**	**1.4**	**0.9**
Zinc	123	120	71	70	38	**650**	**4200**	**2200**	**930**	**2400**	**1400**	**780**

Fall 2015			Reference Sites			Exposure Sites						
Metal µg/g	CCME	BC	Kootenay	Genelle	Birch bank	Korpac	Maglios	Casino	Airport Bar	Trimac	Ft Shepherd	Waneta
Arsenic	5.9	5.7	0.9	1	0.8	6	5.5	**14.1**	5.2	**5.9**	4.1	3.6
Cadmium	0.6	0.6	0.19	0.17	0.11	**1.39**	0.54	0.57	0.46	**1.12**	0.52	**2.81**
Chromium	37.3	36.4	11.9	10	15.6	20.8	19.1	**36.6**	22.5	26.3	20.7	31.2
Copper	35.7	35.1	5.4	5.1	5.1	**95.9**	**161**	**514**	**139**	**196**	**176**	**36**
Lead	35	33.4	6.8	7.3	7	**160**	**141**	**136**	**48.9**	**109**	**52.8**	**91.9**
Mercury	0.17	0.16	0.05	<0.05	<0.05	**0.23**	0.13	0.12	0.08	**0.25**	**0.17**	0.14
Nickel	n/a	16	7.9	7.3	6.4	10.5	8.4	10.2	10.1	11.6	9.8	**18.3**
Silver	n/a	0.5	<0.2	<0.2	<0.2	0.5	**0.6**	**3.6**	0.4	**0.9**	**1.1**	0.5
Zinc	123	120	59	48	31	**645**	**1190**	**2550**	**770**	**1160**	**793**	**594**

More historic sediment data were available for Waneta Eddy, the largest depositional area downstream of the smelter within the LCR, than for the other depositional sites (Figure 4-27). Guidelines are based on individual samples and therefore maxima are shown here to provide a worst-case analysis. The four metals of main interest showed correlated fluctuations with declining trends after 2003. Sediment concentrations of copper, lead, and zinc at Waneta are now approaching guideline values (Figure 4-27) and as of 2015, sediment arsenic no longer exceeded the BC or CCME guidelines.

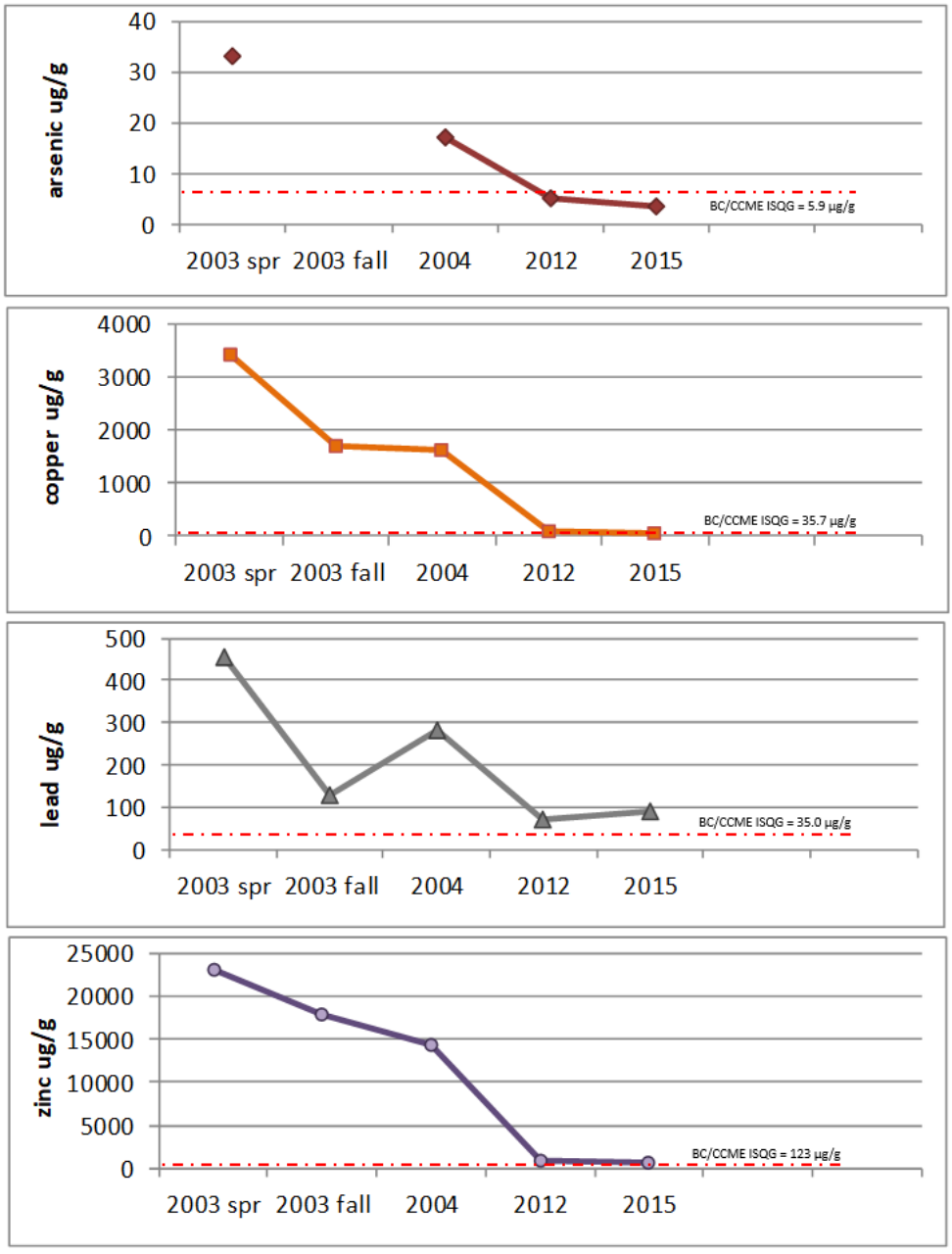

Figure 4-27: Maximum observed concentrations at the Waneta Eddy for depositional sediment metals of interest from 2003 to 2015, compared to BC guidelines.

Sediment Nutrients

Most sediment nutrients including phosphorus, ammonia and potassium were elevated downstream of Trail, and may contribute to the increased periphyton growth. This is a common occurrence in rivers receiving urban stormwater. Gradually diminishing inputs to groundwater from historic fertilizer manufacturing is another probable nutrient source. No nuisance algae growths were detected at the depositional sites in 2015; thus, the elevated nutrients were not problematic.

Summation

Depositional sediment quality in the 2015 samples showed lower concentrations of metals of interest than samples collected in the preceding years. Sediment metals that exceeded guideline PEL concentrations in 2015 were limited to Zn, Pb, and Cu.

4.3 Periphyton

4.3.1 Erosional Habitat Periphyton

Primary objectives of the erosional periphyton sampling components are to assess the effects of the effluent discharge on erosional periphyton communities in terms of community structure, composition, and standing crop biomass, and to detect any trends over time in these metrics.

Erosional cobble substrates account for approximately 1517 ha or 98% of the total area of the LCR between HLK Dam and the Canada - US border. This reflects the erosional nature of the Columbia River in this area and highlights the importance of erosional habitats to the LCR. The years when periphyton studies were conducted in the LCR area of interest are 1995, 1999, 2003, 2010, 2012 and 2015.

Periphytic algal are the main primary producers in freshwater environments. Periphyton biofilms in erosional LCR habitats are complex, layered assemblages of autotrophs (e.g., algae, photosynthetic bacteria) and heterotrophs (e.g., bacteria, fungi, yeasts, protozoa), all embedded in a protective polymeric matrix (Wetzel 1993, Decho 1990, Drenner *et al.* 1993, Sobczack 1996). This biofilm supplies a large portion of the energy to higher trophic levels in the LCR. Diatoms commonly constitute the dominant group of algae in river biofilms, as they did in every study of the LCR including this one.

Biomonitoring is a useful tool for assessing aquatic ecosystem health, complementing physical and chemical analyses (Morin et al, 2008). Periphytic algae are very sensitive to systemic modifications in water quality and hydrologic regime (Fernandes and Esteves 2003). After a high-flow period such as freshet, bacteria and small closely attached diatoms are among the rapid, early colonizers, while slower growing filamentous green algae are among the later arrivals. Diatoms arriving from upstream reservoirs that become entrapped on the biofilm are important to the LCR periphyton (Larratt et al. 2013).

When the summary data from the 2012 and the 2015 investigations are compared to other large rivers including the LCR above the area of interest, most metrics place the AOI in the oligotrophic to typical large river category, with small differences between years and between the AOI and upstream LCR Reach 2 (Table 4-12). This summary data overview did not detect an influence from the smelter on LCR erosional periphyton.

Table 4-12: Summary of typical range of LCR periphyton metrics from 2015, with comparison to oligotrophic, typical, and productive large rivers and upstream Reach 2 LCR.

Metric	Oligo-trophic or stressed	Typical large rivers	Eutrophic or productive	LCR-upstream Reach 2 *	Exposure Erosional AOI of LCR 2012	Exposure Erosional AOI of LCR 2015
Number of taxa (live & dead)	<20 – 40	25 - 60	Variable	8 – 60	23 – 48	22 – 44
Chlorophyll-a µg/cm^2	<2	2 – 5 (7)	>7 – 10 (30+)	0.04 – 15.3	0.37 – 3.50	0.23 – 0.99
Algae density cells/cm^2	<0.2 x10^6	1 - 4 x10^6	>10 x10^6	0.03 – 3.9 x10^6	0.05 – 0.73x10^6	0.05 – 0.29x10^6
Algae biovolume cm^3/m^2	<0.5	0.5 – 5	20 - 80	0.1 – 25	0.15 – 0.93	0.18 – 1.46
Diatom density frustules/cm^2	<0.15 x10^6	1 - 2 x10^6	>20 x10^6	0.4 – 2.3 x10^6	0.07 – 0.28 x10^6	0.04 – 0.55 x10^6
Biomass – AFDW mg/cm^2	<0.5	0.5 - 2	>3	0.35 – 7.1	Not sampled	Not sampled
Biomass – dry wt mg/cm^2	<1	1 – 5	>10	3.1	Not sampled	Not sampled
Bacteria sed. HTPC CFU/cm^2	<4 -10 x10^6	0.4 – 50 ×10^6	>50×10^6 – >10^{10}	1.5 - >5 x 10^6	0.36 – >2 x 10^6	Not re-sampled
Fungal count CFU/cm^2	<50	50 – 200	>200	8 - 1830	<200 – 1000	Not re-sampled

Comparison data obtained from Flinders and Hart 2009; Biggs 1996; Peterson and Porter 2000; Freese et al. 2006; Durr and Thomason 2009; Romani 2009; Biggs and Close 2006. Dodds et al, 1998

*Artificial substrate samples, tends to inflate growth metrics compared to natural substrates

4.3.2 Dominant Erosional Taxa

Diatoms were the dominant algae class in all studies of the AOI, as is typical of large rivers (Table 4-12). In most of this work, the small diatom *Achnanthidium minutissima* was dominant numerically at erosional sites. However, when the dominant taxa are ranked by their biovolume contributions to standing crop, a variety of dominant diatoms emerge (Table 4-13). Timing of sampling with respect to flow events likely accounts for much of the observed dominant species variation between years of study as it does throughout the LCR (Olson-Russello et al. 2014).

In 2015, periphyton samples from erosional reference sites had 8 diatom dominants and 2 dominant filamentous green taxa, while those from erosional exposure sites had 9 diatom dominants, and 1 dominant filamentous green taxa. Of these, 6 taxa were dominants in both reference and exposure sites. Unique dominants occurring only at the exposure sites included the genera

Navicula and Nitzschia, known to have metal pollution tolerance (Morin et al, 2008), however these taxa were also prevalent in the reference sites.

Diatom frustule abnormalities were extremely rare (<1 in 500) in the 2012 and 2015 results and were evenly distributed between the reference and exposure sites. Sites with heavy loads of metal pollution are known to have abnormality levels of more than 3.5 to >10% (Guasch et al 2012), while no sample exceeded 0.2% in the LCR AOI.

4.3.3 Erosional Species Richness

The periphyton community metrics of species richness and Simpson Index showed little difference between reference and exposure areas in 2015 data. Like 2012, there was no significant difference between species richness in erosional areas between reference (29 ± 4 taxa) and exposure sites (31±7 taxa) in the 2015 samples (Table 4-14, Figure 4-28 and Figure 4-29). Like species richness, there was no significant change in the Simpsons Index between exposure and reference sites in the 2015 data ($F=1.48$, $p=0.22$) (Table 4-14).

Despite these overall community similarities, in pair-wise comparison ERO-EXP-4 had significantly lower species richness, especially among the diatoms, when compared to sites ERO-EXP-1, ERO-EXP-2, and ERO-EXP-3 ($p<0.001$), and to ERO-REF-1 ($p=0.04$).

We measured 23 to 44 taxa per site while earlier studies measured between 63 and 84 taxa per site (Golder 2003, 2007). Improved effluent management throughout the LCR may have lowered phosphorus levels sufficiently to gradually lower species richness over time toward a natural, background range. These findings are important because reduced periphyton species richness is universally found at sites with metal effluent impacts (Guasch et al. 2012; Morin et al. 2008). All erosional sites had more diatoms and fewer filamentous algae in 2015 compared to 2012, with the biggest differences in diversity at the near-field sites, which became closer to typical LCR sites (Table 4-13). Overall, the density of filamentous green algae was far higher at erosional sites than at depositional sites (Table 4-13, Table 4-14, Table 4-15), likely in response to elevated nutrients, water velocity, and substrate type. This is supported by previous ecological studies that show water velocity, substrate type, and nutrient concentrations affect algae growth (Larratt et al. 2013).

4.3.4 Erosional Productivity Metrics

Most samples from the LCR AOI were in the oligotrophic category for periphyton growth in 2003 chl-a results (Golder, 2007b). Similarly, only four chlorophyll-a samples reached the mesotrophic 2 – 5 $\mu g/cm^2$ chl-a range in the

near field during 2012, while in 2015 all chl-a results indicated oligotrophic conditions, and none reached the mesotrophic range (Table 4-14). The fall 2015 erosional periphyton chlorophyll-a data averaged 0.71 ± 0.2 μg/cm^2 at the two reference sites and was unchanged at the 5 exposure sites (Table 4-14).

Mirroring the chl-a results, periphyton abundance continued its decline since 2003 to average (1.36 ± 0.9) ×10^5 cells/cm^2 at reference sites and (1.76 ± 1.5) ×10^5 cells/cm^2 at exposure sites in the 2015 data. This decline in periphyton abundance has been most dramatic at the exposure sites and is approaching standing crop estimates typical for LCR (Table 4-14). Like the other 2015 periphyton metrics, biovolumes from erosional sites did not show any significant difference between reference and exposure sites (Figure 4-28 and Figure 4-29), although there was wider variability in the exposure site 2015 data than in the 2012 data. In fact, all periphyton production metrics showed higher variability in 2015 than in 2012 throughout the data set (Figure 4-28). All productivity metrics were significantly different across 2015 erosional sites: total abundance ($F=3.39$, $p=0.012$), total biovolume ($F=2.81$, $p=0.03$), and chl-a ($F=5.10$, $p=0.001$). This was driven by the unusually low productivity at ERO-EXP-4 (Kor-Mag) (Figure 4-29), with significant differences between adjacent sites. This important effect detected by the periphyton data, was likely induced by local nutrient additions and is not attributable to the smelter as these sites are further downstream of the smelter where the effluent plume is more diffused/diluted. It is more likely that this variability is driven by other nutrient inputs such as tributaries. For example, Ryan Creek located about 2.2 km downstream of the smelter had historic mining in its headwaters. This historic activity is speculated to be the cause of observed exceedances of criteria in both surface water and sediment in Ryan Creek (Golder 2006).

While there was substantial variation among exposure sites, no spatial gradients in abundance data emerged within the near and far-field sites or between the exposure and reference sites attributable to smelter operations (Table 4-14). Similarly, in all three years of study, there were no strong spatial gradients in chl-a with distance upstream or downstream of the smelter attributable to smelter operations (Figure 4-28). Seasonal and year-to-year variations were a driver of the variation among sites in the 2003, 2012 and 2015 chl-a data sets.

Sites with important differences between 2012 and 2015 erosional periphyton include these sites that have been identified as impacted in earlier work (Golder 2010) ERO-EXP-1, ERO-EXP-2 in the near-field and ERO-EXP-4 in the far field where the plume travels (Figure 4-29). Samples collected at ERO-EXP-1 adjacent to Stoney Creek showed high green filamentous production in the 1990's before the fertilizer plant was remediated, and since remediation, filamentous populations have progressively declining through to the present. This is an encouraging development.

At the ERO-EXP-2, periphyton community metrics were either low (Golder 2003) or high (Hawes et al. 2014). Groundwater discharges from the smelter site have elevated temperature and nutrients including ammonia and sulphate (Golder 2010). Periphyton productivity in this near field area is also influenced by greater water velocities and is situated immediately downstream of the CIII outfall. These conditions can be stimulatory for many algae taxa including cyanobacteria. Cyanobacteria are also known for their metal tolerance (Fiore and Trevors, 1994). ERO-EXP-2 samples had more cyanobacteria in 2012, but were typical of the upstream LCR in 2015. These near-field taxonomic results confirm the 2015 productivity metrics, suggesting that the influence of the smelter on the AOI is diminishing as reclamation proceeds.

In previous studies, the Old Bridge site (ERO-EXP-3) was distinctive with more Chrysophytes (golden algae) and higher green algae densities (Golder 2003), which often indicates organic or nutrient enrichment (Felisberto, et al. 2011; Wetzel 2001). In 2012 and 2015 results, these algae were no longer prevalent, possibly indicating changes in Trail Creek water quality.

Far field site ERO-EXP-4 showed low productivity in 2012 and very low productivity in 2015 (Figure 4-29). For example, 2015 samples showed very low diatom densities and diversity with only moderate populations of *Gomphonema* and *Botryococcus.* In addition to the dilute effluent plume, there are other important influences acting on this site including lower velocities over more embedded substrates with more fines, and Ryan Creek inflows. Since productivity metrics are consistently higher above and below this site, smelter impact is not the primary cause of the low productivity observed at this site.

Over the course of these studies, productivity metrics within the IDZ and near-field have been trending toward more typical LCR levels. As the data accrues, this trend will clarify. It must be remembered that periphyton systems are influenced by a wide number of factors and apparent changes may reflect timing of sampling relative to the time elapsed since the last major flow event or simply large annual variations which have been observed on the LCR (Larratt et al., 2013). Since the enhanced productivity in the near field is declining as reclamation proceeds, and since the enhanced near-field productivity does not approach nuisance proportions but is a benefit to benthic invertebrates, it is not harmful from a periphyton perspective, only different.

4.3.5 Indicator Taxa at Erosional Sites

Attempts to find periphyton species whose distributions were correlated to metals of interest in the AOI and could serve as indicator taxa were largely

unsuccessful and contradictory (G3 1999, Golder 2003, Golder 2007), due to other more important driving forces on periphyton, including overall river flows, localized water velocities, irradiance, nutrient concentrations and benthic invertebrate grazing pressure. Many results are conflicting in the literature as well (Medley and Clements 1998, Soldo and Behra 2000, Guasch et al 2012). Instead of looking within the diatoms for indicators of metal exposure, it is better to analyze the overall community structure and the distribution of the main algae classes in LCR samples (Morin et al. 2008). Using this approach, no indication of a spatial trend in the periphyton community structure with distance downstream of the smelter in either the 2003 (Golder) or the 2012 and 2015 data were detected using NMDS. Instead of adverse impacts, we found the highest periphyton density and diversity occurred at the near-field sites in the 2012 and in the 2015 samples. Both recent years are in direct opposition to the 2003 findings that indicated lower periphyton growth metrics in the near field.

Periphyton tissue metal samples were collected from filamentous green algae from right-bank and left-bank erosional sites in 2015. The range of cell wall structure among periphyton taxa provides adsorption sites for many metal ions – a natural process important to metal attenuation in all lakes and rivers (Sulaymon et al. 2013; Wetzel 2001). Unlike water samples that represent one point in time, periphyton tissue metals from erosional cobble substrates represent metals adsorbed from the water over the 2-4 week life span of the cell. Algae are known to adsorb all the metals of interest to this study (Kaplan, 2013; Dipak et al. 1993; Mehta and Gaur, 2008). However, bioavailability differs among metals. Humic substances can have an increased effect on the reduction of the uptake for Cu, Cr, Co, and Cd (Vymazal 1984). The rates of metal uptake by periphyton depend on cell wall and cell membrane type, cell condition, as well as the extracellular conditions such as metal concentration and pH of the environment. Continuous uptake for Ni, Cr, and Fe has been shown, while uptake of Cu, Pd, Cd, and Co occurs rapidly with initial exposure with only slight uptake thereafter (Vymazal 1984).

Periphyton tissue concentrations suggest there are several sources of metals that include the smelter. Elevated periphyton tissue concentrations were observed at far field sites, which suggest an additional source of metals. There were 6% of mercury samples, 29% of silver samples, and 3% thallium samples that were below the limit of detection. The concentrations of silver and mercury could not be compared using a mixed effects model because of the large number of non-detectable samples and the small amount of variability in reference sites. The periphyton tissue concentrations of As, Cd, Cu, Cr, Pb and Tl were not significantly different between reference and exposure sites ($p<0.05$). For these five metals site explained 4%-36% of the variation of these metal concentrations. The effect of treatment on the concentrations of zinc were tested with a one-way ANOVA because site explained 0% of the variation

in the concentrations of zinc. Zinc concentrations were not significantly different between reference and exposure sites (F=1.5, 0.227).

The concentrations of copper and silver in periphyton tissue along with the periphyton metrics suggest that these two metals are not exerting an algicidal effect. Periphyton tissue metal concentrations of copper and silver were highly variable within sites and there was no linear trend associated with the periphyton productivity metrics (biovolume, chl-a, and abundance) and periphyton tissue metals.

Unlike 2012, 2015 samples showed two unique non-algae components of the biofilm. First, black particulates were noted in ERO-EXP 2-3, 2-4 and 2-5, as well as ERO-EXP 3-1 and 3-4. Freshwater sponge spicules were noted in ERO-EXP 1-4, 2-5, 5-2, and DEP-EXP-4. They inhabit a wide range of aquatic habitats, usually preferring habitats with low suspended silt since they are filter-feeders.

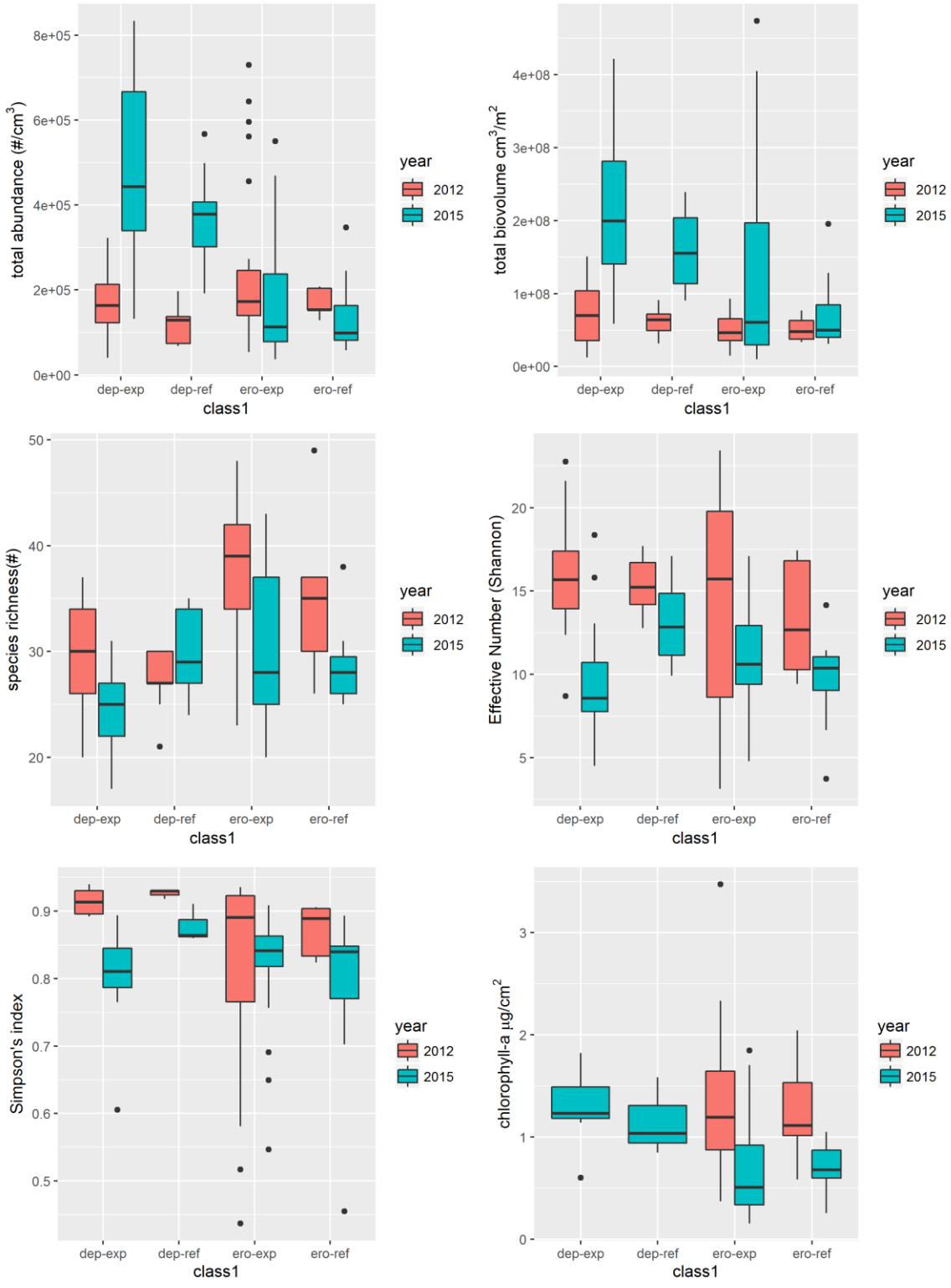

Figure 4-28: Boxplots of five metrics of 2012 and 2015 periphyton community productivity and diversity in depositional and erosional sites above and below smelter outflow (reference versus exposure respectively). Dep = depositional Ero = erosional Exp = exposure Ref = reference.

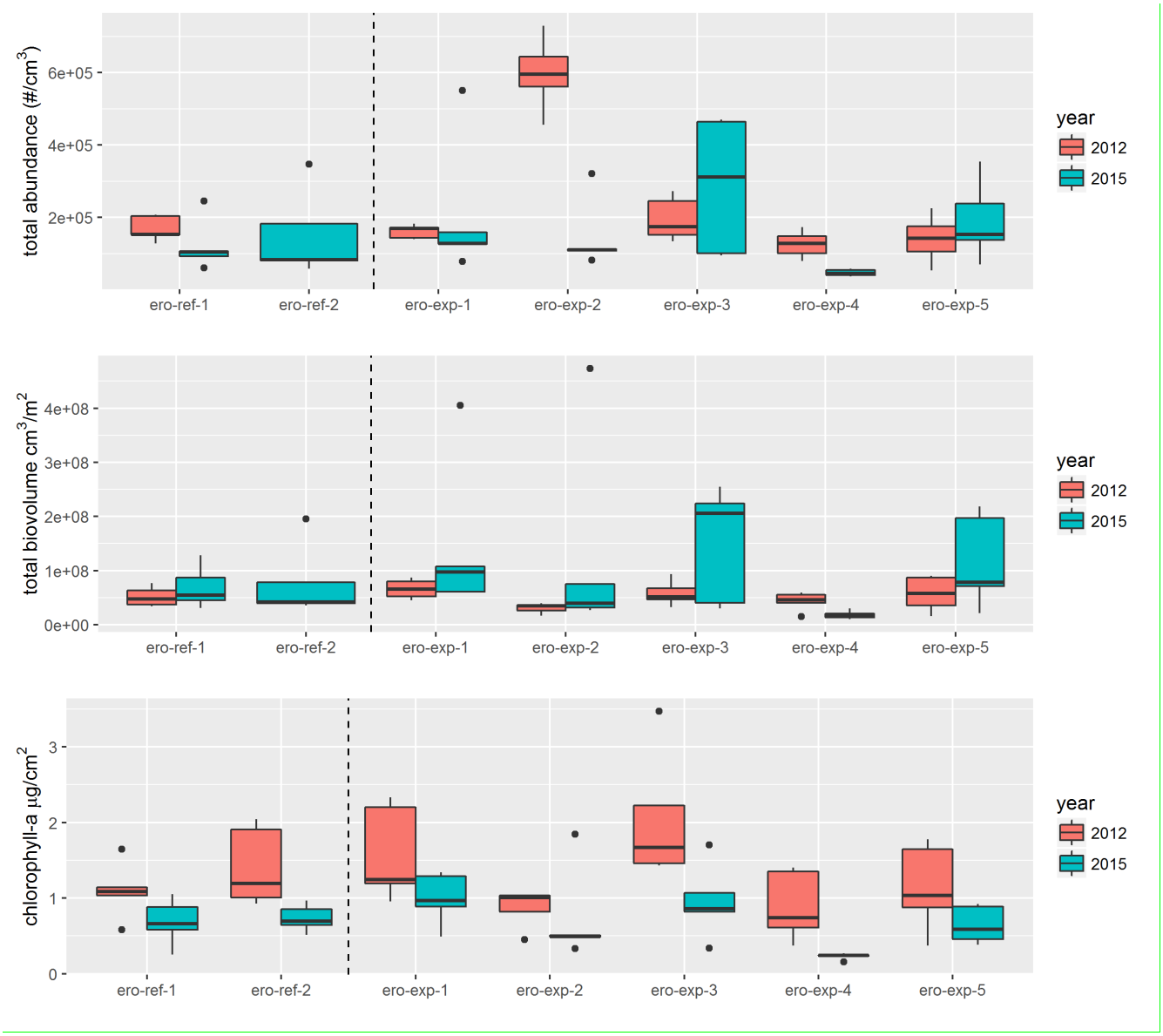

Figure 4-29: Boxplots of three metrics of 2012 and 2015 periphyton community productivity in erosional sites. Dep = depositional Ero = erosional Exp = exposure Ref = reference.

Table 4-13: Percent contribution of the major algae groups to periphyton biovolume by erosional sample site, 2015.

	Biovolume – Percent						
	Reference Sites		Exposure Sites				
	Ero Ref 1	Ero Ref 2	Ero Exp 1	Ero Exp 2	Ero Exp 3	Ero Exp 4	Ero Exp 5
2015 Algae Type	Birchbank	u/s Stoney	CIV-Stoney	CIII	CIII-Korpac	Kor-Mag	Mag-Wan
Diatoms	73.7	85.5	85.5	93.0	86.9	91.1	91.2
Green Algae	24.4	13.9	13.7	6.7	12.7	7.32	8.52
Flagellates	0.35	0.48	0.16	0.24	0.36	0.90	0.15
Blue-green Algae	0.06	0.17	0.6	0.07	0.03	0.53	0.16
Dinoflagellates	0.0	0.0	0.0	0.0	0.03	0.0	0.0
Red	1.44	0.0	0.0	0.0	0.0	0.0	0.0

Table 4-14: Periphyton growth metrics by erosional sample site, 2015.

		Near Field			Far Field		Reference	
Erosional Periphyton	Statistic	CIV/Stoney Exp-1	CIII Exp-2	CII - Kor Exp-3	Kor - Mag Exp-4	Mag - Wan Exp-5	LB opp. CIV Ref-1	Birchbank Ref-2
Abundance (cells /cm^3 × 10^5)	Mean (± SD)	2.08 ± 1.9	1.54 ± 0.98	2.88 ± 1.8	0.47 ± 0.09	1.9 ± 1.1	1.22 ± 0.71	1.50 ± 1.20
	Median	1.23	1.10	3.11	0.45	1.53	1.04	0.83
	Minimum	0.78	0.80	0.95	0.36	0.70	0.61	0.58
	Maximum	5.50	3.21	4.69	0.58	3.54	2.45	3.47
Species Richness (# taxa)	Mean (± SD)	36.8 ± 7.4	32.6 ± 4.88	32.2 ± 4.02	22.2 ± 1.9	29.2 ± 4.76	30.2 ± 4.71	27 ± 2.0
	Median	39	34	34	22	28	28	26
	Minimum	24	27	28	20	24	26	25
	Maximum	43	38	37	25	37	38	30
Bio Volume (cm^3/m^2)	Mean (± SD)	1.46 ± 1.46	1.29 ± 0.1.9	1.51 ± 1.1	0.18 ± 0.07	1.17 ± 0.86	0.69 ± 0.39	0.78 ± 0.68
	Median	0.97	0.39	2.06	0.17	0.78	0.54	0.42
	Minimum	0.59	0.27	0.30	0.098	0.21	0.31	0.36
	Maximum	4.05	4.74	2.55	0.30	2.18	1.28	1.95
Simpson's Index	Mean (± SD)	0.86 ± 0.07	0.84 ± 0.03	0.80 ± 0.07	0.85 ± 0.02	0.75 ± 0.14	0.84 ± 0.05	0.73 ± 0.16
	Median	0.90	0.84	0.83	0.86	0.83	0.85	0.82
	Minimum	0.76	0.79	0.69	0.82	0.55	0.75	0.45
	Maximum	0.91	0.87	0.88	0.89	0.86	0.89	0.85
Chlorophyll-a (ug/cm^2)	Mean (± SD)	0.99 ± 0.34	0.73 ± 0.63	0.96 ± 0.50	0.23 ± 0.04	0.65 ± 0.25	0.68 ± 0.30	0.73 ± 0.18
	Median	28	0.49	0.86	0.24	0.59	0.66	0.70
	Minimum	24	0.33	0.33	0.15	0.38	0.25	0.51
	Maximum	37	1.85	1.70	0.27	0.92	1.05	0.97

Kor = Korpac Mag = Maglios Wan = Waneta

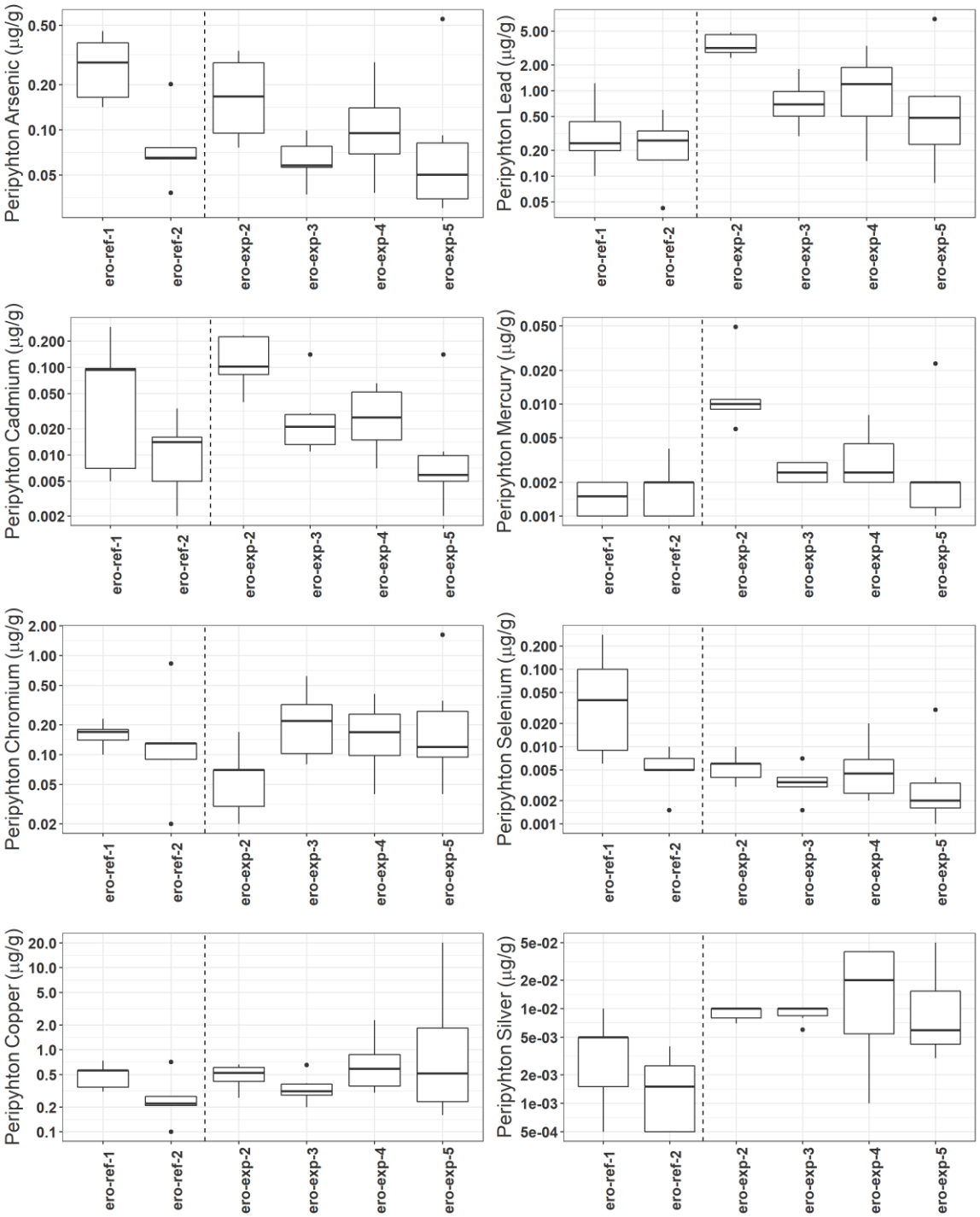

Figure 4-30: Periphyton tissue metals at erosional sites, 2015. Vertical dashed line separates reference from exposure sites.

4.3.6 Erosional Statistical Community Analysis

NMDS

Statistical community analyses confirmed that there were no major differences between erosional sites upstream and downstream of the smelter. These analyses were completed at the genus level and excluded rare (occurred in <5% of samples) taxa that can bias the analyses (Guasch et al., 2012). NMDS analysis of the 2012 and 2015 indicated that the most important factor determining periphyton community was the year sampled ($F=9.64$, $R^2=0.13$, $p<0.001$) (Figure 4-31). Significant differences between years have been identified throughout the LCR and MCR, and are caused by annual variations in weather, flow patterns water temperature, etc. The difference between periphyton communities from reference and exposure sites was significant, but explained only 4% of the periphyton community variation ($F=2.39$, $R^2=0.04$, $p = 0.02$; Figure 4-31).

The taxa that were primarily responsible for causing differences between years in erosional periphyton communities, include the cyanobacteria *Synechocystis,* as well as the green alga *Aphanothece spp*. were higher in 2012, while the green alga *Botryococcus spp.* and the golden alga *Dinobryon spp.* was prevalent in 2015.

The taxa that were primarily responsible for separating the erosional sites from the depositional sites were the prevalence of metal-tolerant diatoms *Nitzschia spp.*, *Fragilaria spp.*, and *Cymbella spp*. at depositional sites. The diversity of metal-tolerant taxa is indicative of moderate concentrations of metals. The depositional sediment metals are not present in concentrations that are known to adversely affect periphyton communities (Hawes et al. 2014; Medley and Clements, 1998). At the erosional sites, the occurrence of the green algae *Botryococcus spp.*, the cyanobacteria *Calothrix spp.*, and the diatom *Gomphonema spp.* also separated depositional sites from erosional periphyton.

The differences in taxa responsible for separating reference and exposure were too small to allow determination of key taxa.

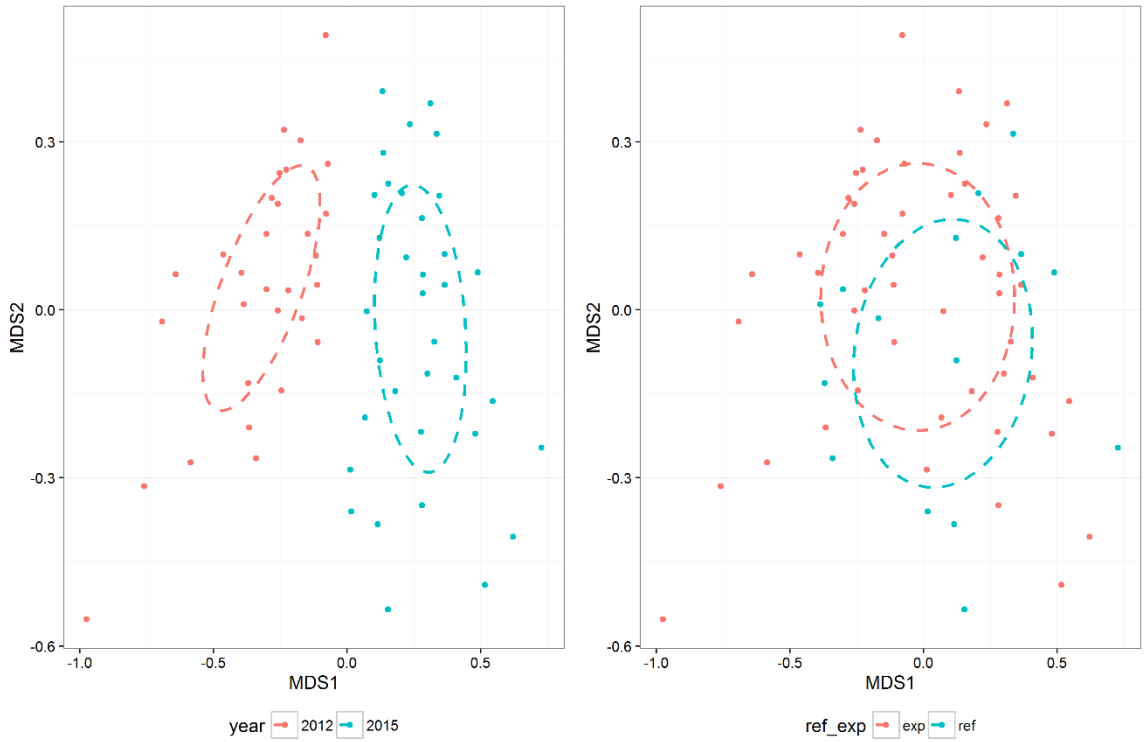

Figure 4-31: NMDS of periphyton biovolume at the genus level grouped by year (left panel), and grouped by exposure (EXP) sites in red and reference (REF) sites in blue (right panel). The stress value was 0.22.

The NMDS showed overall periphyton community structure in 2015 had more diatoms and fewer cyanobacteria than in 2012. The models showed that abundance, chl-a, and species richness were higher in 2012 (chiefly ERO-EXP-2) while 2015 had higher biovolume (chiefly ERO-EXP-1-5 and ERO-EXP-2-1). These 2015 samples had very high densities and diversities of diatoms, notably large varieties of *Synedra ulna* and *Didymo.*

Model Averaging

Model averaging also demonstrated that physical habitat factors, including substrate size (D90) was important in predicting chl-a, and effective number of species (Figure 4-32). The positive relationship between substrate size and chl-a and effective number of species occurs because large substrates have large, stable surfaces available for periphyton growth.

The effect of treatment (reference/exposure) were included in the periphyton community and productivity models to test if the effluent discharge influenced periphyton community composition and productivity. Reference/exposure did not explain a significant portion of the variation in periphyton. Earlier research in the LCR area of interest reported adverse effects of metals on periphyton growth within the near-field prior to 2003 (G3 2001, Suter and

Tsao, 1996, Golder 2010). Suter and Tsao (1996) identified chronic effects values were possibly exceeded for Cd Cu Zn, while later reports suggested Pb, Tl and Cu correlated with periphyton growth in the IDZ (Golder 2010). While this may have been the case in the past, 2012 and 2015 periphyton community metrics did not differ significantly between reference and exposure sites, based on results from mixed effects models and model averaging (Figure 4-32), corroborating results from NMDS (Figure 4-31).

Summation

Near-field taxonomic results from 2015 confirm the erosional productivity metrics, suggesting that the influence of the smelter on the AOI is diminishing as reclamation proceeds. Over the course of 2003-2015 periphyton studies, productivity metrics within the IDZ and near-field have been trending lower toward more typical LCR levels.

Periphyton tissue metals analysis in 2015 showed increases within the IDZ for Cr and Hg, while Cu, Pb, Zn, Cd, and Ag showed a small increase over exposure sites below the smelter outfalls. These concentrations declined with increasing distance downstream from the smelter, then increasing again at ERO-EXP 4 indicating other metal sources. Tl and Se were highest at the Birchbank Reference Area.

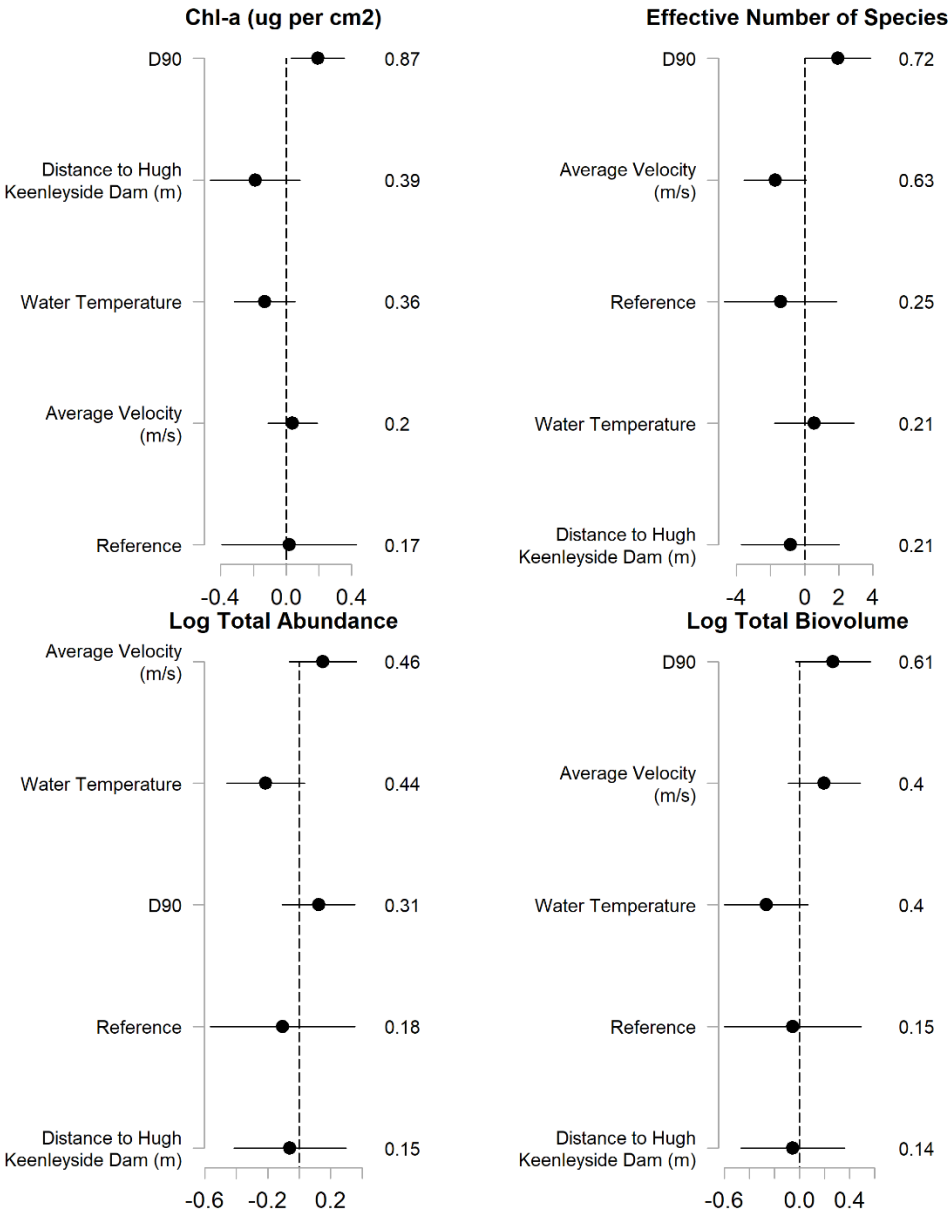

Figure 4-32: Model averaged parameter coefficients and 95% confidence limits from model averaged linear mixed effects models of the effect of treatment (reference or exposure), distance downstream of HLK outflow, average velocity, water temperature, and substrate (D90) on periphyton productivity and diversity in erosional sites in LCR above and below smelter outflow. Coefficients are centered and standardized to allow direct comparisons of the direction and size of effects. Variables with 95% confidence intervals spanning zero are considered of low significance as the direction of their effects are inconsistent among models. Parameter coefficients are sorted by their relative variable importance to the averaged model on a scale of 0 to 1 on the right y-axis of each panel.

4.3.7 Depositional Habitat Periphyton

Primary objectives of the depositional periphyton sampling components are to assess the effects of the effluent discharge on discrete depositional periphyton communities in terms of community structure, composition, and standing crop biomass, and to detect any trends over time. Depositional sediments account for approximately 33 ha or 2% of the total area of the LCR between HLK Dam and the Canada - US border. In the study area, the area of depositional habitat was estimated at 0.1% of the total sediment habitat (Golder 2007a). Despite their small size, the depositional areas are important for their contribution to overall LCR biodiversity.

Depositional periphyton communities are usually distinct from their erosional counterparts (Table 4-16). They are smaller and are driven by unique site characteristics that make them more diverse than the comparatively uniform mainstem erosional habitats. Additionally, depositional sediments retain historic discharges and are therefore slower to demonstrate improved conditions than the erosional habitats are. Most sediment nutrients including phosphorus, ammonia and potassium were progressively elevated downstream of Trail, and may contribute to the increased periphyton growth. This is a common occurrence in rivers receiving urban stormwater and wastewater.

Aqueous metal concentrations continued their observed decline in the 2003 to 2015 data, both in terms of concentration and guideline exceedances. Depositional sediment metals that exceeded guideline PEL concentrations in 2015 were limited to Zn, Pb and Cu. These are the three metals identified in tests of bioavailability that ranked depositional sites with potential toxicity as Maglios > Fort Shepherd > Waneta (Golder, 2007a; 2010). Of these, copper is known to lower densities of some algae. These sites did not show lower periphyton metrics in recent data (Figure 4-34). All algae including diatoms have varying sensitivity to dissolved metals and varying requirements for trace metals as nutrients including the metals Mn, Fe, Co, Ni, Cu, Zn, and Cd (Medley and Clemens 1998).

Growth of periphyton and macrophytes in LCR depositional sites downstream of Trail has decreased dramatically over the past decade (Golder 2007), likely in response to variable flow regimes and possibly declining nutrient concentrations. Nutrient concentrations in LCR water measured in 2012 through 2015 would classify the LCR as oligotrophic (Olson-Russello et al. 2014).

4.3.8 Comparison of Depositional and Erosional Periphyton

Depositional periphyton communities usually generate about half of the erosional periphyton abundance per unit area because unstable sandy

substrate does not allow slow-growing species to develop before substrate disruption (Barbour, 1999, Wetzel, 2001). Further, they are subject to scour during high flows as happened in 2012 throughout the LCR. However, if depositional areas are not scoured and offer macrophytes or other stable growth media, then depositional abundance can exceed that of erosional substrates as happened in 2015 (Table 4-16). Biovolume is similar between the two habitat types because the small, closely attached species so prevalent in high flow situations are absent here. Instead, larger diatoms are prevalent, as well as large diatoms from upstream reservoirs that settle in the calm backwaters and eddies. These factors culminated in significantly greater species richness and diversity in depositional sites versus erosional sites in 2015 samples (Table 4-16Table 4-16). Additionally, the contribution made to the biofilm by algae was small in depositional periphyton, while the contribution made by bacteria and organic debris was much greater than it is in erosional periphyton biofilms (Hawes et al 2014).

4.3.9 Dominant Depositional Taxa

Reservoir taxa such as *Cyclotella* accounted for a significant portion of the 2015 depositional periphyton (Table 4-17), particularly in reference sites that are physically closer to the reservoirs. Depositional reference sites had larger biovolumes of *Didymosphenia geminata* (also called Didymo or rock snot) than the erosional sites in 2012 because most of the Didymo originated from above the Kootenay confluence in that year (Larratt et al. 2013). Conversely, in 2015 samples, Didymo was a dominant taxon at exposure sites and not at reference sites. In both habitat types, there was no evidence of species shifts reflecting effects from the smelter. In 2012 and in 2015, both depositional reference and exposure site periphyton were dominated by a similar community of diatoms and filamentous green algae (Table 4-17).

4.3.10 Depositional Species Richness and Diversity

Species richness and diversity (Simpson's Index) did not differ greatly between the 7 exposure and 3 reference sites in depositional habitats during 2012 or 2015, although species richness generally increased downstream of the smelter in 2012 while the reverse was true in 2015. No statistical test was run to specifically compare the differences in these variables. In the depositional habitats, those with significantly increased productivity in 2015 tended to have lower diversity metrics (Table 4-18).

4.3.11 Depositional Periphyton Productivity

Chlorophyll-a at depositional sites exceeded that of erosional sites in the 2015 data with the reference sites averaging 1.16 ± 0.38 µg/cm^2 and the exposure sites averaging 1.29 ± 0.40 µg/cm^2 (Table 4-16). This trend was also apparent in the abundance and biovolume data. Reference depositional sites had similar

growth metrics, while significant differences in total biovolume (F=3.35, p=0.01) and abundance (F=4.81, p=0.002) occurred in exposure site pairs. For example, the Korpac site had a significantly different biovolume and abundance from Casino, and the abundances of Trimac and Ft. Shepherd were significantly different than Korpac.

Depositional cell density and biovolume were consistently lower than the erosional metrics in the 2012 results that followed two heavy freshet years, but in the 2015 results under more typical flows, depositional periphyton abundance was much higher than at adjacent erosional areas (Figure 4-28). Reference depositional 2015 samples showed a 4-fold increase in productivity metrics over 2012 samples. The change was even greater in the smaller depositional sites such as Casino Bar and Ft Shepherd (Table 4-18; Figure 4-34). Large depositional sites such as downstream Waneta and upstream Genelle eddies had lower periphyton abundance biovolume and species richness in 2012 and in 2015 results than the smaller depositional sites. The large depositional eddies likely have other influences restricting their periphyton production that are unrelated to the smelter such as greater water depth (Table 4-18). The overall productivity and diversity of the exposure Waneta site was slightly higher than that of the reference Genelle site in the 2015 data, again suggesting that an impact from the smelter was not detected.

Depositional periphyton abundance and biovolume showed no consistent gradient from upstream reference to downstream exposure sites in the 2003 work (Golder 2007), the 2012 AREMP or in this study (Figure 4-34). Growth metrics and species richness showed weak positive correlations with sediment copper concentrations measured in 2015 (r=0.61 to 0.74), while Simpson's index was negatively correlated at r=-0.92. Taken together, these results indicate that the algicidal effects of copper were not resulting in reduced periphyton growth, but were affecting the relative concentrations of dominant taxa. Depositional metal concentrations have been declining over the past decade (Hawes et al. 2014).

In each study, the range of productivity metrics varied significantly, both within the 3 reference sites and within the 7 exposure sites (Table 4-18). None the less, productivity metrics of the depositional sites downstream of the smelter exceeded the average of the reference sites (Table 4-18). Nutrients are donated by many sources including groundwater from the smelter site, City of Trail stormwater and City of Trail primary-treated municipal effluent is discharged to the Columbia River just above the Maglios site. These may have contributed to the progressive increase in sediment nutrient concentrations the further down the river the depositional site occurred. Increases in periphyton production as water progresses downstream are normal in large river systems and are frequently nutrient-driven (Wetzel, 2001).

4.3.12 Depositional Community Structure

Diatoms accounted for over 95 – 99.8% of the total depositional periphyton biovolume in 2012 and over 99.3 - 99.9% in 2015 in depositional surface sediments. Depositional reference and exposure sites shared 7 dominant taxa out of 10 (Table 4-17 Table 4-17). The many taxa that occurred in both reference and exposure sites helps explain why the NMDS analysis did not detect major periphyton community differences attributable to smelter effluent exposure ($F=0.82$, $R^2=0.05$, $p=0.49$; Figure 4-33). Year-to-year differences were detected ($F=13.9$, $R^2=0.44$, $p<0.001$) due to a prevalence of the diatom *Tabellaria* and the flagellate *Ochromonas* in 2012, while the diatoms *Cyclotella*, *Achnanthidium,* and *Eucocconeis* were prevalent in 2015. Cyanobacteria counts were lower throughout all the LCR depositional sites in 2015 over 2012, as was species diversity. These are system-wide changes, attributable to important periphyton community drivers including flow regime, water temperature, water chemistry, etc.

There was no indication of a spatial trend in the depositional community structure with distance downstream of the smelter in 2012 or 2015 periphyton data. This data was collected during fall low flows, when the potential to generate a downstream spatial trend could be expected to be the greatest. In 2012 findings, Waneta had unusually high flagellated algae densities, known as a group for their metal tolerance. In 2015 flagellates were still common but the Waneta periphyton community structure was not as distinct as it had been, suggesting improved conditions (Table 4-15).

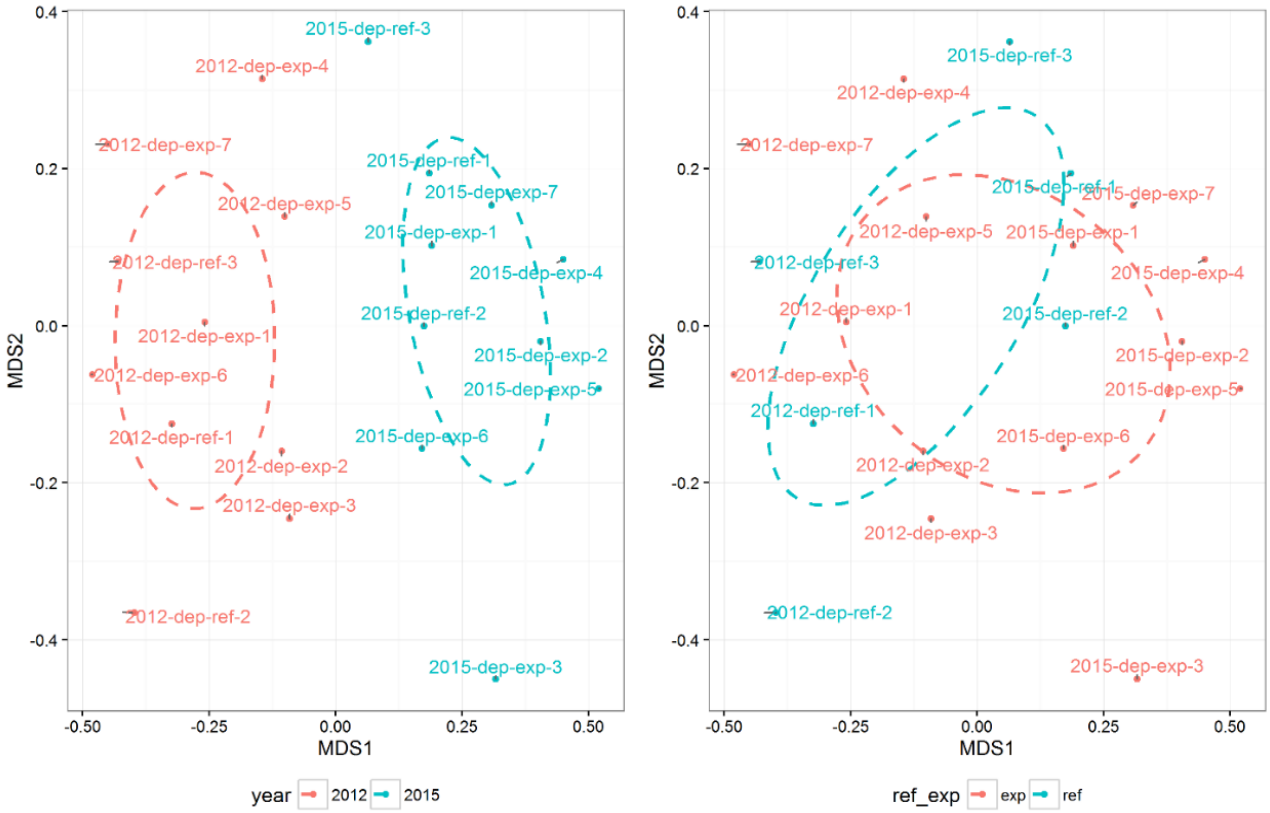

Figure 4-33: NMDS of depositional periphyton biovolume at the genus level grouped by year (left panel), and grouped by exposure (EXP) sites in red and reference (REF) sites in blue (right panel). The stress value was 0.17.

Table 4-15: Percent contribution of the major algae groups to periphyton biovolume by site - Depositional Sites, 2015.

	Biovolume – Percent									
	Reference Sites			Exposure Sites						
Algae Type	Kootenay	Genelle	Birchbank	Korpac	Maglios	Casino	Airport Bar	Trimac	Ft Shepherd	Waneta
Diatoms	99.7	99.9	99.3	99.9	99.9	99.9	99.7	99.8	99.9	99.9
Green Algae	0.0	0.0	0.0	0.03	0.0	0.0	0.0	0.14	0.02	0.0
Flagellates	0.21	0.04	0.48	0.06	0.02	0.01	0.18	0.02	0.02	0.04
Blue-green Algae	0.13	0.03	0.18	0.01	0.01	0.01	0.07	0.01	0.01	0.01
Dinoflagellates	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 4-16: Summary statistics describing periphyton community productivity and diversity in depositional and erosional sites above and below smelter outflow (reference and exposure sites respectively). Values are based on data obtained during periphyton sampling conducted October, 2015.

		Depositional Sites		Erosional Sites	
Metric	Statistic	Reference	Exposure	Reference	Exposure
Abundance	Mean (± SD)	3.73 ± 0.58	4.76 ± 1.9	1.36 ± 0.94	1.76 ± 1.49
(cells/cm^2 × 10^5)	Median	3.62	4.68	0.99	1.13
	Minimum	3.21	2.29	0.58	0.36
	Maximum	4.36	7.26	3.47	5.5
Species Richness	Mean (± SD)	40.00 ± 1.7	34.86 ±4.45	28.6 ± 3.8	30.6 ± 6.7
(# species)	Median	39	34	28	28
	Minimum	39	30	25	20
	Maximum	42	43	38	43
Total biovolume	Mean (± SD)	1.61 ± 0.29	2.2 ± 0.88	0.74 ± 0.52	1.12 ± 1.24
(cm^3/m^2)	Median	1.65	2.31	0.50	0.60
	Minimum	1.31	1.24	0.31	0.98
	Maximum	1.87	3.43	1.95	4.74
Chlorophyll-a	Mean (± SD)	1.16 ± 0.38	1.29 ± 0.40	0.71 ± 0.24	0.71 ± 0.46
(µg/cm^2)	Median	1.03	1.23	0.67	0.51
	Minimum	0.85	0.60	0.25	0.15
	Maximum	1.59	1.82	1.05	1.84
Simpson's Index	Mean (± SD)	0.88 ± 0.03	0.80 ± 0.09	0.79 ± 0.13	0.82 ± 0.08
	Median	0.86	0.81	0.84	0.84
	Minimum	0.86	0.60	0.45	0.55
	Maximum	0.91	0.89	0.89	0.91

Table 4-17: Dominant periphyton species as defined by percent biovolume for erosional and depositional sites with upstream reference sites shown separately from downstream exposure sites, 2015.

Erosional			
Dominant Reference Taxa	Biovolume (%)		Dominant Exposure Taxa
Synedra ulna (sm variety)	31.0	27.9	*Didymosphenia geminata*
Gomphonema olivaceum	16.8	25.5	*Synedra ulna (sm variety)*
Cladophora sp. glomerata?	11.4	8.9	*Stigeoclonium sp.*
Stigeoclonium sp.	6.8	6.3	*Gomphonema olivaceum.*
Synedra ulna	15.9	4.6	*Synedra ulna*
Didymosphenia geminata	4.1	3.1	*Navicula tripunctata*
Synedra acus	2.5	2.5	*Diatoma tenue var elongata*
Cocconeis placentula	1.9	2.1	*Synedra acus*
Tabellaria fenestrata	1.5	2.0	*Navicula spp.*
Gomphonema sp.	1.4	1.4	*Nitzschia sp.*
Depositional			
Dominant Reference Taxa	Biovolume (%)		Dominant Exposure Taxa
Synedra ulna (sm variety)	18.5	34.3	*Synedra ulna (sm variety)*
Navicula tripunctata	11.8	7.0	*Cyclotella spp.*
Cyclotella ocellata	10.1	6.7	*Didymosphenia geminata*
Staurosira construens	7.3	4.3	*Eucocconeis flexella*
Eucocconeis flexella	5.4	4.0	*Cyclotella bodanica*
Navicula spp.	5.4	3.7	*Navicula spp.*
Fragilaria crotonensis	4.9	3.5	*Frustulia rhomboides*
Frustulia rhomboides	3.8	3.1	*Nitzschia sp.*
Cyclotella bodanica	3.7	2.6	*Synedra acus*
Cocconeis placentula	3.0	2.5	*Cocconeis placentula*

NOTE: (?) indicates that the identification was tentative

Table 4-18: Periphyton growth metrics by depositional sample site for 2015 samples.

		Exposure							Reference		
Metric	Statistic	Korpac Dep Exp 1	Maglios Dep Exp 2	Casino Dep Exp 3	Airport Bar Dep Exp 4	Trimac Dep Exp 5	Ft Shepherd Dep Exp 6	Waneta Dep Exp 7	Kootenay Dep Ref 1	Birchbank DEP Ref 2	Genelle Dep Ref 3
Abundance (cells /cm^3 × 10^5)	Mean (± SD)	2.29 ± 1.3	4.69 ± 0.81	7.26 ± 0.93	3.20 ± 1.25	6.49 ± 0.92	6.14 ± 1.50	3.28 ± 0.94	4.367± 1.14	3.62 ± 0.54	3.21 ± 1.60
	Median	1.74	4.25	6.79	2.91	6.56	6.77	3.39	3.84	3.79	2.71
	Minimum	1.32	4.19	6.66	2.13	5.53	4.43	2.29	3.57	3.02	1.92
	Maximum	3.80	5.62	8.34	4.57	7.37	7.22	4.16	5.67	4.07	4.99
Species Richness (# taxa)	Mean (± SD)	27 ± 4	27 ± 2	21 ± 2	21 ± 5	22 ± 0.6	29 ± 2	26 ± 5	30 ± 4	31 ± 3	28 ± 6
	Median	26	26	20	20	22	30	26	29	30	25
	Minimum	23	25	20	17	22	27	21	27	28	24
	Maximum	31	29	24	27	23	31	31	35	34	34
Bio Volume (cm^3/m^2)	Mean (± SD)	1.24 ± 0.70	2.62 ± 1.28	3.43 ± 0.71	1.26 ± 0.64	2.31 ± 0.37	3.03 ± 0.82	1.51 ± 0.53	1.65 ± 0.66	1.87 ± 0.28	1.31 ± 0.64
	Median	1.14	1.98	3.27	0.99	2.47	2.97	1.40	1.42	2.03	0.97
	Minimum	0.59	1.78	2.81	0.80	1.89	2.25	1.04	1.13	1.55	0.90
	Maximum	1.97	4.09	4.21	1.99	2.56	3.88	2.10	2.39	2.04	2.04
Simpson's Index	Mean (± SD)	0.86 ± 0.06	0.81 ± 04	0.60 ± 0.01	0.76 ± 0.03	0.82 ± 0.03	0.80 ± 0.05	0.89 ± 0.03	0.84 ± 0.01	0.91 ± 0.01	0.84 ± 0.07
	Median	0.87	0.79	0.60	0.75	0.82	0.77	0.88	0.84	0.91	0.84
	Minimum	0.80	0.78	0.59	0.73	0.79	0.76	0.86	0.84	0.89	0.77
	Maximum	0.90	0.85	0.61	0.79	0.85	0.86	0.92	0.85	0.92	0.90
Chlorophyll-a (µg/cm^2)	Mean	0.60	1.82	1.22	1.24	1.23	1.73	1.14	0.85	1.59	1.03
	Median	0.60	1.82	1.22	1.24	1.23	1.73	1.14	0.85	1.59	1.03
	Minimum	0.60	1.82	1.22	1.24	1.23	1.73	1.14	0.85	1.59	1.03
	Maximum	0.60	1.82	1.22	1.24	1.23	1.73	1.14	0.85	1.59	1.03

Strong annual differences in periphyton productivity and community structure were apparent in the depositional sites. Periphyton productivity (biovolume and abundance) was higher in 2015 across most sites than in 2012, due in part to more Didymo in 2015. The periphyton models indicate lower species richness and Simpson's index in 2015 primarily driven by annual differences in the depositional exposure sites 1 through 4 (Figure 4-34). Simpson's Index was consistently lower in 2015 across sites; the 2015 site of DEP-EXP-3 (Casino) had very low Simpson's Index compared to all other sites.

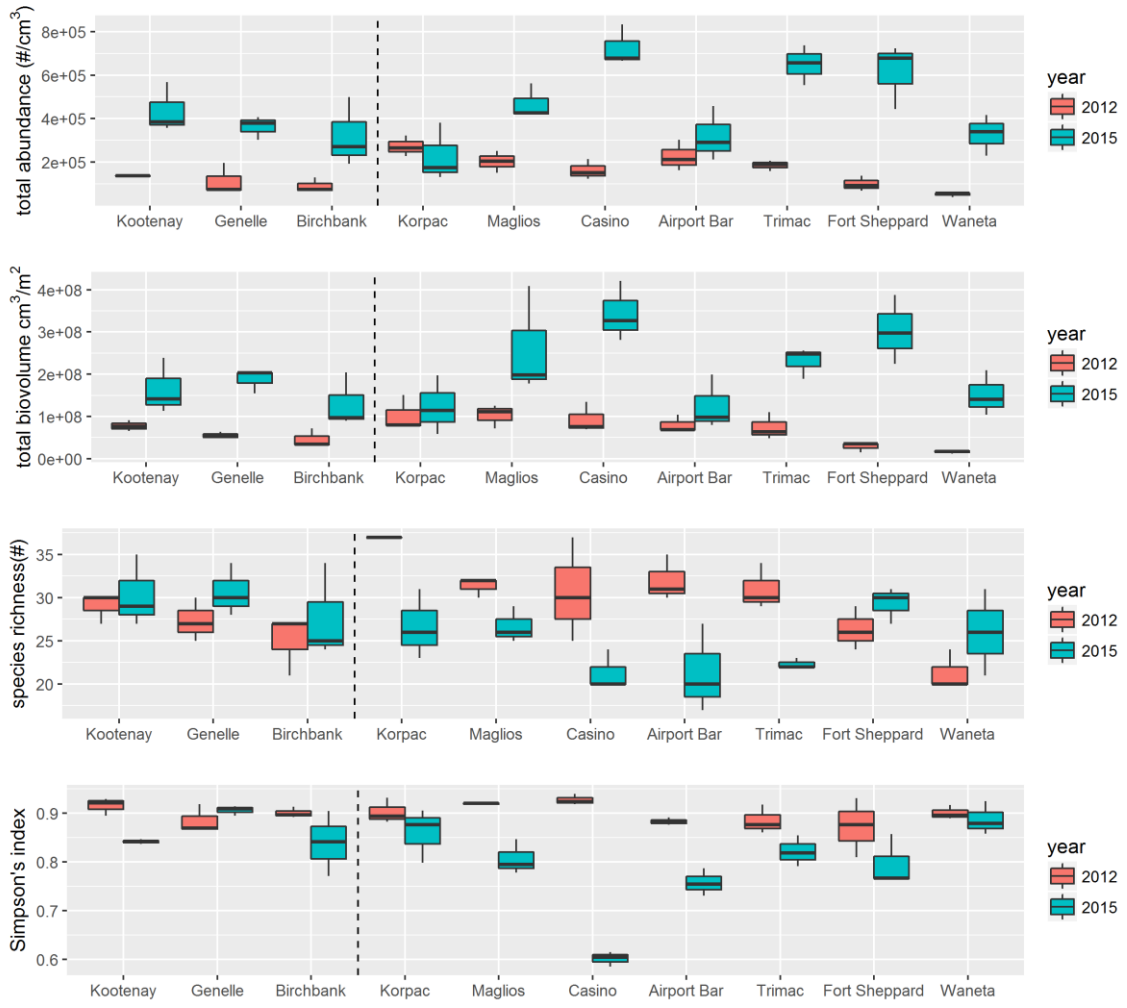

Figure 4-34: Boxplots of three metrics of 2012 and 2015 periphyton community productivity and diversity in depositional sites.

A PCA is used to simplify data where multiple variables are correlated. This procedure transforms a number of correlated variables to a reduced number of uncorrelated variables. These are referred to as the principle components, with the first PC accounting for the majority of variability ion the data.

The purpose of the PCA is to understand which metals underpin the most variation observed in the multivariate metal concentration data. The analysis calculates a "loading" for each metal. A loading is as measure of how much variation (along that axis) it explains. Normally, only the first couple of metals assigned to an axis explain the majority of the variation. Finally, the sites can be displayed in a plot using the two principal component axes. The figure produced is useful to visualize site groupings according to multiple metals, in a two-dimensional figure.

The sediment metal concentrations of As, Cr, Zn and Cu were positively correlated to PC1. Reference sites have noticeably lower PC1 loadings compared to exposure sites, suggesting lower concentrations of As, Cr, Zn and Cu (Figure 4-35). Unlike PC1, PC2 does not provide clear separation between reference and exposure sites.

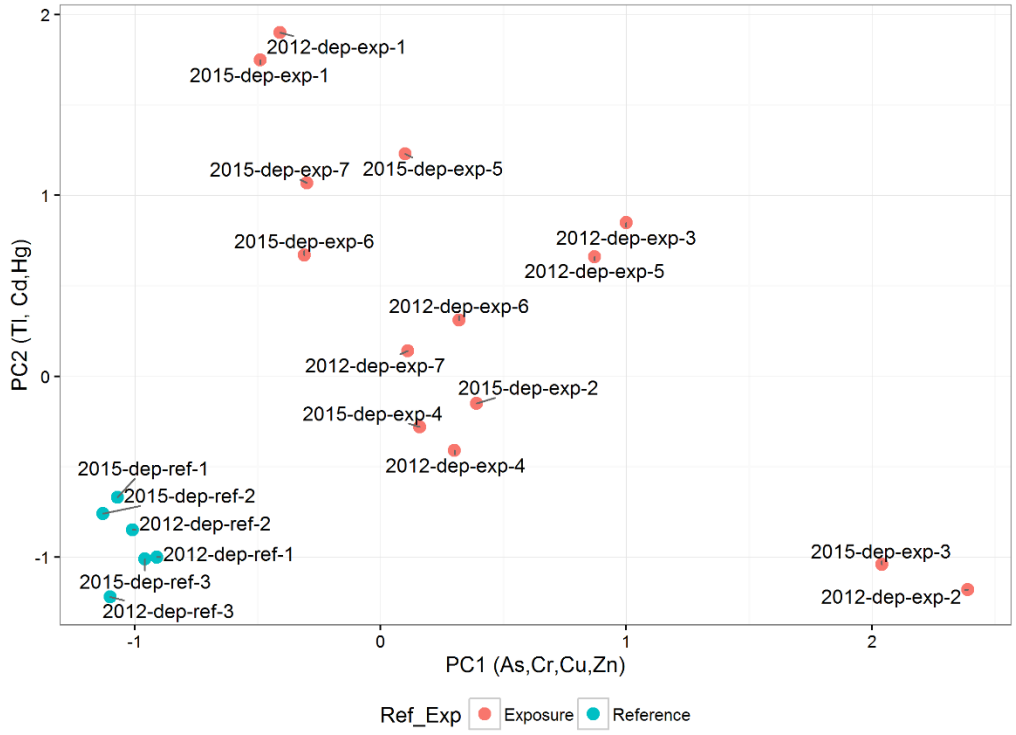

Figure 4-35: PCA sediment metals biplot of PCs periphyton community productivity and diversity depositional sites models.

The effect of treatment (reference vs. exposure area) was tested on three periphyton metrics which quantify community composition and productivity. To test for the effect of year (2012 and 2015) and if the effect of treatment differs with year an interaction term was initially tested. The interaction term of year and treatment was not significant for all three periphyton models so it was dropped from the final model. However, the periphyton productivity and diversity in the 2015 depositional sites were statistically different from 2012 depositional sites. The effective number of species was the only periphyton metric that showed differences between the depositional exposure and reference sites ($F=5.02$, $p=0.04$). The 2012 and 2015 effective number of species also were significantly different ($F=32.8$, $p<0.001$). The 2015 total abundance and total biovolume of periphyton at the depositional sites were significantly different than the 2012 total abundance and biovolume (Appendix N).

SUMMATION

The periphyton results indicated a range of impacts on the LCR area of interest, predominated by areas when nutrient outfalls occur such as the groundwater inflow from the smelter site, and the City of Trail municipal outfall. The influence of the smelter outfall on periphyton metrics was minor and far smaller than the effect of year-to-year influences such as flow regime, weather and other extraneous factors.

4.4 Benthic Invertebrates

In both the upstream reference and downstream exposure sites, benthic invertebrate abundance and diversity can vary by an order of magnitude among sites of the same type. Overall, however species assemblages and distributions observed within this study were comparable to those sampled in other productivity studies being carried out in the LCR further upstream of the AREMP study area (Larratt et al. 2013).

The LCR is productive, diverse and variable in terms of benthic invertebrate communities (Larratt et al. 2013). Benthic macroinvertebrates were collected from several historic sites in the Columbia River between 1980 and 1992, with densities varying from 1,518 to 32,712 organisms/m^2, with the number of taxa ranging from 18 to 47 (Hatfield 1994). Based on historical data, benthic invertebrate communities were considered to be healthy and diverse in the Castlegar area of the Columbia River (Hatfield 1997). Within the 2015 AREMP data collection, macroinvertebrate abundance ranged from about 60,933 organisms/m^2 in depositional sites, to about 1,548 organisms/m^2 in erosional habitats.

4.4.1 Invertebrates in Erosional Areas

In erosional habitats, exposure sites had mean invertebrate sample abundance at 1,426 ± 1,200 organisms compared to reference sites with 1,448 ± 1,181 organisms (Figure 4-36). Overall, abundance was lower in 2015 compared to 2012 AREMP data collection. However, the variation between sites was lower.

Table 4-19: Summary of benthic community metrics for erosional habitats for 2012 and 2015 AREMP data collection.

		2012		2015	
Metric	Treatment	mean	st.dev	mean	. st.dev
EPT rich	exp	11.96	2.72	11.72	2.62
	ref	9.30	2.79	9.90	3.70
Hilsenhoff_Biotic_Index	exp	3.98	0.86	3.84	1.25
	ref	4.67	1.15	4.74	1.07
perc. Chironomidae	exp	3.27%	3.10%	4.44%	3.75%
	ref	3.73%	4.35%	5.11%	5.92%
perc. EPT	exp	76.45%	27.38%	65.92%	29.48%
	ref	52.80%	39.39%	47.40%	39.88%
Simpson	exp	0.74	0.15	0.80	0.07
	ref	0.75	0.19	0.81	0.10
sp. rich	exp	23.32	8.33	25.60	5.57
	ref	23.90	8.69	27.70	4.40
tot. abun	exp	6008.20	6554.98	1426.76	1200.01
	ref	4686.30	5832.54	1448.00	1181.21
tot. biom	exp			279.46	219.53
	ref			314.97	322.13

Note, biomass data were not measured in 2012.

The maximum abundance measured during 2015 data collection was 1,548 macroinvertebrates/m^2 documented at ERO-EXP-2, site 1 located just downstream of smelter Outfall CIII. Overall, ERO-EXP-2 also had the greatest mean abundance over the 5 sites, with 1,097 macroinvertebrates/m^2. ERO-REF-2 had the second highest mean abundance, with 658 macroinvertebrates/m^2.

Biomass of benthic communities was not a metric recorded from 2012 AREMP data, but was reported for 2015 data. Biomass values were aligned with abundance measures documented for each area. Exposure Area 2, Site 1 (ERO-EXP-2-1) had the highest measured biomass of 1044 g. ERO-EXP-2 also had the highest mean biomass across the five sites of 496 g followed by ERO-REF-2 and ERO-EXP-1 at 384 g and 370 g respectively.

The maximum species richness in 2015 was documented at ERO-EXP-5-1 with 45 taxa identified. However, ERO-EXP-1 had the highest mean species richness across the five sites of 30 taxa (Figure 4-38).

The Simpson's Index of Diversity was greatest at ERO-EXP-1-2 where the index score was 0.92 (Figure 4-38). Exposure Area 1 also had the highest mean community diversity (Index score = 0.87) followed by ERO-REF-1 (Index score = 0.85), then Exposure Areas 5 and 4 with mean Index Scores of 0.82 and 0.81, respectively.

ERO-EXP-2 also had the greatest EPT abundance of 1,405 individuals/m^2. This exposure area also had the greatest mean EPT abundance over the five sites of 1,022 individuals/m^2. ERO-REF-2 and ERO-EXP-1 had the second and third greatest mean EPT abundance of 471 and 404 individuals/m^2, respectively. The highest EPT richness in 2015 was documented at ERO-EXP-5-1 with 18 taxa. Overall however, Exposure Areas (ERO-EXP) 1, 2, and 5 had the highest mean EPT richness. This is similar to 2012 results where Exposure Areas had greater EPT richness than Reference Areas (Figure 4-36).

The relative abundance of EPT in Exposure Areas (ERO-EXP) 2 and 3 was markedly greater than all other areas (Figure 4-37). The site with the highest %EPT within the sample was ERO-EXP-3-4 with 97% EPT. Overall ERO-EXP-2 had the highest mean %EPT across the five sites equaling 93%. ERO-EXP-3 had a mean % EPT of 77% across the five sites (Figure 4-37).

Figure 4-37 shows near field sites have lower Hilsenhoff Biotic Index (HBI) scores indicating a higher predominance of metal sensitive species, suggesting that the smelter does not have an adverse effect on benthic community composition. The HBI score was lowest at Exposure Area 5, Site 5 (ERO-EXP-5-3) with a score of 2.13. Overall however, Exposure Areas 2 and 3 had the lowest mean Hilsenhoff Scores of 2.63 and 3.48 respectively. These values were lower than all other exposure or reference areas that were sampled

(Figure 4-37). This indicates a greater predominance of metal-sensitive species (e.g., EPT) downstream of the smelter, as it did in 2012. The high predominance of web spinning caddisflies and mayflies are likely responsible for this result. The HBI ranges from 0-10; taxa with a zero value are extremely intolerant of metals, taxa with scores of 2 – 9 have varying degrees of tolerance, while a score of 10 indicates a high ability to withstand metals.

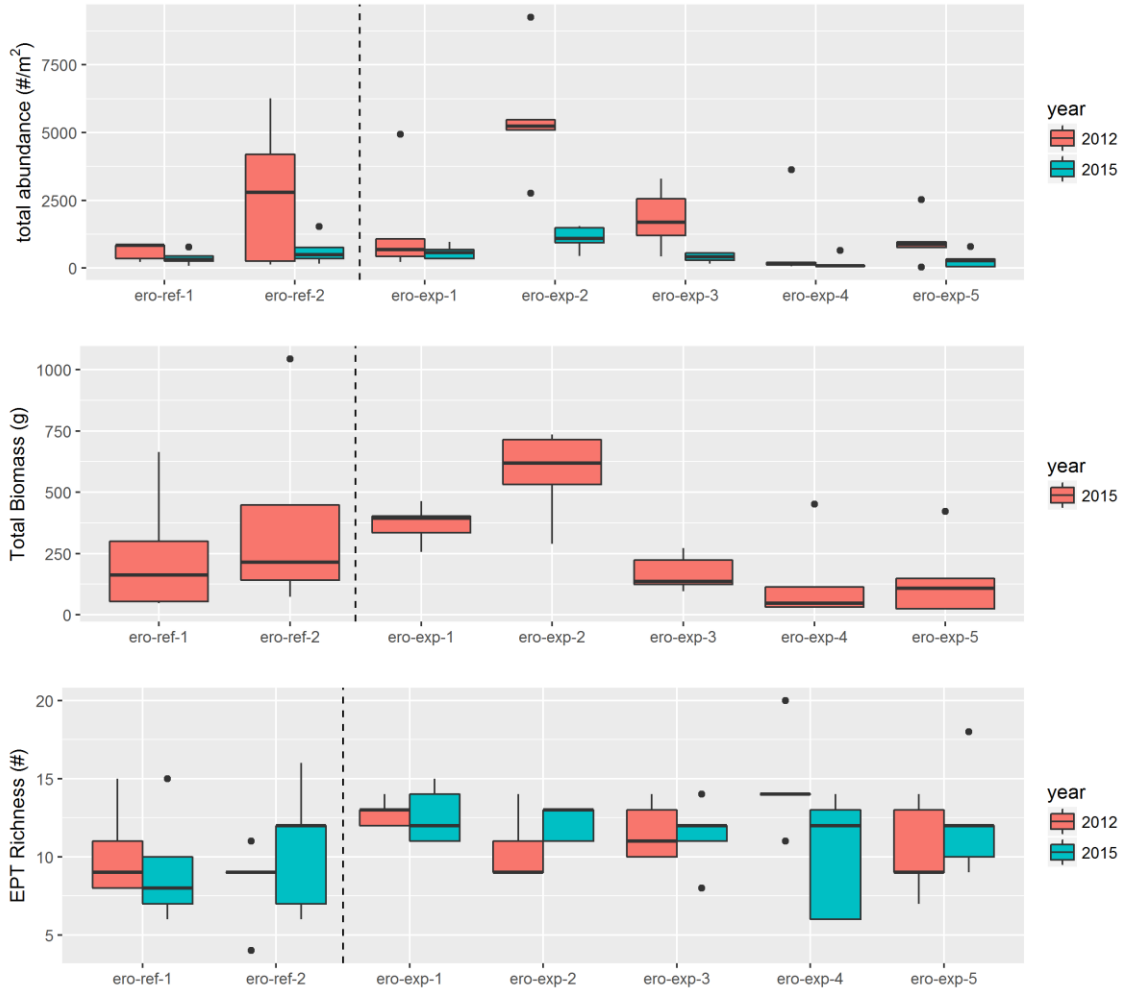

Figure 4-36: Boxplots of three metrics of benthic invertebrate community productivity and diversity in depositional and erosional sites above and below smelter outflow. Note, biomass was only sampled in 2015.

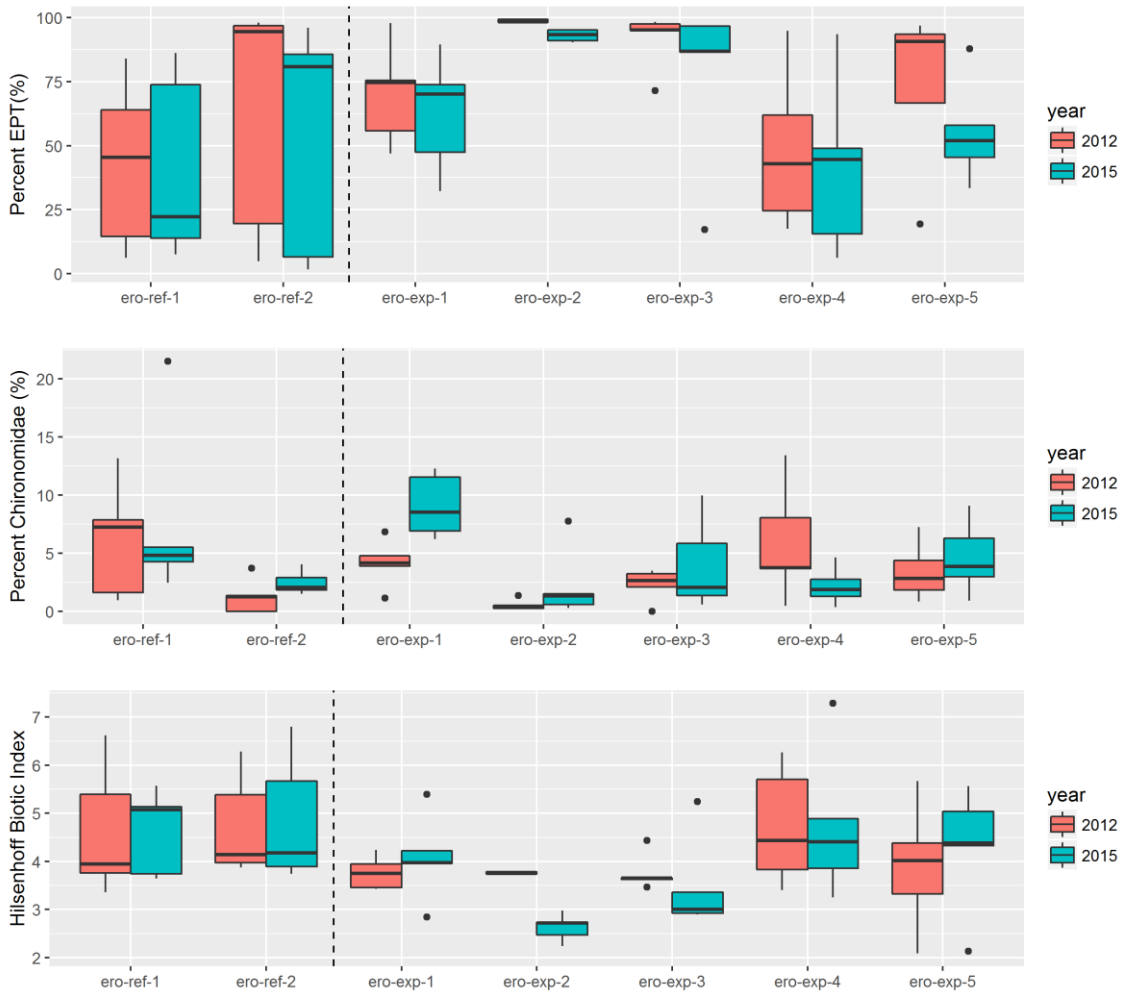

Figure 4-37: Boxplots of three metrics of benthic invertebrate community productivity and diversity in erosional sites above and below smelter outflow.

Figure 4-38: Boxplots of three metrics of benthic invertebrate community composition and diversity in erosional sites above and below smelter outflow.

Erosional Habitat Dominant Taxa

Dominant taxa in erosional habitats were consistent across Reference and Exposure areas (Table 4-20). As indicated by community metrics, EPT taxa are the predominant organism across all Reference and Exposure areas. Net-spinning caddisflies (family: Hydropsychidae) predominated all sampled reference and exposure areas except Exposure Area 5, which was predominated by the spiny crawler mayfly (Family: Ephemerellidae), the third most dominant taxa in all other areas. Within Reference Area 1, some individual sites were dominated by pond snails (Family: Lymnaeidae) and other gastropods, amphipods (Family: Crangonyctidae), and water mites (Family: Hygrobatidae). Pond snails and bladder snails (Family: Physidae) were dominant taxa at sites in all areas except ERO-EXP-2.

Table 4-20: Dominant taxa represented in erosional areas for 2015 samples

Class	Order	Family	Predominant Taxa*	Common Name	ERO-REF-1	ERO-REF-2	ERO-EXP-1	ERO-EXP-2	ERO-EXP-3	ERO-EXP-4	ERO-EXP-5
Arachnida	Trombidiformes	Hygrobatidae	Hygrobates	water mite	4.1%						
Bivalvia	Veneroida	Pisidiidae	Pisidium	pill clam	1.2%						
Gastropoda	Basommatophora	Lymnaeidae	Lymnaeidae	pond snail	5.3%	1.7%			2.7%	5.1%	7.1%
		Physidae	Physa	bladder snail	0.3%	0.6%	1.5%			0.5%	1.4%
		Planorbidae	Planorbidae	ramshorn snail		4.1%					
	Hypsogastropoda	Hydrobiidae	Hydrobiidae	mud snail	2.6%						
Insecta	Diptera	Empididae	Hemerodromia sp.	dance fly					1.3%		
	Ephemeroptera	Ephemerellidae	Drunella grandis group	western green drake		2.9%		2.1%			
			Ephemerella	pale morning dun				2.0%	1.1%		2.6%
			Ephemerellidae	spiny crawler mayfly	10.0%	1.9%	20.0%	24.7%	21.6%	15.8%	21.8%
	Hemiptera	Corixidae	Sigara	water boatman		1.8%					
	Trichoptera	Brachycentridae	Brachycentrus occidentalis	humpless casemaker				4.1%			
		Hydropsychidae	Cheumatopsyche	net-spinning caddisfly	14.9%	14.6%	11.9%	1.1%	6.8%	18.5%	12.3%
			Hydropsyche		20.7%	41.3%	22.1%	39.0%	39.3%	22.6%	3.4%
		Glossosomatidae	Protoptila	saddle-case maker	0.5%						
Malacostraca	Amphipoda		Amphipoda	amphipod						1.6%	
		Crangonyctidae	Crangonyx		5.2%		2.6%			1.5%	
Oligochaeta	Lumbriculida	Lumbriculidae	Lumbriculidae	aquatic worm						1.5%	
	Tubificida	Enchytraeidae	Enchytraeus	white worm		2.5%				5.2%	
		Naididae	Naididae	detritus worm			1.8%				17.8%

* based on metric data provided by Cordillera Consulting (2016)
Dominant taxa in each area are highlighted above

4.4.2 Invertebrates in Depositional Areas

In 2012, reference areas (DEP-REF) had higher mean invertebrate abundance at 17,422 ± 14,566 organisms/m^2 compared to exposure areas (DEP-EXP) with 8,302 ± 12,166 organisms/m^2 (Figure 4-39). Similarly, in 2015, reference areas had higher mean invertebrate abundance at 20,186 ± 19,825 organisms/m^2, compared to exposure areas with 8,908 ± 10,218 organisms/m^2 (Figure 4-39). In both years, variation between areas and sample sites was high.

Table 4-21: Summary of benthic community metrics for depositional habitats for 2012 and 2015 AREMP data collection. Note, biomass data were not measured in 2012.

		2012		2015	
Metric	Treatment	mean	st.dev	mean	st.dev
EPT rich	exp	1.03	1.50	1.54	1.50
	ref	1.20	1.21	1.47	0.99
Hilsenhoff_Biotic_Index	exp	7.49	1.61	7.35	0.92
	ref	7.50	1.76	7.07	0.98
perc. Chironomidae	exp	42.46%	35.40%	12.95%	11.08%
	ref	16.87%	14.45%	18.44%	24.63%
perc. EPT	exp	1.30%	2.26%	9.74%	15.63%
	ref	1.87%	2.49%	3.20%	4.65%
Simpson	exp	0.67	0.17	0.74	0.17
	ref	0.59	0.21	0.72	0.15
sp. rich	exp	11.63	4.19	14.03	6.32
	ref	11.07	7.31	16.67	4.25
tot. abun	exp	8302.22	12166.18	8907.94	10218.08
	ref	17422.22	14566.30	20186.67	19825.50
tot. biom	exp			19.40	26.40
	ref			33.88	35.48

Note, biomass data were not measured in 2012.

The maximum abundance measured in a single site during 2015 data collection was 60,933 macroinvertebrates/m^2 documented in Kootenay Eddy (DEP-REF-1-5). Overall, however, Genelle (DEP-REF-2) had the greatest mean abundance with 37,493 macroinvertebrates/m^2. Waneta (DEP-EXP-7) had the second greatest mean abundance with 28,684 macroinvertebrates/m^2.

Mean sample biomass of depositional areas was greatest at Genelle (DEP-REF-2) equalling 71.7 g. Waneta and Maglios followed with mean biomass equalling 68.4 g and 28.7 g, respectively.

Maglios (DEP-EXP-2) had the maximum sampled species richness as well as the highest mean species richness across the five samples of 27 and 22.8, respectively (Figure 4-41).

Community diversity was greatest at Airport Bar (DEP-EXP-4) sample 1 where a Simpson's Index of Diversity score was 1.00. Overall, Birchbank had the

highest mean diversity (0.88) with Maglios (DEP-EXP-2) and Casino Eddy (DEP-EXP-3) having equal mean diversity scores of 0.81 (Figure 4-41).

Casino Eddy (DEP-EXP-3) had the highest sampled EPT abundance with 49 individuals/sample. Casino Eddy also had the highest mean EPT abundance of 29 individuals across the five sites within this area. Furthermore, Casino Eddy had the highest mean %EPT per sample of 38% and the highest measured %EPT of 60% in a single sample. Korpac (DEP-EXP-1) had the second highest mean % EPT across the five samples of 14%. Conversely, Korpac had the highest EPT species richness of 6 taxa in a sample and the greatest overall mean EPT richness (across the five samples) of 3.4. Casino Eddy had the second highest mean EPT richness of 2.2 (Figure 4-40).

Birchbank, while having low total abundance, had the highest % chironomid composition of 69% in a single sample and the highest mean % chironomid abundance across the five samples of 50%. Casino had the second highest mean chironomid abundance of 25% (Figure 4-40).

Birchbank had both the lowest overall (5.44) and lowest mean Hilsenhoff Biotic Index score (5.76). Casino had the second lowest mean score of 6.29. Conversely, Waneta sample 1 had the highest Hilsenhoff score of 9.06 while Ft. Shepherd had the highest mean score of 8.20 (Figure 4-40). A low Hilsenhoff score indicates a high relative abundance of metals-sensitive species whereas a high score indicates a low relative abundance of metal-sensitive species.

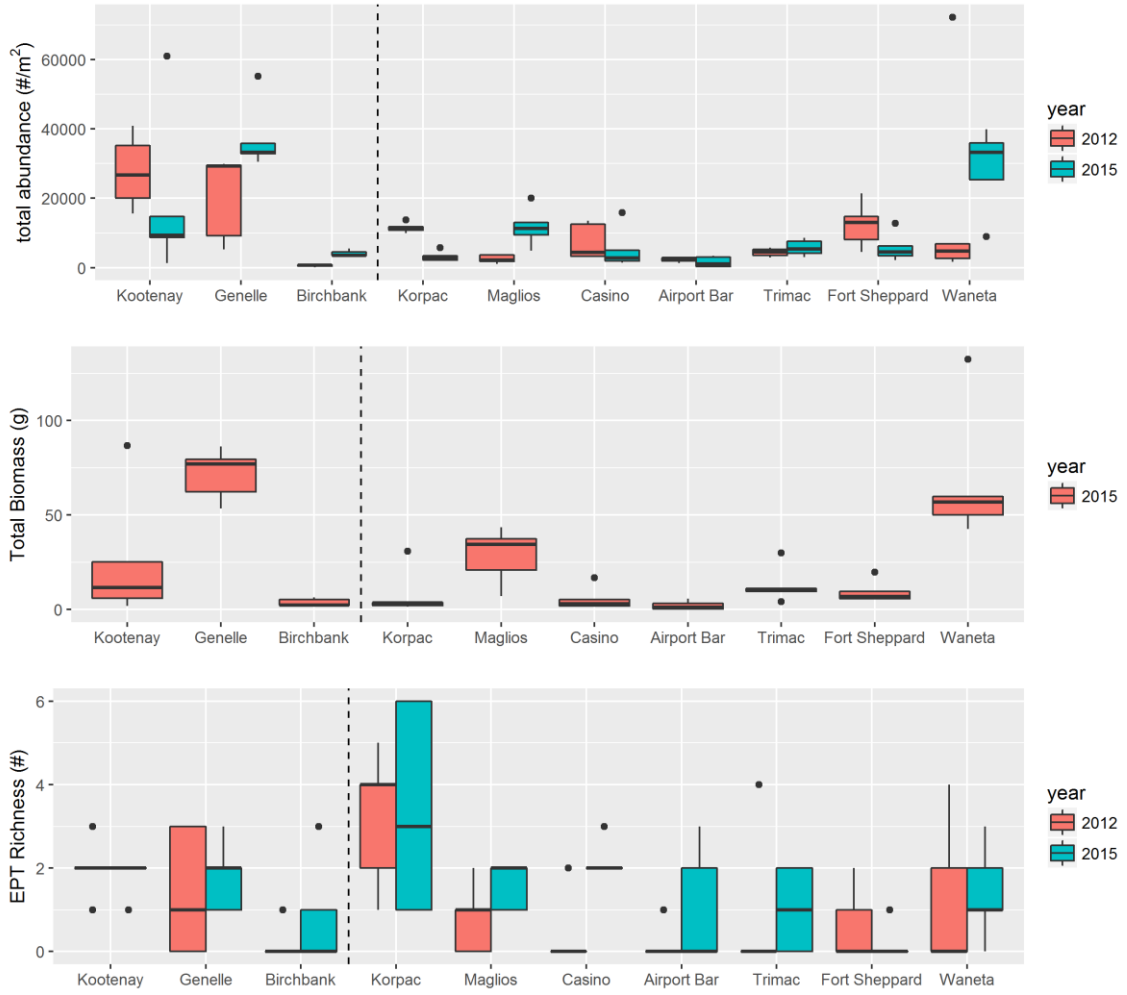

Figure 4-39: Boxplots of three metrics of benthic invertebrate community productivity and diversity in depositional areas above and below smelter outflow.

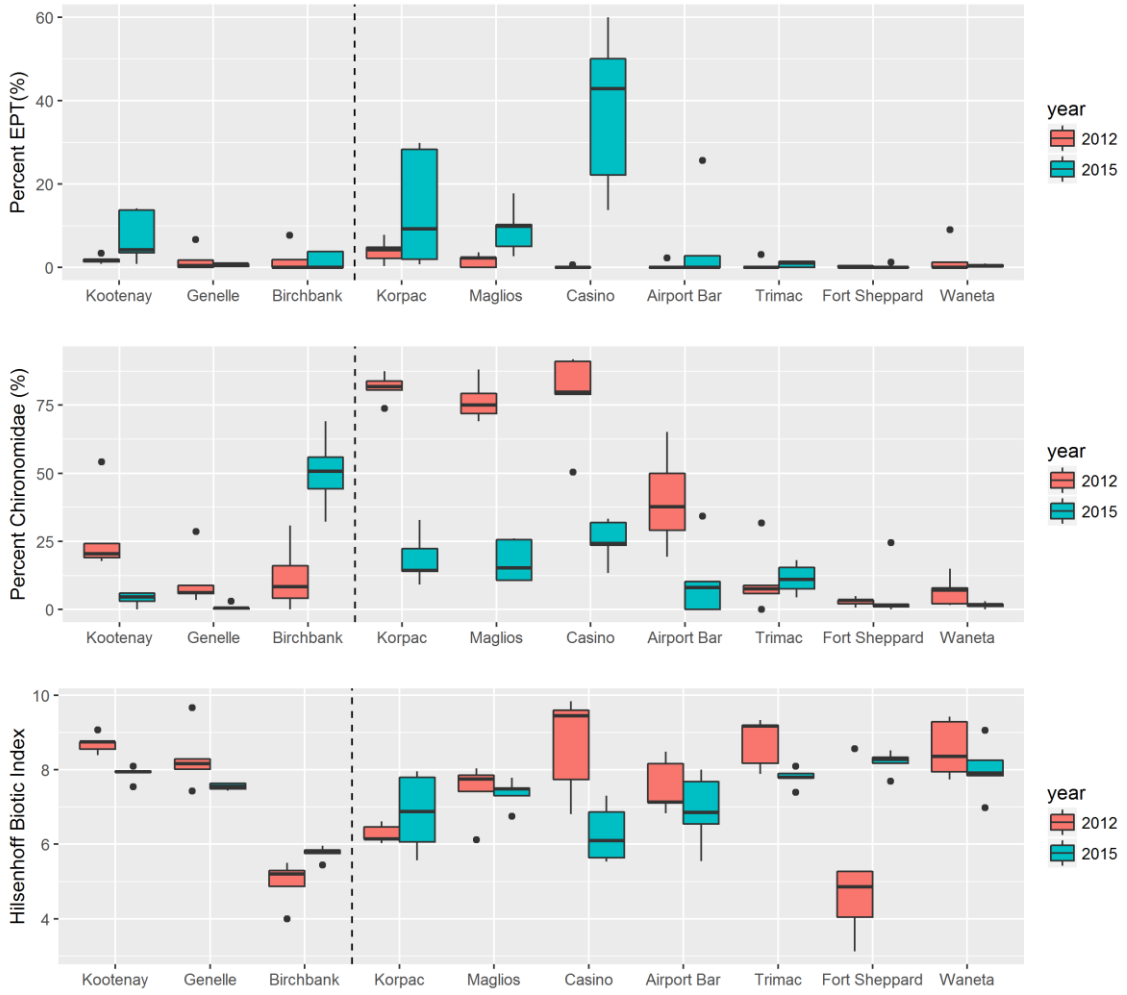

Figure 4-40: Boxplots of three metrics of benthic invertebrate community composition and diversity in depositional areas above and below smelter outflow.

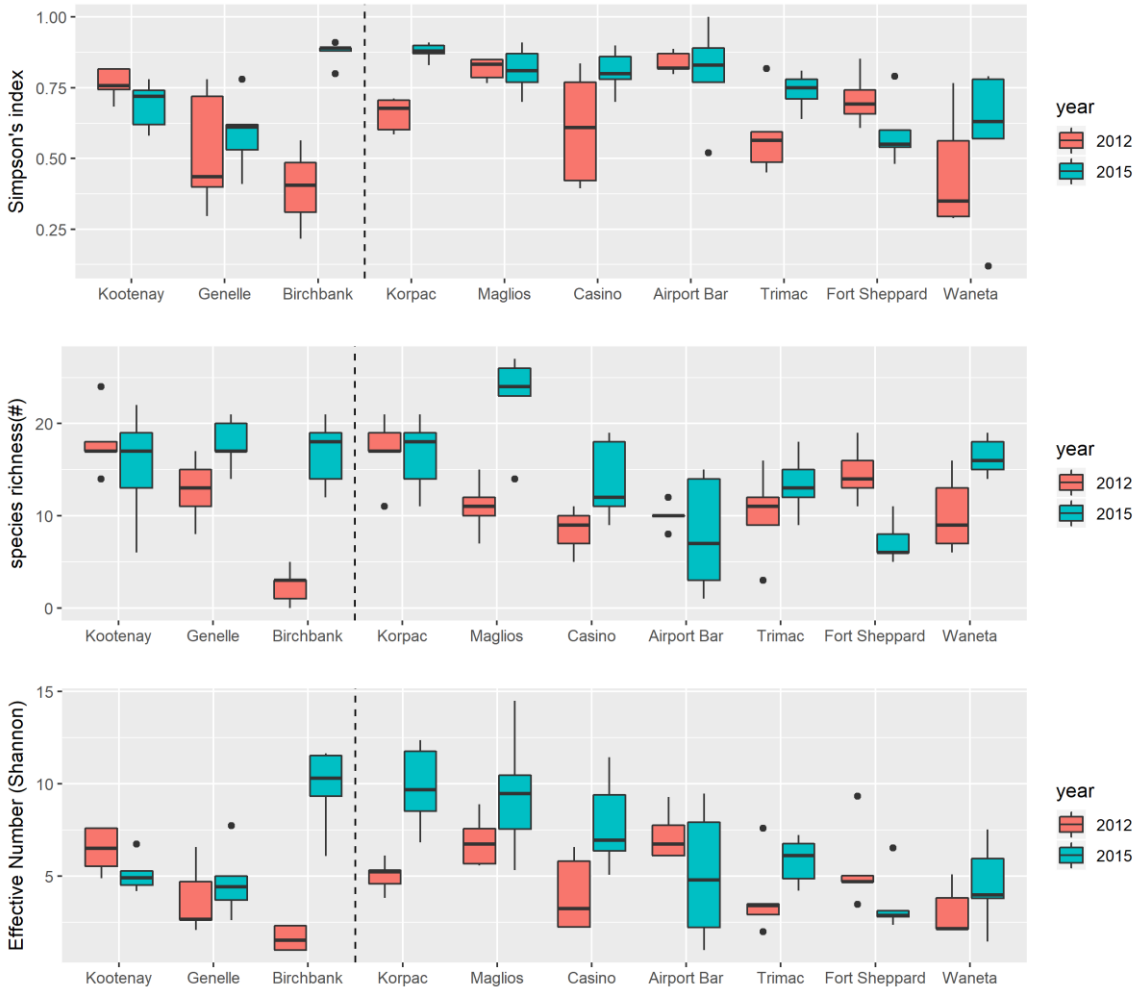

Figure 4-41: Boxplots two metrics of benthic invertebrate community composition and diversity in depositional areas above and below smelter outflow.

Depositional Habitat Dominant Taxa

The distribution of dominant taxa across the depositional areas was more variable than the erosional areas. Kootenay Eddy (DEP-REF-1), Genelle (DEP-REF-2), and Waneta (DEP-EXP-7) were more similar in community composition, each having communities dominated by isopods (Family: Asellidae) and detritus worms (Family: Naididae). Birchbank (DEP-REF-3) was unique, being comprised primarily of chironomids (Family: Chironomidae). Casino Eddy (DEP-REF-3) was also unique from the remaining exposure areas (Korpac, Maglios, Airport Bar, Trimac, and Fort Shepherd) in that black dancer caddisflies (Family: Leptoceridae) were co-dominant along with aquatic worms.

Table 4-22: Dominant taxa represented in depositional habitats for 2015 samples.

Class	Order	Family	Predominant Taxa*	Common Name	DEP-REF-1	DEP-REF-2	DEP-REF-3	DEP-EXP-1	DEP-EXP-2	DEP-EXP-3	DEP-EXP-4	DEP-EXP-5	DEP-EXP-6	DEP-EXP-7
Arachnida	Trombidiformes	Hygrobatidae	Hygrobates	water mite			7.9%							
		Lebertiidae	Lebertia					1.6%						
Bivalvia	Veneroida	Pisidiidae	Pisidiidae	pill clam					7.2%	8.8%	1.7%	3.9%	0.8%	
			Pisidium		11.4%			11.4%	26.8%		12.2%	23.0%	10.2%	3.6%
Gastropoda	Basommatophora	Lymnaeidae	Lymnaeidae	pond snail						4.6%		2.5%		0.5%
		Physidae	Physa	bladder snail								2.2%		2.2%
		Planorbidae	Planorbidae	ramshorn snail		12.7%								
	Heterostropha	Valvatidae	Valvata	valve snail					2.2%					
			Valvata tricarinata			1.9%								
	Hypsogastropoda	Hydrobiidae	Hydrobiidae	mud snail			10.1%				0.6%			
Insecta	Diptera	Chironomidae	Cryptochironomus	chironomid						1.3%		2.6%		
			Microtendipes pedellus group				11.9%				11.0%			
			Polypedilum sp.										1.2%	
			Procladius						11.6%	11.9%				
			Rheotanytarsus					6.3%						
			Robackia demeijerei				18.0%							
			Tanytarsus							0.7%				
	Ephemeroptera	Ephemerellidae	Ephemerellidae	spiny crawler mayfly				7.1%			8.8%			
	Trichoptera	Leptoceridae	Mystacides	black dancer caddisfly	1.0%				2.7%	14.4%				
			Oecetis	brown caddisfly	1.4%									
Malacostraca	Amphipoda	Crangonyctidae	Crangonyx	amphipod										0.4%
	Amphipoda	Hyalellidae	Hyalella			1.0%								
	Isopoda	Asellidae	Caecidotea	isopod	55.0%	58.5%								44.3%
Oligochaeta	Lumbriculida	Lumbriculidae	Lumbriculidae	aquatic worm	3.3%		4.8%	13.9%	11.3%	14.7%	25.4%	35.5%	62.3%	11.7%
	Tubificida	Enchytraeidae	Enchytraeus	white worm				5.4%						
		Naididae	Naididae	detritus worm	7.2%	3.3%		6.8%			2.8%	4.9%	20.2%	19.5%

* based on metric data provided by Cordillera Consulting (2016)
Dominant taxa in each area are highlighted above

4.4.3 Invertebrate community composition

NMDS was utilized to analyze how species compositions shift between years and within areas. Community analyses of both erosional and depositional habitats were completed at the genus level. Rare taxa were excluded from the analysis and defined as occurred in <5% of samples taxa. The NMDS for erosional sites provided a good representation of the community (stress index=0.16), whereas the depositional NMDS provided an adequate representation of the community (stress index=0.24).

Erosional Habitats

When grouped by year, NMDS illustrates a significant difference in benthic community composition between 2012 and 2015 (Figure 4-42; $F=9.02$, $R^2=0.12$, $p<0.001$). Strong negative loadings reflect the reduced abundance in 2015 of the long-horned caddisfly (Genus: Ceraclea) and water boatman (Genus: Callicorixa). Strong positive loadings relate to the increased dominance of mayflies (Family: Ephemerellidae), pond snails (Family: Lymnaeidae) and water mites (Genus: Atractides).

There was no difference ($F=1.61$, $R^2=0.02$, $p=0.12$) in overall species composition between reference and exposure sites in both 2012 and 2015 (Figure 4-42).

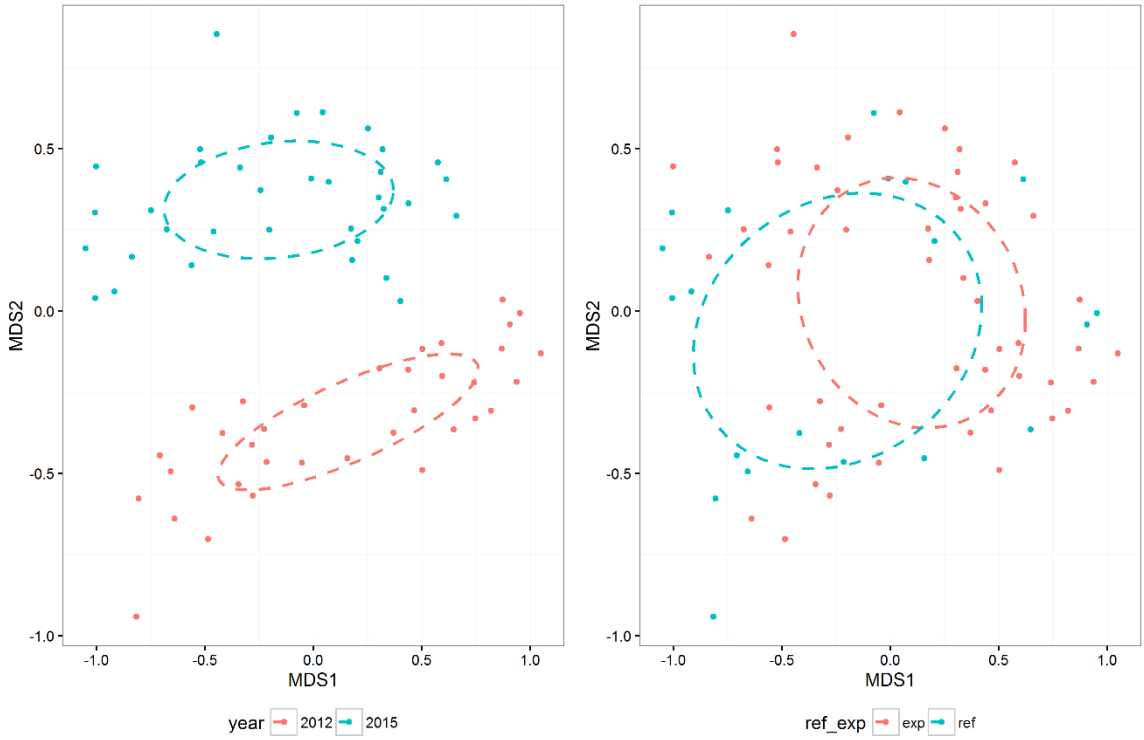

Figure 4-42: NMDS of erosional habitat benthic invertebrate communities at the species grouped by year (left) and by exposure and reference sites (right). The stress value was 0.16.

Depositional Habitat

When grouped by year, the benthic community structure was different in 2012 than in 2015 ($F=9.66$, $R^2=0.09$, $p<0.001$). Positive loadings in 2015 related to increased abundance of the gastropods Lynaeidae and Valvatidae, pill clams (Family: Pisidiidae), and black dancer caddisflies (Family: Leptoceridae). Conversely, strong negative loadings related to a decrease in abundance in 2015 of pebble snails (Genus: Fluminicola), water boatman (Family: Corixidae) and chironomids including *Micropsectra* sp., and *Microtendipes* sp.

There was a small difference ($F=4.2$, $R^2=0.04$, $p<0.001$) in overall species composition between reference and exposure sites in both 2012 and 2015 (Figure 4-43).

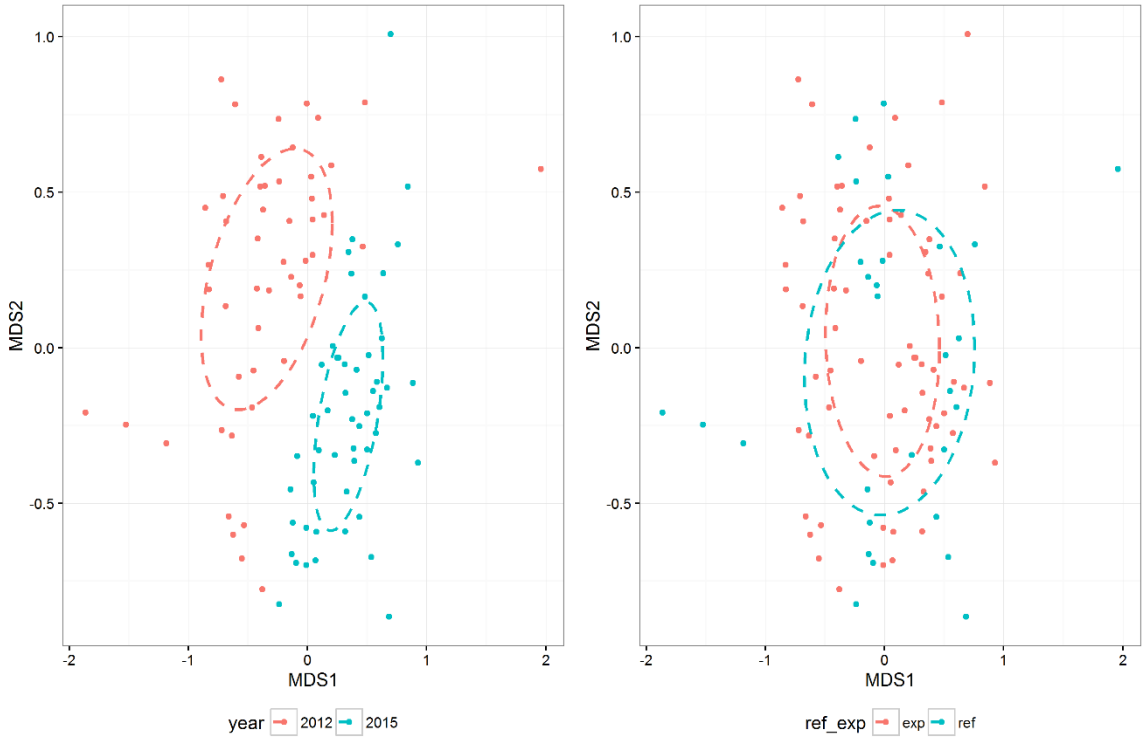

Figure 4-43: NMDS of depositional habitat benthic invertebrate communities at the species grouped year (left) and by exposure and reference sites (right). The stress value was 0.24.

4.4.4 Erosional Habitat Invertebrate Tissue Metals

Benthic invertebrate tissue samples were collected from six sites in 2015 from snails and caddisfly. The concentrations of As, Cd, Cr, Cu, Pb, Hg, Se, Ag, Tl and Zn were compared visually by site and benthic group (Figure 4-44 - Figure 4-46). Caddisfly and snails were treated as factors (i.e. benthic group) in the ANOVA because these two species are likely to assimilate metals in different ways. The concentrations of Hg, Ag, Cr and Tl in benthic invertebrate samples could not be compared using a mixed effects model because of the large number of non-detectable concentrations. A large percentage of invertebrate tissues samples had concentrations of Hg and Ag below the limit of detection, both metals had 56% of the samples below the limit of detection. Thallium and chromium also had 32% and 24% of the invertebrate samples below the limit of detection respectively.

The concentration of only five metals could be compared among tissue type (Caddisfly and Snail) and treatment (reference and exposure) using a mixed effects model. Copper concentrations were higher at exposure sites ($t=-4.54$, $p=0.03$) and also higher in snails compared to caddisflies ($t=10.49$, $p<0.001$). Arsenic, cadmium and zinc concentrations were not significantly different

between exposure and reference areas ($p>0.05$). However, snails had higher Cd and As concentrations compared to caddisflies, whereas snails had lower zinc concentrations compared to caddisflies. Lead concentrations in caddisfly and snail tissue were not significantly different between reference and exposure sites ($t=-2.2$, $p=0.1$).

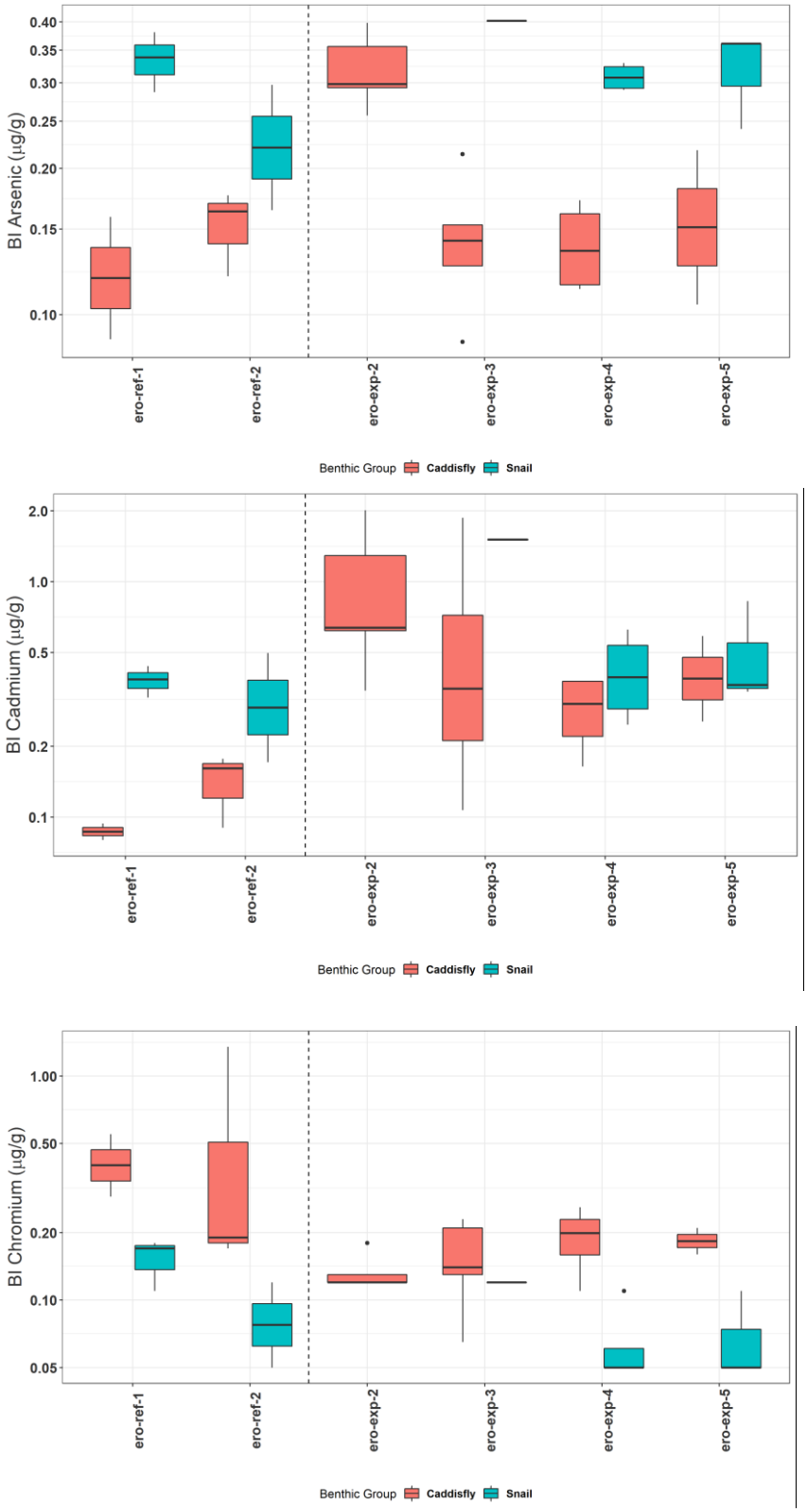

Figure 4-44: Benthic invertebrate tissue metals at erosional sites, 2015.

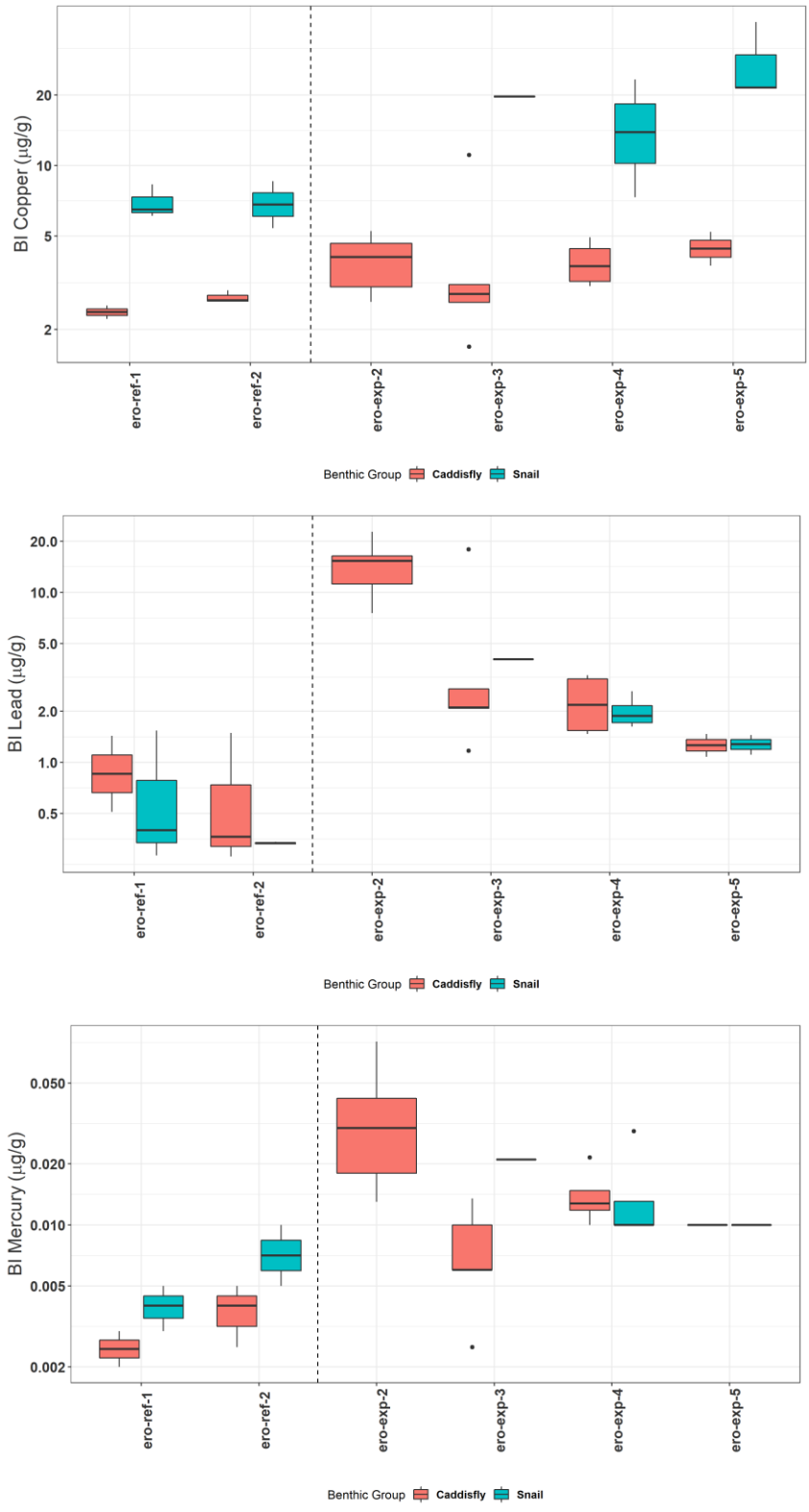

Figure 4-45: Benthic invertebrate tissue metals at erosional sites, 2015. The vertical line separates reference from exposure sites

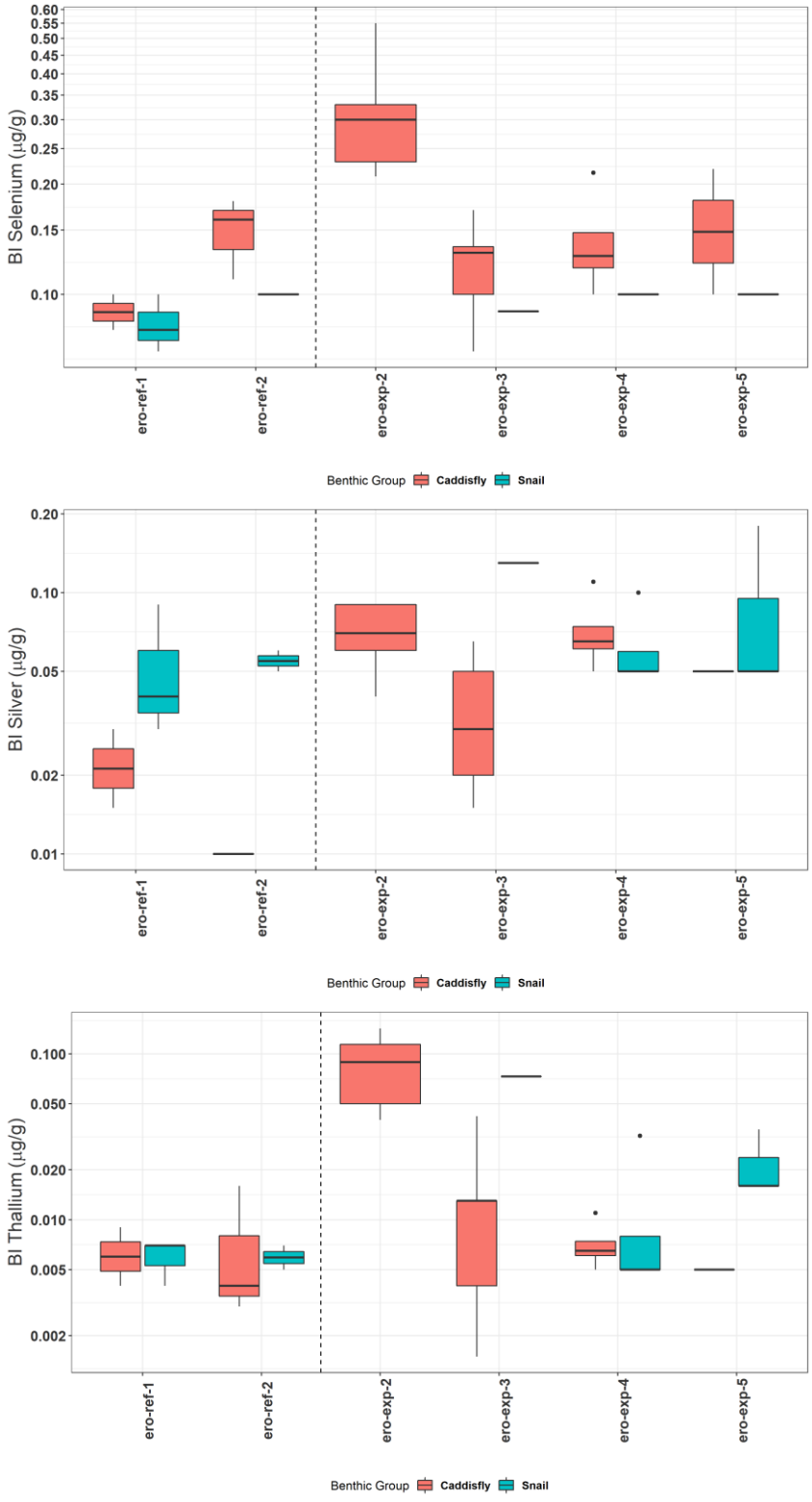

Figure 4-46: Benthic invertebrate tissue metals at erosional sites, 2015.

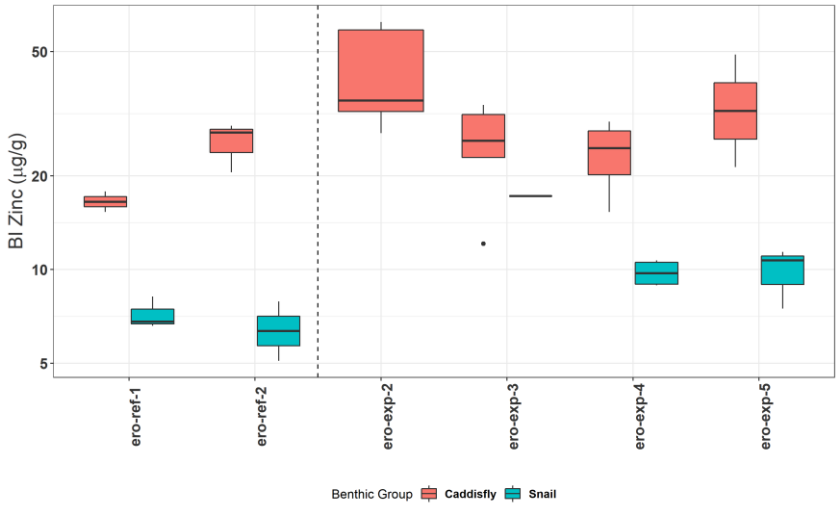

Figure 4-47: Benthic invertebrate tissue metals at erosional sites, 2015.

4.4.5 Benthic Community Response

In 2015 erosional sites with higher velocities had greater benthic macroinvertebrate abundance and were dominated by EPT taxa. This remains consistent with results of the 2012 AREMP (Hawes et al. 2014) and previous studies by Larratt et al. (2013).

There are many potential explanatory variables that influence benthic community structure including abundance, species richness, diversity and other metrics summarized above. Flows and the related factors of velocity, substrate size, shear stress, light penetration and particulate suspension exert control over periphyton and benthic macroinvertebrate growth and species assemblages. While the AREMP focuses on studying the effects of effluent discharge on aquatic environments, Larratt et al. (2013) found that key controlling factors of river production shift with season. During summer high flow periods water temperature and substrate type are the primary controlling factors. During fall lower flow periods, substrate size and wetted depth were dominant factors in the LCR.

Erosional Habitats

Average velocity at a site is the most important variable influencing benthic macroinvertebrate communities in erosional habitats (Figure 4-48 and Figure 4-49). Velocity had a large correlation coefficient for the Hilsenhoff Biotic Index, total biomass, %EPT, effective number of species, and EPT richness. Exposure Area 2, within the side channel downstream of the CIII outfall had

the highest mean velocity of all sites (0.40 m/s) followed by Exposure Area 5 (0.35 m/s) and Exposure Area 3 (0.33 m/s).

Substrate size (D90) was also an important variable influencing biomass and percent Chironomidae. Percent Chironomidae increase with larger substrates because sites with boulder have fines between the boulder which provides suitable habitat for Chironomidae taxa. In addition, some of the samples with high percent Chironomidae also have low velocities such as ERO-EXP-1-2.

Distance from HLK was negatively associated with total biomass and abundance. These associations may be strongly influenced by the low abundance and biomass at ERO-EXP-5-4 and ERO-EXP-5-5. These sites are the furthest downstream and also have the lowest invertebrate productivity of any of the 2015 sites. Other factors such as velocity may also be responsible for low abundance and biomass at these sites.

The covariate Reference spanned zero for all productivity and community composition metrics (Figure 4-48 and Figure 4-49). The effect of treatment (i.e. Reference vs. Exposure) is therefore of low importance in describing variation in productivity and community composition.

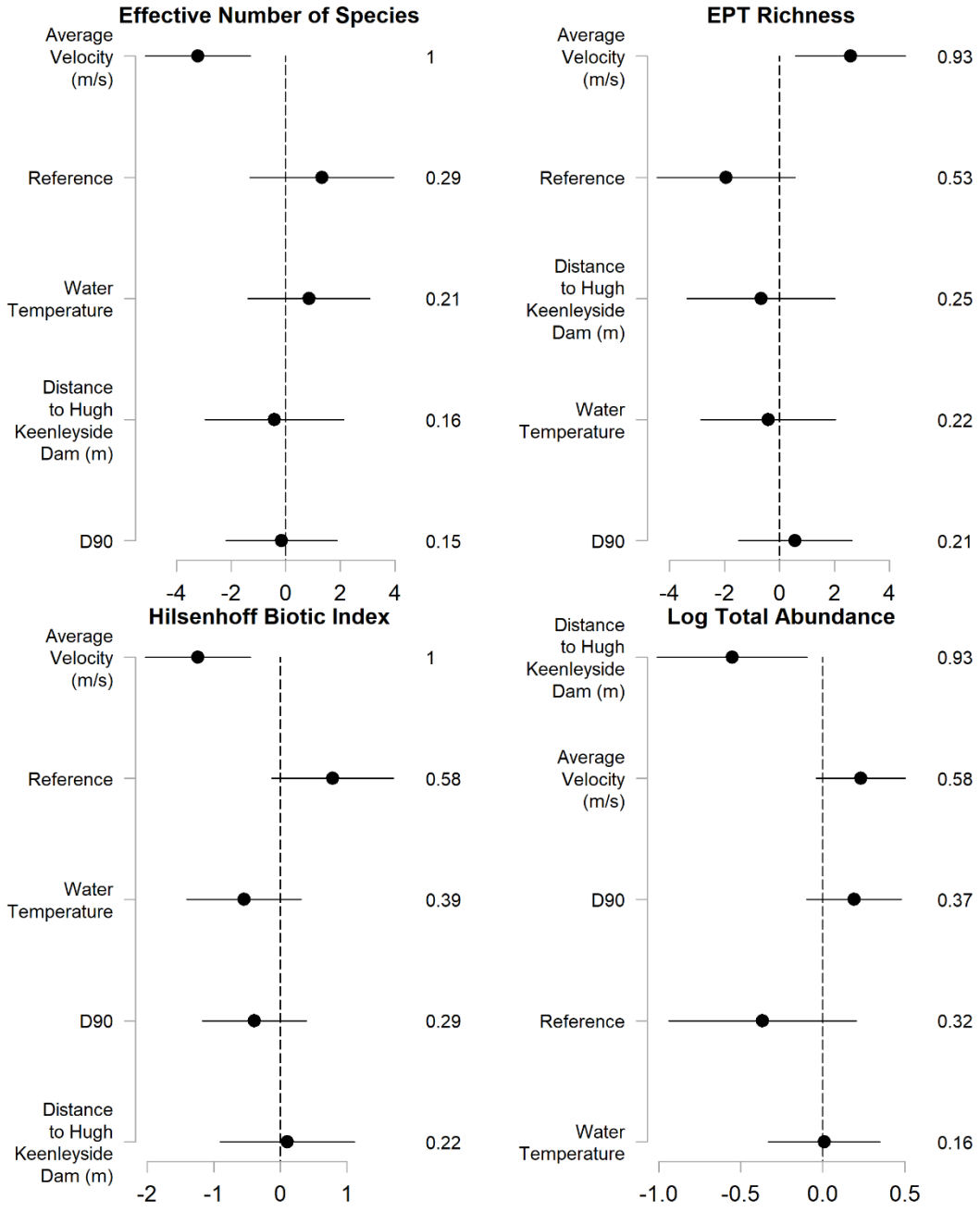

Figure 4-48: Model averaged parameter coefficients and 95% confidence limits from model averaged linear models of the effect of treatment (reference or exposure), distance downstream of HLK outflow, average velocity, water temperature, and substrate (D90) on benthic invertebrate productivity and diversity in erosional sites in LCR above and below smelter outflow.

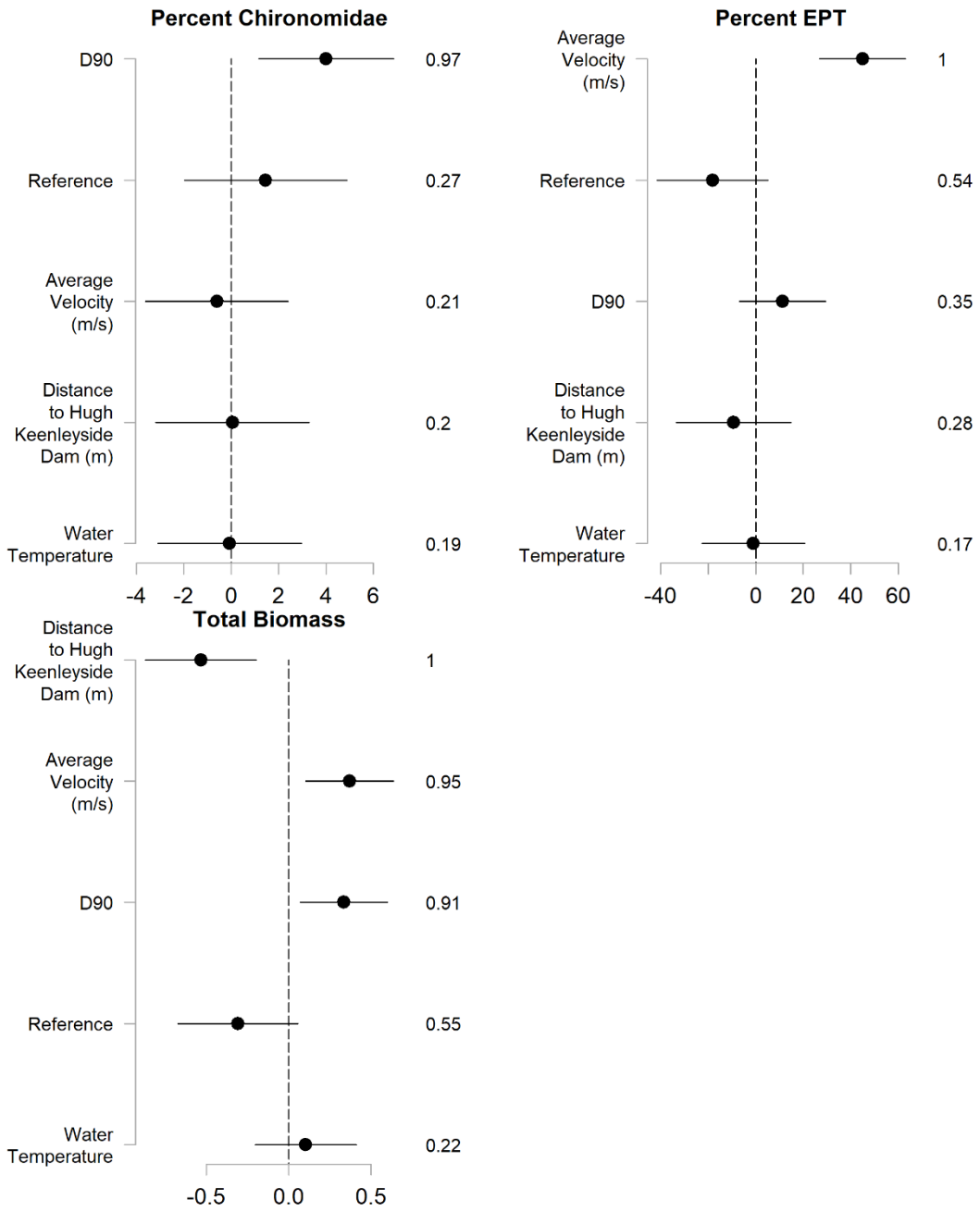

Figure 4-49: Model averaged parameter coefficients and 95% confidence limits from model averaged linear models of the effect of treatment (reference or exposure), distance downstream of HLK outflow, average velocity, water temperature, and substrate (D90) on benthic invertebrate productivity and diversity in erosional sites in LCR above and below smelter outflow.

Depositional Habitats

The effect of treatment (reference vs. exposure area) was tested on four benthic invertebrate metrics which quantify community composition and productivity. To test for the effect of year (2012 and 2015) and if the effect of treatment differs with year an interaction term was initially tested. The interaction term of year and treatment was not significant for all four benthic invertebrate models so it was dropped from the final model. Total abundance at reference and exposure sites was not significantly different at depositional sites ($F=0.68$, $p=0.42$). Similarly, treatment did not have a significant effect on percent EPT, percent Chironomidae and effective number of species (Appendix Q). The four benthic invertebrate metrics did not differ significantly by year sampled.

Summation

There was little to no difference in the structure of benthic macroinvertebrate communities between Reference and Exposure Areas for both erosional and depositional habitats. However, community structure for both habitat types differed significantly between years (2012 and 2015). Physical habitat attributes (velocity and substrate size) are the most important variables influencing communities in erosional habitats.

4.5 Small Bodied Fish Condition and Tissue Metals Monitoring

Sculpins were used for small body fish analysis because they are abundant, sedentary, and have high site fidelity. In addition, these species have small home ranges and are unlikely to migrate between exposure and reference areas. Sampling was carried out from April 26-30, 2016 when flows were still low, ranging between about 2275 – 2330 m^3/sec. During this time female sculpin were notably gravid. Following catch success in the 2013 sampling program (Hawes et al 2014), Torrent Sculpin (*Cottus rhotheus*) were the target species for health assessments.

Figure 4-50: Common sculpins collected during spring 2013 and 2016 sampling programs. From left to right: Torrent Sculpin, Columbia Sculpin, Shorthead Sculpin.

A total of 1077 small-bodied fish were collected over the 5-day period. Columbia Sculpin (*Cottus hubbsi*) was encountered most frequently during sampling with Shorthead Sculpin (*Cottus confuses*) and Torrent Sculpin accounting for 37% and 10% of total catch respectively (Table 4-23).

Table 4-23: Small-bodied fish collection summary. Fish were collected May 13-16, 2013 from the mainstem of the Columbia River with a backpack electrofisher and pole seine.

Species	Catch	% Catch
Rainbow Trout (*Oncorhynchus mykiss*)	3	0.3%
Northern Pikeminnow (*Ptychocheilus oregonensis)*	5	0.5%
Prickly Sculpin (*Cottus asper*)	12	1.1%
Longnose Dace (*Rhinichthys cataractae*)	16	1.5%
Torrent Sculpin (*Cottus rhotheus*)	116	10.8%
Shorthead Sculpin (*Cottus confuses*)	396	36.8%
Columbia Sculpin (*Cottus hubbsi*)	529	49.1%
	1077	

Cottus bairdi hubbsi is Blue-listed[2] in British Columbia. Its range includes the Columbia River system in British Columbia, Idaho, Washington, Oregon, and Nevada; and the Harney basin in Oregon (McPhail 2007). *C. bairdi hubbsi* was

[2] Blue list Includes any native species or subspecies considered to be of Special Concern (formerly Vulnerable) in British Columbia. Taxa of Special Concern have characteristics that make them particularly sensitive or vulnerable to human activities or natural events. Blue-listed taxa are at risk, but are not Extirpated, Endangered or Threatened.

the dominant sculpin species in the AREMP small-bodied fish collection and made up 51% of the total sculpins collected (n = 1041). Fall sampling events by others also revealed high relative abundance of *C. bairdi hubbsi* in riffle habitats of the LCR (Porto and Lawrence 2011).

Cottus confuses is also Blue-listed. Habitat includes fast riffles of cold headwaters, creeks, and small to large rivers (McPhail 2007), also sometimes large rivers with slow-moving water (e.g., along shorelines, in backwaters). It is generally found in more upstream habitats relative to *C. bairdi hubbsi*. *C. Confusus* was the second most abundant sculpin species collected as part of the AREMP small-bodied fish survey and made up 38% of the total sculpins collected (n = 1041).

There were 319 sculpin retained for analysis of tissue metals and health assessments. Ninety-two (92) sculpin were from reference areas and 227 were collected from exposure areas (Table 4-24).

Table 4-24: Summary of sculpins retained for tissue metals and health assessments.

Species		Exposure	Reference	Total
Prickly Sculpin		**4**	**7**	**11**
	Female		4	4
	Male	3	3	6
	Unknown	1		1
Columbia Sculpin		**186**	**33**	**219**
	Female	93	15	108
	Male	79	14	93
	Unknown	14	4	18
Torrent Sculpin		**37**	**52**	**89**
	Female	12	13	25
	Male	20	26	46
	Unknown	5	13	18
		227	**92**	**319**

4.5.1 Sculpin Condition Metrics

In 2015 sculpin data, there was no significant difference ($p > 0.05$) between reference and exposure areas for condition measured as liver weight corrected for fish totally body weight and for body weight corrected for fish length. There was no significant difference for male fish gonad corrected for total body weight between reference and exposure areas (m=-0.011±0.40, p=0.98). Likewise, there was no difference between female gonad fish corrected for total body weight in reference and exposure areas (m=-0.18±0.11, p=0.11). Overall, the males were found to have lighter liver weights as well as total body weights when corrected for fish length, compared to the females. As a result, both the gonadosomatic index and liversomatic index showed no difference with distance from smelter while the difference between males and females was significant for these indices (Figure 4-51).

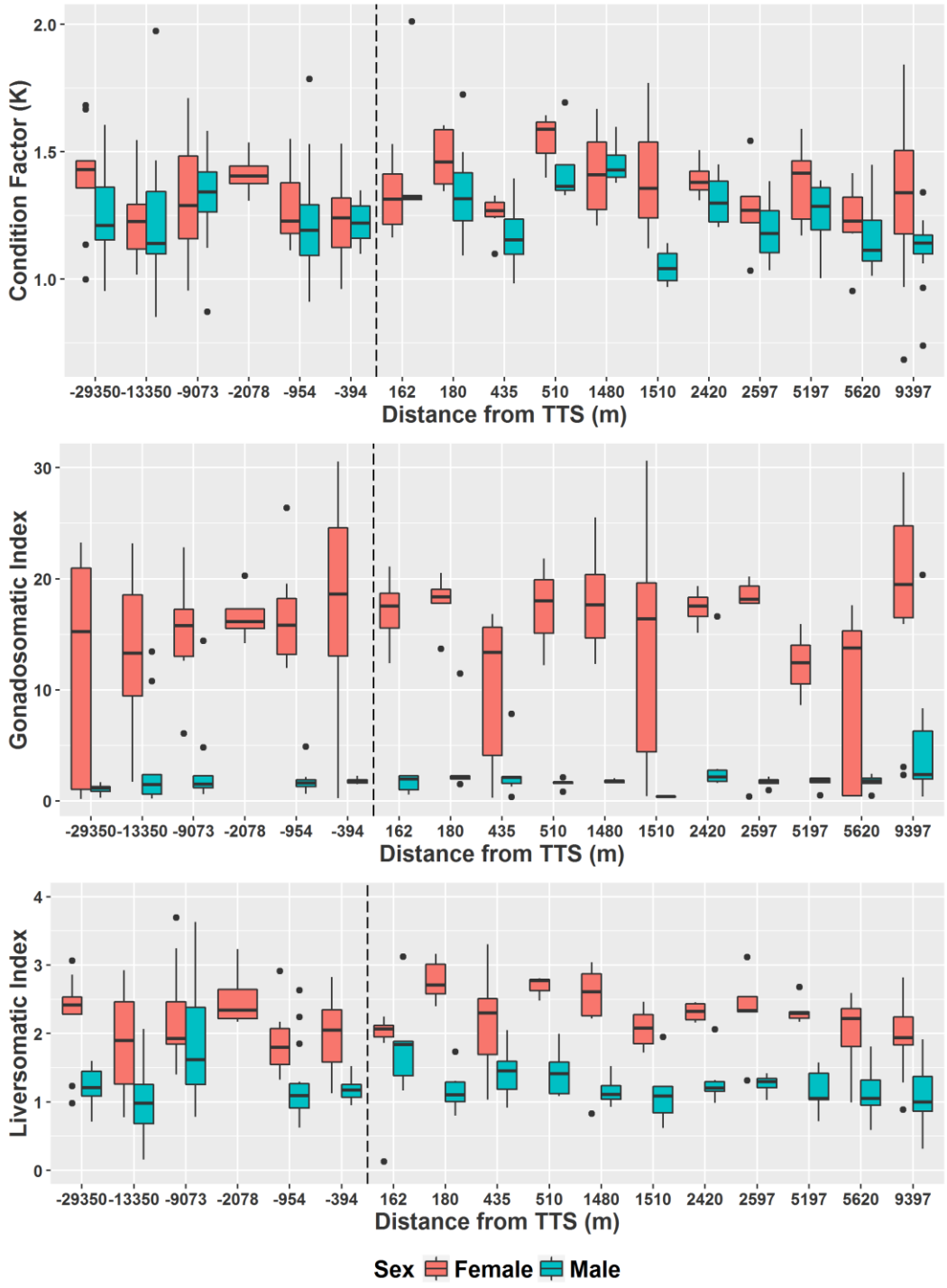

Figure 4-51: Sculpin condition metrics taken from fish collected during the April 2016 small-bodied fish sampling program. Plotted data to the left of the vertical dashed line are upstream reference areas and those to the right of the line are exposure areas.

4.5.2 Sculpin Tissue Metals

In most cases, tissue metal concentrations in sculpin were below TRO guidelines in both reference and exposure sites. However, exceedances were prominent in fish from near-field sites (e.g. ERO-EXP-2) (Figures 4-52 – 4-55). For example, ERO-EXP-2 and ERO-EXP-3-1-R had higher lead levels compared to other sites. ERO-EXP-2 also had higher thallium levels when compared to other sites. These exceedances appear as outliers in Figure 4.55. The outliers are due to the skewness of data. The high tissue metals concentrations in ERO-EXP-2 (the nearfield side channel immediately downstream of the CIII outfall) resulted in the heavy-tailed distribution and distinct difference of concentrations in fish collected in the ERO-EXP-2 side channel compared to all other exposure sites, which had lower concentrations.

A mixed effects models was used to test the effect of treatment (exposure and reference) on metal concentrations in sculpin. A random intercept was fitted to each site. Lead concentrations at exposure sites were significantly higher than concentrations at reference sites ($p<0.05$). The concentrations of arsenic, cadmium, copper, iron, selenium, thallium and zinc at reference and exposures sites were not significantly different. Differences in chromium concentrations at reference and exposure sites were not tested because 72%, had chromium concentrations below the limit of detection. For the mixed effect mercury model total length was used as a covariate because mercury bioaccumulates in fish. As expected, the total length of sculpin had a positive association with mercury concentrations ($m=0.22\pm0.03$, $p<0.001$). However, treatment did not explain significant differences in mercury concentrations in fish ($m=-0.18\pm0.18$, $p=0.92$).

In 2015 sculpin samples, tissue concentrations for most metals of interest were below the wildlife TRO guidelines in both the reference and the exposure sites. However, some exceedances were observed. There was one exceedance of both the arsenic wildlife TRO (0.47 mg/kg ww) and cadmium wildlife TRO (0.9 mg/kg ww) from ERO-EXP-3-1. There were 258 sculpins with whole body lead concentrations exceeding the TRO (0.16 mg/kg wet weight) for wildlife. Of these, 111 fish were from the IDZ. The maximum whole fish lead concentration measured for a near-field sculpin was 20.3 mg/kg *ww*. This individual was collected from the right bank just upstream of New Bridge. Sculpins collected from ERO-EXP-2 had the highest average lead concentrations of 6.22 mg/kg *ww.* Sculpins from ERO-EXP-3-1 (Right Bank), just downstream of the CII outfall before New Bridge, had the second highest average lead concentrations of 4.56 mg/kg *ww.* Concentrations drop markedly with increasing distance downstream from New Bridge. Sculpins collected from the right bank adjacent downtown Trail (ERO-EXP-3-2-R) had average lead concentrations that were 3.5 times lower than fish collected just 300 m further upstream from ERO-EXP-3-1-R. Tissue lead concentrations decrease

with distance downstream to a point where they are about 9 times lower than average concentrations measured at fish from New Bridge. However, all sculpins collected from downstream the IDZ had lead concentrations that exceeded the TRO for wildlife. In addition, 37 sculpins from Reference sites had lead concentrations that exceed the TRO.

Table 4-255: Summary and distribution of TRO exceedances for sculpin whole body lead concentrations.

Row Labels	Location	Total number of exceedances/sites	MaxPb Conc. (mg/kg *ww*)	Ave. Pb Conc. (mg/kg *ww*)
Ero-Exp-2	IDZ	30	12.70	6.22
Ero-Exp-3-1-R	IDZ	15	20.30	4.56
Ero-Exp-1	IDZ	30	8.23	1.51
Ero-Exp-3-2-R	IDZ	15	4.11	1.29
Ero-Exp-3-4-R	Exp D/S IDZ	15	2.60	1.07
Ero-Exp-3-2-L	IDZ	9	3.26	0.88
Ero-Exp-3-3-R	Exp D/S IDZ	15	1.28	0.67
Ero-Exp-3-4-L	Exp D/S IDZ	10	1.47	0.66
Ero-Exp-3-3-L	Exp D/S IDZ	10	1.04	0.57
Ero-Exp-4-5-R	Exp D/S IDZ	15	0.99	0.53
Ero-Exp-5	Exp D/S IDZ	30	1.23	0.51
Ero-Exp-4-5-L	Exp D/S IDZ	15	0.90	0.45
Ero-Exp-3-1-L	IDZ	12	0.87	0.40
Ero-Ref-2-4	Ref	10	0.45	0.29
Ero-Ref-3	Ref	6	0.37	0.26
Koot-Ref-1	Ref	21	0.35	0.25

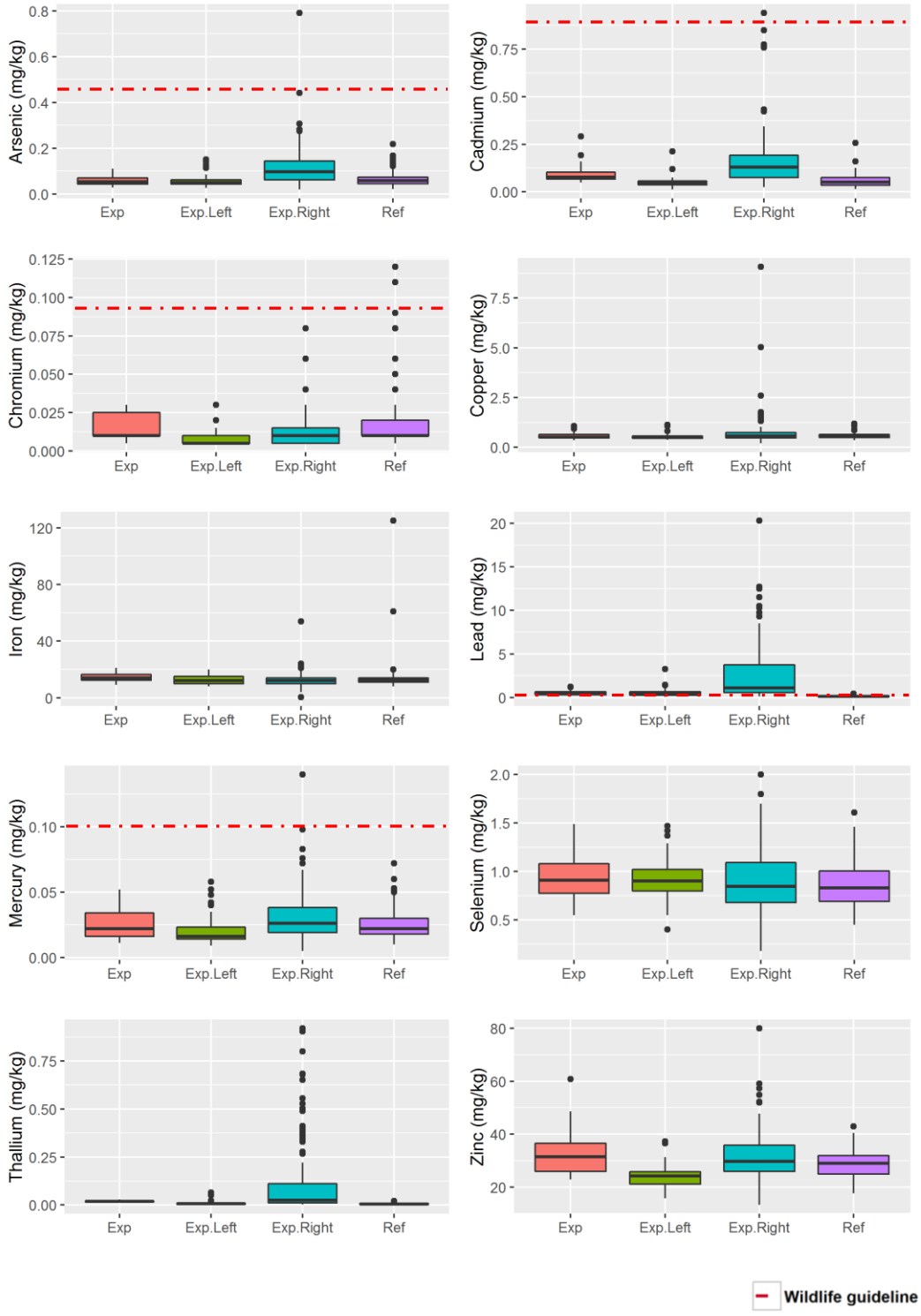

Figure 4-52: Metal concentrations (mg/kg wet) in whole body sculpin samples in reference and exposure above and below smelter outflow respectively. The pink box (Exp) represents ERO-EXP-5, which is within the area of total effective dilution of the plume across the channel and therefore represents both banks.

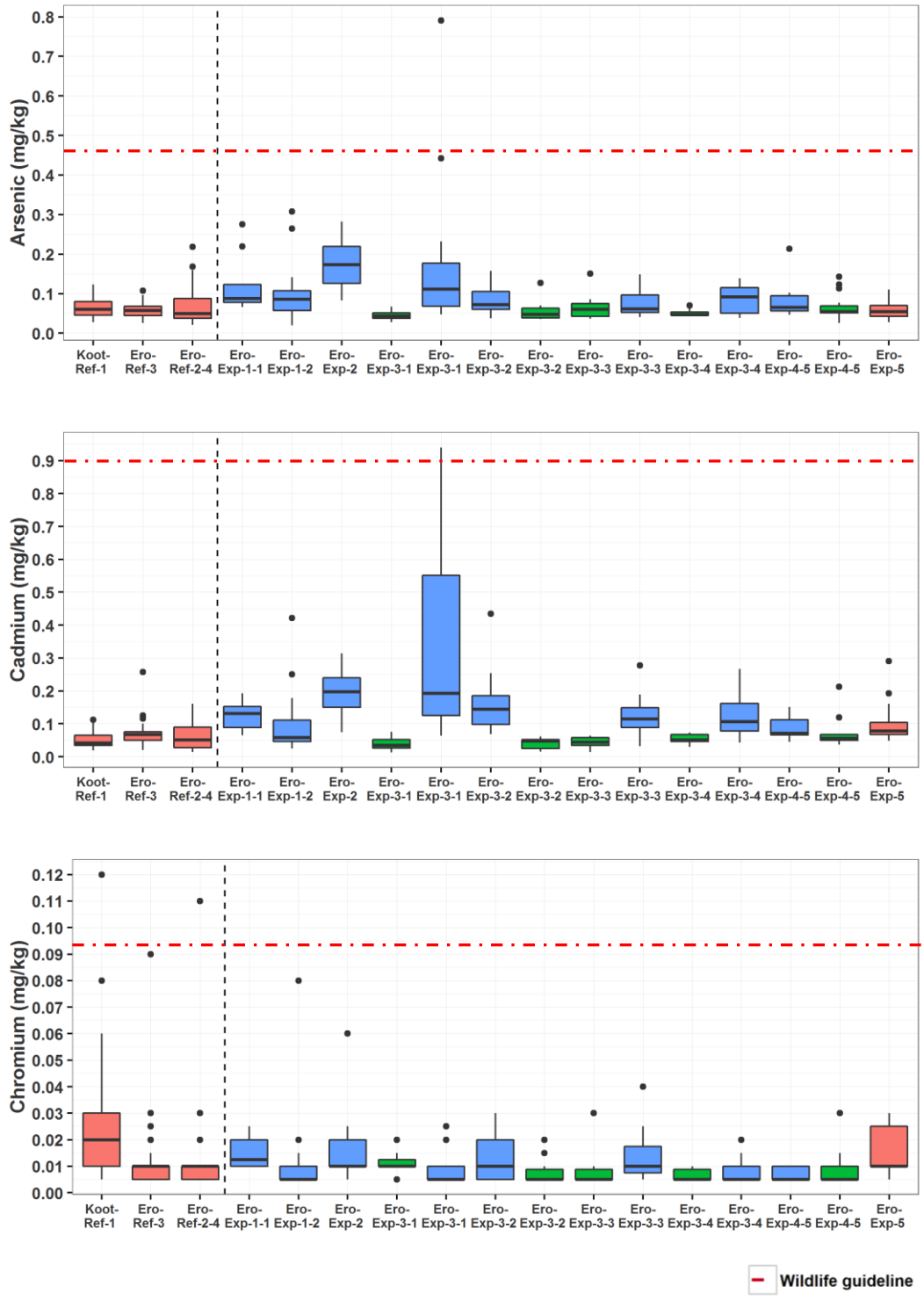

Figure 4-53: Metal concentrations (mg/kg wet) in whole body sculpin samples in reference and exposure by bank. Both banks (pink); Left Bank only (green); right bank only (blue).

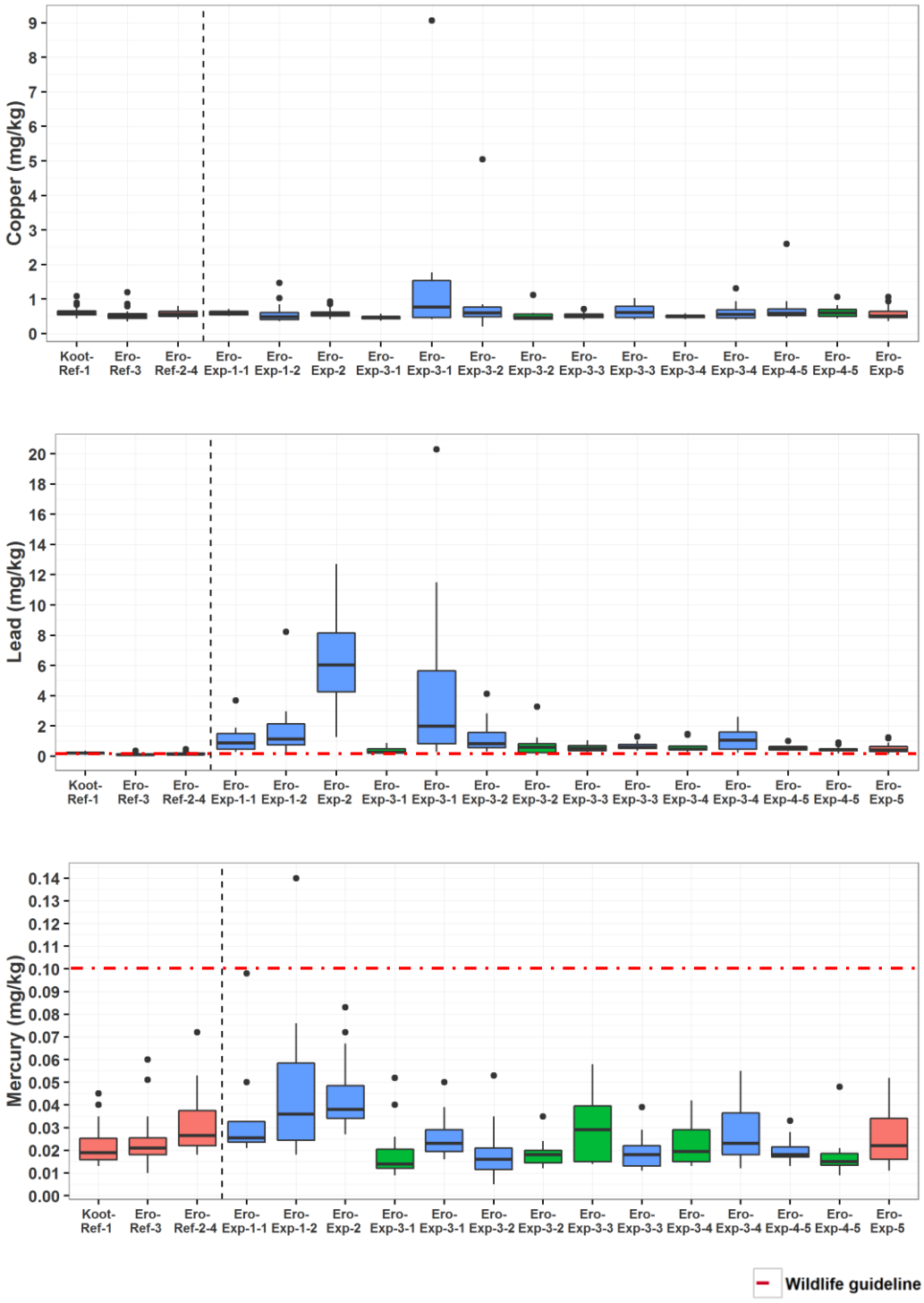

Figure 4-54: Metal concentrations (mg/kg wet) in whole body sculpin samples in reference and exposure by bank. Both banks (pink); Left Bank only (green); right bank only (blue).

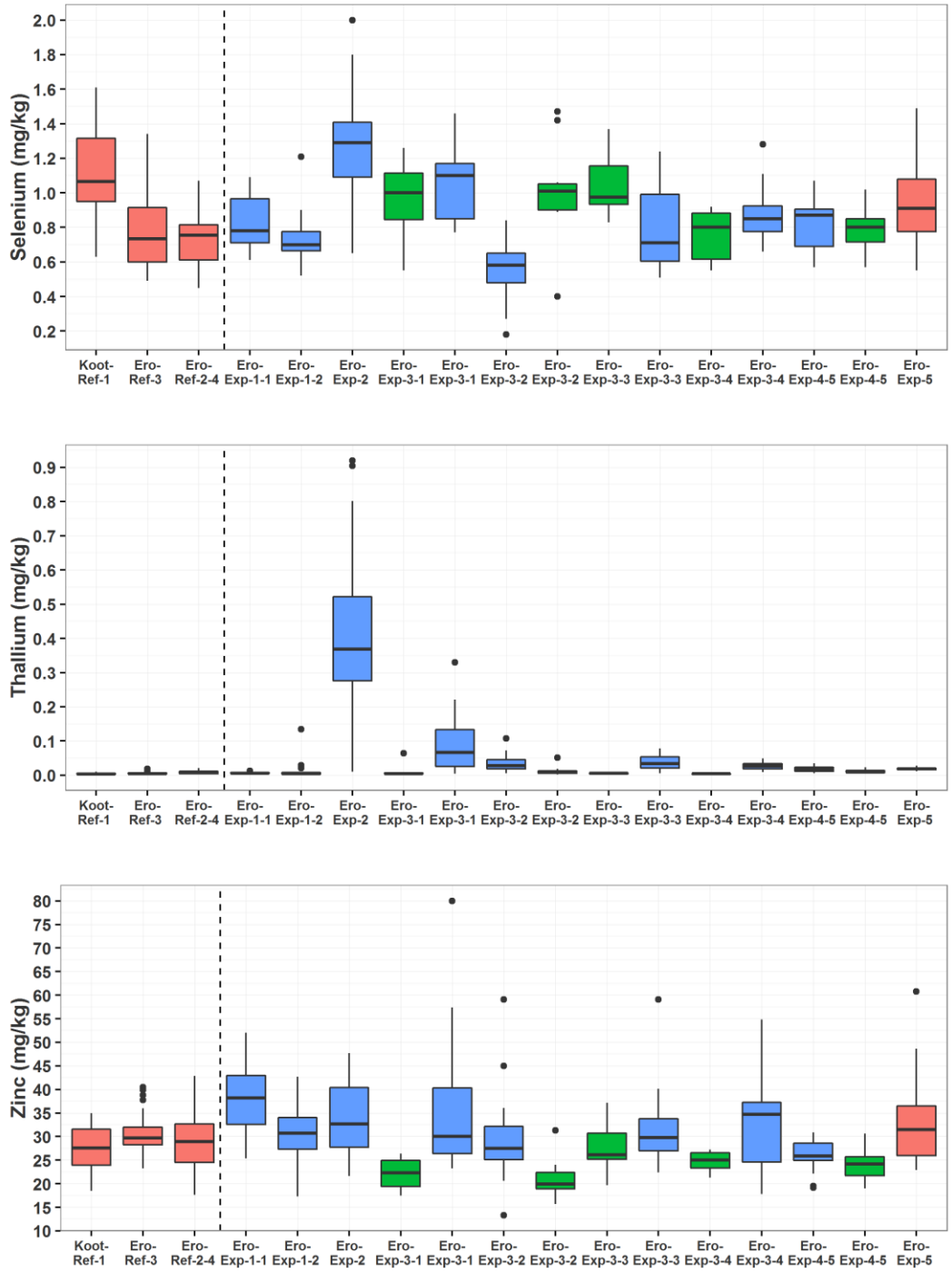

Figure 4-55: Metal concentrations (mg/kg wet) in whole body sculpin samples in reference and exposure by bank. Both banks (pink); Left Bank only (green); right bank only (blue). *The draft BC guideline for Se in fish tissue (muscle) is 4mg/kg.*

4.6 Large Bodied Fish Condition and Tissue Metals

A total of 120 adult fish (Mountain Whitefish, Rainbow Trout, and Walleye) were collected from two sites in the study area. Twenty fish of each species (60 total) were collected from the reference area (HLK Dam downstream to Robson Bridge) and 60 from the exposure area (Beaver Creek downstream to Waneta). Sampling focused on obtaining catchable-size fish (>200 mm) that would be sought by anglers. Thus, lower age class fish were generally excluded from sampling. Varying tissue metal concentrations among the three species was expected due to their different life histories and feeding habits. Walleye, being a top-level predator and piscivorous was expected to have higher concentrations of bioaccumulative substances. Summaries of ANCOVA models testing for effects of treatment, species, sex, and individual size on condition and tissue metal concentrations are included in Appendix R.

4.6.1 Large Bodied Fish Condition

There was no significant difference in Walleye condition (k) between fish caught in the reference area upstream of the smelter and those caught downstream of the smelter (Figure 4-56). Mountain Whitefish that had a fork length less than 400 cm had a higher fish condition in exposure areas (R^2 = 0.58 p <0.001). Rainbow Trout condition (k) was higher in fish caught from the reference area than those caught downstream of the smelter (R^2 = 0.13 p =0.01).

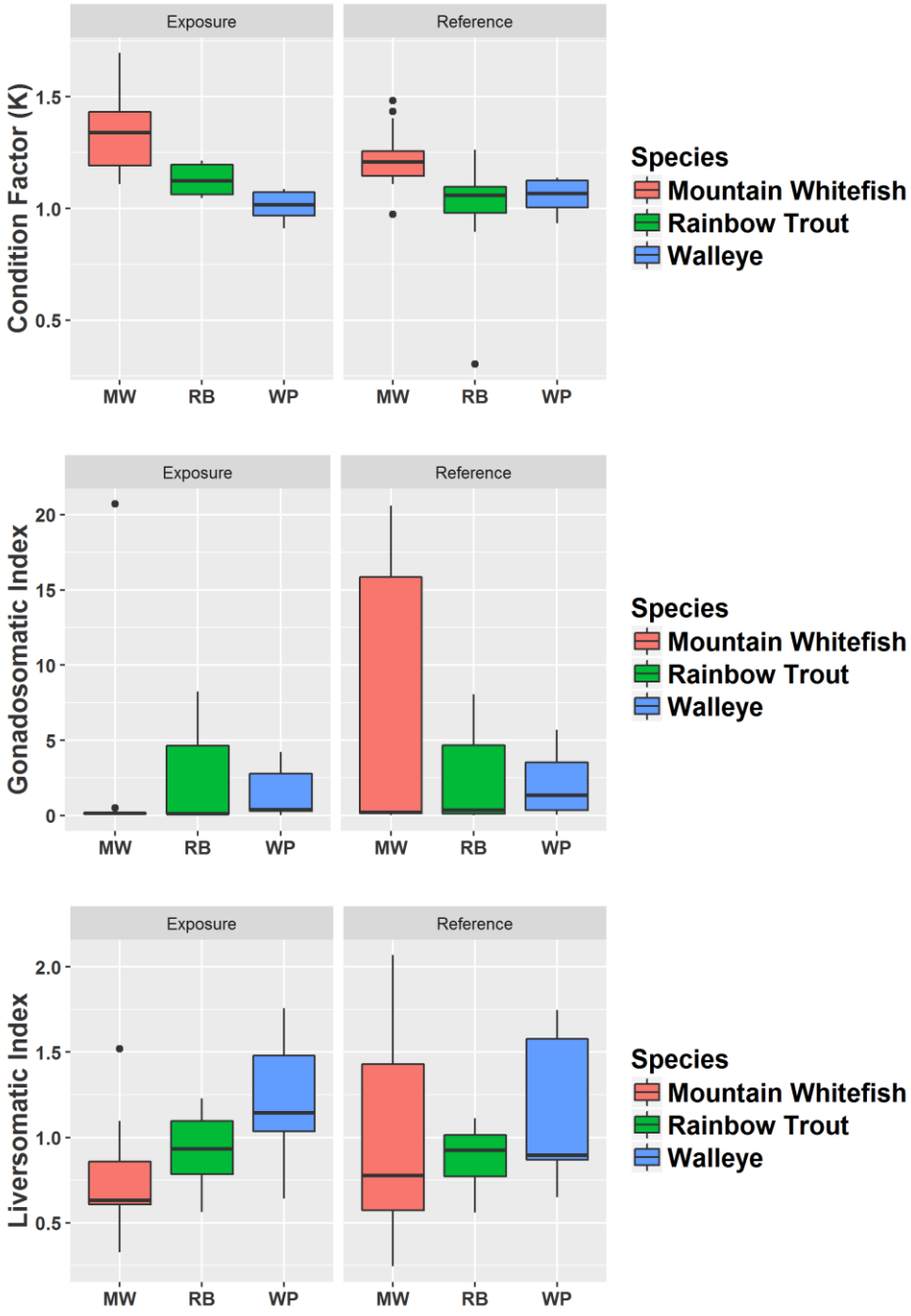

Figure 4-56: Box plots of Mountain Whitefish, Rainbow Trout, and Walleye condition metrics sampled in 2016 from reference (upstream of smelter) and exposure (downstream of smelter) areas in the LCR.

4.6.2 Large Fish Tissue Metals

Concentrations measured from fish caught in 2015 were compared to Canadian guidelines for chemical contaminants and toxins in fish for human consumption (Canadian Food Inspection Agency 2011) and the LCR tissue residue objectives (TRO) for wildlife (1997). Three metal guideline concentration limits: Human health, wildlife, and BCMOE, are plotted in the following section. However, some thresholds are outside of the data range plotted and are therefore not visible in all figures.

When considering tissue metals concentrations, it should be acknowledged that individuals of these species can migrate long distances between reference and exposure areas at different times of the year. The distance an individual may travel and the residency time in a given area is not known. In other words, fish collected from the upstream reference area may have frequented areas downstream of the smelter and vice versa.

Tissue metals concentrations are reported in mg/kg wet. The mean % moisture of sampled fillets, whole fish, and gut samples was 73.8% ±3.5, 71.0% ±3.6, and 63.9% ±10.4 respectively.

4.5.2.1 Arsenic (As)

Arsenic concentrations in fillet tissues are very unlikely to pose a risk to human health or wildlife consumers of fish. None of the muscle tissue and whole fish had arsenic concentrations above the TRO (wildlife) guideline or the human health consumption guideline (Figure 4-57).

Fillet arsenic increased marginally with fork length but did not significantly differ among reference and exposure sites, or among species or sex. (Model R^2 = 0.31, p <0.001). However, fillet arsenic was higher in 2013 samples compared to 2016. Whole body samples did not differ significantly in arsenic concentrations between reference and exposure sites, among species, sex, or lengths. Arsenic levels in whole body samples were statistically different among sample years (model R^2 = 0.29, p <0.001). Arsenic levels were statistically higher in stomach contents of smaller Rainbow Trout and Walleye caught from the reference area upstream of the smelter (model R^2 = 0.11, p = 0.01). The elevated metal concentrations in the gut would be related to solid metals associated with sediments that are passed through the fish and not absorbed.

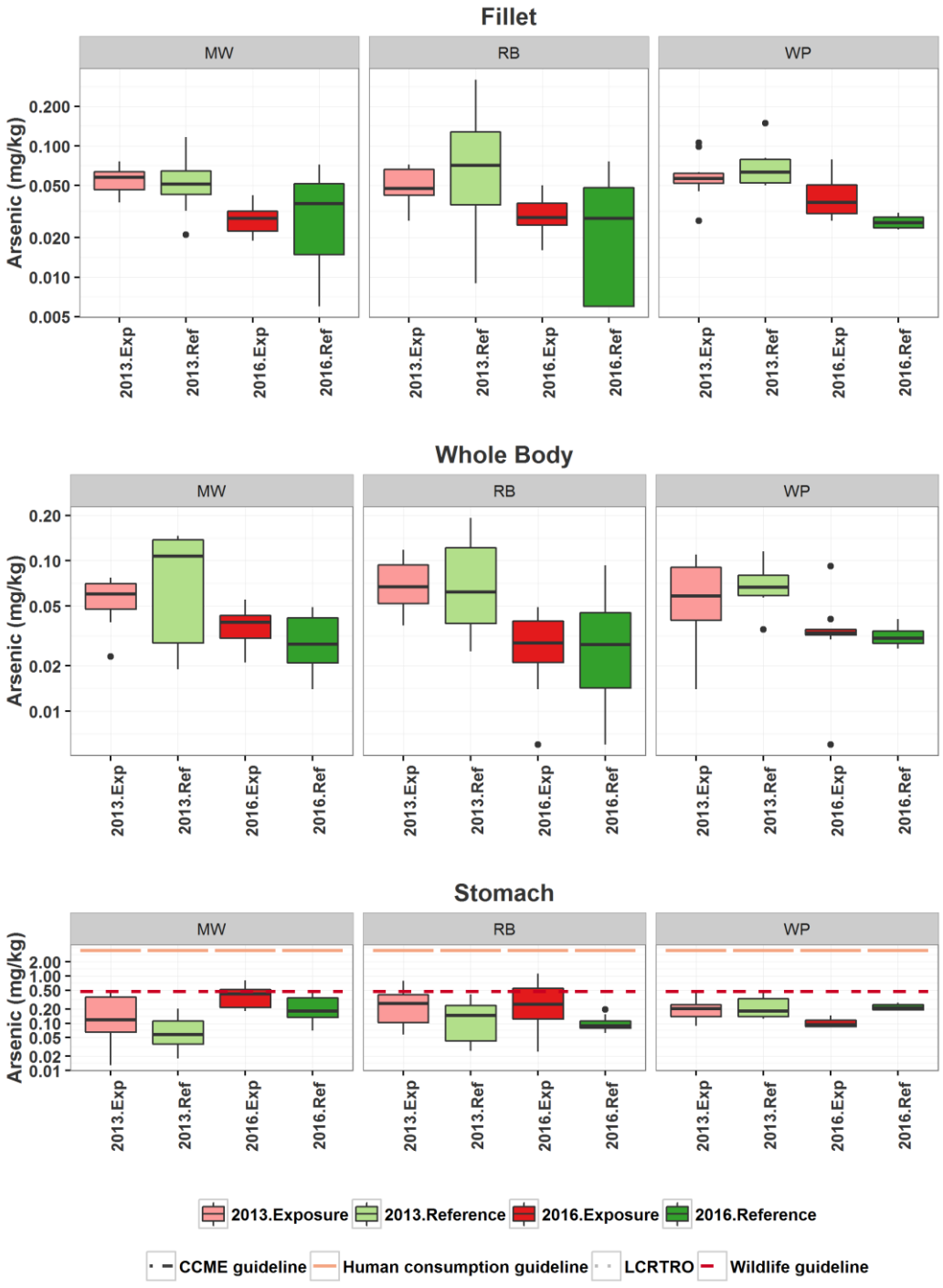

Figure 4-57: Concentrations of Arsenic (mg/kg wet) in fillet, whole body, and stomach content samples from Mountain White fish (MW), Rainbow Trout (RB), and Walleye (WP) collected from reference (Ref) and exposure (Exp) areas upstream and downstream of the smelter respectively. Human consumption and wildlife guidelines are included as horizontal lines where they fall within metal concentrations. Ten percent of fillet and five percent of whole body samples had As concentrations below the limit of detection.

4.5.2.2 Cadmium (Cd)

Cadmium concentrations in muscle tissue and whole fish are very unlikely to pose health risk concerns to humans or wildlife. Muscle tissue and whole fish Cd concentrations were well below the TRO (0.9 mg/kg wet) (Figure 4-58) and there is no guideline set for human consumption.

The high number of non-detectable cadmium concentrations in fillet samples (88%) prevented a statistical comparison of reference and exposure sites. From visual inspection of the boxplots it is evident that Mountain Whitefish had higher fillet cadmium than Rainbow Trout and Walleye (Figure 4-58). Cadmium concentrations were significantly higher in whole body samples from exposure sites versus reference sites and in Mountain Whitefish relative to other species (model R^2 = 0.35, p = <0.001). Cadmium levels were significantly higher in the stomachs of Walleye sampled from the exposure area downstream of the smelter (model R^2 = 0.40, p = <0.001) compared to those sampled from the reference area upstream. Walleye tissue concentrations decreased marginally with larger fish.

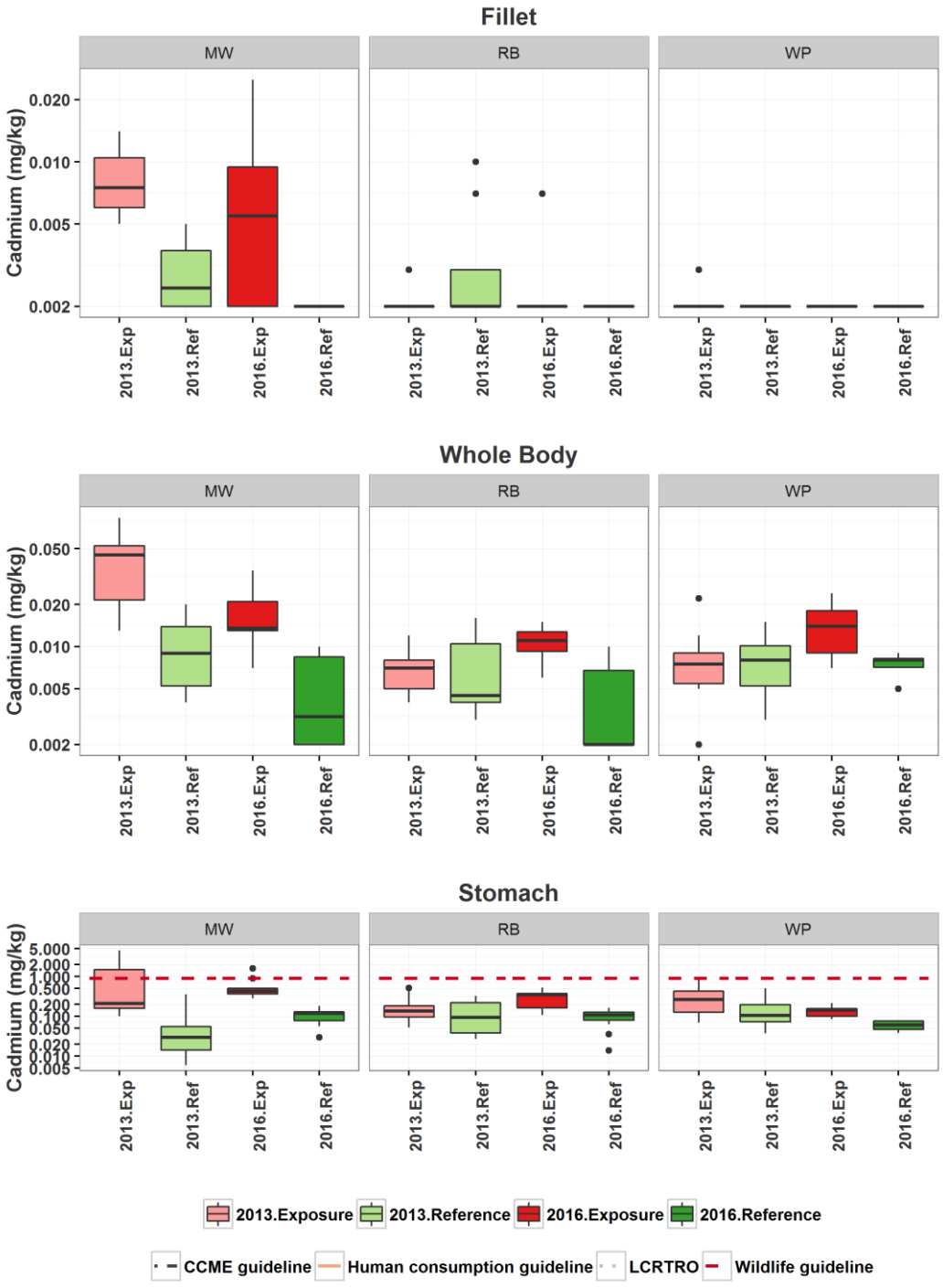

Figure 4-58: Concentrations of Cadmium (mg/kg wet) in fillet, whole body, and stomach content samples from Mountain White fish (MW), Rainbow Trout (RB), and Walleye (WP) collected from reference (Ref) and exposure (Exp) areas upstream and downstream of the smelter respectively. Human consumption and wildlife guidelines are included as horizontal lines where they fall within metal concentrations. Eighty-eight percent of fillet and twenty-three percent of whole body samples had Cd concentrations below the limit of detection.

4.5.2.3 Chromium (Cr)

Fillet chromium concentrations are very unlikely to pose health risk concerns to humans or wildlife consumers of fish. Mean Cr concentrations in muscle tissue (fillets) and in whole fish were below the detection limit (<0.01 mg/kg). The maximum recorded Cr concentration from muscle was from a reference area Rainbow Trout sample. Maximum muscle and whole fish Cr concentrations were 0.12 and 0.15 mg/kg wet weight respectively, which is well below the 0.94 mg/kg wet weight TRO.

Due to the large number of non-detectable chromium results, comparisons could not be tested statistically. However, species and years were visually compared using Figure 4-59. Gut Cr concentrations were higher than other tissue types in all 2016 samples at both reference and exposure sites. Walleye gut samples had lower Cr gut concentrations compared to Mountain Whitefish and Rainbow Trout. There were more fillet samples with non-detectable Cr results in 2013 compared to 2016 fillet samples.

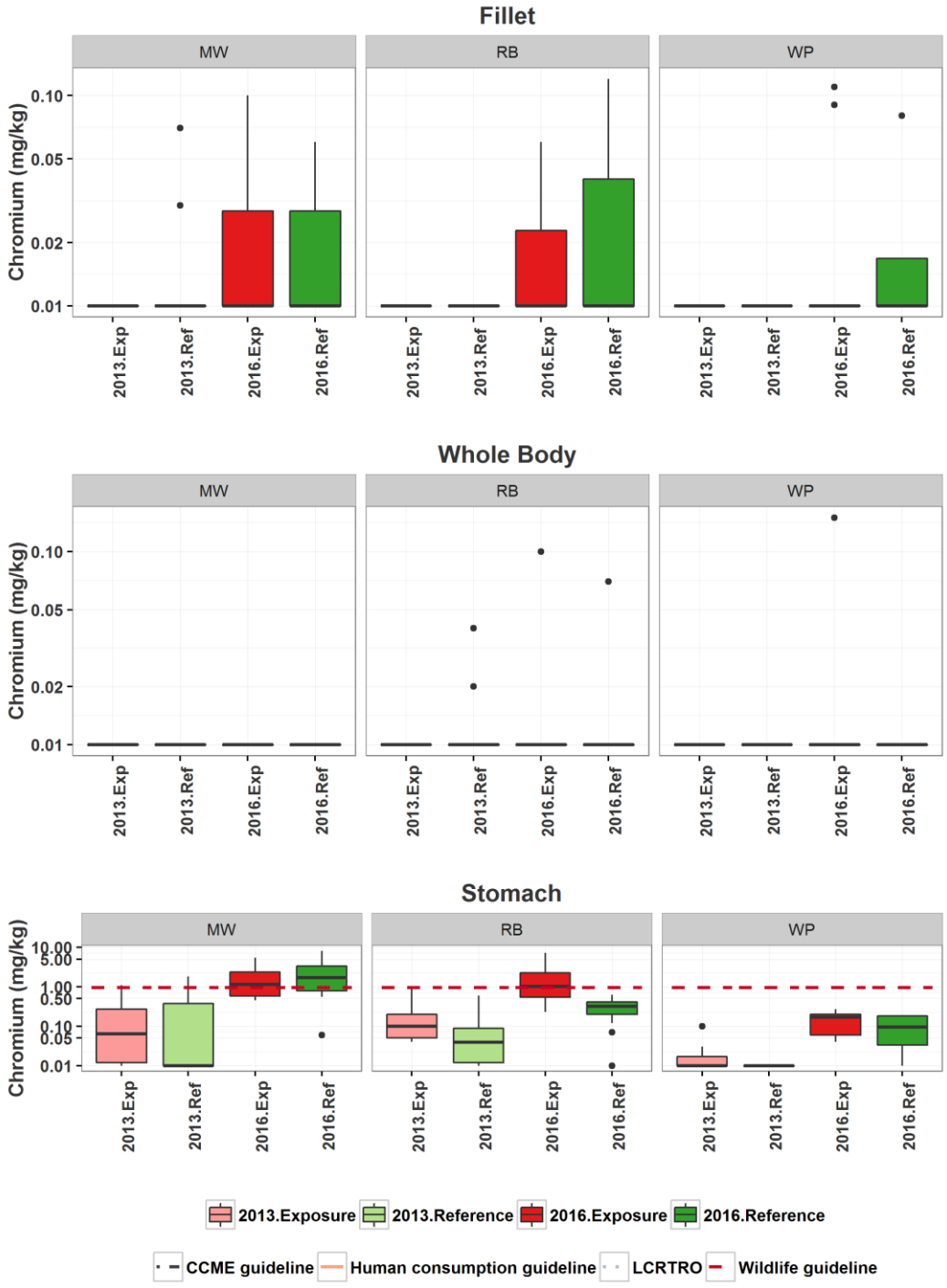

Figure 4-59: Concentrations of Chromium (mg/kg wet) in fillet, whole body, and stomach content samples from Mountain White fish (MW), Rainbow Trout (RB), and Walleye (WP) collected from reference (Ref) and exposure (Exp) areas upstream and downstream of the smelter, respectively. Human consumption and wildlife guidelines are included as horizontal lines where they fall within metal concentrations. Seventy-one percent of fillet, ninety –five percent of whole body, and four percent of stomach samples had Cr concentrations below the limit of detection.

4.5.2.4 Copper (Cu)

There are no tissue guidelines available for copper. Fillet copper was significantly lower in Rainbow Trout and Walleye than in Mountain Whitefish and significantly higher in 2016 samples than 2013 but was not significantly different between reference and exposure areas (model $R^2 = 0.63$, $p < 0.001$) (Figure 4-60). Whole body copper concentrations were significantly lower in Walleye, whereas they were significantly higher in 2016 Rainbow Trout samples (model $R^2 = 0.55$, $p < 0.001$). Copper levels were significantly higher in guts of fish in exposure sites and in Rainbow Trout, and decreases marginally with fork length (model $R^2 = 0.56$, $p < 0.001$).

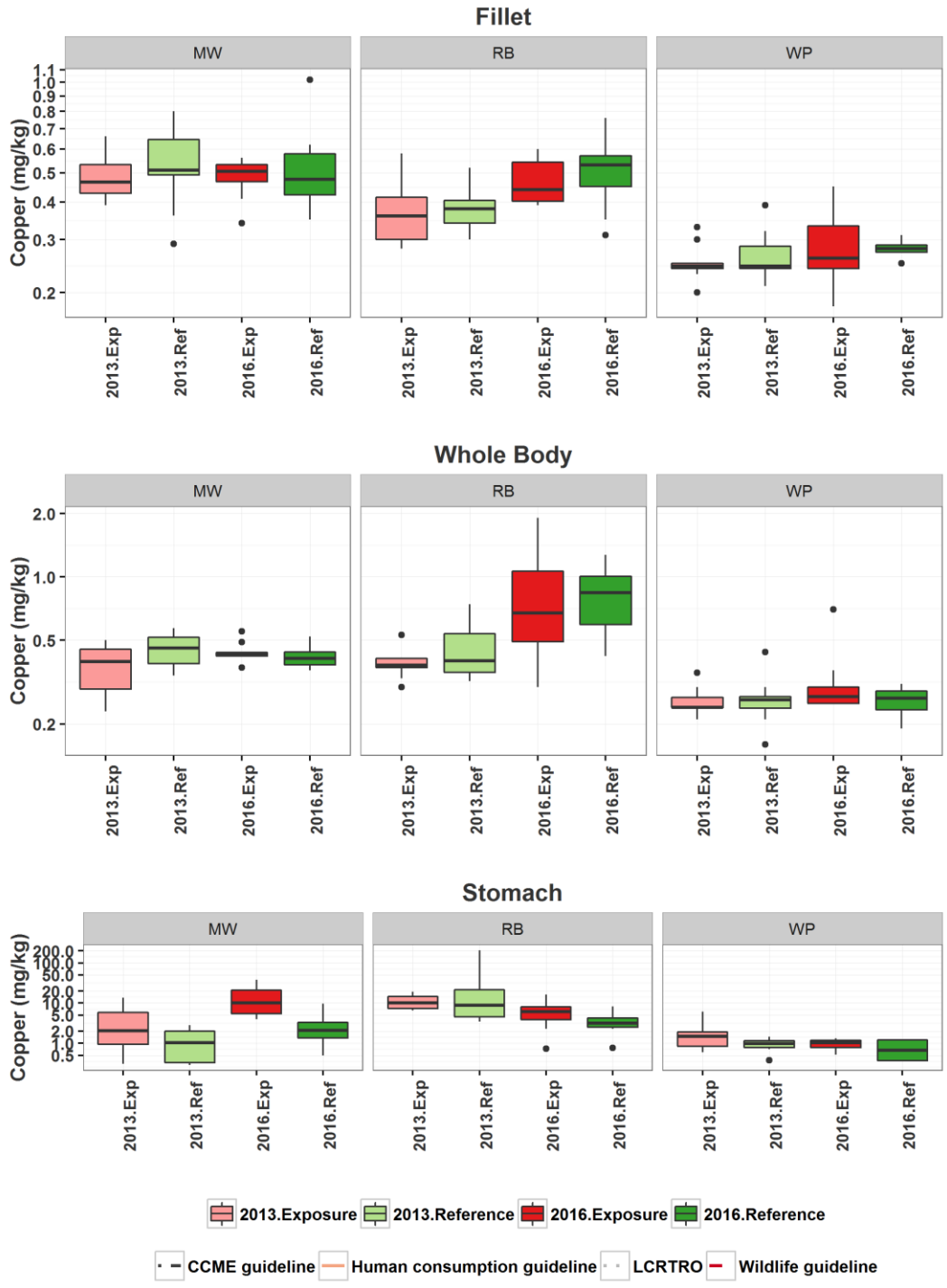

Figure 4-60: Concentrations of Copper (mg/kg wet) in fillet, whole body, and stomach content samples from Mountain White fish (MW), Rainbow Trout (RB), and Walleye (WP) collected from reference (Ref) and exposure (Exp) areas upstream and downstream of the smelter respectively.

4.5.2.5 Lead (Pb)

Lead concentrations in muscle tissue and whole fish samples were below the Canadian guideline for human consumption (0.5 mg/kg wet) and LCR TRO for wildlife in 2016 (0.16 mg/kg wet) (Figure 4-61). Likewise, there were no sample exceedances in the 2016 fillet samples. However, one Rainbow Trout caught in 2016 had a whole-body concentration above the LCR TRO for wildlife.

Most fillet lead concentrations sampled from the reference area in 2016 were below the limit of detection sampled from reference areas in 2016. As a result, an ANCOVA could not be run for fillet lead. Overall, 55% of fillet samples were below the limit of detection for lead. Through visual inspection of the data, it is evident that Rainbow Trout has higher fillet lead concentrations at exposure sites (Figure 4-61). Lead concentrations in whole body samples were significantly lower in reference area, Walleye, 2016, and increased with fork length (model $R^2 = 0.50$, $p < 0.001$). Stomach lead concentrations were significantly higher in fish sampled from the exposure area in 2016 and in Rainbow Trout and decreased slightly with fork length (model $R^2 = 0.71$, $p < 0.001$). Walleye had lower lead gut concentrations compared to the other species. Mountain Whitefish had highest mean gut concentration of 3.7 mg/kg wet followed by Rainbow Trout (1.4 mg/kg wet) in 2016. Walleye had mean gut concentration of 0.06 mg/kg wet in 2016.

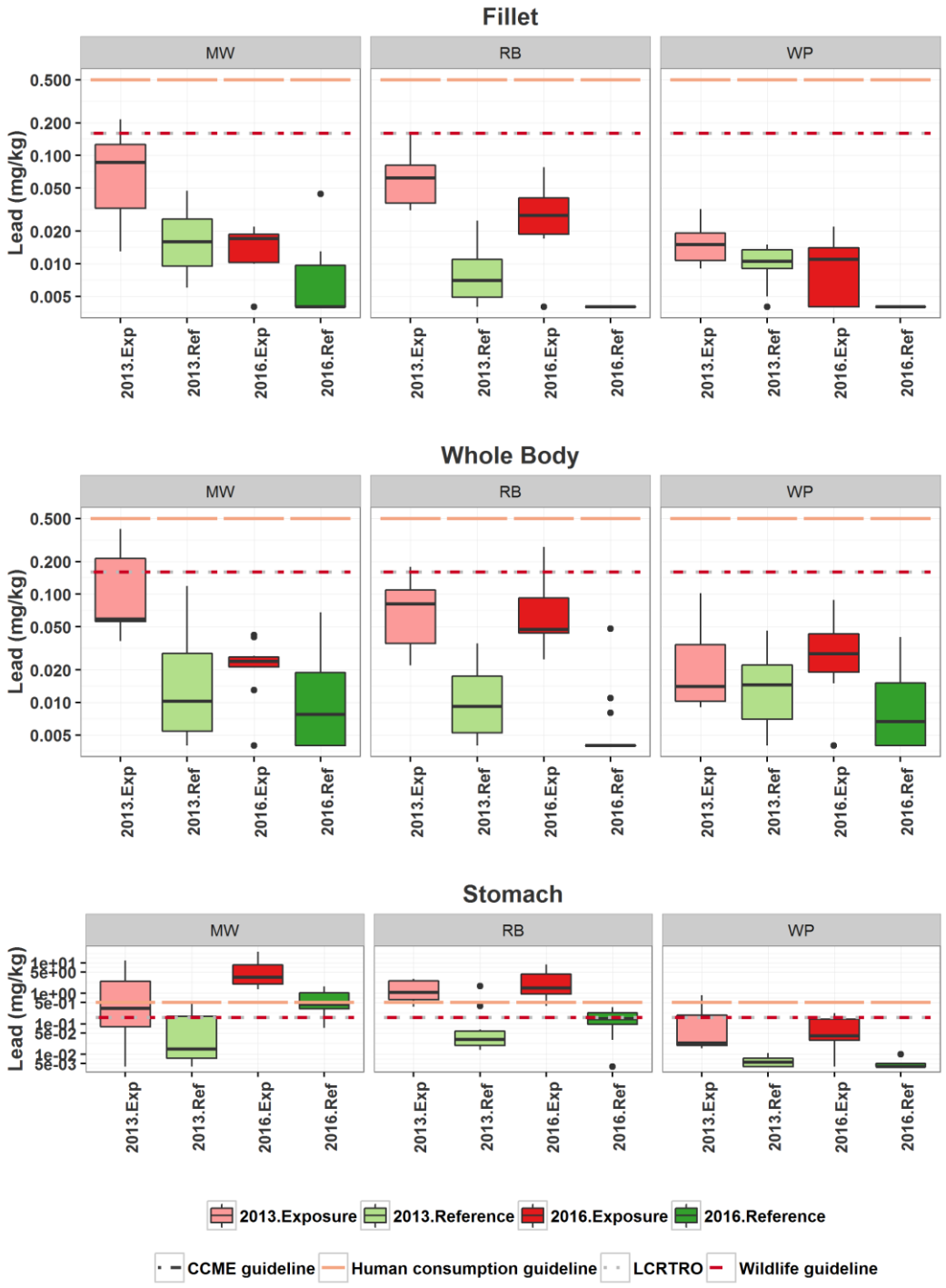

Figure 4-61: Concentrations of lead (mg/kg wet) in fillet, whole body, and stomach content samples from Mountain White fish (MW), Rainbow Trout (RB), and Walleye (WP) collected from reference (Ref) and exposure (Exp) areas upstream and downstream of the smelter respectively. Human consumption and wildlife guidelines are included as horizontal lines where they fall within metal concentrations. Fifty-five percent of fillet, thirty-five percent of whole body, and nine percent of stomach samples had Pb concentrations below the limit of detection.

4.5.2.6 Mercury (Hg)

With the exception of one sample, mean muscle (fillet), and whole fish mercury concentrations were below the Canadian guidelines for human health (0.5 mg/kg wet) in 2016 samples. There was one Walleye fillet from a reference area in 2016 that exceeded the Canadian guideline for human health.

The Lower Columbia TRO (0.10 mg/kg wet) was exceeded by whole fish concentrations in Walleye from both reference and exposure areas and in one Mountain Whitefish from a reference area. There were exceedances for fillet concentrations of Walleye in reference and exposure areas, and in one Rainbow Trout and one Mountain Whitefish in reference areas.

Mean Hg tissue concentrations were greater in Walleye and Rainbow Trout sampled from the reference area upstream of the smelter (Figure 4-62). In contrast with other parameters, Hg concentrations were highest in Walleye muscle and whole fish samples.

Previous studies showed Walleye to have had the highest mean mercury concentrations of between 0.08 – 0.65 mg/kg wet, followed by Rainbow Trout (0.04 – 0.21 mg/kg wet) and then Mountain Whitefish (0.05 – 0.17 mg/kg wet) (Hatfield 2008).

Fillet mercury was significantly higher in Walleye than the other large-bodied fish (Model $R^2 = 0.84$ $p < 0.001$). It was also significantly higher in fish sampled from the reference area than those sampled from the exposure area, indicating that fish tissue concentrations are probably unrelated to the smelter. Similarly, Hg concentrations in whole body samples were higher in fish from the reference area than exposure area; higher in Walleye than other species, and increased with fork length ($R^2 = 0.79$, $p < 0.001$). Stomach content mercury levels did not differ significantly between reference and exposure areas, species, and sex. However, mercury stomach concentrations were significantly higher in 2013 samples than in 2016 samples ($R^2 = 0.34$, $p < 0.001$).

Methylated mercury is one of the few metals with demonstrated biomagnification in aquatic food chains. As a top predator, Walleye are expected to have a higher Hg burden given that the species lives longer and feeds at a higher level in the food chain. Both these factors predispose Walleye to have higher potential to accumulate methylated mercury.

Hg Concentrations in fish tissue are not changing over time (Hatfield 2008). Historically, mercury contributions to the LCR included those from the phosphate fertilizer production (apatite) in Trail. However, current sources of mercury are more likely attributed to natural weathering and the flooding of the multiple reservoirs in the Columbia and Kootentay Rivers upstream of the Trail smelter (Hatfield 2008).

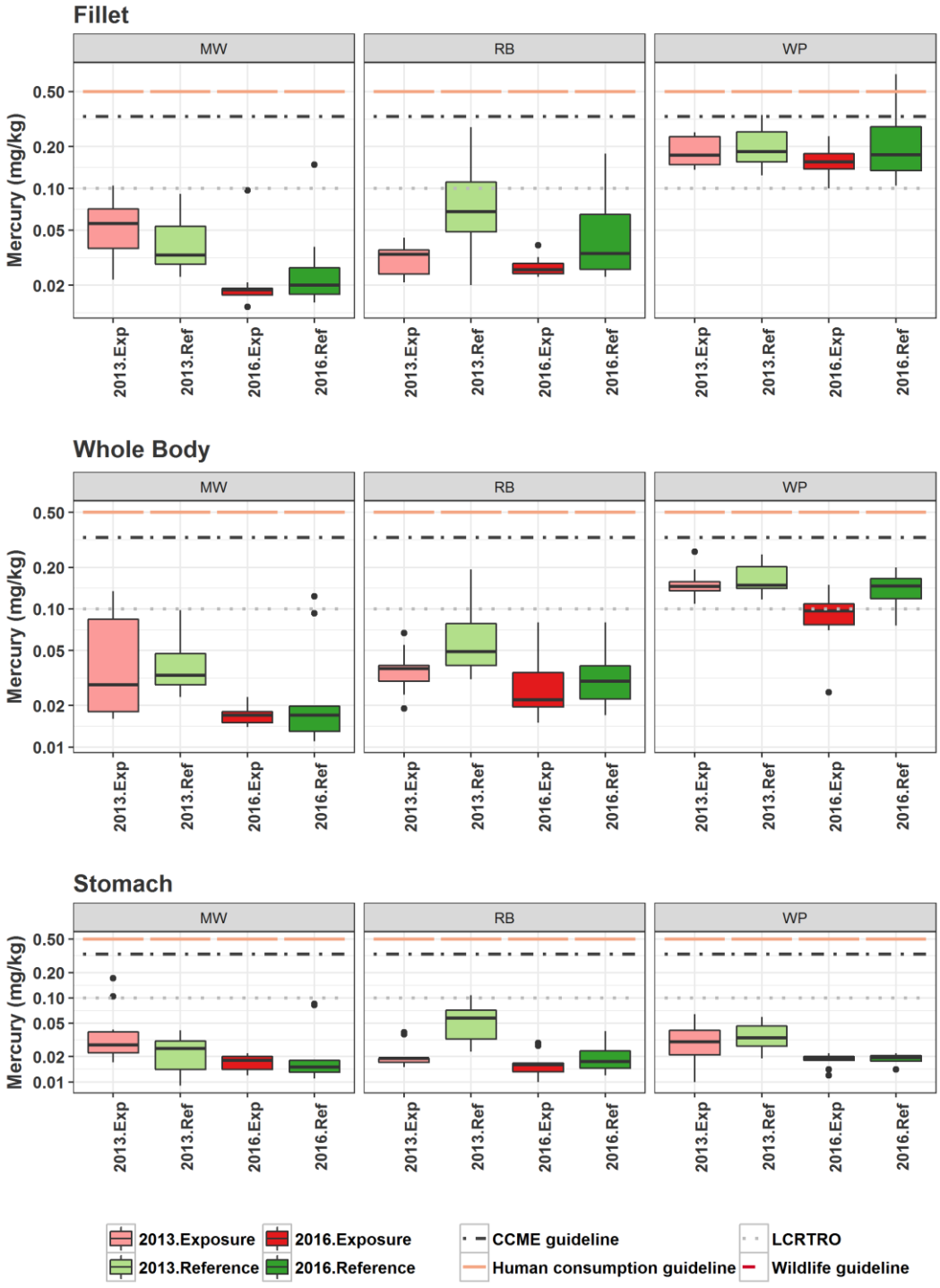

Figure 4-62: Concentrations of mercury (mg/kg wet) in fillet, whole body, and stomach content samples from Mountain White fish (MW), Rainbow Trout (RB), and Walleye (WP) collected from reference (Ref) and exposure (Exp) areas upstream and downstream of the smelter respectively. Human consumption and wildlife guidelines are included as horizontal lines where they fall within metal concentrations.

4.5.2.7 Selenium (Se)

A mean concentration of 1 mg/kg wet weight/body weight Selenium in the tissue is recommended to protect freshwater aquatic life and consumers from adverse effects (BC MoE 2011). Like most metals, selenium concentrations were highest in gut samples (Figure 4-63). Aquatic life is primarily exposed to selenium through diet rather than from direct exposure in the water (BC MOE 2012).

Fillet selenium was significantly higher in: fish from the exposure area than reference area; Mountain Whitefish than other species; 2013 samples than 2016; and, male fish versus female fish (model $R^2 = 0.45$, $p < 0.001$). Differences between reference and exposure areas were evident in 2016 samples of Mountain Whitefish and Rainbow Trout (Figure 4-63). Like fillet samples, selenium concentrations in whole body samples were significantly higher in: fish from the exposure area than reference area; Mountain Whitefish than other species; and, 2016 samples than 2013 samples (model $R^2 = 0.54$, $p < 0.001$). Selenium concentrations in stomach samples were significantly higher in: exposure area fish than reference area; Mountain Whitefish than other species; and, 2013 than 2016 samples (model $R^2 = 0.70$, $p < 0.001$).

Four MW whole fish Se concentrations exceeded the 1 mg/kg TRO with concentrations ranging between 1.08 – 1.81mg/kg. This is not a concern because the TRO threshold is calibrated for muscle tissue and not whole fish. Comparing the whole-body samples to the TRO guideline is not a valid comparison because of how the different tissues accumulate and store selenium. For instance, Sato et al. (1980) found that selenium accumulations in fish kidneys, livers, gall bladders and gills were large, while those in heart, bone and muscle were small.

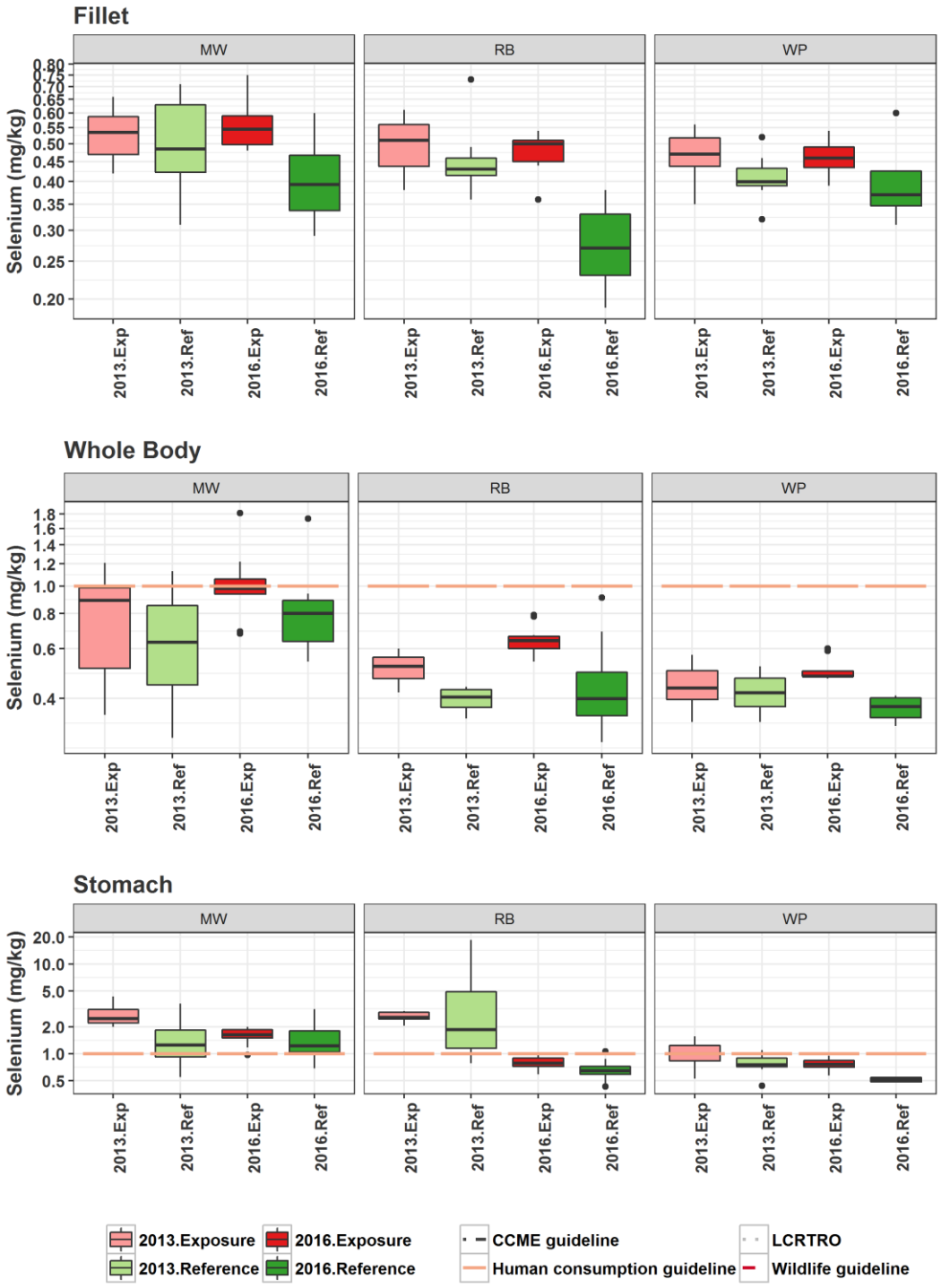

Figure 4-63: Concentrations of selenium (mg/kg wet) in fillet, whole body, and stomach content samples from Mountain White fish (MW), Rainbow Trout (RB), and Walleye (WP) collected from reference (Ref) and exposure (Exp) areas upstream and downstream of the smelter respectively. ***The draft BC guideline for Se in fish tissue (muscle) is 4mg/kg.***

4.5.2.8 Thallium (Tl)

There was no guideline for thallium in fish tissues for wildlife or human consumption. Thallium was significantly higher in fillets of exposure areas than reference areas, Walleye, and Rainbow Trout were significantly higher than Mountain Whitefish (model $R^2 = 0.54$, $p < 0.001$) (Figure 4-64). Whole fish thallium concentrations were significantly higher in fish from the exposure area. Rainbow Trout and Walleye also had marginally higher levels, as did female individuals. In addition, whole fish thallium concentrations marginally decreased with fork length and were marginally higher in 2013 than 2016 (model $R^2 = 0.61$, $p < 0.001$). Thallium concentrations in large body fish stomachs were significantly, higher in fish collected from exposure areas than reference areas, Walleye, Rainbow Trout than Mountain Whitefish, and concentrations decreased with fork length (model $R^2 = 0.33$, $p < 0.001$).

Although thallium was significantly higher in fillets of exposure areas than reference areas, there are no expected effects on fish health. The measured fish tissue concentrations of thallium were below the literature-derived benchmark of 0.66 mg/kg wet weight (Lapointe and Couture 2010). In other studies, a tissue concentration of 0.66 mg/kg *ww* was reported for whole-body Tl that was associated with no observed effects on time to hatch for embryos of fathead minnows. In the LCR, fillet and whole body Tl concentrations were below 0.050 mg/kg, approximately ten times lower than the literature-derived benchmark. Consequently, no negative effects from Tl in the lower Columbia River are expected.

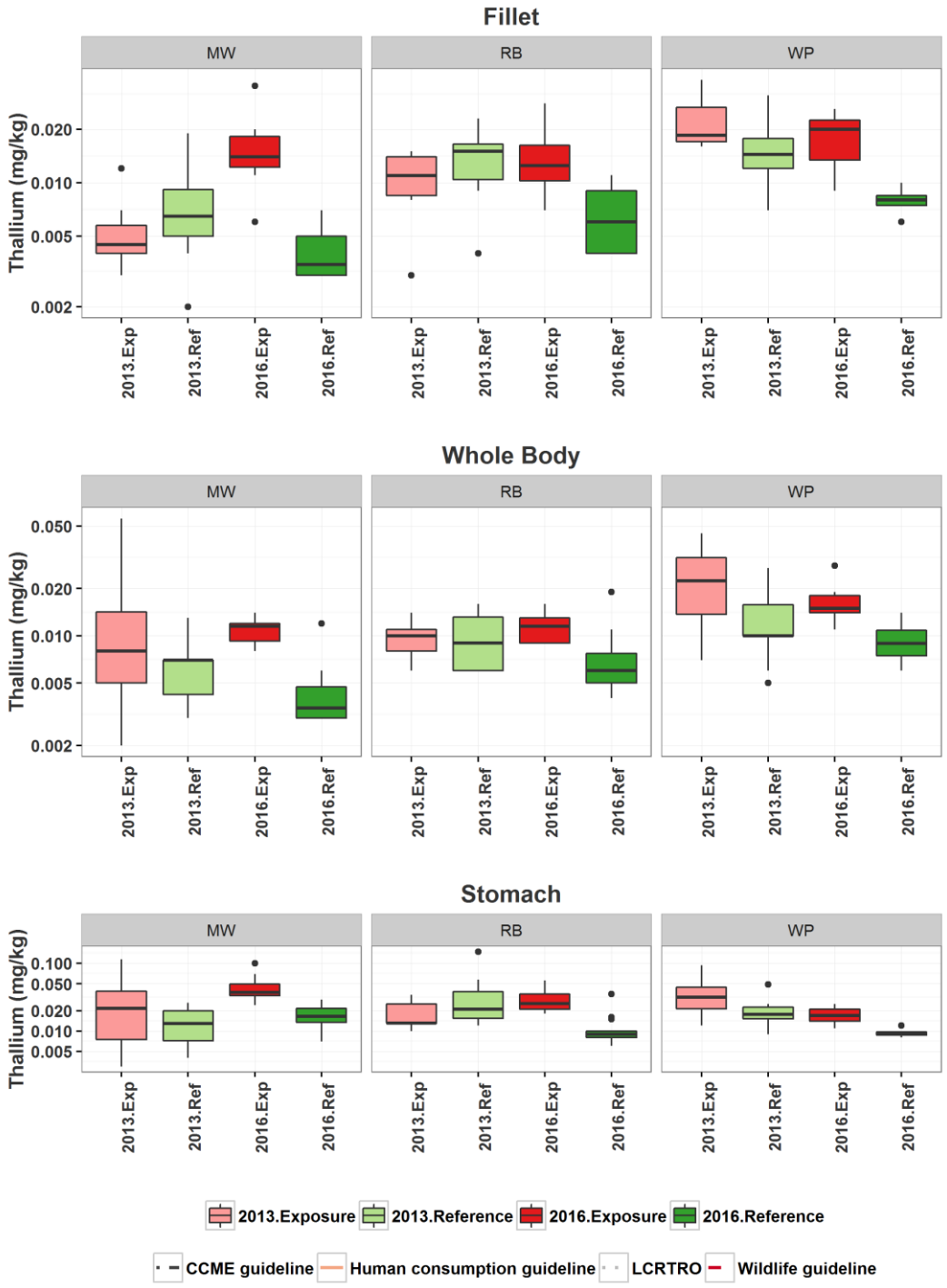

Figure 4-64: Concentrations of thallium (mg/kg wet) in fillet, whole body, and stomach content samples from Mountain White fish (MW), Rainbow Trout (RB), and Walleye (WP) collected from reference (Ref) and exposure (Exp) areas upstream and downstream of the smelter respectively.

4.5.2.9 Zinc (Zn)

There was no guideline for zinc in fish tissues for wildlife or human consumption. Fillet zinc did not significantly differ between reference and exposure areas, among species, sex, year sampled, or fish lengths (Figure 4-65). Zinc concentrations in whole body samples were significantly higher in reference areas and marginally decreased with fork length (model $R^2 = 0.21$, $p < 0.001$). Concentrations of zinc in stomach contents were significantly higher in exposure areas than reference areas and in Rainbow Trout than Walleye and Mountain Whitefish and females than males, and stomach concentrations marginally decreased with fork length (model $R^2 = 0.79$, $p < 0.001$).

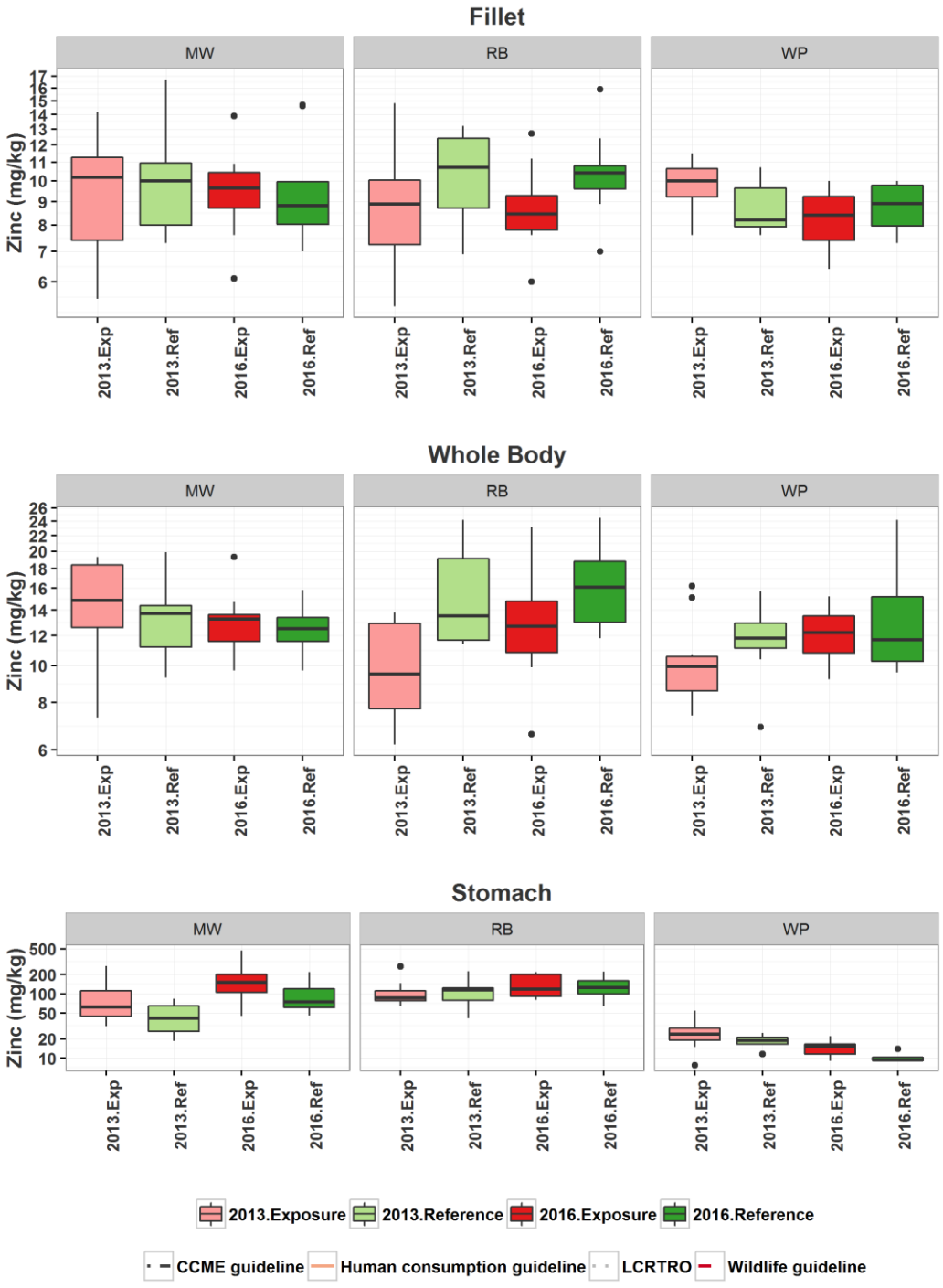

Figure 4-65: Concentrations of zinc (mg/kg wet) in fillet, whole body, and stomach content samples from Mountain White fish (MW), Rainbow Trout (RB), and Walleye (WP) collected from reference (Ref) and exposure (Exp) areas upstream and downstream of the smelter respectively.

4.6.3 Summary of Tissue Metals Concentrations from 2000-2016

Fillet metals were plotted from 2000-2016 for Mountain Whitefish, Rainbow Trout, and Walleye to begin to look at trends in mean tissue metals concentrations for arsenic, cadmium, chromium, lead, and mercury (Figure 4-66). Declining trends are evident for arsenic, cadmium, and lead. Increased detection capabilities for cadmium since 2004 demonstrate the declining trend in 2005 for Walleye, and in 2012 and 2016 for all three species. However, no trend is apparent with chromium and mercury.

It should be noted, though, that there is uncertainty regarding how past data were collected and processed in the different studies (e.g. sample size, location, collection timing, tissue extraction and processing, etc.). This uncertainty limits the extent to which trends can be interpreted and conclusions drawn at this time. This uncertainty may be reduced when additional samples are collected and assessed in future years of the AREMP.

None of the muscle tissue or whole fish had arsenic, cadmium, or chromium concentrations above the TRO (wildlife) guideline for fish collected in 2016. Only one Rainbow Trout caught in 2016 had a whole-body concentration of lead above the TRO for wildlife. Whole fish concentrations of mercury in Walleye from both reference and exposure areas, and in one Mountain Whitefish from a reference area exceeded the TRO. The TRO guidance specifically states that the values should be compared to a composite sample or average of 6-10 fish, not single samples.

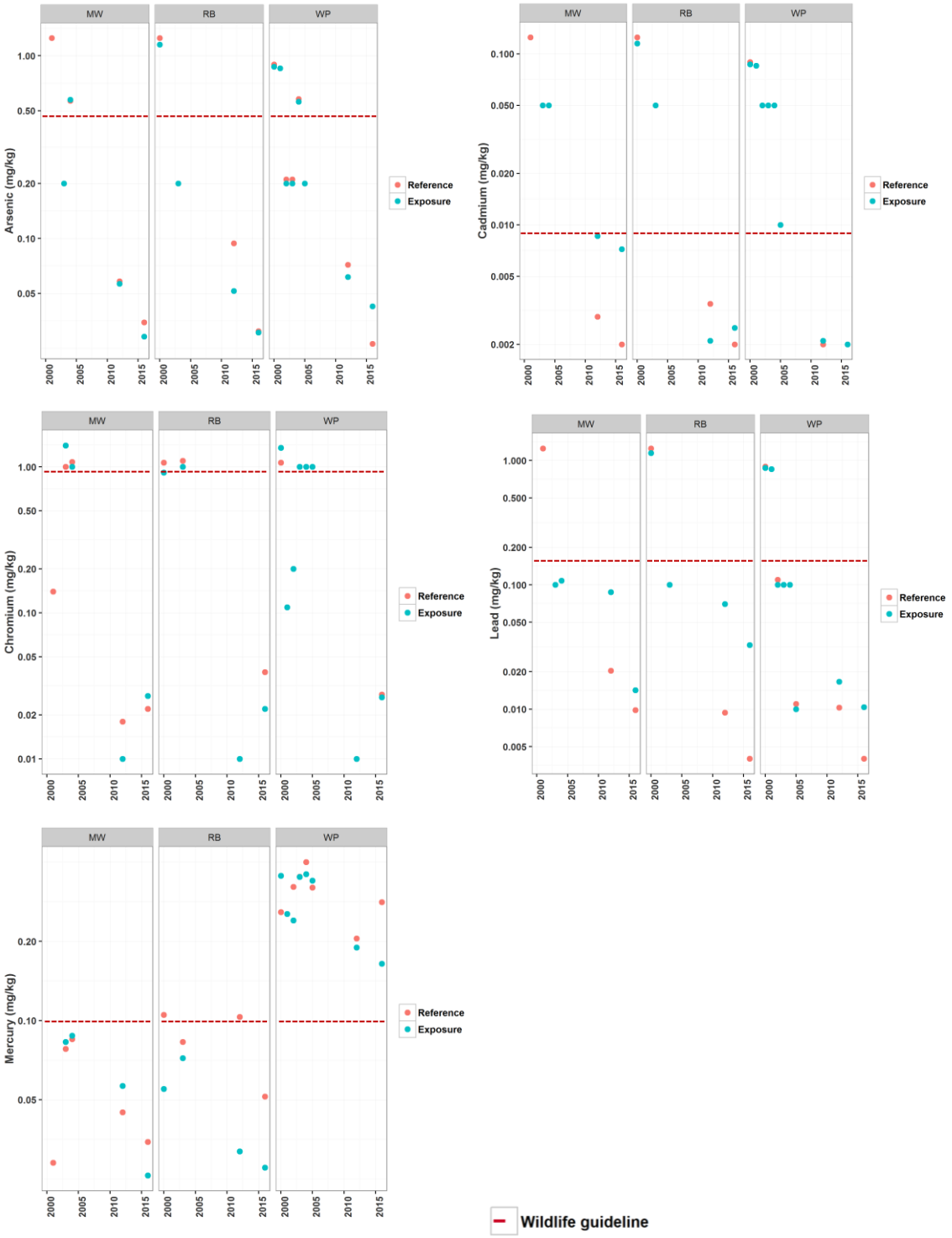

Figure 4-66: Trends in metal concentrations in LCR fish tissue (fillets) from 2000-2016.

5.0 SUMMARY AND CONCLUSIONS

Within the 2017 AREMP and other river studies, complex statistical models found that streamflows and the related factors of velocity, substrate size, shear stress, light penetration and particulate suspension exert control over periphyton and benthic macroinvertebrate growth and species assemblages. While the AREMP focuses on studying the effects of effluent discharge on aquatic environments, Larratt et al. (2013) found that key controlling factors of river production shift with season and substrate type/size largely influenced by water velocities and channel character are the primary controlling factors.

5.1 Water quality

The purpose of the AREMP water quality component is to carry out a long-term monitoring program to evaluate the effects of Teck's permitted effluent discharges on the LCR. Key questions include:

1. Are Provincial Water Quality Objectives attained at the downstream end of the Initial Dilution Zone during low flows (less than 40 kcfs) as per long-term trend monitoring?
2. Does water quality in the study area vary spatially in the Columbia River including point source discharge sites and reference sites, and temporally as a result of Teck's point source effluent discharges?
3. Are water quality parameters that are analyzed at the AREMP stations appropriate?

The water quality study was designed and implemented to address these questions.

5.1.1 Attainment of water quality objectives

General water quality parameters and nutrients were slightly elevated within the IDZ. In both the IDZ and the entire area of interest (AOI), none of the general water quality parameters or nutrients exceeded the LCR Water Quality Objectives in the 2015-2016 samples. Sulphate concentrations are elevated in the IDZ but do not exceed guidelines, and return to within 3.8% of background concentrations by Maglios. Total Organic Carbon (TOC) exceedances occurred throughout the study area outside the IDZ, but not within it, and also followed a declining trend from the Birchbank reference site through the area of interest.

No metal exceedances attributable to the smelter were detected in 2015-2016 samples below the IDZ. Provincial Water Quality Objectives were attained at the downstream end of the IDZ, or Old Bridge Site, even during low flows during all 2015 and 2016 sampling events.

In this study, nutrient concentrations in the LCR below the IDZ were not significantly altered by the effluent discharges. The largest nutrient inputs were above the Birchbank reference site and likely include Celgar, the City of Castlegar, and the BC Hydro Arrow and Kootenay lake fertilization programs. All nutrients remained within their respective water quality objectives and guidelines throughout the LCR. Ammonia increased within the IDZ but the total increase in nitrogen was less than 5% between Birchbank and Waneta.

5.1.2 Spatial and temporal variation in water quality

The AREMP transect water quality sampling showed spatial variation in water quality within the IDZ. The effluent plume stayed on the right bank (~1/3 channel width or approximately 60 m) through to the downstream end of the IDZ. Water quality varied in the river cross-section in both horizontal and vertical stations within the IDZ. Adjacent to the smelter, groundwater and permitted effluent discharges mix, which results in the highest metal values in right-bank samples within the IDZ. Some metals were also elevated in the l-sh samples collected within the IDZ, and may reflect a groundwater influence.

Transect sampling at Waneta indicated effective mixing of the effluent plume as demonstrated by homogeneity of most metal concentrations across the channel. Water sampling at Maglios (at the Bear Creek confluence, near Rock Island), indicated effective (near to full) mixing of the effluent plume is attained about 4.2 km downstream of the IDZ. Between this station and the smelter outfalls, the plume follows the right bank and all metals of interest were within the LCR and BC guidelines by the downstream end of the IDZ. Complete mixing of the plume occurred between Maglios and Waneta.

5.1.3 Water quality study design

The AREMP water quality monitoring study conducted in 2015 and 2016 met all requirements. The existing parameters, along with their reportable detection limits, were appropriate for this study.

5.2 Depositional habitat

The objective of the depositional habitat component of the AREMP is to assess smelter permitted effluent discharge on depositional benthic communities by comparing sediment, periphyton, and benthic invertebrate structure and composition between areas upstream (reference) and downstream (exposure) of the smelter. Key questions for this component include:

1. What is the sediment quality in the depositional areas upstream and downstream of the smelter?

2. Are periphyton on depositional sediments downstream of the smelter different from the upstream communities in terms of abundance, species diversity and biovolume?
3. Are the benthic invertebrate communities in depositional sediments downstream of the smelter different from the upstream communities in terms of abundance, species diversity and species composition?
4. If differences in benthic communities exist, do these differences suggest adverse effects (i.e. impairment of benthic communities such that they provide poor habitat to upper trophic consumers) and is this linked to current permitted effluent discharges?

5.2.1 Area of depositional zones in the LCR area of interest

Hydrodynamics of the Columbia River in the study area create conditions where long-term depositional zones are expected to be rare (Golder, 2003). The spatial extent of depositional habitat in the LCR is small. Depositional sediments account for approximately 33 ha or 2% of the total area of the LCR between HLK Dam and the Canada-US border. Within the area of interest, depositional habitat was estimated at 0.1% of the total sediment habitat (Golder 2007c). The importance of these depositional areas is limited by their small contribution to the overall LCR habitat.

5.2.2 Sediment quality in depositional areas of the LCR

Sediment chemistry of depositional areas in the LCR was distinct from erosional cobble substrates. Depositional sediments tend to develop lower dissolved oxygen, lower redox, and elevated organic components. Therefore, these sediments are inhabited by unique microflora communities dominated by decomposers.

Sand dominates in all depositional sites within the AOI. The length of time that deposited materials remain in depositional areas is also important. Larger depositional sites such as Waneta Eddy and Genelle Eddy can be expected to have longer storage than small depositional sites, thus Waneta Eddy may take longer to return to a natural state than adjacent erosional sites.

Fines that accumulated during low flows are frequently scoured and re-sorted during high flows (Parametrix et al. 2010). Estimates of percent slag in this study were lower in recent years than in earlier studies (Golder 2003 2007). Macrophyte growth was greater in 2015 than in 2012 at several depositional sites, likely due to smaller freshets in recent years.

Most metals of interest in depositional exposure sites exceeded two standard deviations of results from reference sites, but not all of them are attributable to the smelter. For example, aluminum, and manganese concentrations are

not attributable to the smelter. Additionally, similar lead concentrations occurred in stream sediments adjacent to the depositional sample sites which were not impacted by the smelter (Reyes et al., 2004). Lead was the only sediment metal that consistently decreased with distance downstream of the smelter in 2015 data. Other sediment metals showed increases at Casino and Trimac suggesting other metal sources.

Every depositional sediment metal concentration metric available shows decreasing concentrations of all metals of interest from 2003 to 2012, and from 2012 to 2015, particularly in exposure sites downstream of the smelter. In every exposure site, the number of sediment metal exceedances and the magnitude of those exceedances decreased from 2003 to 2015. In 2015 data, the list of metals exceeding possible effects level concentrations or sensitive species levels was smaller than in earlier years and only included Zn, Pb and Cu.

5.2.3 Depositional periphyton community health

Depositional periphyton communities throughout the LCR had lower overall productivity than adjacent erosional habitats following high scour years such as 2012, but their productivity was greater than erosional areas following stable flows as in 2015. Their community structure includes more diatoms settling out from reservoir releases, accumulate more organic debris and have more decomposer components in the biofilm than adjacent erosional cobble substrates. There was no indication of a spatial trend in the depositional community structure with distance downstream of smelter in the 2012 or in the 2015 periphyton data.

There was no detectable impact of sediment metal concentrations on depositional periphyton community structure or standing crop. Similarly, there was no detectable impact of current effluent discharges on depositional periphyton community structure or standing crop. In fact, most growth metrics were higher at the depositional sites downstream of the smelter than they were in the upstream reference sites.

5.2.4 Depositional benthic invertebrate community health

There was a small difference in overall species composition between reference and exposure areas in 2015, as there was in 2012. However, community structure differed significantly between years (2012 and 2015). Positive loadings in 2015 related to increased abundance of the gastropods Lynaeidae and Valvatidae, pill clams (Family: Pisidiidae), and black dancer caddisflies (Family: Leptoceridae). Reference areas had higher abundance and biomass than exposure areas. Maglios (DEP-EXP-2) had the highest sampled species richness as well as the highest mean species richness across the five samples.

The effect of treatment (reference vs. exposure) was tested on four benthic invertebrate metrics which quantify community composition and productivity. Total abundance at reference and exposure sites was not significantly different in depositional habitats (F=0.68, p=0.42). Similarly, treatment did not have a significant effect on percent EPT, percent Chironomidae and effective number of species. The four benthic invertebrate metrics did not differ significantly by year sampled.

5.3 Erosional Habitat

The main objectives of the AREMP erosional habitat sampling are to assess potential effects of the effluent discharge on erosional periphyton communities in terms of community structure, composition, and standing crop biomass, and to detect any trends over time. Key questions to be addressed were:

1. What is the difference in erosional periphyton communities in erosional habitat downstream of the smelter compared to the upstream communities in terms of community structure, composition, and standing crop biomass?
2. What is the difference in the erosional benthic invertebrate communities in erosional habitat downstream of the smelter compared to the upstream communities in terms of community structure and composition?
3. On the basis of qualitative review, is there a trend in periphyton and benthic metrics over time?

5.3.1 Erosional periphyton community health

In riverine cobble substrates, localized variability in species distribution is very high. As in all large rivers, LCR periphyton continues to show wide natural variance in abundance within and between sites, including reference and exposure sites. Similarly, there was little indication of a spatial trend in the presence of algae classes with distance upstream or downstream of the smelter in the 1995, 2003, 2012 or 2015 data. All metrics and statistical analyses conducted on the 2015 data indicate there is no impact on erosional periphyton community structure attributable to the smelter.

Diatoms are the most prevalent type of algae in erosional river biofilms and account for an increasing percentage of periphyton production within the IDZ. This population now conforms to typical LCR results. The dominant species lists did not indicate measurable change between the erosional reference and exposure sites. Within the IDZ where warm effluent and warm, comparatively nutrient-rich groundwater can infiltrate the river, a shift to increased

concentrations of cyanobacteria and filamentous green algae were detected in the past but was subtle in 2015.

Major driving forces on LCR periphyton communities included flows and localized water velocity, irradiance, nutrient concentrations, algae settling from upstream reservoirs and grazing pressure. Metal concentrations did not exceed potential effects levels, and did not measurably affect any growth metric in the 2012 data. Other stressors such as flow regime drive the community as they do in most large river systems.

Reference/exposure did not explain a significant portion of the variation in periphyton and 2012 and 2015 periphyton community metrics did not differ significantly between reference and exposure sites.

Near-field taxonomic results from 2015 confirm the erosional productivity metrics, suggesting that the influence of the smelter on the AOI is diminishing as reclamation treatment proceeds. Over the course of 2003-2015 periphyton studies, productivity metrics within the IDZ and near-field have been trending lower toward more typical LCR levels.

Periphyton tissue metals analysis in 2015 showed increases within the IDZ for Cr and Hg, while Cu, Pb, Zn, Cd, Ag showed small increases over exposure sites below the smelter outfalls. These concentrations declined with increasing distance downstream from the smelter, then increased again at ERO-EXP 4 indicating other metal sources. Tl and Se were highest at the Birchbank Reference Area.

5.3.2 Erosional habitat benthic invertebrate community health

There was no difference in the structure of benthic macroinvertebrate communities between reference and exposure areas for erosional habitats. However, community structure differed significantly between years (2012 and 2015).

Exposure Area 2, situated just downstream of the CIII outfall, had the highest mean abundance, biomass, EPT richness, and % EPT. ERO-EXP-2 site 3 had the lowest measured HBI score. EPT taxa are the predominant organisms across all reference and exposure areas.

Hilsenhoff Biotic Index scores and EPT richness were both significantly different between Reference Areas and Exposure Areas. Exposure Areas had higher EPT richness and lower HBI scores corroborating one another indicating a greater abundance of metal and pollution sensitive species in sites downstream of the smelter.

Five metals could be statistically compared among tissue type (Caddisfly and Snail) and treatment (reference and exposure) using a mixed effects model. Copper concentrations were higher at exposure sites ($t=-4.54$, $p=0.03$) and also higher in snails compared to caddisflies ($t=10.49$, $p<0.001$). Arsenic, cadmium, and zinc concentrations were not significantly different between exposure and reference areas ($p>0.05$). However, snails had higher Cd and As concentrations compared to caddisflies, whereas snails had lower zinc concentrations compared to caddisflies. Lead concentrations in caddisfly and snail tissue were not significantly different between reference and exposure sites ($t=-2.2$, $p=0.1$).

Physical habitat attributes, velocity and substrate size, are the most important variables influencing communities in erosional habitats. Velocity is an important variable for explaining benthic macroinvertebrate abundance, %EPT, and HBI scores. Sites with higher water velocity had higher abundance and %EPT while having lower HBI scores. Exposure Area 2, within the side channel downstream of the CIII outfall had the highest mean velocity of all areas followed by Exposure Area 5 and Exposure Area 3. Substrate size (D90) and water temperature were also important variables influencing abundance, species richness, species diversity, and % EPT.

5.4 Small Bodied Fish

The 2015 small-bodied fish study was designed to address the following questions:

1. Is there a difference in tissue metals composition and concentration in small-bodied fish between reference sites and exposure sites upstream downstream of the smelter respectively?
2. Do tissue metal concentrations decrease in small bodied fish as the distance from the smelter effluent discharge increases?
3. Is there a difference in the length, weight, liver weight, gonad weight and condition of fish collected upstream of the smelter and downstream of the smelter?
4. What is the relationship between the distance from the effluent discharges and tissue metals, condition factor, liver weight (liversomatic index) and gonad weight (gonadosomatic index)?

Sculpin tissue Pb, Tl, As and Cd concentrations at near-field sites were significantly different than at reference sites, while the remaining metals of interest were not different. Elevated Pb, Tl, As and Cd concentrations decreased rapidly moving downstream from the smelter beyond the IDZ. Sculpins sampled in the IDZ on the right bank within 200 m downstream of the Combined II and III outfalls had higher tissue metals concentrations than those

captured upstream of these locations as well as sites further downstream both within and beyond the IDZ. Sculpins collected from the right bank adjacent downtown Trail had average lead concentrations that were 3.5 times lower than fish collected just 300 m further upstream from the right bank at New Bridge (ERO-EXP-3-1-R).

In 2015 sculpin samples, tissue concentrations for most metals of interest were below the wildlife TRO guidelines in both the reference and the exposure sites. There was one exceedance of both the arsenic wildlife TRO (0.47 mg/kg ww) and cadmium wildlife TRO (0.9 mg/kg ww) from ERO-EXP-3-1. Whole body lead concentrations exceeded the TRO (0.16 µg/g wet weight) for wildlife in 258 sculpins. All sculpins collected from within and downstream the IDZ had lead concentrations that exceeded the TRO for wildlife and 37 sculpins from Reference sites had lead concentrations that exceeded the TRO.

Sculpin species have been shown to be highly sensitive to zinc, cadmium and copper (Besser et al. 2007). Toxic thresholds for total arsenic in freshwater fish tissues range from 1.3 to 5 mg/kg ww (Matz et al. 2017). The upper quartile of arsenic tissue concentrations in LCR sculpins was below 0.2 mg/kg ww and a single maximum outlier of 0.8 mg/kg ww was observed. These observed values are below the reported toxic thresholds.

Lead is an endocrine disruptor, and is easily accumulated in the ovaries of fish (Luszczek-Trojnar et al. 2013). Chronic exposure can affect steroidogenesis, gametogenesis, and ovulation. While long-term exposure of fish to low doses of pollutants may produce no apparent effects, it may have a considerable impact on reproductive organs by reducing the size of the next generation. Once removed from exposure, depuration eliminates the previously observed effects of exposure to lead.

The GSI is a good indicator of normal ovarian growth and reproductive development. After 12 months of chronic lead exposure, Luszczek-Trojnar et al. (2013) found that GSI values were significantly lower in experimental fish. However, after 24 months exposure, there was no difference in GSI values between control and exposure fish. This apparent conditioning of fish to elevated lead is believed a result of proteins and glycoproteins that occur naturally in fish and chelate metal ions.

While near-field sculpins had significantly higher metals concentrations of Pb, Tl, As, and Cd, there was no significant difference in condition responses between reference and exposure fish. Similarly, the hepatosomatic and gonadosomatic indices showed no significant difference with distance from the smelter, but the difference between males and females was significant. Besser et al. (2007) demonstrated that chronic responses to metal toxicity can vary between different populations of the same species. The elevated metals concentrations observed in sculpins in the IDZ did not result in significant

differences in condition metrics between reference and exposure fish. This suggests that metal concentrations of the effluent plume in the IDZ are not exceeding toxic thresholds to local sculpin populations.

5.5 Large Bodied Fish

The large-bodied fish program is undertaken every 4 years. This study aims to address the following questions:

1. How do the concentrations of total metals in the tissues of three large bodied fish species in the lower Columbia in 2015 compare to the concentrations since 2000?
2. Is there a difference in the concentration of metals in large bodied fish captured from reference areas and exposure areas?
3. Do the fish tissue concentrations exceed relevant human consumption guidelines?

Concentrations of metals in fillets are very unlikely to pose an unacceptable health concern to people who consume fish. Select metals of interest were below their respective guidelines for human consumption in Canada (Canadian Food Inspection Agency 2011). However, one Walleye fillet from a reference area exceeded the human consumption guideline for Mercury.

In 2016, there was no significant difference in arsenic and copper concentrations in Rainbow Trout, Mountain Whitefish, and Walleye fillets between reference and exposure areas. A high number of non-detectable fillet tissue results for cadmium, chromium, and lead occurred for both reference and exposure area fish, preventing further statistical analysis. Fillet tissue mercury was significantly higher in Walleye than in Rainbow Trout and Mountain Whitefish. Mercury was also higher in fish collected from the reference area than the exposure area.

When considering tissue metals concentrations, it should be acknowledged that individuals of these species can migrate long distances between reference and exposure areas at different times of the year. The distance an individual may travel and the residency time in each area is not known. In other words, fish collected from the upstream reference area may have frequented areas downstream of the smelter and vice versa.

Declining trends are evident for arsenic, cadmium, and lead. Increased detection capabilities for cadmium since 2004 demonstrate the declining trend in 2005 for Walleye, and in 2012 and 2016 for all three species. However, no trend is apparent with chromium and mercury.

It should be noted that there is uncertainty regarding how past data were collected and processed in the different studies (e.g., sample size, location, collection timing, tissue extraction and processing, etc.). This uncertainty limits the extent to which trends can be interpreted and conclusions drawn at this time. This uncertainty may be reduced when additional samples are collected and assessed in future years of the AREMP.

6.0 CLOSURE

This report has been prepared exclusively for Teck Metals Ltd.

If you have any questions pertaining to this report, you may contact the undersigned at your convenience.

Respectfully Submitted,
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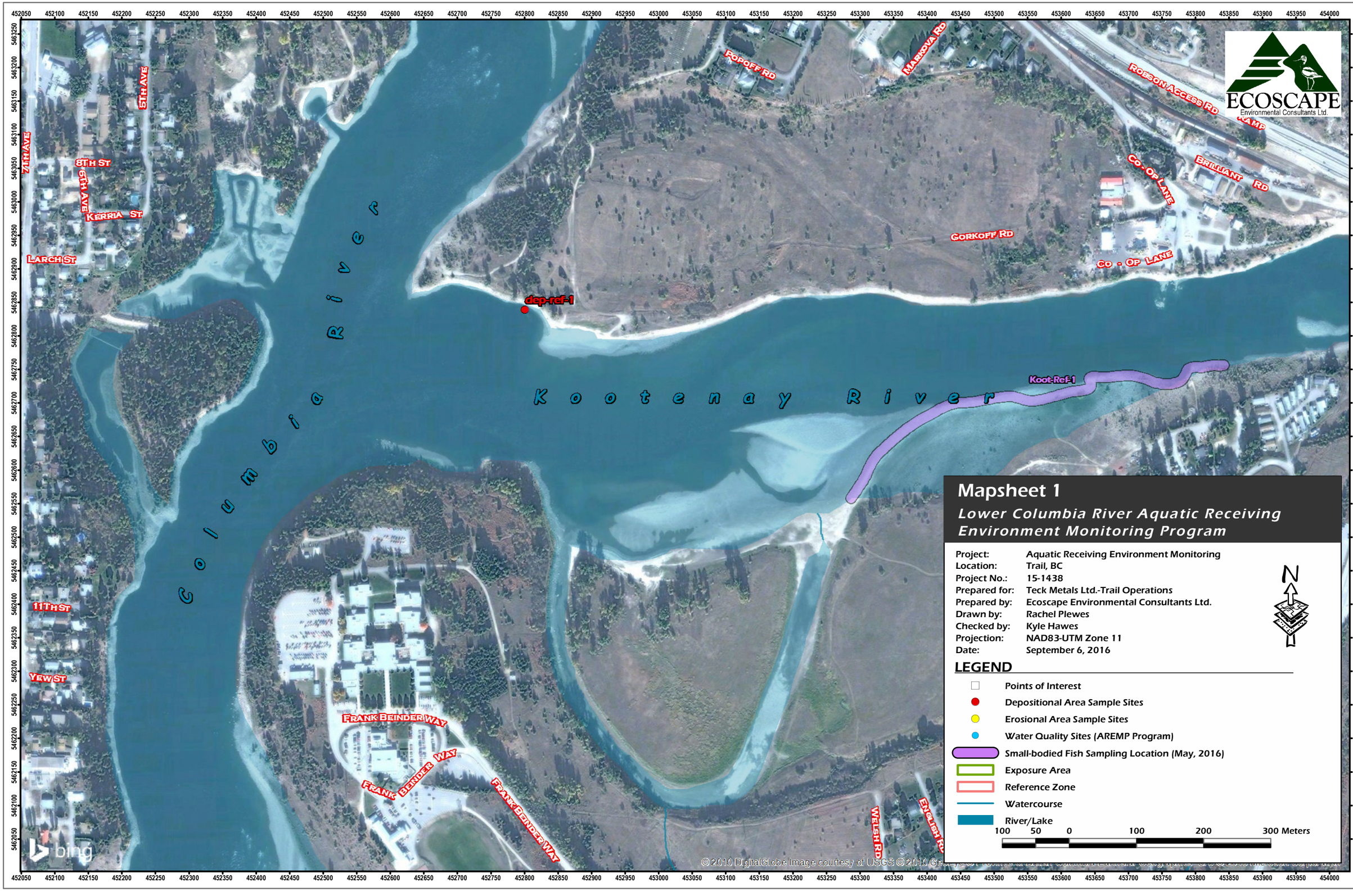
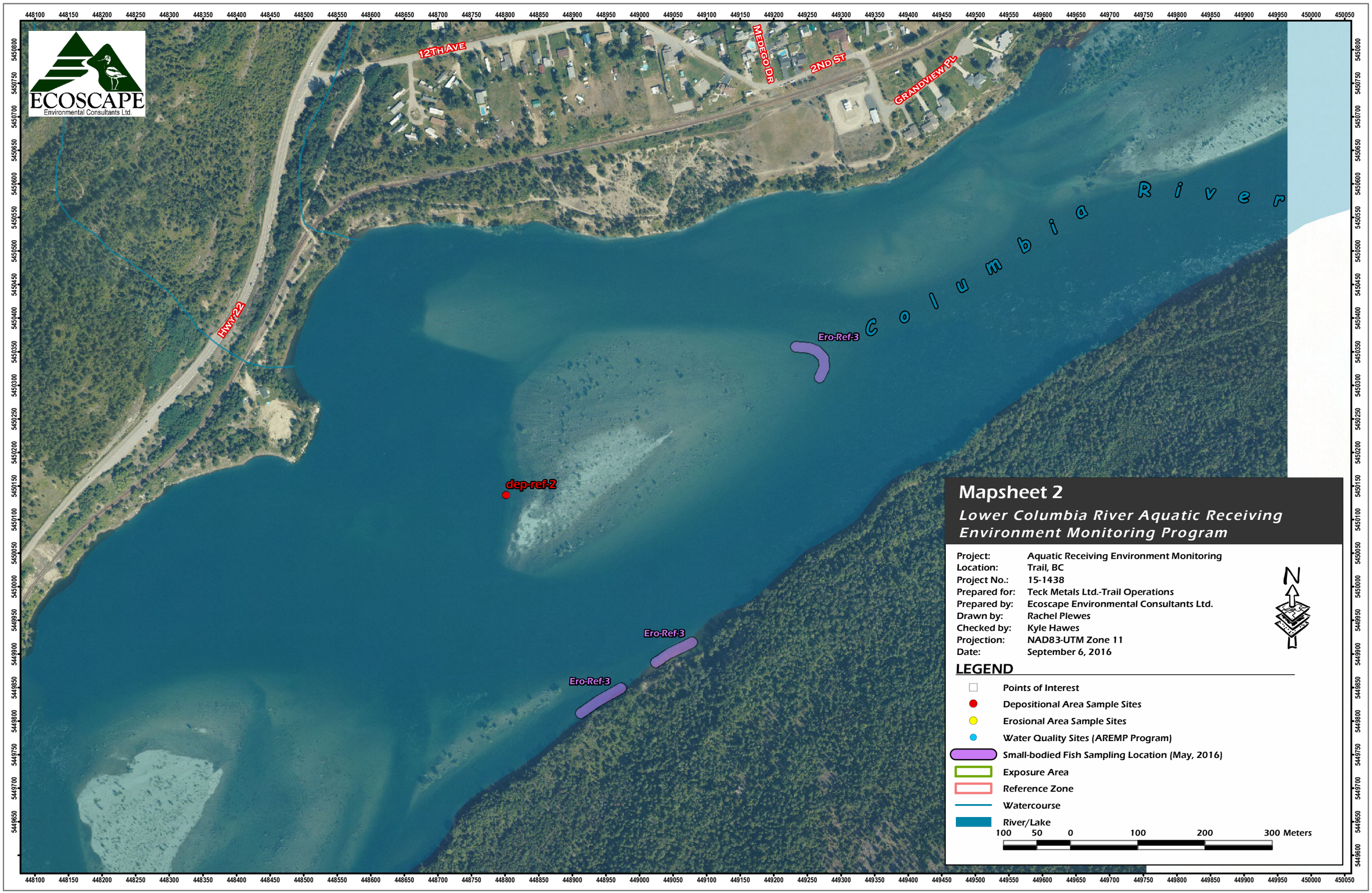
SCHEDULE - A

MAP SHEETS



ECOSCAPE
Environmental Consultants Ltd.
Mapsheet 1
Lower Columbia River Aquatic Receiving Environment Monitoring Program
Project: Aquatic Receiving Environment Monitoring
Location: Trail, BC
Project No.: 15-1438
Prepared for: Teck Metals Ltd.-Trail Operations
Prepared by: Ecoscape Environmental Consultants Ltd.
Drawn by: Rachel Plewes
Checked by: Kyle Hawes
Projection: NAD83-UTM Zone 11
Date: September 6, 2016
LEGEND
Points of Interest
Depositional Area Sample Sites
Erosional Area Sample Sites
Water Quality Sites (AREMP Program)
Small-bodied Fish Sampling Location (May, 2016)
Exposure Area
Reference Zone
Watercourse
River/Lake
100 50 0 100 200 300 Meters
N
Columbia River
Kootenay River
dep-ref-1
Koot-Ref-1
Popoff Rd
Markova Rd
Roeson Access Rd
Brilliant Rd
Co-Op Lane
Gorkoff Rd
Frank Beinder Way
Welsh Rd
English Rd
7th Ave
5th Ave
8th St
6th Ave
Kerria St
Larch St
11th St
Yew St
bing
© 2010 DigitalGlobe Image courtesy of USGS © 2010 GeoEye



ECOSCAPE
Environmental Consultants Ltd.

Mapsheet 2

Lower Columbia River Aquatic Receiving Environment Monitoring Program

Project:	Aquatic Receiving Environment Monitoring
Location:	Trail, BC
Project No.:	15-1438
Prepared for:	Teck Metals Ltd.-Trail Operations
Prepared by:	Ecoscape Environmental Consultants Ltd.
Drawn by:	Rachel Plewes
Checked by:	Kyle Hawes
Projection:	NAD83-UTM Zone 11
Date:	September 6, 2016

N

LEGEND

- Points of Interest
- Depositional Area Sample Sites
- Erosional Area Sample Sites
- Water Quality Sites (AREMP Program)
- Small-bodied Fish Sampling Location (May, 2016)
- Exposure Area
- Reference Zone
- Watercourse
- River/Lake

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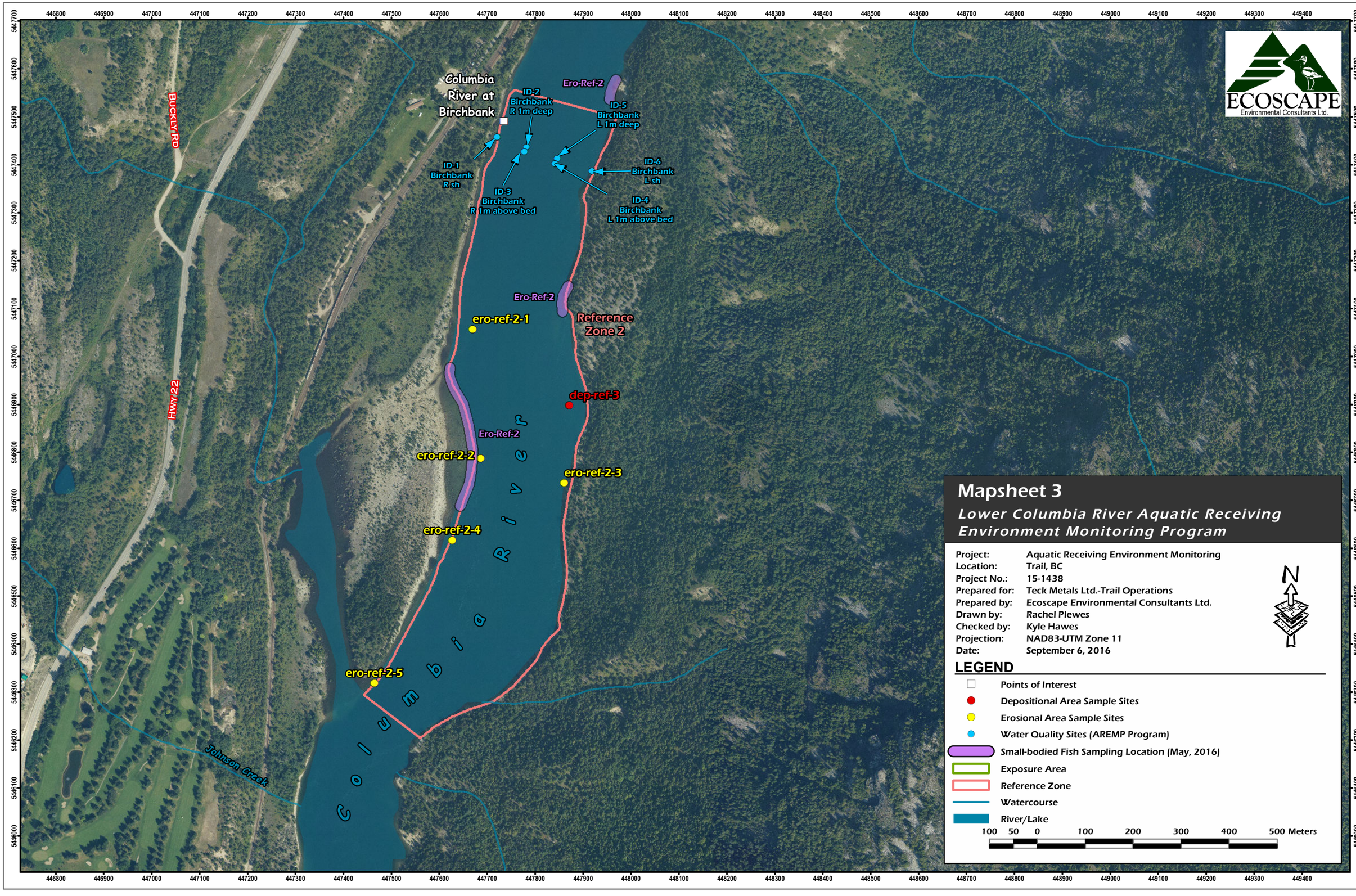


ECOSCAPE
Environmental Consultants Ltd.

Mapsheet 3

Lower Columbia River Aquatic Receiving Environment Monitoring Program

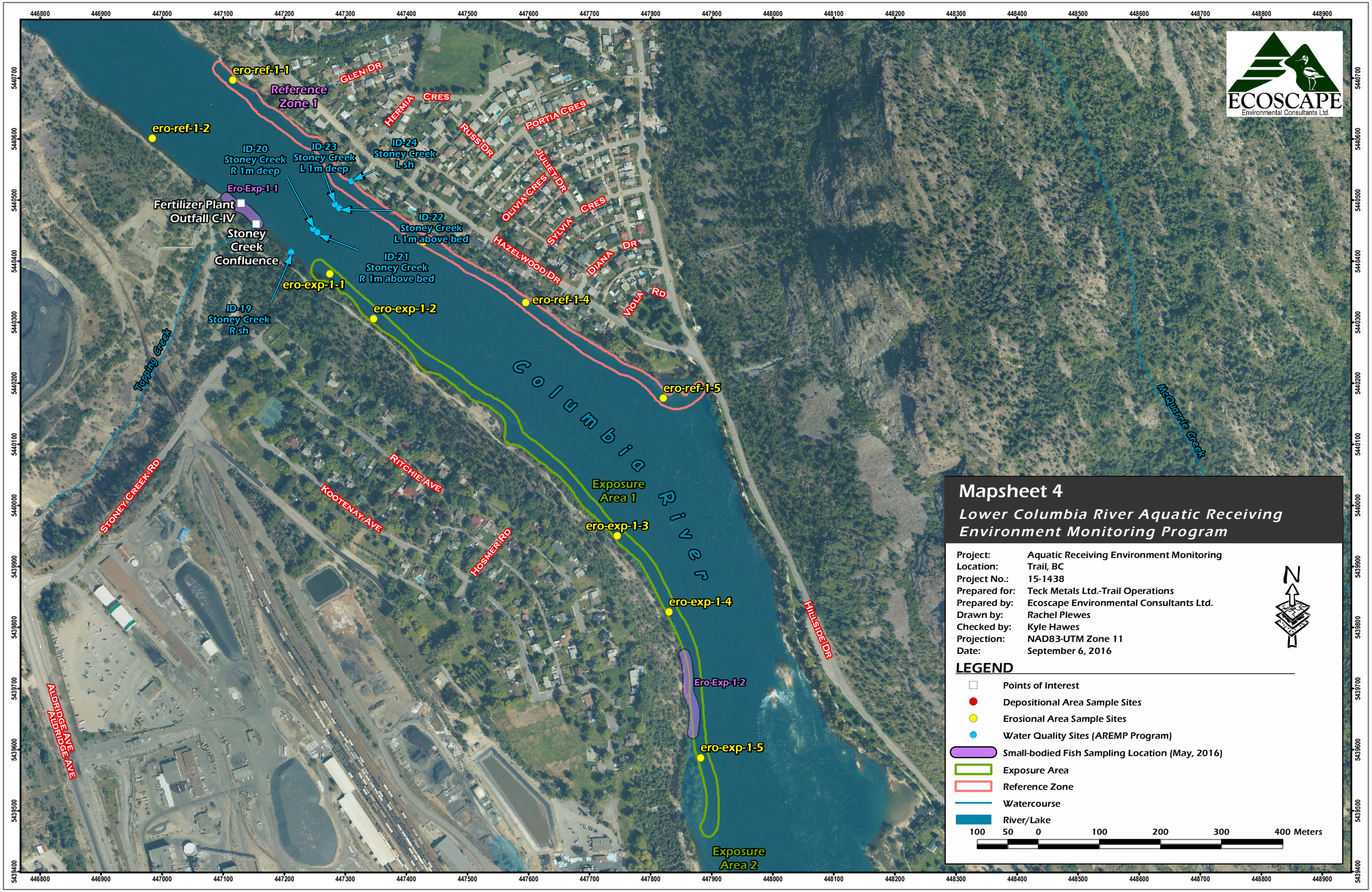
Project:	Aquatic Receiving Environment Monitoring
Location:	Trail, BC
Project No.:	15-1438
Prepared for:	Teck Metals Ltd.-Trail Operations
Prepared by:	Ecoscape Environmental Consultants Ltd.
Drawn by:	Rachel Plewes
Checked by:	Kyle Hawes
Projection:	NAD83-UTM Zone 11
Date:	September 6, 2016

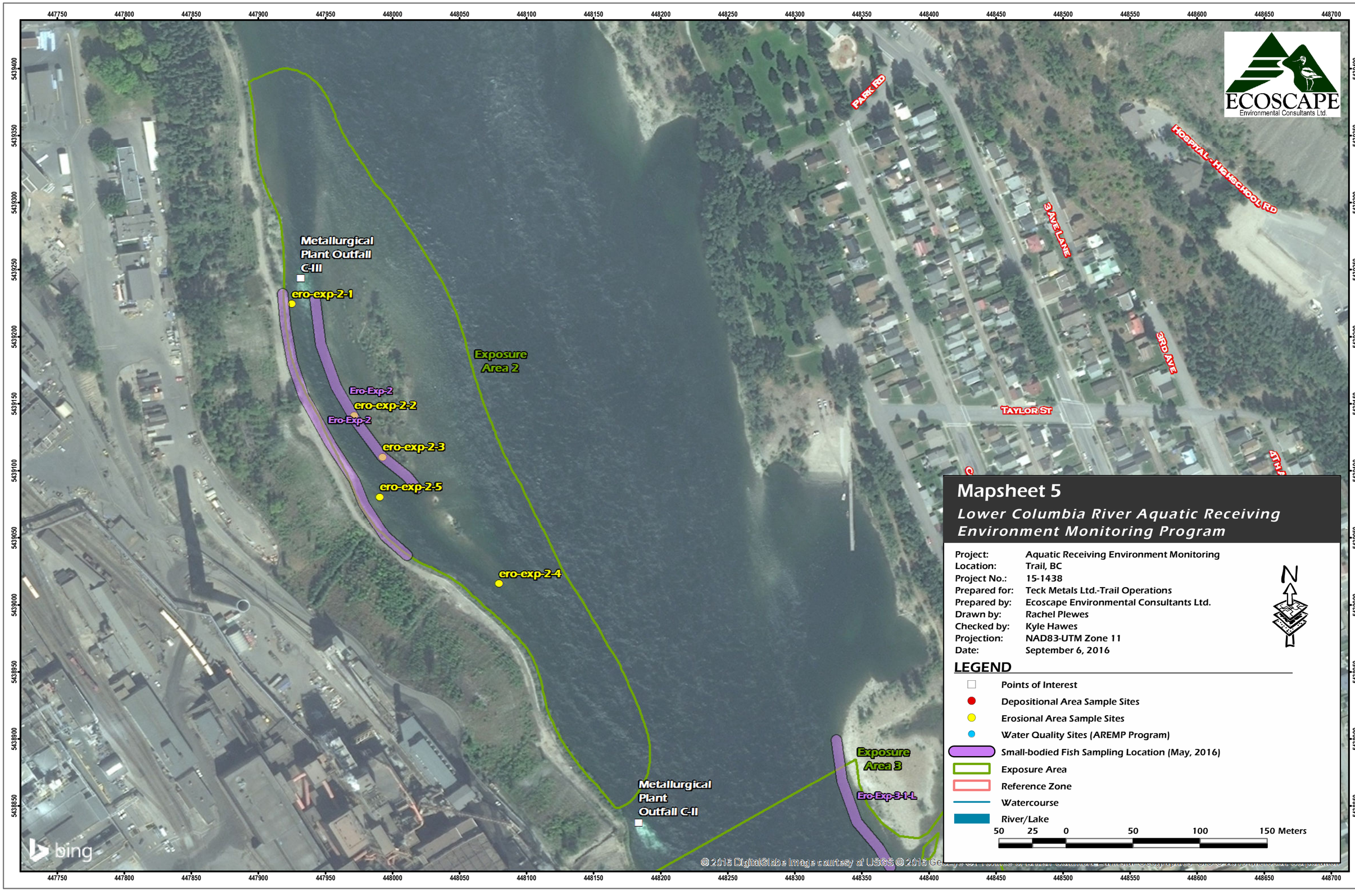
N

LEGEND

- Points of Interest
- Depositional Area Sample Sites
- Erosional Area Sample Sites
- Water Quality Sites (AREMP Program)
- Small-bodied Fish Sampling Location (May, 2016)
- Exposure Area
- Reference Zone
- Watercourse
- River/Lake

100 50 0 100 200 300 400 500 Meters


ero-ref-1-1
Reference Zone 1
ero-ref-1-2
ID-20 Stoney Creek R 1m deep
ID-23 Stoney Creek L 1m deep
ID-24 Stoney Creek L sh
Ero-Exp-1-1
Fertilizer Plant Outfall C-IV
Stoney Creek Confluence
ID-22 Stoney Creek L 1m above bed
ID-21 Stoney Creek R 1m above bed
ero-exp-1-1
ID-19 Stoney Creek R sh
ero-exp-1-2
ero-ref-1-4
ero-ref-1-5
ero-exp-1-3
ero-exp-1-4
Ero-Exp-1-2
ero-exp-1-5
Exposure Area 1
Exposure Area 2
Columbia River
Topping Creek
McQuarrie Creek
GLEN DR
HERMIA CRES
PORTIA CRES
RUSS DR
JULIET DR
OLIVIA CRES
SYLVIA CRES
HAZELWOOD DR
DIANA DR
VIOLA RD
RITCHIE AVE
KOOTENAY AVE
HOSMER RD
STONEY CREEK RD
ALDRIDGE AVE
HILLSIDE DR
ECOSCAPE
Environmental Consultants Ltd.
Mapsheet 4
Lower Columbia River Aquatic Receiving Environment Monitoring Program
Project: Aquatic Receiving Environment Monitoring
Location: Trail, BC
Project No.: 15-1438
Prepared for: Teck Metals Ltd.-Trail Operations
Prepared by: Ecoscape Environmental Consultants Ltd.
Drawn by: Rachel Plewes
Checked by: Kyle Hawes
Projection: NAD83-UTM Zone 11
Date: September 6, 2016
N
LEGEND
Points of Interest
Depositional Area Sample Sites
Erosional Area Sample Sites
Water Quality Sites (AREMP Program)
Small-bodied Fish Sampling Location (May, 2016)
Exposure Area
Reference Zone
Watercourse
River/Lake
100 50 0 100 200 300 400 Meters



ECOSCAPE
Environmental Consultants Ltd.

Mapsheet 5

Lower Columbia River Aquatic Receiving Environment Monitoring Program

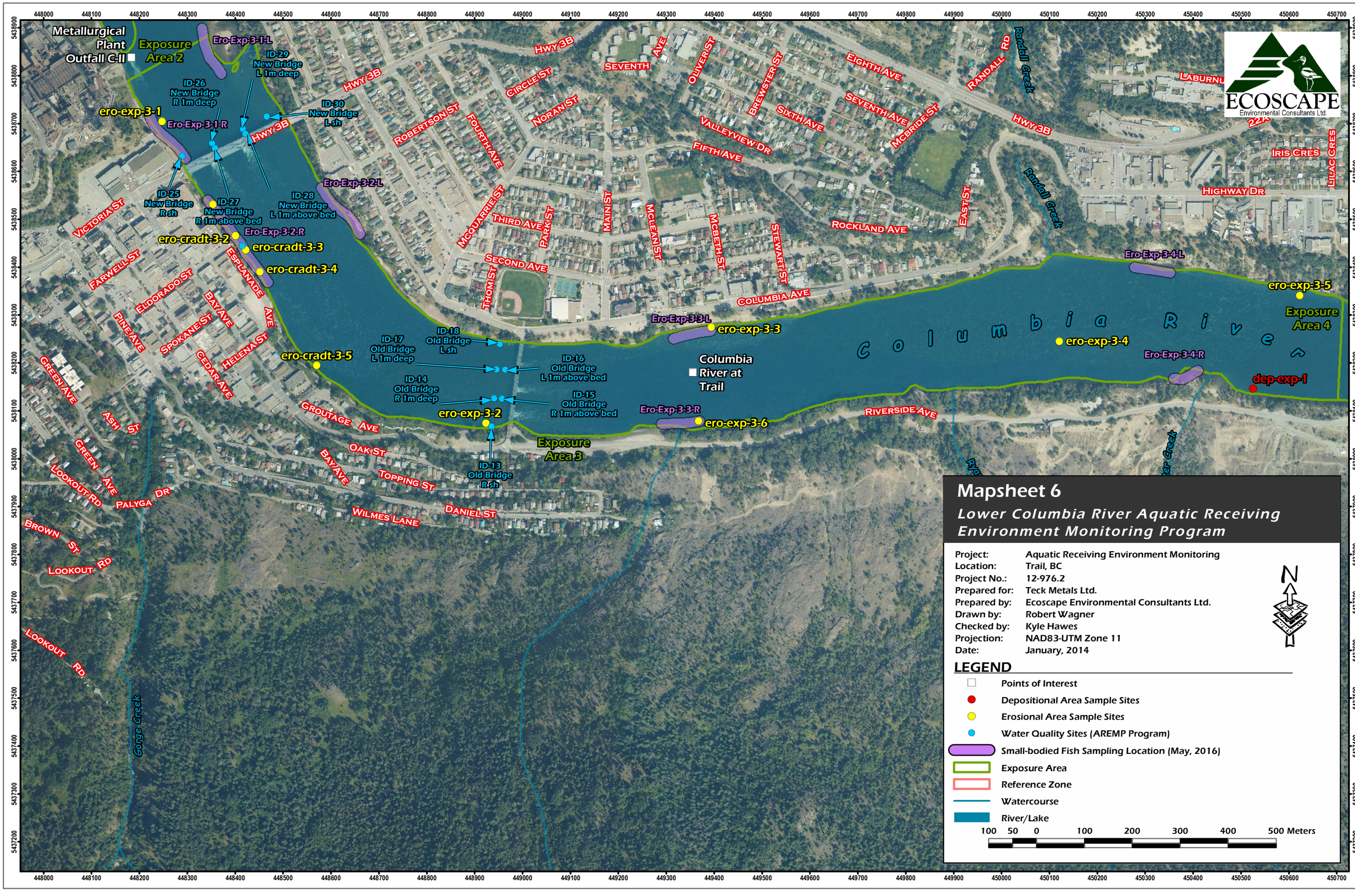
Project:	Aquatic Receiving Environment Monitoring
Location:	Trail, BC
Project No.:	15-1438
Prepared for:	Teck Metals Ltd.-Trail Operations
Prepared by:	Ecoscape Environmental Consultants Ltd.
Drawn by:	Rachel Plewes
Checked by:	Kyle Hawes
Projection:	NAD83-UTM Zone 11
Date:	September 6, 2016

N

LEGEND

- Points of Interest
- Depositional Area Sample Sites
- Erosional Area Sample Sites
- Water Quality Sites (AREMP Program)
- Small-bodied Fish Sampling Location (May, 2016)
- Exposure Area
- Reference Zone
- Watercourse
- River/Lake

50 25 0 50 100 150 Meters



Mapsheet 6

Lower Columbia River Aquatic Receiving Environment Monitoring Program

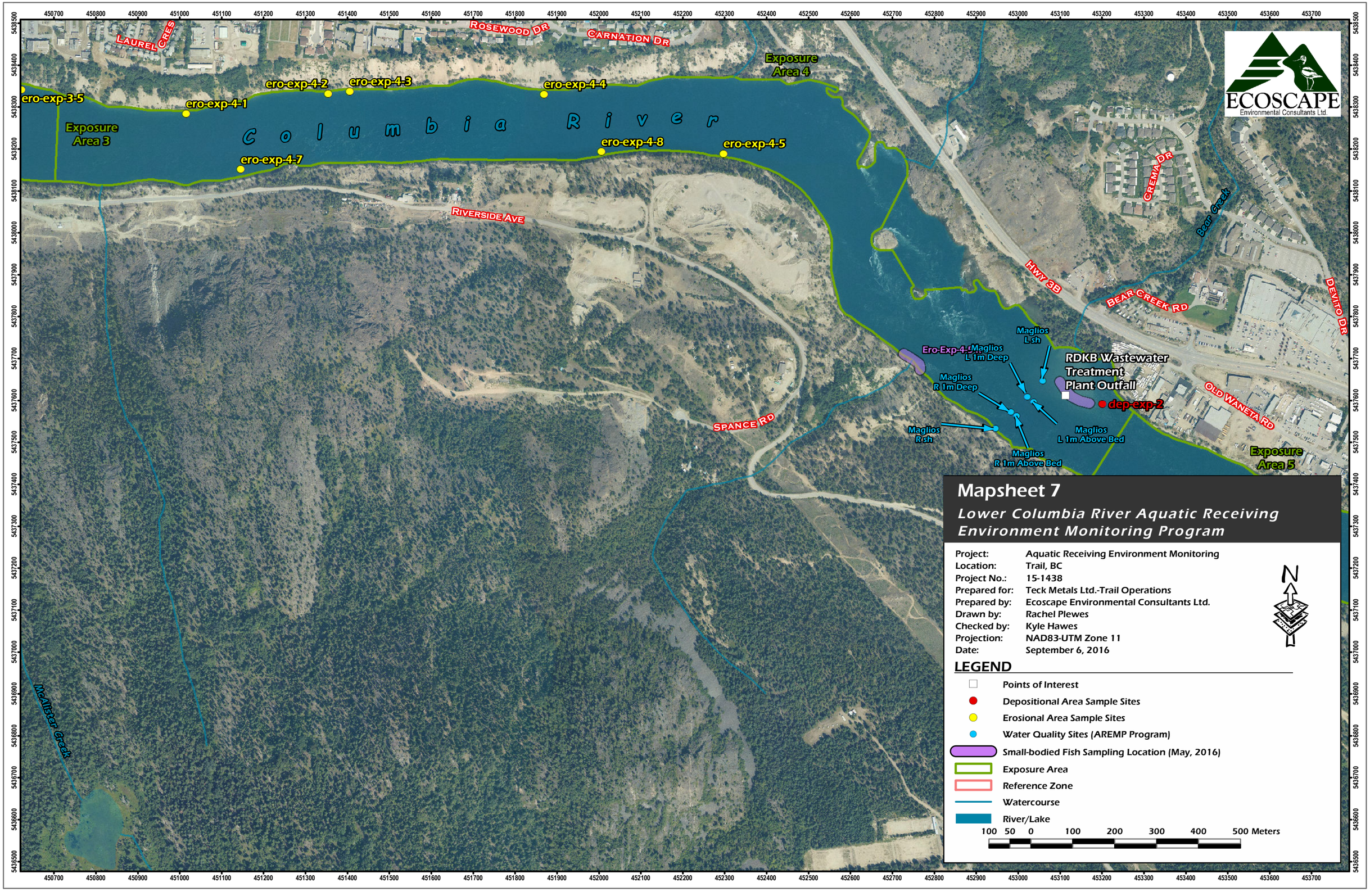
Project:	Aquatic Receiving Environment Monitoring
Location:	Trail, BC
Project No.:	12-976.2
Prepared for:	Teck Metals Ltd.
Prepared by:	Ecoscape Environmental Consultants Ltd.
Drawn by:	Robert Wagner
Checked by:	Kyle Hawes
Projection:	NAD83-UTM Zone 11
Date:	January, 2014

N

LEGEND

- Points of Interest
- Depositional Area Sample Sites
- Erosional Area Sample Sites
- Water Quality Sites (AREMP Program)
- Small-bodied Fish Sampling Location (May, 2016)
- Exposure Area
- Reference Zone
- Watercourse
- River/Lake

100 50 0 100 200 300 400 500 Meters


Columbia River
ero-exp-3-5
ero-exp-4-1
ero-exp-4-2
ero-exp-4-3
ero-exp-4-4
ero-exp-4-5
ero-exp-4-7
ero-exp-4-8
Exposure Area 3
Exposure Area 4
Exposure Area 5
LAUREL CRES
ROSEWOOD DR
CARNATION DR
RIVERSIDE AVE
SPANCE RD
HWY 3B
CREMA DR
Bear Creek
BEAR CREEK RD
DEVITO DR
OLD WANETA RD
McAllister Creek
Ero-Exp-4-1
Maglios L 1m Deep
Maglios L sh
Maglios R 1m Deep
Maglios R sh
Maglios L 1m Above Bed
Maglios R 1m Above Bed
RDKB Wastewater Treatment Plant Outfall
dep-exp-2
ECOSCAPE
Environmental Consultants Ltd.
Mapsheet 7
Lower Columbia River Aquatic Receiving Environment Monitoring Program
Project: Aquatic Receiving Environment Monitoring
Location: Trail, BC
Project No.: 15-1438
Prepared for: Teck Metals Ltd.-Trail Operations
Prepared by: Ecoscape Environmental Consultants Ltd.
Drawn by: Rachel Plewes
Checked by: Kyle Hawes
Projection: NAD83-UTM Zone 11
Date: September 6, 2016
LEGEND
Points of Interest
Depositional Area Sample Sites
Erosional Area Sample Sites
Water Quality Sites (AREMP Program)
Small-bodied Fish Sampling Location (May, 2016)
Exposure Area
Reference Zone
Watercourse
River/Lake
100 50 0 100 200 300 400 500 Meters
N

Mapsheet 8

Lower Columbia River Aquatic Receiving Environment Monitoring Program

Project:	Aquatic Receiving Environment Monitoring
Location:	Trail, BC
Project No.:	15-1438
Prepared for:	Teck Metals Ltd.-Trail Operations
Prepared by:	Ecoscape Environmental Consultants Ltd.
Drawn by:	Rachel Plewes
Checked by:	Kyle Hawes
Projection:	NAD83-UTM Zone 11
Date:	September 6, 2016

ECOSCAPE
Environmental Consultants Ltd.

N

LEGEND

- Points of Interest
- Depositional Area Sample Sites
- Erosional Area Sample Sites
- Water Quality Sites (AREMP Program)
- Small-bodied Fish Sampling Location (May, 2016)
- Exposure Area
- Reference Zone
- Watercourse
- River/Lake

200 100 0 200 400 600 800 1,000 Meters

Ero-Exp-4-5-L
dep-exp-2
ero-exp-4-9
ero-exp-5-1
ero-exp-5-2
ero-exp-5-6
Ero-Exp-5
dep-exp-3
dep-exp-4
Exposure Area 4
Exposure Area 5
Columbia River
HWY 3B
OLD WANETA RD
10TH AVE
THEATRE RD
CASINO RD
HWY 22A
BEAVER CREEK PARK RD
HUTCHINSON RD
COLUMBIA GARDENS RD
BEAVER RD
7TH ST
9TH ST
12TH AVE
11TH AVE
8TH AVE
9TH AVE
5TH ST
6TH ST
3RD ST
1ST ST
Casino Creek
Beaver Creek
Linnie Creek

dep-exp-4

Exposure Area 5

Columbia River

Sayward Creek

INDUSTRIAL RD

CROWN RD

STATION RD

HWY 22A

SEVEN MILE DAM RD

dep-exp-5

Sheppard Creek

ECOSCAPE
Environmental Consultants Ltd.

Mapsheet 9

Lower Columbia River Aquatic Receiving Environment Monitoring Program

Project:	Aquatic Receiving Environment Monitoring
Location:	Trail, BC
Project No.:	15-1438
Prepared for:	Teck Metals Ltd.-Trail Operations
Prepared by:	Ecoscape Environmental Consultants Ltd.
Drawn by:	Rachel Plewes
Checked by:	Kyle Hawes
Projection:	NAD83-UTM Zone 11
Date:	September 6, 2016

N

LEGEND

- Points of Interest
- Depositional Area Sample Sites
- Erosional Area Sample Sites
- Water Quality Sites (AREMP Program)
- Small-bodied Fish Sampling Location (May, 2016)
- Exposure Area
- Reference Zone
- Watercourse
- River/Lake

200 100 0 200 400 600 800 1,000 Meters

ECOSCAPE
Environmental Consultants Ltd.

ero-exp-5-3
Exposure Area 5
dep-exp-6
ero-exp-5-4
Seven Mile Dam Rd
Sheppard Creek
Waneta Composite
Hwy 22A
ero-exp-5-5
Columbia River
dep-exp-7
Waneta-Nelway Rd
Seven Mile Dam Rd

Mapsheet 10

Lower Columbia River Aquatic Receiving Environment Monitoring Program

Project:	Aquatic Receiving Environment Monitoring
Location:	Trail, BC
Project No.:	15-1438
Prepared for:	Teck Metals Ltd.-Trail Operations
Prepared by:	Ecoscape Environmental Consultants Ltd.
Drawn by:	Rachel Plewes
Checked by:	Kyle Hawes
Projection:	NAD83-UTM Zone 11
Date:	September 6, 2016

N

LEGEND

- Points of Interest
- Depositional Area Sample Sites
- Erosional Area Sample Sites
- Water Quality Sites (AREMP Program)
- Small-bodied Fish Sampling Location (May, 2016)
- Exposure Area
- Reference Zone
- Watercourse
- River/Lake

200 100 0 200 400 600 Meters

bing
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APPENDIX A

Aquatic Community Sampling Outline

Appendix A. AREMP erosional habitat sampling areas and sites.

Area	Description	Area-Site	Bank	Periphyton Community	Benthic Community	Periphyton Tissue	Benthic Tissue	Sculpin Tissue
KOOT-REF-1	Erosional habitat on left bank of Kootenay River	KOOT-REF-1	L					KOOT-REF-1
ERO-REF-1	Left bank opposite Stoney Creek	ERO-REF-1-1	L	ERO-REF-1-1A	ERO-REF-1-1	ERO-REF-1-1-PeriT	ERO-REF-1-1-BenTS	
				ERO-REF-1-1B				
				ERO-REF-1-1C				
		ERO-REF-1-2	L	ERO-REF-1-2A	ERO-REF-1-2	ERO-REF-1-2-PeriT	ERO-REF-1-2-BenTS	
				ERO-REF-1-2B				
				ERO-REF-1-2C				
		ERO-REF-1-3	L	ERO-REF-1-3A	ERO-REF-1-3	ERO-REF-1-3-PeriT	ERO-REF-1-3-BenTC	
				ERO-REF-1-3B				
				ERO-REF-1-3C				
		ERO-REF-1-4	L	ERO-REF-1-4A	ERO-REF-1-4	ERO-REF-1-4-PeriT	ERO-REF-1-4-BenTC	
				ERO-REF-1-4B				
				ERO-REF-1-4C				
		ERO-REF-1-5	L	ERO-REF-1-5A	ERO-REF-1-5	ERO-REF-1-5-PeriT	ERO-REF-1-5-BenTS	
				ERO-REF-1-5B				
				ERO-REF-1-5C				
ERO-REF-2	Birchbank	ERO-REF-2-1	B	ERO-REF-2-1A	ERO-REF-2-1	ERO-REF-2-1-PeriT	ERO-REF-2-1-BenTC	ERO-REF-2
				ERO-REF-2-1B				
				ERO-REF-2-1C				
		ERO-REF-2-2	B	ERO-REF-2-2A	ERO-REF-2-2	ERO-REF-2-2-PeriT	ERO-REF-2-2-BenTC	
				ERO-REF-2-2B				
				ERO-REF-2-2C				
		ERO-REF-2-3	B	ERO-REF-2-3A	ERO-REF-2-3	ERO-REF-2-3-PeriT	ERO-REF-2-3-BenTC	
				ERO-REF-2-3B				
				ERO-REF-2-3C				
		ERO-REF-2-4	B	ERO-REF-2-4A	ERO-REF-2-4	ERO-REF-2-4-PeriT	ERO-REF-2-4-BenTS	
				ERO-REF-2-4B				
				ERO-REF-2-4C				
		ERO-REF-2-5	B	ERO-REF-2-5A	ERO-REF-2-5	ERO-REF-2-5-PeriT	ERO-REF-2-5-BenTS	
				ERO-REF-2-5B				
				ERO-REF-2-5C				
ERO-REF-3	Gennelle		B					ERO-REF-3
ERO-EXP-1	Right bank from Stoney Creek to side channel	ERO-EXP-1-1	R	ERO-EXP-1-1A	ERO-EXP-1-1			ERO-EXP-1
				ERO-EXP-1-1B				
				ERO-EXP-1-1C				
		ERO-EXP-1-2	R	ERO-EXP-1-2A	ERO-EXP-1-2			
				ERO-EXP-1-2B				
				ERO-EXP-1-2C				
		ERO-EXP-1-3	R	ERO-EXP-1-3A	ERO-EXP-1-3			
				ERO-EXP-1-3B				
				ERO-EXP-1-3C				
		ERO-EXP-1-4	R	ERO-EXP-1-4A	ERO-EXP-1-4			
				ERO-EXP-1-4B				
				ERO-EXP-1-4C				
		ERO-EXP-1-5	R	ERO-EXP-1-5A	ERO-EXP-1-5			
				ERO-EXP-1-5B				
				ERO-EXP-1-5C				
ERO-EXP-2	Side channel from CIII outfall down to CII Outfall	ERO-EXP-2-1	R	ERO-EXP-2-1A	ERO-EXP-2-1	ERO-EXP-2-1-PeriT	ERO-EXP-2-1-BenTC	ERO-EXP-2
				ERO-EXP-2-1B				
				ERO-EXP-2-1C				
		ERO-EXP-2-2	R	ERO-EXP-2-2A	ERO-EXP-2-2	ERO-EXP-2-2-PeriT	ERO-EXP-2-2-BenTC	
				ERO-EXP-2-2B				
				ERO-EXP-2-2C				
		ERO-EXP-2-3	R	ERO-EXP-2-3A	ERO-EXP-2-3	ERO-EXP-2-3-PeriT	ERO-EXP-2-3-BenTC	
				ERO-EXP-2-3B				
				ERO-EXP-2-3C				
		ERO-EXP-2-4	R	ERO-EXP-2-4A	ERO-EXP-2-4	ERO-EXP-2-4-PeriT	ERO-EXP-2-4-BenTC	
				ERO-EXP-2-4B				
				ERO-EXP-2-4C				
		ERO-EXP-2-5	R	ERO-EXP-2-5A	ERO-EXP-2-5	ERO-EXP-2-5-PeriT	ERO-EXP-2-5-BenTC	
				ERO-EXP-2-5B				

Area	Description	Area-Site	Bank	Periphyton Community	Benthic Community	Periphyton Tissue	Benthic Tissue	Sculpin Tissue
				ERO-EXP-2-5C				
ERO-EXP-3	CII Outfall downstream to Korpak	ERO-EXP-3-1	R	ERO-EXP-3-1A ERO-EXP-3-1B ERO-EXP-3-1C	ERO-EXP-3-1	ERO-EXP-3-1-PeriT	ERO-EXP-3-1-BenTC	ERO-EXP-3-1-R
		ERO-EXP-3-1-L	L					ERO-EXP-3-1-L
		ERO-EXP-3-2	R	ERO-EXP-3-2A ERO-EXP-3-2B ERO-EXP-3-2C	ERO-EXP-3-2	ERO-EXP-3-2-PeriT	ERO-EXP-3-2-BenTS	
		ERO-EXP-3-2-L	L					ERO-EXP-3-2-L
		ERO-EXP-3-3	L	ERO-EXP-3-3A ERO-EXP-3-3B ERO-EXP-3-3C	ERO-EXP-3-3	ERO-EXP-3-3-PeriT	ERO-EXP-3-3-BenTC	ERO-EXP-3-3-L
		ERO-EXP-3-4	R	ERO-EXP-3-4A ERO-EXP-3-4B ERO-EXP-3-4C	ERO-EXP-3-4	ERO-EXP-3-4-PeriT	ERO-EXP-3-4-BenTC	ERO-EXP-3-4-R
		ERO-EXP-3-5	L	ERO-EXP-3-5A ERO-EXP-3-5B ERO-EXP-3-5C	ERO-EXP-3-5	ERO-EXP-3-5-PeriT	ERO-EXP-3-5-BenTC	ERO-EXP-3-4-L
		ERO-EXP-3-6	R			ERO-EXP-3-6-PeriT	ERO-EXP-3-6-BenTC	ERO-EXP-3-3-R
ERO-CRADT	Right bank From New Bridge to D/S End of right bank retaining wall	ERO-CRADT-3-1	R	ERO-CRADT-3-1A ERO-CRADT-3-1B ERO-CRADT-3-1C	ERO-CRADT-3-1	ERO-CRADT-3-1-PeriT	ERO-CRADT-3-1-BenTC	ERO-EXP-3-2R
		ERO-CRADT-3-2	R	ERO-CRADT-3-2A ERO-CRADT-3-2B ERO-CRADT-3-2C	ERO-CRADT-3-2	ERO-CRADT-3-2-PeriT	ERO-CRADT-3-2-BenTS	
		ERO-CRADT-3-3	R	ERO-CRADT-3-3A ERO-CRADT-3-3B ERO-CRADT-3-3C	ERO-CRADT-3-3	ERO-CRADT-3-3-PeriT	ERO-CRADT-3-3-BenTC	
		ERO-CRADT-3-4	R	ERO-CRADT-3-4A ERO-CRADT-3-4B ERO-CRADT-3-4C	ERO-CRADT-3-4	ERO-CRADT-3-4-PeriT	ERO-CRADT-3-4-BenTC	
		ERO-CRADT-3-5	R	ERO-CRADT-3-5A ERO-CRADT-3-5B ERO-CRADT-3-5C	ERO-CRADT-3-5	ERO-CRADT-3-5-PeriT	ERO-CRADT-3-5-BenTS	
ERO-EXP-4	Korpak downstream to below Maglios	ERO-EXP-4-1	L	ERO-EXP-4-1A ERO-EXP-4-1B ERO-EXP-4-1C	ERO-EXP-4-1	ERO-EXP-4-1-PeriT	ERO-EXP-4-1-BenTS	
		ERO-EXP-4-2	L	ERO-EXP-4-2A ERO-EXP-4-2B ERO-EXP-4-2C	ERO-EXP-4-2	ERO-EXP-4-2-PeriT	ERO-EXP-4-2-BenTS	
		ERO-EXP-4-3	L	ERO-EXP-4-3A ERO-EXP-4-3B ERO-EXP-4-3C	ERO-EXP-4-3	ERO-EXP-4-3-PeriT	ERO-EXP-4-3-BenTS	
		ERO-EXP-4-4	L	ERO-EXP-4-4A ERO-EXP-4-4B ERO-EXP-4-4C	ERO-EXP-4-4	ERO-EXP-4-4-PeriT	ERO-EXP-4-4-BenTC	
		ERO-EXP-4-5	R	ERO-EXP-4-5A ERO-EXP-4-5B ERO-EXP-4-5C	ERO-EXP-4-5	ERO-EXP-4-5-PeriT	ERO-EXP-4-5-BenTS	
		ERO-EXP-4-7	R			ERO-EXP-4-7-PeriT	ERO-EXP-4-7-BenTC	
		ERO-EXP-4-8	R			ERO-EXP-4-8-PeriT	ERO-EXP-4-8-BenTC	

Area	Description	Area-Site	Bank	Periphyton Community	Benthic Community	Periphyton Tissue	Benthic Tissue	Sculpin Tissue
		ERO-EXP-4-9	R			ERO-EXP-4-9-PeriT	ERO-EXP-4-9-BenTC	ERO-EXP-4-5-R
			L					ERO-EXP-4-5-L
ERO-EXP-5	Maglios downstream to Waneta	ERO-EXP-5-1	L	ERO-EXP-5-1A ERO-EXP-5-1B ERO-EXP-5-1C	ERO-EXP-5-1	ERO-EXP-5-1-PeriT	ERO-EXP-5-1-BenTS	
		ERO-EXP-5-2	R	ERO-EXP-5-2A ERO-EXP-5-2B ERO-EXP-5-2C	ERO-EXP-5-2	ERO-EXP-5-2-PeriT	ERO-EXP-5-2-BenTC	
		ERO-EXP-5-3	R	ERO-EXP-5-3A ERO-EXP-5-3B ERO-EXP-5-3C	ERO-EXP-5-3	ERO-EXP-5-3-PeriT	ERO-EXP-5-3-BenTComp	
		ERO-EXP-5-4	R	ERO-EXP-5-4A ERO-EXP-5-4B ERO-EXP-5-4C	ERO-EXP-5-4	ERO-EXP-5-4-PeriT	ERO-EXP-5-4-BenTS	
		ERO-EXP-5-5	R	ERO-EXP-5-5A ERO-EXP-5-5B ERO-EXP-5-5C	ERO-EXP-5-5	ERO-EXP-5-5-PeriT	ERO-EXP-5-5-BenTS	
		ERO-EXP-5-6	R			ERO-EXP-5-6-PeriT	ERO-EXP-5-6-BenTC	ERO-EXP-5

Appendix A. AREMP depositional habitat sampling areas and sites.					
Area	**Description**	**Area-Site**	**Bank**	**Periphyton Community**	**Benthic Community**
DEP-REF-1	Kootenay Eddy	DEP-REF-1	R	DEP-REF- KE-1	DEP-REF-1-1
				DEP-REF- KE-2	DEP-REF-1-2
				DEP-REF- KE-3	DEP-REF-1-3
					DEP-REF-1-4
					DEP-REF-1-5
DEP-REF-2	Genelle	DEP-REF-2	R	DEP-REF- GE-1	DEP-REF-2-1
				DEP-REF- GE-2	DEP-REF-2-2
				DEP-REF- GE-3	DEP-REF-2-3
					DEP-REF-2-4
					DEP-REF-2-5
DEP-REF-3	Birchbank	DEP-REF-3	L	DEP-REF- BB-1	DEP-REF-3-1
				DEP-REF- BB-2	DEP-REF-3-2
				DEP-REF- BB-3	DEP-REF-3-3
					DEP-REF-3-4
					DEP-REF-3-5
DEP-EXP-1	Korpak	DEP-EXP-1	R	DEP-EXP- KO-1	DEP-EXP-1-1
				DEP-EXP- KO-2	DEP-EXP-1-2
				DEP-EXP- KO-3	DEP-EXP-1-3
					DEP-EXP-1-4
					DEP-EXP-1-5
DEP-EXP-2	Maglios	DEP-EXP-2	L	DEP-EXP- MG-1	DEP-EXP-2-1
				DEP-EXP- MG-2	DEP-EXP-2-2
				DEP-EXP- MG-3	DEP-EXP-2-3
					DEP-EXP-2-4
					DEP-EXP-2-5
DEP-EXP-3	Casino Eddy	DEP-EXP-3	R	DEP-EXP- C-1	DEP-EXP-3-1
				DEP-EXP- C-2	DEP-EXP-3-2
				DEP-EXP- C-3	DEP-EXP-3-3
					DEP-EXP-3-4
					DEP-EXP-3-5
DEP-EXP-4	Airport Bar	DEP-EXP-4	L	DEP-EXP-AB-1	DEP-EXP-4-1
				DEP-EXP-AB-2	DEP-EXP-4-2
				DEP-EXP-AB-3	DEP-EXP-4-3
					DEP-EXP-4-4
					DEP-EXP-4-5
DEP-EXP-5	Trimac	DEP-EXP-5	R	DEP-EXP- TR-1	DEP-EXP-5-1
				DEP-EXP- TR-2	DEP-EXP-5-2
				DEP-EXP- TR-3	DEP-EXP-5-3
					DEP-EXP-5-4
					DEP-EXP-5-5
DEP-EXP-6	Fort Shepherd	DEP-EXP-6	L	DEP-EXP- FS-1	DEP-EXP-6-1
				DEP-EXP- FS-2	DEP-EXP-6-2
				DEP-EXP- FS-3	DEP-EXP-6-3
					DEP-EXP-6-4
					DEP-EXP-6-5
DEP-EXP-7	Waneta	DEP-EXP-7	L	DEP-EXP- WA-1	DEP-EXP-7-1
				DEP-EXP- WA-2	DEP-EXP-7-2
				DEP-EXP- WA-3	DEP-EXP-7-3
					DEP-EXP-7-4
					DEP-EXP-7-5

APPENDIX B

AREMP Sample Sites Physical Data

Erosional Area
Physical Habitat
Parameters

Sample Name	Sub Sample	Sample Type	Organizatiion	Date	Time	Crew	Weather	AirTemp	Water Temp	Stage	River_Bank	Comments
ero-ref-2-1	0	Kick(CABIN)	Ecoscape/Larratt Aquatic	10/14/2015	12:24:32pm	KH;MAO;MS;RP	Clear	12.0	12.1	low	Right Bank	
ero-ref-2-2	0	Kick(CABIN)	Ecoscape/Larratt Aquatic	10/14/2015	01:37:36pm	KH;MAO;MS;RP	Clear	12.0	12.1	low	Right Bank	
ero-ref-2-3	0	Kick(CABIN)	Ecoscape/Larratt Aquatic	10/14/2015	02:50:33pm	KH;MAO;MS;RP	Clear	15.0	12.1	low	Left Bank	
ero-ref-2-4	0	Kick(CABIN)	Ecoscape/Larratt Aquatic	10/14/2015	03:50:15pm	KH;MAO;MS;RP	Clear	16.0	12.1	low	Right Bank	
ero-ref-2-5	0	Kick(CABIN)	Ecoscape/Larratt Aquatic	10/14/2015	04:39:52pm	KH;MAO;MS;RP	Clear	16.0	12.5	low	Right Bank	
ero-ref-1-1	0	Kick(CABIN)	Ecoscape/Larratt Aquatic	10/15/2015	08:22:13am	KH;MAO;MS;RP	Clear	5.0	12.5	low	Left Bank	
ero-ref-1-2	0	Kick(CABIN)	Ecoscape/Larratt Aquatic	10/15/2015	09:05:26am	KH;MAO;MS;RP	Clear	5.0	12.4	low	Right Bank	
ero-ref-1-3	0	Kick(CABIN)	Ecoscape/Larratt Aquatic	10/15/2015	09:52:55am	KH;MAO;MS;RP	Clear	5.0	12.4	low	Left Bank	
ero-ref-1-4	0	Kick(CABIN)	Ecoscape/Larratt Aquatic	10/15/2015	10:40:52am	KH;MAO;MS;RP	Clear	10.0	12.4	low	Left Bank	
ero-ref-1-5	0	Kick(CABIN)	Ecoscape/Larratt Aquatic	10/15/2015	11:51:27am	KH;MAO;MS;RP	Clear	10.0	12.4	low	Left Bank	
ero-exp-1-1	0	Kick(CABIN)	Ecoscape/Larratt Aquatic	10/15/2015	01:35:51pm	KH;MAO;MS;RP	Clear	13.0	12.5	low	Right Bank	
ero-exp-1-2	0	Kick(CABIN)	Ecoscape/Larratt Aquatic	10/15/2015	02:06:07pm	KH;MAO;MS;RP	Clear	13.0	12.7	low	Right Bank	
ero-exp-1-3	0	Kick(CABIN)	Ecoscape/Larratt Aquatic	10/15/2015	02:39:31pm	KH;MAO;MS;RP	Clear	13.0	12.7	low	Right Bank	
ero-exp-1-4	0	Kick(CABIN)	Ecoscape/Larratt Aquatic	10/15/2015	03:14:36pm	KH;MAO;MS;RP	Clear	13.0	12.7	low	Right Bank	
ero-exp-1-5	0	Kick(CABIN)	Ecoscape/Larratt Aquatic	10/15/2015	03:49:43pm	KH;MAO;MS;RP	Clear	13.0	12.7	low	Right Bank	
ero-exp-2-1	0	Kick(CABIN)	Ecoscape/Larratt Aquatic	10/15/2015	04:26:21pm	KH;MAO;MS;RP	Clear	13.0	12.7	low	Right Bank	
ero-exp-2-2	0	Kick(CABIN)	Ecoscape/Larratt Aquatic	10/15/2015	05:22:33pm	KH;MAO;MS;RP	Clear	13.0	12.7	low	Left Bank	left bank of right side channel
ero-exp-2-3	0	Surber/Kick	Ecoscape/Larratt Aquatic	10/16/2015	08:46:48am	KH;MAO;MS;RP	Clear	7.0	14.0	low	Left Bank	
ero-exp-2-4	0	Surber/Kick	Ecoscape/Larratt Aquatic	10/16/2015	09:26:57am	KH;MAO;MS;RP	Clear	7.0	13.0	low	Left Bank	
ero-exp-2-5	0	Surber/Kick	Ecoscape/Larratt Aquatic	10/16/2015	10:10:39am	KH;MAO;MS;RP	Clear	7.0	13.0	low	Right Bank	
ero-exp-3-1	0	Surber/Kick	Ecoscape/Larratt Aquatic	10/16/2015	11:02:49am	KH;MAO;MS;RP	Clear	7.0	13.4	low	Right Bank	
ero-cradt-3-1	0	Surber/Kick	Ecoscape/Larratt Aquatic	10/16/2015	12:20:42pm	KH;MAO;MS;RP	Clear	7.0	13.4	low	Right Bank	just d/s of trail creek
ero-cradt-3-2	0	Surber/Kick	Ecoscape/Larratt Aquatic	10/16/2015	01:16:01pm	KH;MAO;MS;RP	Clear	7.0	12.9	low	Right Bank	
ero-cradt-3-3	0	Surber/Kick	Ecoscape/Larratt Aquatic	10/16/2015	02:19:21pm	KH;MAO;MS;RP	Clear	7.0	12.9	low	Right Bank	
ero-cradt-3-4	0	Surber/Kick	Ecoscape/Larratt Aquatic	10/16/2015	03:17:07pm	KH;MAO;MS;RP	Clear	7.0	12.9	low	Right Bank	
ero-cradt-3-5	0	Surber/Kick	Ecoscape/Larratt Aquatic	10/16/2015	03:55:02pm	KH;MAO;MS;RP	Clear	7.0	12.9	low	Right Bank	
ero-exp-3-2	0	Surber/Kick	Ecoscape/Larratt Aquatic	10/16/2015	04:53:44pm	KH;MAO;MS;RP	Clear	7.0	12.9	low	Right Bank	
ero-exp-3-3	0	Surber/Kick	Ecoscape/Larratt Aquatic	10/16/2015	05:43:53pm	KH;MAO;MS;RP	Clear	7.0	12.9	low	Left Bank	
ero-exp-3-4	0	Surber/Kick	Ecoscape/Larratt Aquatic	10/17/2015	09:08:07am	KH;MAO;MS;RP	Clear	7.0	12.2	low	Right Bank	
ero-exp-3-5	0	Surber/Kick	Ecoscape/Larratt Aquatic	10/17/2015	09:54:10am	KH;MAO;MS;RP	Clear	7.0	12.2	low	Left Bank	
ero-exp-5-5	0	Surber/Kick	Ecoscape/Larratt Aquatic	10/17/2015	11:01:33am	KH;MAO;MS;RP	Clear	7.0	12.2	low	Right Bank	
ero-exp-5-4	0	Surber/Kick	Ecoscape/Larratt Aquatic	10/17/2015	01:34:16pm	KH;MAO;MS;RP	Clear	7.0	12.7	low	Right Bank	
ero-exp-5-3	0	Surber/Kick	Ecoscape/Larratt Aquatic	10/17/2015	02:27:35pm	KH;MAO;MS;RP	Clear	7.0	12.7	low	Right Bank	
ero-exp-5-6	0	Other	Ecoscape/Larratt Aquatic	10/18/2015	08:53:28am	KH;MAO;MS;RP	Over cast	10.0	12.3	low	Right Bank	tissue only
ero-exp-5-2	0	Surber/Kick	Ecoscape/Larratt Aquatic	10/18/2015	09:21:00am	KH;MAO;MS;RP	Over cast	10.0	12.3	low	Right Bank	
ero-exp-5-1	0	Surber/Kick	Ecoscape/Larratt Aquatic	10/18/2015	10:09:08am	KH;MAO;MS;RP	Over cast	10.0	12.3	low	Left Bank	
ero-exp-4-9	0	Surber/Kick	Ecoscape/Larratt Aquatic	10/18/2015	11:34:46am	KH;MAO;MS;RP	Over cast	10.0	12.3	low	Right Bank	
ero-exp-4-5	0	Surber/Kick	Ecoscape/Larratt Aquatic	10/18/2015	12:19:28pm	KH;MAO;MS;RP	Over cast	10.0	12.3	low	Right Bank	
ero-exp-4-4	0	Surber/Kick	Ecoscape/Larratt Aquatic	10/18/2015	01:00:02pm	KH;MAO;MS;RP	Over cast	10.0	12.4	low	Left Bank	
ero-exp-4-3	0	Surber/Kick	Ecoscape/Larratt Aquatic	10/18/2015	02:01:35pm	KH;MAO;MS;RP	Over cast	10.0	12.4	low	Left Bank	
ero-exp-4-2	0	Surber/Kick	Ecoscape/Larratt Aquatic	10/18/2015	02:10:05pm	KH;MAO;MS;RP	Over cast	10.0	12.4	low	Left Bank	
ero-exp-4-1	0	Surber/Kick	Ecoscape/Larratt Aquatic	10/18/2015	03:06:40pm	KH;MAO;MS;RP	Over cast	10.0	12.4	low	Left Bank	
ero-exp-4-8	0	Surber/Kick	Ecoscape/Larratt Aquatic	10/18/2015	03:52:21pm	KH;MAO;MS;RP	Over cast	10.0	12.4	low	Right Bank	
ero-exp-4-7	0	Surber/Kick	Ecoscape/Larratt Aquatic	10/18/2015	04:50:05pm	KH;MAO;MS;RP	Over cast	10.0	12.4	low	Right Bank	tissue site
ero-exp-3-6	0	Surber/Kick	Ecoscape/Larratt Aquatic	10/18/2015	05:40:30pm	KH;MAO;MS;RP	Over cast	10.0	12.4	low	Right Bank	tissue site

Erosional Area
Physical Habitat
Parameters

Sample Name	Sub_Organi	Sub_Clay	Sub_Silt	Sub_Sand	Sub_Gravel	Sub_Pebble	Sub_Cobble	Sub_Blder	Sub_BedRk	D50	D90	Embeddedne	Compaction
ero-ref-2-1	0	0	0	0	0	5	85	10	0	0	0	None	Medium
ero-ref-2-2	0	0	0	0	0	5	85	10	0	0	0	None	Medium
ero-ref-2-3	0	0	0	0	0	40	55	5	0	0	0	Low (0-25%)	Medium
ero-ref-2-4	0	0	0	5	5	10	80	0	0	0	0	Low (0-25%)	Medium
ero-ref-2-5	0	0	0	5	5	10	80	0	0	0	0	Low (0-25%)	Medium
ero-ref-1-1	0	0	0	1	1	3	55	40	0	0	0	Low (0-25%)	Medium
ero-ref-1-2	0	0	0	10	5	10	65	10	0	0	0	Low (0-25%)	Medium
ero-ref-1-3	0	0	0	0	0	0	60	40	0	0	0	None	Medium
ero-ref-1-4	0	0	0	0	0	2	78	20	0	0	0	None	Medium
ero-ref-1-5	0	0	0	2	3	5	65	25	0	0	0	Low (0-25%)	Medium
ero-exp-1-1	0	0	0	2	1	2	50	45	0	0	0	Low (0-25%)	Medium
ero-exp-1-2	0	0	0	1	1	3	35	65	0	0	0	Low (0-25%)	Medium
ero-exp-1-3	0	0	0	2	3	5	35	55	0	0	0	Low (0-25%)	Medium
ero-exp-1-4	0	0	0	5	5	5	35	50	0	0	0	Low (0-25%)	Medium
ero-exp-1-5	0	0	0	1	2	3	65	30	0	0	0	Low (0-25%)	Medium
ero-exp-2-1	0	0	0	1	2	3	65	30	0	0	0	Low (0-25%)	Medium
ero-exp-2-2	0	0	0	2	13	25	55	5	0	0	0	Low (0-25%)	Medium
ero-exp-2-3	0	0	0	2	25	28	30	10	0	0	0	Low (0-25%)	Medium
ero-exp-2-4	0	0	0	1	10	30	54	5	0	0	0	Low (0-25%)	Medium
ero-exp-2-5	0	0	0	1	10	25	49	15	0	0	0	Low (0-25%)	Medium
ero-exp-3-1	0	0	0	1	10	25	59	5	0	0	0	Medium (25-75%)	High
ero-cradt-3-1	0	0	0	1	5	10	59	25	0	0	0	Low (0-25%)	Medium
ero-cradt-3-2	0	0	0	5	5	10	35	45	0	0	0	Medium (25-75%)	Medium
ero-cradt-3-3	0	0	0	5	5	10	35	45	0	0	0	Low (0-25%)	Medium
ero-cradt-3-4	0	0	0	5	5	10	40	40	0	0	0	Low (0-25%)	Medium
ero-cradt-3-5	0	0	0	5	5	10	40	40	0	0	0	Low (0-25%)	Medium
ero-exp-3-2	0	0	0	1	2	7	30	60	0	0	0	Low (0-25%)	Medium
ero-exp-3-3	0	0	0	5	10	15	60	10	0	0	0	Medium (25-75%)	High
ero-exp-3-4	0	0	0	0	0	5	80	15	0	0	0	None	Medium
ero-exp-3-5	0	0	0	0	0	5	50	45	0	0	0	None	Medium
ero-exp-5-5	0	0	0	0	10	20	65	5	0	0	0	None	Medium
ero-exp-5-4	0	0	0	0	10	20	70	0	0	0	0	None	Medium
ero-exp-5-3	0	0	0	0	15	30	55	0	0	0	0	None	Medium
ero-exp-5-6	0	0	0	1	5	10	84	0	0	0	0	Unknown	
ero-exp-5-2	0	0	0	2	15	25	58	0	0	0	0	Unknown	
ero-exp-5-1	0	0	0	5	10	20	60	5	0	0	0	Low (0-25%)	Medium
ero-exp-4-9	0	0	0	0	5	10	40	45	0	0	0	Low (0-25%)	Medium
ero-exp-4-5	0	0	0	20	5	15	45	15	0	0	0	Medium (25-75%)	Medium
ero-exp-4-4	0	0	0	5	5	5	55	30	0	0	0	Low (0-25%)	Medium
ero-exp-4-3	0	0	0	15	10	15	55	5	0	0	0	Medium (25-75%)	Medium
ero-exp-4-2	0	0	0	2	20	28	45	5	0	0	0	Medium (25-75%)	Medium
ero-exp-4-1	0	0	0	20	10	20	30	20	0	0	0	Medium (25-75%)	Medium
ero-exp-4-8	0	0	0	2	10	20	58	10	0	0	0	Low (0-25%)	Medium
ero-exp-4-7	0	0	0	2	5	15	48	30	0	0	0	Low (0-25%)	Medium
ero-exp-3-6	0	0	0	0	2	3	25	70	0	0	0	Low (0-25%)	Medium

Erosional Area
Physical Habitat
Parameters

Sample Name	Comt_Sub	Depth_W	VEL_BOT	VEL40	VEL_SURF	Comt_Chan	BI_Com	Peri_Com	BI_Tis	Peri_Tis
ero-ref-2-1		0.30	0.03	0.31	0.42		Yes	Yes	Yes	Yes
ero-ref-2-2	higher velocity	0.35	0.59	0.79	0.98		Yes	Yes	Yes	Yes
ero-ref-2-3		0.32	0.65	0.48	0.38		Yes	Yes	Yes	Yes
ero-ref-2-4		0.30	0.00	0.00	0.00	no velocity. some sand deposited since flows dropped	Yes	Yes	Yes	Yes
ero-ref-2-5		0.35	0.00	0.04	0.00	no velocity. some sand deposited since flows dropped	Yes	Yes	Yes	Yes
ero-ref-1-1		0.33	0.10	0.15	0.07		Yes	Yes	Yes	Yes
ero-ref-1-2		0.35	0.07	0.15	0.10		Yes	Yes	Yes	Yes
ero-ref-1-3		0.30	0.13	0.21	0.11		Yes	Yes	Yes	Yes
ero-ref-1-4		0.35	0.10	0.17	0.34		Yes	Yes	Yes	Yes
ero-ref-1-5		0.35	0.00	0.05	0.13		Yes	Yes	Yes	Yes
ero-exp-1-1		0.35	0.04	0.22	0.30		Yes	Yes	No	No
ero-exp-1-2		0.35	0.03	0.08	0.12		Yes	Yes	No	No
ero-exp-1-3		0.35	0.24	0.19	0.40		Yes	Yes	No	No
ero-exp-1-4		0.30	0.10	0.24	0.23		Yes	Yes	No	No
ero-exp-1-5		0.30	0.05	0.36	0.64		Yes	Yes	No	No
ero-exp-2-1		0.37	0.09	0.45	0.59		Yes	Yes	Yes	Yes
ero-exp-2-2		0.37	0.18	0.43	0.47		Yes	Yes	Yes	Yes
ero-exp-2-3		0.30	0.25	0.65	0.63		Yes	Yes	Yes	Yes
ero-exp-2-4		0.30	0.02	0.30	0.32		Yes	Yes	Yes	Yes
ero-exp-2-5		0.30	0.12	0.19	0.30		Yes	Yes	Yes	Yes
ero-exp-3-1		0.35	0.42	0.62	0.69	high embedded - paved/compact	Yes	Yes	Yes	Yes
ero-cradt-3-1		0.35	0.02	0.16	0.26		Yes	Yes	Yes	Yes
ero-cradt-3-2	concrete and asphalt debris with rip rap	0.35	0.00	0.01	0.01	flows deflected by trail creek fan	Yes	Yes	Yes	Yes
ero-cradt-3-3	concrete and asphalt debris with rip rap	0.35	0.14	0.27	0.32		Yes	Yes	Yes	Yes
ero-cradt-3-4	less debris	0.33	0.04	0.10	0.22		Yes	Yes	Yes	Yes
ero-cradt-3-5		0.37	0.08	0.09	0.16		Yes	Yes	Yes	Yes
ero-exp-3-2		0.35	0.08	0.11	0.17		Yes	Yes	Yes	Yes
ero-exp-3-3	more paved site	0.31	0.18	0.33	0.35	broader riffle	Yes	Yes	Yes	Yes
ero-exp-3-4		0.30	0.14	0.28	0.45		Yes	Yes	Yes	Yes
ero-exp-3-5		0.30	0.01	0.08	0.15		Yes	Yes	Yes	Yes
ero-exp-5-5		0.30	0.17	0.35	0.65		Yes	Yes	Yes	Yes
ero-exp-5-4		0.35	0.19	0.34	0.44		Yes	Yes	Yes	Yes
ero-exp-5-3	unstable cobble pebble	0.30	0.28	0.46	0.52		Yes	Yes	Yes	Yes
ero-exp-5-6		0.30	0.45	0.54	0.54		No	No	Yes	Yes
ero-exp-5-2		0.30	0.20	0.32	0.51		Yes	Yes	Yes	Yes
ero-exp-5-1		0.30	0.01	0.06	0.20		Yes	Yes	Yes	Yes
ero-exp-4-9		0.37	0.42	0.53	0.59		No	No	Yes	Yes
ero-exp-4-5		0.30	0.00	0.03	0.07	nearly still high fines and higher embedd	Yes	Yes	Yes	Yes
ero-exp-4-4		0.30	0.11	0.15	0.15		Yes	Yes	Yes	Yes
ero-exp-4-3		0.35	0.00	0.03	0.07		Yes	Yes	Yes	Yes
ero-exp-4-2		0.35	0.18	0.39	0.46		Yes	Yes	Yes	Yes
ero-exp-4-1		0.35	0.00	0.01	0.01		Yes	Yes	Yes	Yes
ero-exp-4-8		0.30	0.17	0.25	0.27		No	No	Yes	Yes
ero-exp-4-7		0.30	0.11	0.21	0.19		No	No	Yes	Yes
ero-exp-3-6		0.30	0.12	0.55	0.62		No	No	Yes	Yes

Erosional Area
Physical Habitat
Parameters

Sample Name	GPS_Date
ero-ref-2-1	10/14/2015
ero-ref-2-2	10/14/2015
ero-ref-2-3	10/14/2015
ero-ref-2-4	10/14/2015
ero-ref-2-5	10/14/2015
ero-ref-1-1	10/15/2015
ero-ref-1-2	10/15/2015
ero-ref-1-3	10/15/2015
ero-ref-1-4	10/15/2015
ero-ref-1-5	10/15/2015
ero-exp-1-1	10/15/2015
ero-exp-1-2	10/15/2015
ero-exp-1-3	10/15/2015
ero-exp-1-4	10/15/2015
ero-exp-1-5	10/15/2015
ero-exp-2-1	10/15/2015
ero-exp-2-2	10/15/2015
ero-exp-2-3	10/16/2015
ero-exp-2-4	10/16/2015
ero-exp-2-5	10/16/2015
ero-exp-3-1	10/16/2015
ero-cradt-3-1	10/16/2015
ero-cradt-3-2	10/16/2015
ero-cradt-3-3	10/16/2015
ero-cradt-3-4	10/16/2015
ero-cradt-3-5	10/16/2015
ero-exp-3-2	10/16/2015
ero-exp-3-3	10/16/2015
ero-exp-3-4	10/17/2015
ero-exp-3-5	10/17/2015
ero-exp-5-5	10/17/2015
ero-exp-5-4	10/17/2015
ero-exp-5-3	10/17/2015
ero-exp-5-6	10/18/2015
ero-exp-5-2	10/18/2015
ero-exp-5-1	10/18/2015
ero-exp-4-9	10/18/2015
ero-exp-4-5	10/18/2015
ero-exp-4-4	10/18/2015
ero-exp-4-3	10/18/2015
ero-exp-4-2	10/18/2015
ero-exp-4-1	10/18/2015
ero-exp-4-8	10/18/2015
ero-exp-4-7	10/18/2015
ero-exp-3-6	10/18/2015

Erosional Area
Physical Habitat
Parameters

Sample Name	Sample Type	Organization	Date	Time	Crew	Weather	Air Temp	Water Temp	Stage	River Bank	Comments	Sub Organi	Sub Clay	Sub Silt	Sub Sand	Sub Gravel
dep-ref-1	Ekman	Ecoscape/Larratt Aquatic	10/13/2015	05:36:54pm	KH;MAO;MS;RP	Clear	12.0	14.9	low	Right Bank	kootenay eddy	0	0	60	40	0
dep-ref-2	Ekman	Ecoscape/Larratt Aquatic	10/14/2015	10:02:41am	KH;MAO;MS;RP	Clear	9.0	14.0	low	Right Bank	dense macrophytes (elodea,mirioph)	0	0	75	25	0
dep-ref-3	Ekman	Ecoscape/Larratt Aquatic	10/14/2015	10:34:44am	KH;MAO;MS;RP	Clear	9.0	12.1	low	Left Bank	fine sand	0	0	40	60	0
dep-exp-7	Ekman	Ecoscape/Larratt Aquatic	10/17/2015	12:44:34pm	KH;MAO;MS;RP	Clear	15.0	12.4	low	Left Bank		0	0	80	20	0
dep-exp-6	Ekman	Ecoscape/Larratt Aquatic	10/17/2015	03:37:06pm	KH;MAO;MS;RP	Clear	15.0	12.4	low	Left Bank		0	0	80	20	0
dep-exp-5	Ekman	Ecoscape/Larratt Aquatic	10/17/2015	04:33:14pm	KH;MAO;MS;RP	Clear	15.0	12.4	low	Right Bank		0	0	95	5	0
dep-exp-4	Ekman	Ecoscape/Larratt Aquatic	10/17/2015	05:14:00pm	KH;MAO;MS;RP	Clear	15.0	12.4	low	Left Bank		0	0	75	25	0
dep-exp-3	Ekman	Ecoscape/Larratt Aquatic	10/17/2015	05:48:56pm	KH;MAO;MS;RP	Clear	15.0	12.4	low	Right Bank		0	0	75	25	0
		Ecoscape/Larratt Aquatic	10/18/2015	10:52:15am	KH;MAO;MS;RP	Over cast	11.0	12.3	low	Left Bank		0	0	73	30	0
dep-exp-1	Ekman	Ecoscape/Larratt Aquatic	10/18/2015	06:12:21pm	KH;MAO;MS;RP	Over cast	11.0	12.3	low	Right Bank	korpac	0	0	60	40	0

Erosional Area
Physical Habitat
Parameters

Sample Name	Sub Pebble	Sub Cobble	Sub Blder	Sub BedRk	D50	D90	Embeddedne	Compaction	Comt Sub	Depth W	VEL BOT	VEL40	VEL SURF	Comt Chan	BI Com	Peri Com	Sedi	GPS Date
dep-ref-1	0	0	0	0	0	0	High (75%+)	Low	silt sand; potmogeton	0.70	0.00	0.00	0.00	standing	Yes	Yes	Yes	10/13/2015
dep-ref-2	0	0	0	0	0	0	High (75%+)	Low		0.60	0.00	0.00	0.00	still backwater	Yes	Yes	Yes	10/14/2015
dep-ref-3	0	0	0	0	0	0	High (75%+)	Low		0.60	0.00	0.00	0.00	still backwater	Yes	Yes	Yes	10/14/2015
dep-exp-7	0	0	0	0	0	0	Unknown	Low		1.50	0.00	0.00	0.00	sediment	Yes	Yes	Yes	10/17/2015
dep-exp-6	0	0	0	0	0	0	Unknown	Low		1.00	0.00	0.00	0.00		Yes	Yes	Yes	10/17/2015
dep-exp-5	0	0	0	0	0	0	Unknown	Low		1.00	0.00	0.00	0.00		Yes	Yes	Yes	10/17/2015
dep-exp-4	0	0	0	0	0	0	Unknown	Low		1.00	0.00	0.00	0.00		Yes	Yes	Yes	10/17/2015
dep-exp-3	0	0	0	0	0	0	Unknown	Low		1.00	0.00	0.00	0.00		Yes	Yes	Yes	10/17/2015
	0	0	0	0	0	0	Unknown			1.10	0.00	0.00	0.00		Yes	Yes	Yes	10/18/2015
dep-exp-1	0	0	0	0	0	0	Unknown			1.00	0.00	0.00	0.00		Yes	Yes	Yes	10/18/2015

APPENDIX C - 1

2015-2016 WATER QUALITY DATA

Water Quality Laboratory Detection Limits and Units

Parameter	Lowest Detection Limit	Units
Physical Tests (Water)		
Conductivity	2.0	uS/cm
Hardness (as CaCO3)	0.50	mg/L
pH	0.10	pH
Total Suspended Solids	3.0	mg/L
Total Dissolved Solids	10	mg/L
Turbidity	0.10	NTU
Alkalinity, Total (as CaCO3)	1.0	mg/L
Ammonia, Total (as N)	0.0050	mg/L
Bromide (Br)	0.050	mg/L
Chloride (Cl)	0.10	mg/L
Fluoride (F)	0.020	mg/L
Nitrate (as N)	0.0050	mg/L
Nitrite (as N)	0.0010	mg/L
Total Kjeldahl Nitrogen	0.050	mg/L
Phosphorus (P)-Total Dissolved	0.0020	mg/L
Phosphorus (P)-Total	0.0020	mg/L
Sulfate (SO4)	0.050	mg/L
Organic / Inorganic Carbon (Water)		
Total Metals (Water)		
Mercury (Hg)-Total	0.00050	ug/L
Aluminum (Al)-Total	0.00050	mg/L
Antimony (Sb)-Total	0.000020	mg/L
Barium (Ba)-Total	0.000020	mg/L
Beryllium (Be)-Total	0.000010	mg/L
Bismuth (Bi)-Total	0.0000050	mg/L
Boron (B)-Total	0.0050	mg/L
Cadmium (Cd)-Total	0.0000050	mg/L
Calcium (Ca)-Total	0.030	mg/L
Chromium (Cr)-Total	0.00010	mg/L
Cobalt (Co)-Total	0.0000050	mg/L
Copper (Cu)-Total	0.00010	mg/L
Iron (Fe)-Total	0.0010	mg/L
Lead (Pb)-Total	0.000010	mg/L
Lithium (Li)-Total	0.00050	mg/L
Magnesium (Mg)-Total	0.030	mg/L
Manganese (Mn)-Total	0.000050	mg/L
Molybdenum (Mo)-Total	0.000050	mg/L
Nickel (Ni)-Total	0.000050	mg/L
Phosphorus (P)-Total	0.050	mg/L
Potassium (K)-Total	0.050	mg/L
Selenium (Se)-Total	0.000040	mg/L
Silicon (Si)-Total	0.050	mg/L
Silver (Ag)-Total	0.0000050	mg/L
Sodium (Na)-Total	0.010	mg/L
Strontium (Sr)-Total	0.000050	mg/L
Thallium (Tl)-Total	0.0000020	mg/L
Tin (Sn)-Total	0.000020	mg/L
Titanium (Ti)-Total	0.00050	mg/L
Uranium (U)-Total	0.0000020	mg/L
Vanadium (V)-Total	0.000050	mg/L
Zinc (Zn)-Total	0.00050	mg/L
Zirconium (Zr)-Total	0.00010	mg/L
Dissolved Metals (Water)		
Dissolved Mercury Filtration Location		-
Dissolved Metals Filtration Location		-
Dissolved Metals Filtration Location		-
Aluminum (Al)-Dissolved	0.00050	mg/L
Antimony (Sb)-Dissolved	0.000020	mg/L
Arsenic (As)-Dissolved	0.000020	mg/L
Barium (Ba)-Dissolved	0.000020	mg/L
Beryllium (Be)-Dissolved	0.000010	mg/L
Bismuth (Bi)-Dissolved	0.0000050	mg/L
Boron (B)-Dissolved	0.010	mg/L
Cadmium (Cd)-Dissolved	0.0000050	mg/L
Calcium (Ca)-Dissolved	0.030	mg/L
Chromium (Cr)-Dissolved	0.00010	mg/L
Cobalt (Co)-Dissolved	0.0000050	mg/L
Copper (Cu)-Dissolved	0.00010	mg/L
Iron (Fe)-Dissolved	0.0010	mg/L
Lead (Pb)-Dissolved	0.0000050	mg/L
Lithium (Li)-Dissolved	0.00050	mg/L
Magnesium (Mg)-Dissolved	0.030	mg/L
Manganese (Mn)-Dissolved	0.000050	mg/L
Mercury (Hg)-Dissolved	0.00050	ug/L
Molybdenum (Mo)-Dissolved	0.000050	mg/L
Nickel (Ni)-Dissolved	0.000050	mg/L
Phosphorus (P)-Dissolved	0.050	mg/L
Potassium (K)-Dissolved	0.050	mg/L
Selenium (Se)-Dissolved	0.000040	mg/L
Silicon (Si)-Dissolved	0.050	mg/L
Silver (Ag)-Dissolved	0.0000050	mg/L
Sodium (Na)-Dissolved	0.010	mg/L
Strontium (Sr)-Dissolved	0.00010	mg/L
Thallium (Tl)-Dissolved	0.0000020	mg/L
Tin (Sn)-Dissolved	0.000010	mg/L
Titanium (Ti)-Dissolved	0.00030	mg/L
Uranium (U)-Dissolved	0.0000020	mg/L
Vanadium (V)-Dissolved	0.000050	mg/L
Zinc (Zn)-Dissolved	0.00050	mg/L
Zirconium (Zr)-Dissolved	0.00010	mg/L
Aggregate Organics (Water)		
BOD	2.0	mg/L
COD	20	mg/L

Sample ID	BIRCHBANK RSH	STONEY CK RSH	NEW BRIDGE RSH	OLD BRIDGE RSH	MAGLIOS RSH	WANETA RSH	DUPLICATE (New Bridge RSH)	FIELD BLANK	TRAVEL BLANK
Date Sampled	31-MAR-15	31-MAR-15	31-MAR-15	31-MAR-15	31-MAR-15	31-MAR-15	31-MAR-15	31-MAR-15	31-MAR-15
Time Sampled	12:30	13:12	15:25	14:58	14:20	13:55	00:00	00:00	00:00
ALS Sample ID	L1594691-1	L1594691-2	L1594691-3	L1594691-4	L1594691-5	L1594691-6	L1594691-7	L1594691-8	L1594691-9
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests									
Conductivity	137	136	148	139	138	137	145	<2.0	<2.0
Hardness (as CaCO3)	64.2	63.5	67.4	62.4	62.1	63.2	65.8	<0.50	-
pH	8.05	8.12	8.11	8.13	8.13	8.14	8.14	5.52	5.49
Total Suspended Solids	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Total Dissolved Solids	87	81	89	85	80	86	87	<10	<10
Turbidity	0.38	0.51	0.49	0.40	0.38	0.36	0.45	<0.10	<0.10
Anions and Nutrients									
Alkalinity, Total (as CaCO3)	64.9	62.3	64.0	62.5	62.8	62.9	62.1	<2.0	<2.0
Ammonia, Total (as N)	<0.0050	0.0057	0.0250	0.0100	<0.0050	<0.0050	0.0248	<0.0050	<0.0050
Bromide (Br)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	0.70	0.74	1.16	0.80	0.72	0.72	1.15	<0.50	<0.50
Fluoride (F)	0.067	0.067	0.107	0.073	0.068	0.068	0.107	<0.020	<0.020
Nitrate (as N)	0.142	0.142	0.155	0.145	0.142	0.142	0.155	<0.0050	<0.0050
Nitrite (as N)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	0.105	0.090	0.111	0.089	0.087	0.068	0.109	<0.050	<0.050
Total Nitrogen	-	0.187	0.211	0.188	0.190	0.181	0.212	<0.030	<0.030
Phosphorus (P)-Total Dissolved	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Phosphorus (P)-Total	<0.0020	0.0021	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.020	<0.0020
Sulfate (SO4)	10.9	10.8	14.8	11.6	11.0	11.0	14.8	<0.30	<0.30
Organic / Inorganic Carbon									
Total Organic Carbon	1.08	1.45	1.08	1.17	0.99	1.60	1.16	<0.50	<0.50
Total Metals									
Mercury (Hg)-Total	<0.00050	0.00083	0.00251	0.00097	<0.00050	<0.00050	0.00139	<0.00050	<0.00050
Total Metals (Undigested)									
Aluminum (Al)-Total	0.0149	0.0181	0.0159	0.0184	0.0146	0.0160	0.0214	0.00065	<0.00050
Antimony (Sb)-Total	0.000039	0.000054	0.000612	0.000166	0.000075	0.000077	0.000618	<0.000020	<0.000020
Arsenic (As)-Total	0.000195	0.000473	0.000326	0.000280	0.000222	0.000229	0.000334	<0.000020	<0.000020
Barium (Ba)-Total	0.0190	0.0190	0.0192	0.0189	0.0190	0.0192	0.0193	<0.000020	<0.000020
Beryllium (Be)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Total	<0.0000050	<0.0000050	0.0000119	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Total	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Total	0.0000100	0.0000298	0.000531	0.000103	0.0000271	0.0000238	0.000524	<0.0000050	<0.0000050
Calcium (Ca)-Total	18.0	18.3	19.8	17.8	18.7	18.9	19.6	<0.030	<0.030
Chromium (Cr)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Total	0.0000122	0.0000141	0.0000241	0.0000193	0.0000124	0.0000146	0.0000239	<0.0000050	<0.0000050
Copper (Cu)-Total	0.00090	0.00058	0.00069	0.00069	0.00053	0.00090	0.00067	<0.00010	<0.00010
Iron (Fe)-Total	0.0135	0.0167	0.0130	0.0172	0.0141	0.0140	0.0159	<0.0010	<0.0010
Lead (Pb)-Total	0.0000509	0.000211	0.000527	0.000668	0.000146	0.000101	0.000588	<0.0000050	<0.0000050
Lithium (Li)-Total	0.00091	0.00092	0.00064	0.00061	0.00068	0.00087	0.00081	<0.00050	<0.00050
Magnesium (Mg)-Total	4.08	4.16	4.33	3.99	4.22	4.19	4.23	<0.030	<0.030
Manganese (Mn)-Total	0.00201	0.00226	0.00387	0.00263	0.00212	0.00217	0.00398	<0.000050	<0.000050
Molybdenum (Mo)-Total	0.000520	0.000549	0.000610	0.000535	0.000528	0.000539	0.000601	<0.000050	<0.000050
Nickel (Ni)-Total	0.000366	0.000314	0.000294	0.000323	0.000316	0.000304	0.000319	<0.000050	<0.000050
Phosphorus (P)-Total	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Total	0.576	0.598	0.613	0.563	0.592	0.593	0.621	<0.050	<0.050
Selenium (Se)-Total	0.000237	0.000190	0.000898	0.000280	0.000236	0.000226	0.000916	<0.000040	<0.000040
Silicon (Si)-Total	2.12	2.31	2.31	2.20	2.25	2.28	2.23	<0.050	<0.050
Silver (Ag)-Total	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Total	1.41	1.42	2.15	1.52	1.44	1.42	2.19	<0.010	<0.010
Strontium (Sr)-Total	0.112	0.115	0.113	0.113	0.111	0.114	0.115	<0.000050	<0.000050
Thallium (Tl)-Total	<0.0000020	<0.0000020	**0.000439**	0.0000740	0.0000176	0.0000144	**0.000428**	<0.0000020	<0.0000020
Tin (Sn)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Titanium (Ti)-Total	<0.00050	0.00061	<0.00050	0.00065	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Uranium (U)-Total	0.000518	0.000515	0.000533	0.000538	0.000516	0.000530	0.000530	<0.0000020	<0.0000020
Vanadium (V)-Total	0.000137	0.000145	0.000137	0.000131	0.000143	0.000137	0.000140	<0.000050	<0.000050
Zinc (Zn)-Total	0.00230	0.00305	**0.00854**	0.00448	0.00202	0.00293	**0.00855**	<0.00050	<0.00050
Zirconium (Zr)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Metals									
Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	-
Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	LAB	-
Aluminum (Al)-Dissolved	0.00796	0.00733	0.00770	0.00646	0.0102	0.00620	0.00703	<0.00050	-
Antimony (Sb)-Dissolved	0.000038	0.000053	0.000578	0.000142	0.000073	0.000072	0.000606	<0.000020	-
Arsenic (As)-Dissolved	0.000217	0.000489	0.000302	0.000234	0.000213	0.000220	0.000301	<0.000020	-
Barium (Ba)-Dissolved	0.0189	0.0187	0.0189	0.0190	0.0187	0.0191	0.0187	<0.000020	-
Beryllium (Be)-Dissolved	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	-
Bismuth (Bi)-Dissolved	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	-
Boron (B)-Dissolved	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	-
Cadmium (Cd)-Dissolved	0.0000119	0.0000304	**0.000526**	0.0000959	0.0000276	0.0000163	**0.000512**	<0.0000050	-
Calcium (Ca)-Dissolved	18.7	18.5	19.8	18.3	18.1	18.5	19.5	<0.030	-
Chromium (Cr)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-
Cobalt (Co)-Dissolved	0.0000067	0.0000074	0.0000179	0.0000096	0.0000096	0.0000075	0.0000185	<0.0000050	-
Copper (Cu)-Dissolved	0.00096	0.00100	0.00066	0.00062	0.00054	0.00087	0.00062	<0.00010	-
Iron (Fe)-Dissolved	0.0022	0.0024	0.0029	0.0024	0.0024	0.0022	0.0022	<0.0010	-
Lead (Pb)-Dissolved	0.0000135	0.0000324	0.000269	0.000134	0.0000357	0.0000257	0.000289	<0.0000050	-
Lithium (Li)-Dissolved	0.00097	0.00095	0.00073	0.00080	0.00072	0.00082	0.00085	<0.00050	-
Magnesium (Mg)-Dissolved	4.27	4.20	4.33	4.08	4.07	4.11	4.18	<0.030	-
Manganese (Mn)-Dissolved	0.000915	0.000997	0.00275	0.00136	0.00104	0.00105	0.00272	<0.000050	-
Mercury (Hg)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-
Molybdenum (Mo)-Dissolved	0.000520	0.000546	0.000614	0.000552	0.000545	0.000530	0.000606	<0.000050	-
Nickel (Ni)-Dissolved	0.000295	0.000287	0.000302	0.000310	0.000301	0.000273	0.000291	<0.000050	-
Phosphorus (P)-Dissolved	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	-
Potassium (K)-Dissolved	0.590	0.598	0.598	0.556	0.548	0.581	0.616	<0.050	-
Selenium (Se)-Dissolved	0.000207	0.000175	0.000899	0.000336	0.000234	0.000228	0.000851	<0.000040	-
Silicon (Si)-Dissolved	2.20	2.32	2.27	2.19	2.16	2.22	2.19	<0.050	-
Silver (Ag)-Dissolved	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	-
Sodium (Na)-Dissolved	1.42	1.42	2.19	1.53	1.45	1.44	2.25	<0.010	-
Strontium (Sr)-Dissolved	0.113	0.113	0.116	0.116	0.113	0.112	0.113	<0.000050	-
Thallium (Tl)-Dissolved	<0.0000020	<0.0000020	0.000424	0.0000690	0.0000173	0.0000145	0.000415	0.0000044	-
Tin (Sn)-Dissolved	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	-
Titanium (Ti)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-
Uranium (U)-Dissolved	0.000525	0.000516	0.000533	0.000517	0.000521	0.000546	0.000537	0.0000021	-
Vanadium (V)-Dissolved	0.000121	0.000120	0.000120	0.000118	0.000101	0.000124	0.000108	<0.000050	-
Zinc (Zn)-Dissolved	0.00349	0.00351	0.00800	0.00383	0.00269	0.00271	0.00846	<0.00050	-
Zirconium (Zr)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	0.00029	<0.00010	<0.00010	<0.00010	-
Aggregate Organics									
BOD	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
COD	<20	<20	<20	<20	<20	<20	<20	<20	<20

Sample ID	BIRCHBANK R SH	BIRCHBANK R 1M ABOVE BED	BIRCHBANK R 1M DEEP	BIRCHBANK L 1M DEEP	BIRCHBANK L 1M ABOVE BED	BIRCHBANK L SH	STONEY CK R SH	STONEY CK R 1M DEEP	STONEY CK R 1M ABOVE BED	STONEY CK L 1M ABOVE BED	STONEY CK L 1M DEEP
Date Sampled	07-APR-15	07-APR-15	07-APR-15	07-APR-15	07-APR-15	07-APR-15	07-APR-15	07-APR-15	07-APR-15	07-APR-15	07-APR-15
Time Sampled	14:19	15:00	14:41	15:30	15:15	15:45	16:23	16:26	16:40	16:55	17:41
ALS Sample ID	L1597478-1	L1597478-2	L1597478-3	L1597478-4	L1597478-5	L1597478-6	L1597478-7	L1597478-8	L1597478-9	L1597478-10	L1597478-11
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests											
Conductivity	144	145	144	142	140	140	139	139	137	138	138
Hardness (as CaCO3)	66.4	63.2	65.0	65.9	67.6	67.4	66.8	67.4	66.9	65.9	67.7
pH	8.16	8.14	8.14	8.04	8.02	8.03	8.04	8.03	8.03	8.04	8.05
Total Suspended Solids	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Total Dissolved Solids	105	88	89	89	88	86	91	88	86	86	86
Turbidity	0.32	0.38	0.33	0.32	0.34	0.39	0.32	0.36	0.30	0.32	0.49
Anions and Nutrients											
Alkalinity, Total (as CaCO3)	59.6	65.4	63.8	64.7	64.6	65.3	65.8	67.0	67.1	66.3	64.5
Ammonia, Total (as N)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0135	<0.0050	<0.0050	<0.0050	<0.0050
Bromide (Br)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	0.95	0.95	0.95	0.95	0.95	0.94	0.97	0.96	0.95	0.95	0.95
Fluoride (F)	0.073	0.070	0.073	0.072	0.073	0.073	0.073	0.070	0.073	0.073	0.070
Nitrate (as N)	0.147	0.146	0.146	0.146	0.146	0.144	0.146	0.146	0.145	0.145	0.145
Nitrite (as N)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	0.066	0.073	0.061	0.062	0.061	0.066	0.082	0.065	0.068	0.075	0.068
Phosphorus (P)-Total Dissolved	<0.0020	<0.0020	0.0022	0.0022	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Phosphorus (P)-Total	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Sulfate (SO4)	11.4	11.4	11.4	11.4	11.4	11.4	11.5	11.4	11.4	11.4	11.4
Organic / Inorganic Carbon											
Total Organic Carbon	1.17	1.10	1.11	1.24	1.46	1.43	1.13	1.10	1.14	1.25	1.07
Total Metals											
Mercury (Hg)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00052	<0.00050
Total Metals (Undigested)											
Aluminum (Al)-Total	0.00992	0.0107	0.0105	0.0102	0.00963	0.00965	0.0107	0.0108	0.00990	0.0108	0.0107
Antimony (Sb)-Total	0.000047	0.000042	0.000047	0.000047	0.000045	0.000045	0.000052	0.000041	0.000043	0.000041	0.000042
Arsenic (As)-Total	0.000260	0.000257	0.000234	0.000254	0.000253	0.000238	0.000457	0.000246	0.000263	0.000260	0.000258
Barium (Ba)-Total	0.0222	0.0223	0.0218	0.0223	0.0220	0.0218	0.0219	0.0219	0.0221	0.0222	0.0219
Beryllium (Be)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Total	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Total	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Total	0.0000140	0.0000111	0.0000105	0.0000090	0.0000134	0.0000126	0.0000269	0.0000134	0.0000143	0.0000099	0.0000118
Calcium (Ca)-Total	18.5	18.4	19.2	19.0	19.4	19.6	19.5	19.6	19.8	19.0	19.5
Chromium (Cr)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Total	0.0000108	0.0000109	0.0000131	0.0000082	0.0000089	0.0000075	0.0000107	0.0000104	0.0000112	0.0000105	0.0000091
Copper (Cu)-Total	0.00043	0.00037	0.00035	0.00033	0.00034	0.00032	0.00032	0.00029	0.00032	0.00030	0.00032
Iron (Fe)-Total	0.0092	0.0097	0.0097	0.0103	0.0098	0.0098	0.0105	0.0103	0.0097	0.0102	0.0103
Lead (Pb)-Total	0.0000407	0.0000426	0.0000417	0.0000382	0.0000372	0.0000363	0.0000592	0.0000377	0.0000419	0.0000421	0.0000383
Lithium (Li)-Total	0.00132	0.00128	0.00134	0.00131	0.00138	0.00127	0.00125	0.00130	0.00131	0.00132	0.00142
Magnesium (Mg)-Total	4.11	4.14	4.31	4.27	4.33	4.35	4.35	4.37	4.44	4.25	4.33
Manganese (Mn)-Total	0.00170	0.00178	0.00186	0.00175	0.00176	0.00175	0.00184	0.00168	0.00174	0.00168	0.00171
Molybdenum (Mo)-Total	0.000545	0.000544	0.000553	0.000547	0.000536	0.000538	0.000533	0.000550	0.000542	0.000550	0.000587
Nickel (Ni)-Total	0.000254	0.000239	0.000265	0.000298	0.000279	0.000284	0.000278	0.000285	0.000281	0.000291	0.000259
Phosphorus (P)-Total	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Total	0.541	0.559	0.567	0.581	0.584	0.590	0.650	0.606	0.599	0.606	0.593
Selenium (Se)-Total	0.000302	0.000331	0.000315	0.000350	0.000325	0.000334	0.000379	0.000340	0.000292	0.000368	0.000323
Silicon (Si)-Total	2.14	2.11	2.19	2.17	2.23	2.25	2.30	2.26	2.31	2.21	2.25
Silver (Ag)-Total	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Total	1.68	1.71	1.70	1.73	1.68	1.70	1.68	1.70	1.71	1.72	1.70
Strontium (Sr)-Total	0.108	0.107	0.107	0.107	0.110	0.107	0.105	0.109	0.111	0.109	0.110
Thallium (Tl)-Total	0.0000029	0.0000021	0.0000065	0.0000024	0.0000027	0.0000025	0.0000021	<0.0000020	<0.0000020	0.0000021	0.0000031
Tin (Sn)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Titanium (Ti)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Uranium (U)-Total	0.000541	0.000531	0.000546	0.000539	0.000549	0.000544	0.000512	0.000563	0.000545	0.000535	0.000540
Vanadium (V)-Total	0.000121	0.000137	0.000137	0.000136	0.000114	0.000120	0.000127	0.000113	0.000141	0.000143	0.000126
Zinc (Zn)-Total	0.00328	0.00181	0.00193	0.00140	0.00143	0.00127	0.00193	0.00126	0.00135	0.00135	0.00129
Zirconium (Zr)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Metals											
Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Aluminum (Al)-Dissolved	0.00462	0.00528	0.00615	0.00503	0.00486	0.00472	0.00457	0.00485	0.00466	0.00608	0.00492
Antimony (Sb)-Dissolved	0.000045	0.000044	0.000046	0.000042	0.000039	0.000042	0.000061	0.000041	0.000036	0.000047	0.000037
Arsenic (As)-Dissolved	0.000255	0.000241	0.000255	0.000250	0.000259	0.000248	0.000463	0.000239	0.000248	0.000248	0.000250
Barium (Ba)-Dissolved	0.0221	0.0222	0.0221	0.0221	0.0220	0.0219	0.0218	0.0220	0.0219	0.0222	0.0218
Beryllium (Be)-Dissolved	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000013
Bismuth (Bi)-Dissolved	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Dissolved	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Dissolved	0.0000091	0.0000112	0.0000108	0.0000097	0.0000105	0.0000132	0.0000231	0.0000100	0.0000113	0.0000110	0.0000104
Calcium (Ca)-Dissolved	19.4	18.5	19.0	19.3	19.7	19.7	19.6	19.7	19.6	19.3	19.8
Chromium (Cr)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Dissolved	0.0000073	0.0000059	0.0000062	0.0000089	0.0000081	0.0000080	0.0000084	0.0000069	0.0000058	0.0000061	0.0000081
Copper (Cu)-Dissolved	0.00039	0.00036	0.00033	0.00029	0.00035	0.00033	0.00029	0.00028	0.00029	0.00028	0.00029
Iron (Fe)-Dissolved	0.0024	0.0025	0.0029	0.0028	0.0027	0.0026	0.0028	0.0026	0.0027	0.0028	0.0029
Lead (Pb)-Dissolved	0.0000123	0.0000122	0.0000104	0.0000084	0.0000110	0.0000081	0.0000229	0.0000091	0.0000074	0.0000106	0.0000133
Lithium (Li)-Dissolved	0.00124	0.00138	0.00131	0.00128	0.00132	0.00133	0.00129	0.00126	0.00130	0.00129	0.00138
Magnesium (Mg)-Dissolved	4.38	4.14	4.26	4.30	4.44	4.41	4.37	4.41	4.39	4.29	4.42
Manganese (Mn)-Dissolved	0.00103	0.000993	0.00102	0.00103	0.00100	0.00105	0.00109	0.00102	0.00105	0.00104	0.00106
Mercury (Hg)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Molybdenum (Mo)-Dissolved	0.000541	0.000543	0.000540	0.000555	0.000540	0.000542	0.000589	0.000550	0.000560	0.000559	0.000573
Nickel (Ni)-Dissolved	0.000245	0.000241	0.000268	0.000270	0.000255	0.000257	0.000298	0.000265	0.000264	0.000259	0.000273
Phosphorus (P)-Dissolved	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Dissolved	0.582	0.547	0.571	0.595	0.576	0.603	0.624	0.584	0.581	0.594	0.633
Selenium (Se)-Dissolved	0.000283	0.000340	0.000333	0.000289	0.000335	0.000341	0.000342	0.000359	0.000325	0.000341	0.000336
Silicon (Si)-Dissolved	2.24	2.11	2.16	2.21	2.25	2.28	2.31	2.29	2.27	2.21	2.30
Silver (Ag)-Dissolved	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Dissolved	1.69	1.69	1.70	1.69	1.69	1.70	1.72	1.68	1.72	1.73	1.72
Strontium (Sr)-Dissolved	0.106	0.105	0.107	0.110	0.109	0.107	0.109	0.110	0.108	0.106	0.109
Thallium (Tl)-Dissolved	0.0000024	0.0000025	0.0000038	<0.0000020	0.0000024	<0.0000020	0.0000024	0.0000022	<0.0000020	0.0000044	0.0000040
Tin (Sn)-Dissolved	0.000014	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Titanium (Ti)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Uranium (U)-Dissolved	0.000538	0.000540	0.000537	0.000538	0.000553	0.000549	0.000537	0.000537	0.000532	0.000558	0.000546
Vanadium (V)-Dissolved	0.000114	0.000117	0.000125	0.000121	0.000123	0.000125	0.000120	0.000119	0.000131	0.000123	0.000134
Zinc (Zn)-Dissolved	0.00253	0.00147	0.00157	0.00122	0.00127	0.00112	0.00170	0.00117	0.00106	0.00116	0.00107
Zirconium (Zr)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Aggregate Organics											
BOD	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
COD	<20	<20	<20	<20	<20	29	<20	<20	<20	<20	<20

Sample ID	STONEY CK L SH	WANETA COMP	MAGLIDS R SH	MAGLIDS R 1M ABOVE BED	MAGLIDS R 1M DEEP	MAGLIDS L 1M DEEP	MAGLIDS L 1M ABOVE BED	MAGLIDS L SH	OLD BRIDGE R SH	OLD BRIDGE R 1M DEEP	OLD BRIDGE R 1M ABOVE BED
Date Sampled	07-APR-15	07-APR-15	08-APR-15	08-APR-15	08-APR-15	08-APR-15	08-APR-15	08-APR-15	08-APR-15	08-APR-15	08-APR-15
Time Sampled	17:42	18:30	08:40	09:06	08:50	09:37	09:20	09:48	10:21	10:26	10:40
ALS Sample ID	L1597478-12	L1597478-13	L1597478-14	L1597478-15	L1597478-16	L1597478-17	L1597478-18	L1597478-19	L1597478-20	L1597478-21	L1597478-22
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests											
Conductivity	139	139	142	141	139	139	141	142	144	142	139
Hardness (as CaCO3)	66.0	66.4	66.5	66.2	66.1	66.7	66.7	66.3	66.1	65.1	64.3
pH	8.04	8.04	7.99	7.98	7.92	7.98	7.98	8.00	8.00	7.98	8.02
Total Suspended Solids	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Total Dissolved Solids	88	91	85	87	88	87	85	88	88	89	85
Turbidity	0.33	0.34	0.34	0.41	0.45	0.42	0.34	0.29	0.34	0.39	0.38
Anions and Nutrients											
Alkalinity, Total (as CaCO3)	62.4	63.9	60.9	64.9	59.2	63.8	63.7	61.7	63.5	63.7	64.4
Ammonia, Total (as N)	<0.0050	0.0086	0.0081	0.0085	0.0086	0.0086	0.0075	0.0076	0.0153	0.0070	0.0071
Bromide (Br)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	0.96	0.97	0.94	0.94	0.94	0.94	0.94	0.94	0.99	0.94	0.93
Fluoride (F)	0.072	0.074	0.074	0.075	0.073	0.074	0.074	0.073	0.080	0.072	0.074
Nitrate (as N)	0.146	0.146	0.150	0.150	0.149	0.149	0.150	0.150	0.152	0.148	0.148
Nitrite (as N)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	0.063	0.078	0.079	0.071	0.067	0.068	0.083	0.090	0.095	0.084	0.081
Phosphorus (P)-Total Dissolved	<0.0020	<0.0020	<0.0020	0.0021	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Phosphorus (P)-Total	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Sulfate (SO4)	11.4	11.8	11.8	11.8	11.8	11.7	11.6	11.6	12.6	11.7	11.7
Organic / Inorganic Carbon											
Total Organic Carbon	1.15	1.15	1.20	1.10	1.14	1.12	1.10	1.27	1.09	1.10	1.20
Total Metals											
Mercury (Hg)-Total	0.00088	<0.00050	0.00093	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00070	<0.00050	<0.00050
Total Metals (Undigested)											
Aluminum (Al)-Total	0.0102	0.00989	0.0109	0.0103	0.0103	0.00988	0.00988	0.00930	0.0114	0.0107	0.00996
Antimony (Sb)-Total	0.000044	0.000100	0.000080	0.000077	0.000077	0.000067	0.000064	0.000068	0.000168	0.000096	0.000066
Arsenic (As)-Total	0.000254	0.000273	0.000264	0.000256	0.000274	0.000279	0.000290	0.000256	0.000344	0.000276	0.000270
Barium (Ba)-Total	0.0221	0.0219	0.0221	0.0219	0.0218	0.0219	0.0217	0.0221	0.0219	0.0217	0.0218
Beryllium (Be)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000015	<0.000010
Bismuth (Bi)-Total	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000069	0.0000074	<0.0000050
Boron (B)-Total	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Total	0.0000118	0.0000287	0.0000289	0.0000314	0.0000245	0.0000267	0.0000284	0.0000252	0.0000828	0.0000315	0.0000308
Calcium (Ca)-Total	19.5	19.6	19.6	19.2	19.4	19.2	19.5	19.2	19.7	19.2	19.2
Chromium (Cr)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Total	0.0000083	0.0000127	0.0000129	0.0000103	0.0000110	0.0000098	0.0000091	0.0000084	0.0000125	0.0000094	0.0000114
Copper (Cu)-Total	0.00029	0.00035	0.00035	0.00034	0.00032	0.00032	0.00032	0.00029	0.00039	0.00030	0.00028
Iron (Fe)-Total	0.0093	0.0097	0.0099	0.0098	0.0099	0.0094	0.0097	0.0089	0.0103	0.0102	0.0097
Lead (Pb)-Total	0.0000350	0.0000757	0.0000855	0.000114	0.0000749	0.000168	0.0000909	0.000117	0.000906	0.000451	0.0000931
Lithium (Li)-Total	0.00135	0.00141	0.00133	0.00131	0.00132	0.00127	0.00133	0.00129	0.00129	0.00139	0.00130
Magnesium (Mg)-Total	4.35	4.35	4.37	4.33	4.35	4.29	4.36	4.25	4.34	4.30	4.30
Manganese (Mn)-Total	0.00169	0.00199	0.00213	0.00213	0.00210	0.00197	0.00195	0.00210	0.00239	0.00201	0.00196
Molybdenum (Mo)-Total	0.000531	0.000545	0.000521	0.000553	0.000546	0.000528	0.000530	0.000520	0.000544	0.000570	0.000540
Nickel (Ni)-Total	0.000273	0.000257	0.000259	0.000271	0.000295	0.000266	0.000258	0.000254	0.000274	0.000277	0.000258
Phosphorus (P)-Total	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Total	0.617	0.612	0.638	0.580	0.585	0.606	0.581	0.568	0.601	0.571	0.589
Selenium (Se)-Total	0.000346	0.000442	0.000397	0.000380	0.000387	0.000379	0.000314	0.000319	0.000547	0.000393	0.000382
Silicon (Si)-Total	2.26	2.28	2.27	2.23	2.22	2.24	2.26	2.21	2.27	2.21	2.22
Silver (Ag)-Total	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Total	1.72	1.78	1.75	1.78	1.76	1.72	1.71	1.68	1.93	1.72	1.71
Strontium (Sr)-Total	0.109	0.109	0.104	0.107	0.107	0.106	0.105	0.107	0.108	0.107	0.109
Thallium (Tl)-Total	0.0000024	0.0000167	0.0000193	0.0000193	0.0000193	0.0000144	0.0000126	0.0000109	0.0000572	0.0000145	0.0000183
Tin (Sn)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000016	<0.000010	<0.000010
Titanium (Ti)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Uranium (U)-Total	0.000549	0.000567	0.000537	0.000544	0.000557	0.000548	0.000548	0.000538	0.000542	0.000522	0.000533
Vanadium (V)-Total	0.000145	0.000138	0.000140	0.000124	0.000134	0.000116	0.000115	0.000114	0.000119	0.000144	0.000130
Zinc (Zn)-Total	0.00195	0.00148	0.00174	0.00167	0.00189	0.00160	0.00180	0.00137	0.00305	0.00161	0.00149
Zirconium (Zr)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Metals											
Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Aluminum (Al)-Dissolved	0.00458	0.00503	0.00472	0.00476	0.00537	0.00507	0.00492	0.00479	0.00569	0.00523	0.00494
Antimony (Sb)-Dissolved	0.000040	0.000094	0.000080	0.000084	0.000079	0.000069	0.000070	0.000064	0.000135	0.000065	0.000069
Arsenic (As)-Dissolved	0.000266	0.000274	0.000270	0.000251	0.000255	0.000260	0.000266	0.000258	0.000295	0.000262	0.000263
Barium (Ba)-Dissolved	0.0219	0.0218	0.0215	0.0217	0.0218	0.0217	0.0216	0.0217	0.0218	0.0217	0.0217
Beryllium (Be)-Dissolved	<0.000010	<0.000010	<0.000010	<0.000010	0.000014	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Dissolved	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000083	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Dissolved	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Dissolved	0.0000117	0.0000278	0.0000265	0.0000303	0.0000271	0.0000219	0.0000189	0.0000207	0.0000590	0.0000212	0.0000276
Calcium (Ca)-Dissolved	19.3	19.4	19.5	19.4	19.3	19.5	19.5	19.4	19.4	19.0	18.8
Chromium (Cr)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Dissolved	<0.0000050	0.0000055	0.0000080	0.0000083	0.0000060	0.0000062	0.0000071	0.0000087	0.0000062	0.0000090	0.0000080
Copper (Cu)-Dissolved	0.00029	0.00031	0.00034	0.00030	0.00030	0.00029	0.00034	0.00029	0.00034	0.00026	0.00027
Iron (Fe)-Dissolved	0.0026	0.0025	0.0025	0.0027	0.0025	0.0023	0.0024	0.0024	0.0033	0.0024	0.0030
Lead (Pb)-Dissolved	0.0000075	0.0000214	0.0000232	0.0000299	0.0000302	0.0000333	0.0000315	0.0000193	0.000109	0.0000233	0.0000451
Lithium (Li)-Dissolved	0.00139	0.00130	0.00134	0.00124	0.00132	0.00133	0.00132	0.00137	0.00133	0.00130	0.00132
Magnesium (Mg)-Dissolved	4.30	4.33	4.36	4.34	4.32	4.37	4.36	4.32	4.26	4.26	4.23
Manganese (Mn)-Dissolved	0.000977	0.00137	0.00131	0.00132	0.00128	0.00125	0.00129	0.00123	0.00161	0.00116	0.00128
Mercury (Hg)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Molybdenum (Mo)-Dissolved	0.000545	0.000553	0.000549	0.000558	0.000566	0.000539	0.000561	0.000557	0.000563	0.000551	0.000536
Nickel (Ni)-Dissolved	0.000260	0.000225	0.000265	0.000251	0.000285	0.000239	0.000281	0.000237	0.000273	0.000247	0.000252
Phosphorus (P)-Dissolved	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Dissolved	0.593	0.601	0.607	0.597	0.606	0.582	0.596	0.554	0.566	0.577	0.583
Selenium (Se)-Dissolved	0.000300	0.000360	0.000369	0.000382	0.000388	0.000298	0.000358	0.000342	0.000537	0.000350	0.000358
Silicon (Si)-Dissolved	2.23	2.28	2.23	2.23	2.22	2.25	2.23	2.22	2.23	2.17	2.17
Silver (Ag)-Dissolved	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000081	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Dissolved	1.71	1.75	1.75	1.74	1.75	1.71	1.75	1.70	1.94	1.71	1.73
Strontium (Sr)-Dissolved	0.111	0.109	0.106	0.105	0.105	0.108	0.106	0.111	0.113	0.109	0.109
Thallium (Tl)-Dissolved	<0.0000020	0.0000167	0.0000193	0.0000198	0.0000176	0.0000147	0.0000122	0.0000109	0.0000562	0.0000150	0.0000174
Tin (Sn)-Dissolved	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Titanium (Ti)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Uranium (U)-Dissolved	0.000538	0.000554	0.000546	0.000559	0.000558	0.000550	0.000545	0.000546	0.000523	0.000539	0.000536
Vanadium (V)-Dissolved	0.000102	0.000124	0.000122	0.000138	0.000118	0.000116	0.000119	0.000114	0.000116	0.000114	0.000116
Zinc (Zn)-Dissolved	0.00127	0.00133	0.00198	0.00161	0.00156	0.00153	0.00146	0.00131	0.00279	0.00129	0.00152
Zirconium (Zr)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Aggregate Organics											
BOD	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
COD	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20

Sample ID	OLD BRIDGE L 1M ABOVE BED	OLD BRIDGE L 1M DEEP	OLD BRIDGE L SH	NEW BRIDGE R SH	NEW BRIDGE R 1M DEEP	NEW BRIDGE R 1M ABOVE BED	NEW BRIDGE L 1M ABOVE BED	NEW BRIDGE L 1M DEEP	NEW BRIDGE L SH	DUPLICATE #1 (New Bridge RSH)	DUPLICATE #2 (New Bridge R 1M DEEP)
Date Sampled	08-APR-15	08-APR-15	08-APR-15	08-APR-15	08-APR-15	08-APR-15	08-APR-15	08-APR-15	08-APR-15	08-APR-15	08-APR-15
Time Sampled	10:54	11:00	11:08	11:45	11:58	12:17	12:35	12:47	12:58	00:00	00:00
ALS Sample ID	L1597478-23	L1597478-24	L1597478-25	L1597478-26	L1597478-27	L1597478-28	L1597478-29	L1597478-30	L1597478-31	L1597478-32	L1597478-33
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests											
Conductivity	140	141	144	153	140	139	141	142	144	151	139
Hardness (as CaCO3)	68.2	66.6	70.0	67.8	67.9	66.3	67.5	68.3	64.7	67.7	64.7
pH	8.02	8.02	8.02	8.00	8.02	8.04	8.04	8.04	8.03	8.03	8.03
Total Suspended Solids	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Total Dissolved Solids	87	88	90	92	87	87	87	86	89	95	86
Turbidity	0.33	0.37	0.35	0.42	0.36	0.34	0.36	0.47	0.35	0.35	0.38
Anions and Nutrients											
Alkalinity, Total (as CaCO3)	65.6	65.4	62.9	62.3	63.1	59.8	64.9	64.9	63.4	63.5	62.4
Ammonia, Total (as N)	<0.0050	0.0072	0.0232	0.0377	0.0057	0.0052	0.0064	0.0104	0.0411	0.0401	0.0057
Bromide (Br)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	0.92	0.91	1.08	1.15	0.91	0.92	0.91	0.91	1.00	1.15	0.91
Fluoride (F)	0.072	0.072	0.070	0.113	0.070	0.073	0.072	0.070	0.072	0.113	0.072
Nitrate (as N)	0.148	0.148	0.167	0.157	0.146	0.146	0.145	0.148	0.160	0.158	0.146
Nitrite (as N)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	0.075	0.12	0.095	0.105	0.077	0.080	0.073	0.079	0.105	0.107	0.072
Phosphorus (P)-Total Dissolved	<0.0020	0.0022	0.0022	0.0029	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0023	<0.0020
Phosphorus (P)-Total	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Sulfate (SO4)	11.4	11.4	12.5	16.2	11.3	11.4	11.3	11.4	12.8	16.2	11.4
Organic / Inorganic Carbon											
Total Organic Carbon	1.09	1.25	1.04	1.15	1.06	1.08	1.09	1.10	1.10	1.45	1.11
Total Metals											
Mercury (Hg)-Total	<0.00050	<0.00050	<0.00050	0.00124	<0.00050	0.00495	<0.00050	<0.00050	<0.00050	0.00170	<0.00050
Total Metals (Undigested)											
Aluminum (Al)-Total	0.00989	0.0105	0.00962	0.0109	0.0107	0.0135	0.0123	0.0112	0.0106	0.0107	0.0109
Antimony (Sb)-Total	0.000046	0.000041	0.000067	0.000441	0.000046	0.000051	0.000043	0.000037	0.000087	0.000455	0.000044
Arsenic (As)-Total	0.000253	0.000255	0.000260	0.000370	0.000262	0.000266	0.000249	0.000246	0.000279	0.000385	0.000264
Barium (Ba)-Total	0.0219	0.0221	0.0219	0.0223	0.0221	0.0217	0.0218	0.0217	0.0225	0.0220	0.0217
Beryllium (Be)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Total	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Total	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Total	0.0000149	0.0000116	0.0000184	0.000471	0.0000141	0.0000296	0.0000118	0.0000112	0.0000219	0.000505	0.0000184
Calcium (Ca)-Total	20.1	19.1	20.0	20.5	19.6	20.1	20.2	19.9	19.6	20.0	18.7
Chromium (Cr)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Total	0.0000101	0.0000089	0.0000097	0.0000233	0.0000106	0.0000121	0.0000094	0.0000082	0.0000137	0.0000228	0.0000080
Copper (Cu)-Total	0.00027	0.00027	0.00027	0.00062	0.00026	0.00037	0.00025	0.00025	0.00028	0.00061	0.00025
Iron (Fe)-Total	0.0095	0.0099	0.0087	0.0102	0.0103	0.0111	0.0098	0.0100	0.0090	0.0112	0.0100
Lead (Pb)-Total	0.0000737	0.0000674	0.000444	0.000561	0.0000511	0.000119	0.000126	0.0000406	0.000250	0.000530	0.0000765
Lithium (Li)-Total	0.00134	0.00128	0.00123	0.00143	0.00130	0.00122	0.00133	0.00125	0.00129	0.00142	0.00130
Magnesium (Mg)-Total	4.46	4.30	4.48	4.38	4.38	4.50	4.46	4.49	4.44	4.35	4.24
Manganese (Mn)-Total	0.00188	0.00217	0.00288	0.00421	0.00201	0.00193	0.00205	0.00219	0.00355	0.00410	0.00185
Molybdenum (Mo)-Total	0.000532	0.000529	0.000506	0.000734	0.000519	0.000519	0.000541	0.000513	0.000539	0.000749	0.000551
Nickel (Ni)-Total	0.000264	0.000257	0.000264	0.000250	0.000269	0.000289	0.000235	0.000247	0.000256	0.000283	0.000245
Phosphorus (P)-Total	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Total	0.631	0.626	0.625	0.628	0.600	0.641	0.626	0.628	0.661	0.628	0.591
Selenium (Se)-Total	0.000309	0.000324	0.000281	**0.00138**	0.000309	0.000319	0.000279	0.000320	0.000288	**0.00140**	0.000291
Silicon (Si)-Total	2.30	2.21	2.25	2.24	2.24	2.31	2.31	2.29	2.40	2.25	2.19
Silver (Ag)-Total	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Total	1.65	1.65	1.72	2.82	1.62	1.62	1.59	1.62	1.75	2.79	1.61
Strontium (Sr)-Total	0.108	0.111	0.109	0.106	0.104	0.106	0.115	0.102	0.111	0.109	0.108
Thallium (Tl)-Total	0.0000021	0.0000026	0.0000029	0.000284	0.0000031	0.0000024	0.0000030	0.0000021	0.0000024	0.000286	0.0000027
Tin (Sn)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Titanium (Ti)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Uranium (U)-Total	0.000533	0.000530	0.000547	0.000529	0.000507	0.000526	0.000547	0.000521	0.000539	0.000553	0.000529
Vanadium (V)-Total	0.000126	0.000129	0.000131	0.000134	0.000134	0.000127	0.000125	0.000135	0.000144	0.000141	0.000126
Zinc (Zn)-Total	0.00122	0.00112	0.00187	0.00740	0.00117	0.00125	0.00129	0.00105	0.00151	0.00739	0.00114
Zirconium (Zr)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Metals											
Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Aluminum (Al)-Dissolved	0.00479	0.00479	0.00473	0.00465	0.00517	0.00519	0.00490	0.00493	0.00467	0.00558	0.00516
Antimony (Sb)-Dissolved	0.000043	0.000039	0.000049	0.000439	0.000040	0.000052	0.000042	0.000043	0.000093	0.000429	0.000047
Arsenic (As)-Dissolved	0.000235	0.000231	0.000241	0.000350	0.000246	0.000256	0.000230	0.000253	0.000260	0.000356	0.000244
Barium (Ba)-Dissolved	0.0216	0.0215	0.0221	0.0218	0.0217	0.0218	0.0216	0.0215	0.0221	0.0217	0.0214
Beryllium (Be)-Dissolved	<0.000010	<0.000010	<0.000010	<0.000010	0.000018	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Dissolved	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Dissolved	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0061	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Dissolved	0.0000114	0.0000101	0.0000140	**0.000466**	0.0000132	0.0000196	0.0000093	0.0000121	0.0000168	**0.000474**	0.0000157
Calcium (Ca)-Dissolved	20.0	19.5	20.5	20.1	19.9	19.4	19.7	19.9	18.9	19.9	18.8
Chromium (Cr)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Dissolved	0.0000054	0.0000070	0.0000064	0.0000171	0.0000082	0.0000061	<0.0000050	0.0000094	0.0000101	0.0000136	0.0000065
Copper (Cu)-Dissolved	0.00026	0.00026	0.00022	0.00055	0.00024	0.00029	0.00026	0.00022	0.00025	0.00057	0.00023
Iron (Fe)-Dissolved	0.0026	0.0023	0.0024	0.0024	0.0027	0.0031	0.0024	0.0026	0.0023	0.0026	0.0023
Lead (Pb)-Dissolved	0.0000527	0.0000202	0.0000537	0.000278	0.0000466	0.000313	0.0000628	0.0000223	0.0000600	0.000313	0.0000688
Lithium (Li)-Dissolved	0.00137	0.00129	0.00140	0.00145	0.00136	0.00135	0.00130	0.00134	0.00137	0.00141	0.00126
Magnesium (Mg)-Dissolved	4.45	4.37	4.57	4.27	4.44	4.35	4.45	4.52	4.27	4.35	4.29
Manganese (Mn)-Dissolved	0.00116	0.00128	0.00216	0.00322	0.00110	0.00124	0.00121	0.00146	0.00282	0.00343	0.00114
Mercury (Hg)-Dissolved	<0.00050	<0.00050	<0.00050	0.00071	<0.00050	0.00190	<0.00050	<0.00050	<0.00050	0.00077	<0.00050
Molybdenum (Mo)-Dissolved	0.000519	0.000535	0.000528	0.000767	0.000571	0.000558	0.000560	0.000552	0.000534	0.000738	0.000542
Nickel (Ni)-Dissolved	0.000272	0.000251	0.000261	0.000269	0.000227	0.000251	0.000242	0.000240	0.000248	0.000282	0.000199
Phosphorus (P)-Dissolved	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Dissolved	0.619	0.598	0.640	0.619	0.628	0.600	0.608	0.638	0.619	0.638	0.600
Selenium (Se)-Dissolved	0.000296	0.000307	0.000312	0.00143	0.000340	0.000326	0.000352	0.000307	0.000290	0.00144	0.000322
Silicon (Si)-Dissolved	2.29	2.22	2.29	2.17	2.26	2.21	2.25	2.31	2.30	2.23	2.20
Silver (Ag)-Dissolved	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Dissolved	1.65	1.66	1.72	2.74	1.62	1.62	1.61	1.62	1.74	2.79	1.63
Strontium (Sr)-Dissolved	0.109	0.107	0.111	0.111	0.111	0.108	0.110	0.107	0.114	0.108	0.107
Thallium (Tl)-Dissolved	0.0000022	0.0000022	0.0000027	0.000288	0.0000042	0.0000023	0.0000023	<0.0000020	0.0000028	0.000294	0.0000027
Tin (Sn)-Dissolved	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Titanium (Ti)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Uranium (U)-Dissolved	0.000527	0.000531	0.000566	0.000546	0.000543	0.000545	0.000534	0.000522	0.000552	0.000539	0.000535
Vanadium (V)-Dissolved	0.000123	0.000120	0.000109	0.000118	0.000114	0.000111	0.000122	0.000094	0.000122	0.000116	0.000106
Zinc (Zn)-Dissolved	0.00112	0.00105	0.00130	0.00691	0.00105	0.00198	0.00104	0.00104	0.00120	0.00687	0.00113
Zirconium (Zr)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Aggregate Organics											
BOD	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
COD	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20

Sample ID	DUPLICATE #3 (New Bridge LSH)	TRAVEL BLANK	FIELD BLANK
Date Sampled	08-APR-15	08-APR-15	08-APR-15
Time Sampled	00:00	00:00	13:30
ALS Sample ID	L1597478-34	L1597478-35	L1597478-36
Matrix	Water	Water	Water
Physical Tests			
Conductivity	144	<2.0	<2.0
Hardness (as CaCO3)	64.4	<0.50	<0.50
pH	8.05	5.85	5.71
Total Suspended Solids	<3.0	<3.0	<3.0
Total Dissolved Solids	88	<10	<10
Turbidity	0.38	<0.10	<0.10
Anions and Nutrients			
Alkalinity, Total (as CaCO3)	58.1	<2.0	<2.0
Ammonia, Total (as N)	0.0409	<0.0050	<0.0050
Bromide (Br)	<0.050	<0.050	<0.050
Chloride (Cl)	1.00	<0.50	<0.50
Fluoride (F)	0.073	<0.020	<0.020
Nitrate (as N)	0.160	<0.0050	<0.0050
Nitrite (as N)	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	0.104	<0.050	<0.050
Phosphorus (P)-Total Dissolved	<0.0020	<0.0020	<0.0020
Phosphorus (P)-Total	<0.0020	<0.0020	<0.0020
Sulfate (SO4)	12.8	<0.30	<0.30
Organic / Inorganic Carbon			
Total Organic Carbon	1.13	<0.50	<0.50
Total Metals			
Mercury (Hg)-Total	<0.00050	<0.00050	<0.00050
Total Metals (Undigested)			
Aluminum (Al)-Total	0.0114	<0.00050	0.00057
Antimony (Sb)-Total	0.000093	<0.000020	<0.000020
Arsenic (As)-Total	0.000264	<0.000020	<0.000020
Barium (Ba)-Total	0.0222	<0.000020	<0.000020
Beryllium (Be)-Total	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Total	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Total	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Total	0.0000159	<0.0000050	<0.0000050
Calcium (Ca)-Total	19.4	<0.030	<0.030
Chromium (Cr)-Total	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Total	0.0000149	<0.0000050	<0.0000050
Copper (Cu)-Total	0.00029	<0.00010	<0.00010
Iron (Fe)-Total	0.0099	<0.0010	<0.0010
Lead (Pb)-Total	0.000259	0.0000085	0.0000105
Lithium (Li)-Total	0.00136	<0.00050	<0.00050
Magnesium (Mg)-Total	4.38	<0.030	<0.030
Manganese (Mn)-Total	0.00350	<0.000050	<0.000050
Molybdenum (Mo)-Total	0.000551	<0.000050	<0.000050
Nickel (Ni)-Total	0.000286	<0.000050	<0.000050
Phosphorus (P)-Total	<0.050	<0.050	<0.050
Potassium (K)-Total	0.630	<0.050	<0.050
Selenium (Se)-Total	0.000327	<0.000040	<0.000040
Silicon (Si)-Total	2.38	<0.050	<0.050
Silver (Ag)-Total	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Total	1.75	<0.010	<0.010
Strontium (Sr)-Total	0.111	<0.000050	<0.000050
Thallium (Tl)-Total	0.0000029	<0.0000020	<0.0000020
Tin (Sn)-Total	<0.000010	<0.000010	<0.000010
Titanium (Ti)-Total	<0.00050	<0.00050	<0.00050
Uranium (U)-Total	0.000549	<0.0000020	<0.0000020
Vanadium (V)-Total	0.000144	<0.000050	<0.000050
Zinc (Zn)-Total	0.00139	0.00055	<0.00050
Zirconium (Zr)-Total	<0.00010	<0.00010	<0.00010
Dissolved Metals			
Dissolved Mercury Filtration Location	FIELD	-	FIELD
Dissolved Metals Filtration Location	FIELD	-	LAB
Aluminum (Al)-Dissolved	0.00464	-	<0.00050
Antimony (Sb)-Dissolved	0.000094	-	<0.000020
Arsenic (As)-Dissolved	0.000259	-	0.000023
Barium (Ba)-Dissolved	0.0217	-	<0.000020
Beryllium (Be)-Dissolved	<0.000010	-	<0.000010
Bismuth (Bi)-Dissolved	<0.0000050	-	<0.0000050
Boron (B)-Dissolved	<0.0050	-	0.0090
Cadmium (Cd)-Dissolved	0.0000153	-	<0.0000050
Calcium (Ca)-Dissolved	18.8	-	<0.030
Chromium (Cr)-Dissolved	<0.00010	-	<0.00010
Cobalt (Co)-Dissolved	0.0000086	-	<0.0000050
Copper (Cu)-Dissolved	0.00027	-	<0.00010
Iron (Fe)-Dissolved	0.0025	-	<0.0010
Lead (Pb)-Dissolved	0.0000778	-	<0.0000050
Lithium (Li)-Dissolved	0.00133	-	<0.00050
Magnesium (Mg)-Dissolved	4.23	-	<0.030
Manganese (Mn)-Dissolved	0.00284	-	<0.000050
Mercury (Hg)-Dissolved	<0.00050	-	<0.00050
Molybdenum (Mo)-Dissolved	0.000536	-	<0.000050
Nickel (Ni)-Dissolved	0.000238	-	0.000067
Phosphorus (P)-Dissolved	<0.050	-	<0.050
Potassium (K)-Dissolved	0.590	-	<0.050
Selenium (Se)-Dissolved	0.000297	-	<0.000040
Silicon (Si)-Dissolved	2.32	-	<0.050
Silver (Ag)-Dissolved	<0.0000050	-	<0.0000050
Sodium (Na)-Dissolved	1.75	-	<0.010
Strontium (Sr)-Dissolved	0.111	-	<0.000050
Thallium (Tl)-Dissolved	0.0000044	-	<0.0000020
Tin (Sn)-Dissolved	<0.000010	-	<0.000010
Titanium (Ti)-Dissolved	<0.00050	-	<0.00050
Uranium (U)-Dissolved	0.000549	-	<0.0000020
Vanadium (V)-Dissolved	0.000128	-	<0.000050
Zinc (Zn)-Dissolved	0.00132	-	<0.00050
Zirconium (Zr)-Dissolved	<0.00010	-	<0.00010
Aggregate Organics			
BOD	<2.0	<2.0	<2.0
COD	<20	<20	<20

Sample ID	BIRCHBANK RSH	STONEY CK RSH	WANETA RSH	MAGLIOS RSH	OLD BRIDGE RSH	NEW BRIDGE RSH	DUPLICATE RSH (NEW BRIDGE RSH)	TRAVEL BLANK	FIELD BLANK
Date Sampled	16-APR-15	16-APR-15	16-APR-15	16-APR-15	16-APR-15	16-APR-15	16-APR-15	16-APR-15	16-APR-15
Time Sampled	09:20	10:05	10:40	11:05	11:25	12:00	00:00	00:00	00:00
ALS Sample ID	L1600493-1	L1600493-2	L1600493-3	L1600493-4	L1600493-5	L1600493-6	L1600493-7	L1600493-8	L1600493-9
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests									
Conductivity	144	145	147	147	149	162	163	<2.0	<2.0
Hardness (as CaCO3)	64.2	64.9	66.4	65.5	65.2	69.2	69.2	<0.50	<0.50
pH	8.02	8.11	8.13	8.12	8.14	8.14	8.14	5.63	6.28
Total Suspended Solids	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Total Dissolved Solids	90	84	86	88	87	94	97	<10	<10
Turbidity	0.28	0.25	0.36	0.34	0.35	0.27	0.37	<0.10	<0.10
Anions and Nutrients									
Alkalinity, Total (as CaCO3)	61.4	58.1	59.1	59.3	59.4	60.4	59.1	<2.0	<2.0
Ammonia, Total (as N)	<0.0050	<0.0050	0.0073	0.0076	0.0144	0.0512	0.0513	<0.0050	<0.0050
Bromide (Br)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	0.85	0.85	0.89	0.86	0.93	1.48	1.48	<0.50	<0.50
Fluoride (F)	0.071	0.072	0.073	0.073	0.080	0.136	0.137	<0.020	<0.020
Nitrate (as N)	0.135	0.135	0.138	0.137	0.139	0.153	0.152	<0.0050	<0.0050
Nitrite (as N)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	0.087	0.080	0.101	0.098	0.106	0.141	0.117	<0.050	<0.050
Phosphorus (P)-Total Dissolved	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0035	0.0033	<0.0020	<0.0020
Phosphorus (P)-Total	<0.0020	<0.0020	<0.020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Sulfate (SO4)	10.7	10.8	11.1	11.0	11.7	16.6	16.6	<0.30	<0.30
Organic / Inorganic Carbon									
Total Organic Carbon	1.22	1.14	1.25	1.27	1.24	1.04	1.17	<0.50	<0.50
Total Metals									
Mercury (Hg)-Total	<0.00050	0.00521	<0.00050	0.00070	<0.00050	0.00110	0.00132	<0.00050	<0.00050
Total Metals (Undigested)									
Aluminum (Al)-Total	0.00913	0.00875	0.0104	0.00847	0.00948	0.00909	0.00873	<0.00050	0.00087
Antimony (Sb)-Total	0.000038	0.000102	0.000075	0.000079	0.000140	0.000811	0.000800	<0.000020	<0.000020
Arsenic (As)-Total	0.000266	0.000621	0.000229	0.000258	0.000290	0.000471	0.000448	<0.000020	<0.000020
Barium (Ba)-Total	0.0209	0.0204	0.0205	0.0205	0.0202	0.0206	0.0207	<0.000020	<0.000020
Beryllium (Be)-Total	0.000014	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Total	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Total	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Total	0.0000116	0.0000356	0.0000306	0.0000347	0.0000779	0.000828	0.000813	<0.0000050	<0.0000050
Calcium (Ca)-Total	19.3	19.0	19.2	19.3	19.2	20.8	20.7	<0.030	<0.030
Chromium (Cr)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Total	0.0000172	0.0000125	0.0000093	0.0000104	0.0000102	0.0000223	0.0000235	<0.0000050	<0.0000050
Copper (Cu)-Total	0.00042	0.00035	0.00038	0.00037	0.00038	0.00087	0.00086	<0.00010	<0.00010
Iron (Fe)-Total	0.0088	0.0082	0.0074	0.0073	0.0070	0.0077	0.0075	<0.0010	<0.0010
Lead (Pb)-Total	0.000110	0.000372	0.0000676	0.000139	0.000139	0.00104	0.000902	<0.0000050	<0.0000050
Lithium (Li)-Total	0.00114	0.00095	0.00109	0.00107	0.00105	0.00117	0.00107	<0.00050	<0.00050
Magnesium (Mg)-Total	4.20	4.14	4.14	4.21	4.11	4.19	4.20	<0.030	<0.030
Manganese (Mn)-Total	0.00185	0.00181	0.00214	0.00210	0.00231	0.00507	0.00487	<0.000050	<0.000050
Molybdenum (Mo)-Total	0.000542	0.000556	0.000564	0.000544	0.000565	0.000904	0.000902	<0.000050	<0.000050
Nickel (Ni)-Total	0.000259	0.000270	0.000276	0.000265	0.000248	0.000257	0.000257	<0.000050	<0.000050
Phosphorus (P)-Total	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Total	0.610	0.625	0.633	0.609	0.609	0.762	0.753	<0.050	<0.050
Selenium (Se)-Total	0.000253	0.000281	0.000286	0.000323	0.000427	**0.00165**	**0.00166**	<0.000040	<0.000040
Silicon (Si)-Total	2.17	2.21	2.17	2.15	2.18	2.18	2.19	<0.050	<0.050
Silver (Ag)-Total	<0.0000050	0.0000067	<0.0000050	<0.0000050	<0.0000050	0.0000072	0.0000070	<0.0000050	<0.0000050
Sodium (Na)-Total	1.56	1.52	1.63	1.58	1.73	3.71	3.76	<0.010	<0.010
Strontium (Sr)-Total	0.111	0.109	0.112	0.110	0.110	0.113	0.113	<0.000050	<0.000050
Thallium (Tl)-Total	0.0000034	0.0000087	0.0000183	0.0000198	0.0000678	**0.000659**	**0.000673**	<0.0000020	<0.0000020
Tin (Sn)-Total	0.000011	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Titanium (Ti)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Uranium (U)-Total	0.000530	0.000515	0.000532	0.000529	0.000527	0.000542	0.000539	<0.0000020	<0.0000020
Vanadium (V)-Total	0.000143	0.000109	0.000114	0.000111	0.000125	0.000119	0.000122	<0.000050	<0.000050
Zinc (Zn)-Total	0.00239	0.00292	0.00230	0.00214	0.00298	**0.0124**	**0.0123**	<0.00050	<0.00050
Zirconium (Zr)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Metals									
Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	-	FIELD
Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	-	FIELD
Aluminum (Al)-Dissolved	0.00475	0.00396	0.00360	0.00462	0.00426	0.00540	0.00515	-	0.00082
Antimony (Sb)-Dissolved	0.000029	0.000054	0.000072	0.000071	0.000135	0.000823	0.000820	-	<0.000020
Arsenic (As)-Dissolved	0.000237	0.000536	0.000267	0.000261	0.000291	0.000422	0.000439	-	<0.000020
Barium (Ba)-Dissolved	0.0205	0.0201	0.0202	0.0204	0.0203	0.0210	0.0206	-	<0.000020
Beryllium (Be)-Dissolved	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000012	-	<0.000010
Bismuth (Bi)-Dissolved	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	-	<0.0000050
Boron (B)-Dissolved	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	-	<0.0050
Cadmium (Cd)-Dissolved	0.0000146	0.0000274	0.0000308	0.0000333	0.0000737	**0.000804**	**0.000821**	-	<0.0000050
Calcium (Ca)-Dissolved	19.0	19.1	19.6	19.3	19.3	20.8	20.7	-	<0.030
Chromium (Cr)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-	<0.00010
Cobalt (Co)-Dissolved	0.0000056	0.0000054	0.0000076	0.0000062	0.0000055	0.0000178	0.0000205	-	<0.0000050
Copper (Cu)-Dissolved	0.00039	0.00030	0.00037	0.00034	0.00038	0.00078	0.00083	-	<0.00010
Iron (Fe)-Dissolved	0.0019	0.0017	0.0017	0.0019	0.0016	0.0018	0.0022	-	<0.0010
Lead (Pb)-Dissolved	0.0000396	0.0000534	0.0000243	0.0000373	0.0000575	0.000516	0.000522	-	0.0000149
Lithium (Li)-Dissolved	0.00109	0.00099	0.00103	0.00103	0.00107	0.00111	0.00105	-	<0.00050
Magnesium (Mg)-Dissolved	4.11	4.15	4.24	4.20	4.16	4.20	4.24	-	<0.030
Manganese (Mn)-Dissolved	0.000880	0.000923	0.00119	0.00125	0.00146	0.00408	0.00405	-	<0.000050
Mercury (Hg)-Dissolved	<0.00050	0.00059	<0.00050	<0.00050	<0.00050	0.00055	0.00052	-	<0.00050
Molybdenum (Mo)-Dissolved	0.000535	0.000529	0.000541	0.000546	0.000561	0.000896	0.000939	-	<0.000050
Nickel (Ni)-Dissolved	0.000243	0.000253	0.000236	0.000252	0.000242	0.000245	0.000262	-	<0.000050
Phosphorus (P)-Dissolved	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	-	<0.050
Potassium (K)-Dissolved	0.602	0.625	0.637	0.633	0.633	0.747	0.768	-	<0.050
Selenium (Se)-Dissolved	0.000277	0.000256	0.000301	0.000280	0.000412	0.00169	0.00176	-	<0.000040
Silicon (Si)-Dissolved	2.13	2.21	2.20	2.16	2.16	2.18	2.15	-	<0.050
Silver (Ag)-Dissolved	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000076	0.0000079	-	<0.0000050
Sodium (Na)-Dissolved	1.57	1.52	1.65	1.59	1.75	3.74	3.72	-	<0.010
Strontium (Sr)-Dissolved	0.110	0.109	0.111	0.109	0.110	0.112	0.113	-	<0.000050
Thallium (Tl)-Dissolved	<0.0000020	0.0000031	0.0000191	0.0000180	0.0000690	0.000666	0.000672	-	<0.0000020
Tin (Sn)-Dissolved	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	-	<0.000010
Titanium (Ti)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-	<0.00050
Uranium (U)-Dissolved	0.000528	0.000530	0.000530	0.000526	0.000518	0.000542	0.000550	-	<0.0000020
Vanadium (V)-Dissolved	0.000112	0.000101	0.000110	0.000101	0.000097	0.000119	0.000130	-	<0.000050
Zinc (Zn)-Dissolved	0.00229	0.00276	0.00237	0.00204	0.00289	0.0115	0.0118	-	<0.00050
Zirconium (Zr)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-	<0.00010
Aggregate Organics									
BOD	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
COD	<20	<20	<20	<20	<20	<20	<20	<20	<20

Sample ID	BIRCHBANK RSH	STONEY CR RSH	WANETA RSH	MAGLIOS RSH	OLD BRIDGE RSH	NEW BRIDGE RSH	DUPLICATE (NEW BRIDGE RSH)	TRAVEL BLANK	FIELD BLANK
Date Sampled	25-APR-15	25-APR-15	25-APR-15	25-APR-15	25-APR-15	25-APR-15	25-APR-15	25-APR-15	25-APR-15
Time Sampled	09:52	10:40	11:07	12:40	12:50	12:55	12:00	12:00	12:00
ALS Sample ID	L1604267-1	L1604267-2	L1604267-3	L1604267-4	L1604267-5	L1604267-6	L1604267-7	L1604267-8	L1604267-9
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests									
Conductivity	143	136	143	143	145	150	150	<2.0	<2.0
Hardness (as CaCO3)	64.9	62.2	64.5	65.2	66.6	67.8	69.6	<0.50	<0.50
pH	8.07	8.11	8.14	8.06	8.12	8.13	8.13	5.43	5.53
Total Suspended Solids	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Total Dissolved Solids	85	87	88	87	86	90	91	<10	<10
Turbidity	0.45	0.52	0.47	0.41	0.50	0.53	0.52	<0.10	<0.10
Anions and Nutrients									
Alkalinity, Total (as CaCO3)	67.3	62.9	63.5	64.9	60.0	61.2	61.1	<2.0	<2.0
Ammonia, Total (as N)	<0.0050	<0.0050	0.0074	0.0069	0.0124	0.0283	0.0276	<0.0050	<0.0050
Bromide (Br)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	0.93	0.95	0.94	0.97	1.02	1.12	1.12	<0.50	<0.50
Fluoride (F)	0.071	0.071	0.072	0.073	0.078	0.093	0.093	<0.020	<0.020
Nitrate (as N)	0.134	0.135	0.137	0.137	0.139	0.141	0.141	<0.0050	<0.0050
Nitrite (as N)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	0.076	0.086	0.087	0.084	0.079	0.097	0.139	<0.050	<0.050
Phosphorus (P)-Total Dissolved	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Phosphorus (P)-Total	0.0026	0.0025	0.0021	<0.0020	0.0024	0.0022	0.0022	<0.0020	<0.0020
Sulfate (SO4)	11.1	11.1	11.3	11.5	12.0	13.6	13.6	<0.30	<0.30
Organic / Inorganic Carbon									
Total Organic Carbon	1.37	1.39	1.38	1.49	1.28	1.26	1.39	<0.50	<0.50
Total Metals									
Mercury (Hg)-Total	<0.00050	<0.00050	0.00071	0.00073	0.00092	0.00244	0.00270	<0.00050	<0.00050
Total Metals (Undigested)									
Aluminum (Al)-Total	0.0133	0.0157	0.0119	0.0195	0.0147	0.0133	0.0147	<0.00050	<0.00050
Antimony (Sb)-Total	0.000046	0.000059	0.000125	0.000119	0.000233	0.00111	0.00108	<0.000020	<0.000020
Arsenic (As)-Total	0.000228	0.000496	0.000301	0.000313	0.000308	0.000420	0.000420	<0.000020	<0.000020
Barium (Ba)-Total	0.0221	0.0217	0.0219	0.0217	0.0216	0.0219	0.0222	<0.000020	<0.000020
Beryllium (Be)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Total	0.0000143	0.0000134	0.0000118	0.0000081	<0.0000050	<0.0000050	<0.0000050	0.0000237	0.0000178
Boron (B)-Total	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Total	0.0000172	0.0000293	0.0000300	0.0000325	0.0000711	0.000345	0.000353	<0.0000050	<0.0000050
Calcium (Ca)-Total	17.6	18.1	18.9	19.5	19.4	20.4	20.2	<0.030	<0.030
Chromium (Cr)-Total	<0.00010	0.00017	<0.00010	<0.00010	0.00011	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Total	0.0000116	0.0000160	0.0000123	0.0000160	0.0000183	0.0000220	0.0000194	<0.0000050	<0.0000050
Copper (Cu)-Total	0.00034	0.00034	0.00039	0.00038	0.00040	0.00059	0.00062	<0.00010	<0.00010
Iron (Fe)-Total	0.0127	0.0163	0.0125	0.0132	0.0138	0.0134	0.0126	<0.0010	<0.0010
Lead (Pb)-Total	0.0000773	0.000138	0.000401	0.000217	0.000375	0.000462	0.000435	0.0000052	0.0000071
Lithium (Li)-Total	0.00140	0.00130	0.00139	0.00125	0.00125	0.00134	0.00136	<0.00050	<0.00050
Magnesium (Mg)-Total	4.00	4.13	4.33	4.49	4.42	4.46	4.39	<0.030	<0.030
Manganese (Mn)-Total	0.00229	0.00231	0.00248	0.00240	0.00281	0.00401	0.00396	<0.000050	<0.000050
Molybdenum (Mo)-Total	0.000527	0.000528	0.000532	0.000547	0.000532	0.000577	0.000573	<0.000050	<0.000050
Nickel (Ni)-Total	0.000270	0.000287	0.000267	0.000289	0.000252	0.000294	0.000277	<0.000050	<0.000050
Phosphorus (P)-Total	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Total	0.563	0.572	0.601	0.624	0.621	0.635	0.638	<0.050	<0.050
Selenium (Se)-Total	0.000303	0.000296	0.000348	0.000396	0.000549	**0.00180**	**0.00176**	<0.000040	<0.000040
Silicon (Si)-Total	2.13	2.26	2.30	2.36	2.34	2.35	2.32	<0.050	<0.050
Silver (Ag)-Total	<0.0000050	0.0000057	<0.0000050	0.0000099	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Total	1.72	1.75	1.71	1.80	1.85	2.47	2.47	<0.010	<0.010
Strontium (Sr)-Total	0.103	0.104	0.103	0.103	0.103	0.103	0.103	<0.000050	<0.000050
Thallium (Tl)-Total	0.0000022	0.0000027	0.0000085	0.0000191	0.0000331	0.000167	0.000164	<0.0000020	<0.0000020
Tin (Sn)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Titanium (Ti)-Total	<0.00050	0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050
Uranium (U)-Total	0.000531	0.000529	0.000545	0.000526	0.000530	0.000533	0.000535	<0.0000020	<0.0000020
Vanadium (V)-Total	0.000150	0.000129	0.000137	0.000142	0.000125	0.000141	0.000135	<0.000050	<0.000050
Zinc (Zn)-Total	0.00199	0.00250	0.00268	0.00271	0.00341	0.00679	0.00700	<0.00050	<0.00050
Zirconium (Zr)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Metals									
Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	-	FIELD
Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	-	FIELD
Aluminum (Al)-Dissolved	0.00546	0.00608	0.00485	0.00521	0.00532	0.00625	0.00595	-	<0.00050
Antimony (Sb)-Dissolved	0.000047	0.000052	0.000097	0.000107	0.000236	0.00109	0.00111	-	<0.000020
Arsenic (As)-Dissolved	0.000257	0.000532	0.000259	0.000271	0.000272	0.000416	0.000399	-	<0.000020
Barium (Ba)-Dissolved	0.0215	0.0214	0.0217	0.0217	0.0217	0.0217	0.0217	-	<0.000020
Beryllium (Be)-Dissolved	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	-	<0.000010
Bismuth (Bi)-Dissolved	0.0000116	0.0000098	0.0000085	<0.0000050	<0.0000050	<0.0000050	<0.0000050	-	0.0000193
Boron (B)-Dissolved	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	-	<0.0050
Cadmium (Cd)-Dissolved	0.0000169	0.0000308	0.0000268	0.0000335	0.0000598	**0.000319**	**0.000321**	-	<0.0000050
Calcium (Ca)-Dissolved	18.9	18.1	18.8	19.0	19.4	20.0	20.5	-	<0.030
Chromium (Cr)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-	<0.00010
Cobalt (Co)-Dissolved	0.0000056	0.0000064	0.0000117	0.0000068	0.0000102	0.0000146	0.0000151	-	<0.0000050
Copper (Cu)-Dissolved	0.00030	0.00031	0.00035	0.00034	0.00034	0.00054	0.00051	-	<0.00010
Iron (Fe)-Dissolved	0.0028	0.0030	0.0027	0.0077	0.0027	0.0029	0.0031	-	<0.0010
Lead (Pb)-Dissolved	0.0000258	0.0000487	0.0000929	0.0000562	0.000113	0.000212	0.000219	-	0.0000064
Lithium (Li)-Dissolved	0.00127	0.00131	0.00134	0.00123	0.00139	0.00137	0.00135	-	<0.00050
Magnesium (Mg)-Dissolved	4.31	4.14	4.28	4.35	4.41	4.35	4.49	-	<0.030
Manganese (Mn)-Dissolved	0.000769	0.000886	0.00109	0.00106	0.00139	0.00265	0.00263	-	<0.000050
Mercury (Hg)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00074	0.00070	-	<0.00050
Molybdenum (Mo)-Dissolved	0.000527	0.000534	0.000533	0.000541	0.000551	0.000576	0.000579	-	<0.000050
Nickel (Ni)-Dissolved	0.000270	0.000271	0.000256	0.000261	0.000253	0.000267	0.000287	-	<0.000050
Phosphorus (P)-Dissolved	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	-	<0.050
Potassium (K)-Dissolved	0.596	0.588	0.611	0.621	0.621	0.651	0.632	-	<0.050
Selenium (Se)-Dissolved	0.000267	0.000260	0.000349	0.000425	0.000565	0.00186	0.00179	-	<0.000040
Silicon (Si)-Dissolved	2.25	2.22	2.26	2.27	2.32	2.27	2.34	-	<0.050
Silver (Ag)-Dissolved	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	-	<0.0000050
Sodium (Na)-Dissolved	1.72	1.77	1.74	1.79	1.84	2.47	2.45	-	<0.010
Strontium (Sr)-Dissolved	0.104	0.103	0.104	0.103	0.106	0.103	0.104	-	<0.000050
Thallium (Tl)-Dissolved	0.0000036	0.0000034	0.0000074	0.0000157	0.0000332	0.000166	0.000170	-	<0.0000020
Tin (Sn)-Dissolved	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	-	<0.000010
Titanium (Ti)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-	<0.00050
Uranium (U)-Dissolved	0.000530	0.000530	0.000546	0.000532	0.000573	0.000545	0.000541	-	<0.0000020
Vanadium (V)-Dissolved	0.000105	0.000132	0.000117	0.000123	0.000130	0.000130	0.000134	-	<0.000050
Zinc (Zn)-Dissolved	0.00221	0.00251	0.00255	0.00246	0.00360	0.00664	0.00641	-	<0.00050
Zirconium (Zr)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-	<0.00010
Aggregate Organics									
BOD	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
COD	<20	<20	<20	<20	<20	<20	<20	<20	<20

Sample ID	BIRCHBANK RSH	BIRCHBANK R 1M DEEP	BIRCHBANK R 1M ABOVE BED	BIRCHBANK L 1M ABOVE BED	BIRCHBANK L 1M DEEP	BIRCHBANK LSH	STONEY CK RSH	STONEY CK R 1M DEEP	STONEY CK R 1M ABOVE BED	STONEY CK L 1M ABOVE BED	STONEY CK L 1M DEEP
Date Sampled	28-APR-15	28-APR-15	28-APR-15	28-APR-15	28-APR-15	28-APR-15	28-APR-15	28-APR-15	28-APR-15	28-APR-15	28-APR-15
Time Sampled	14:35	14:45	15:05	15:23	15:30	15:47	16:38	16:48	17:03	17:15	17:27
ALS Sample ID	L1605547-1	L1605547-2	L1605547-3	L1605547-4	L1605547-5	L1605547-6	L1605547-7	L1605547-8	L1605547-9	L1605547-10	L1605547-11
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests											
Conductivity	137	138	136	137	137	138	137	138	139	137	136
Hardness (as CaCO3)	65.4	67.9	66.5	66.1	66.9	66.6	65.3	63.9	65.7	66.0	66.4
pH	8.04	8.09	8.09	8.10	8.10	8.10	8.10	8.11	8.11	8.11	8.10
Total Suspended Solids	<3.0	3.1	<3.0	<3.0	<3.0	3.3	<3.0	<3.0	3.7	3.1	<3.0
Total Dissolved Solids	82	77	83	77	77	82	83	81	78	79	81
Turbidity	0.39	0.36	0.39	0.39	0.34	0.42	0.45	0.45	0.39	0.35	0.38
Anions and Nutrients											
Alkalinity, Total (as CaCO3)	68.2	66.0	65.5	65.9	65.5	64.7	64.2	63.0	64.4	63.3	66.3
Ammonia, Total (as N)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0095	<0.0050	<0.0050	<0.0050	<0.0050
Bromide (Br)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	0.87	0.87	0.85	0.86	0.86	0.86	0.87	0.86	0.86	0.86	0.85
Fluoride (F)	0.069	0.069	0.069	0.069	0.069	0.070	0.069	0.070	0.069	0.070	0.069
Nitrate (as N)	0.125	0.126	0.126	0.127	0.126	0.125	0.128	0.125	0.126	0.125	0.125
Nitrite (as N)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	0.081	0.073	0.080	0.069	0.081	0.074	0.083	0.066	0.056	0.099	0.085
Phosphorus (P)-Total Dissolved	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Phosphorus (P)-Total	<0.0020	0.0036	0.0030	0.0042	<0.0020	0.0023	0.0041	0.0027	0.0039	0.0024	0.0032
Sulfate (SO4)	10.8	10.8	10.8	10.8	10.8	10.8	10.9	10.8	10.8	10.8	10.8
Organic / Inorganic Carbon											
Total Organic Carbon	1.23	1.35	1.44	1.60	1.52	1.48	1.46	1.21	1.56	1.45	1.52
Total Metals											
Mercury (Hg)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Total Metals (Undigested)											
Aluminum (Al)-Total	0.00953	0.00974	0.0105	0.00997	0.0101	0.0110	0.0113	0.0106	0.00863	0.0100	0.0103
Antimony (Sb)-Total	0.000049	0.000046	0.000040	0.000046	0.000041	0.000038	0.000055	0.000039	0.000039	0.000037	0.000039
Arsenic (As)-Total	0.000220	0.000241	0.000220	0.000242	0.000227	0.000239	0.000418	0.000220	0.000239	0.000248	0.000237
Barium (Ba)-Total	0.0200	0.0200	0.0196	0.0204	0.0203	0.0203	0.0202	0.0202	0.0199	0.0202	0.0204
Beryllium (Be)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Total	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Total	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Total	0.0000153	0.0000169	0.0000136	0.0000154	0.0000159	0.0000112	0.0000230	0.0000169	0.0000175	0.0000151	0.0000131
Calcium (Ca)-Total	19.2	19.4	19.9	19.8	20.1	19.8	19.0	19.3	19.2	19.5	19.2
Chromium (Cr)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Total	0.0000112	0.0000110	0.0000093	0.0000128	0.0000125	0.0000117	0.0000113	0.0000117	0.0000135	0.0000137	0.0000101
Copper (Cu)-Total	0.00033	0.00032	0.00032	0.00032	0.00031	0.00029	0.00032	0.00033	0.00030	0.00033	0.00031
Iron (Fe)-Total	0.0099	0.0106	0.0094	0.0100	0.0113	0.0096	0.0097	0.0095	0.0095	0.0098	0.0095
Lead (Pb)-Total	0.0000555	0.0000563	0.0000467	0.0000611	0.0000518	0.0000428	0.0000740	0.0000481	0.0000464	0.0000471	0.0000475
Lithium (Li)-Total	0.00115	0.00113	0.00115	0.00112	0.00113	0.00117	0.00115	0.00103	0.00110	0.00111	0.00108
Magnesium (Mg)-Total	4.29	4.32	4.41	4.39	4.45	4.35	4.18	4.21	4.24	4.31	4.26
Manganese (Mn)-Total	0.00204	0.00212	0.00194	0.00191	0.00202	0.00211	0.00202	0.00199	0.00193	0.00202	0.00201
Molybdenum (Mo)-Total	0.000554	0.000542	0.000558	0.000565	0.000564	0.000556	0.000559	0.000555	0.000537	0.000576	0.000568
Nickel (Ni)-Total	0.000248	0.000254	0.000253	0.000264	0.000312	0.000550	0.000259	0.000229	0.000258	0.000284	0.000248
Phosphorus (P)-Total	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Total	0.564	0.589	0.617	0.583	0.611	0.577	0.554	0.568	0.566	0.593	0.582
Selenium (Se)-Total	0.000262	0.000278	0.000258	0.000281	0.000275	0.000278	0.000256	0.000254	0.000278	0.000244	0.000273
Silicon (Si)-Total	2.27	2.29	2.32	2.32	2.35	2.31	2.27	2.24	2.24	2.29	2.25
Silver (Ag)-Total	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Total	1.55	1.55	1.52	1.56	1.55	1.55	1.54	1.57	1.53	1.55	1.55
Strontium (Sr)-Total	0.110	0.108	0.107	0.111	0.107	0.114	0.108	0.109	0.108	0.109	0.109
Thallium (Tl)-Total	0.0000025	<0.0000020	<0.0000020	0.0000061	0.0000025	0.0000024	0.0000022	0.0000024	0.0000020	<0.0000020	0.0000021
Tin (Sn)-Total	0.000014	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Titanium (Ti)-Total	0.00055	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Uranium (U)-Total	0.000497	0.000501	0.000500	0.000516	0.000513	0.000496	0.000520	0.000520	0.000500	0.000528	0.000511
Vanadium (V)-Total	0.000149	0.000126	0.000125	0.000127	0.000120	0.000120	0.000136	0.000132	0.000126	0.000128	0.000125
Zinc (Zn)-Total	0.00235	0.00194	0.00130	0.00170	0.00121	0.00159	0.00158	0.00139	0.00145	0.00118	0.00136
Zirconium (Zr)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Metals											
Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Aluminum (Al)-Dissolved	0.00584	0.00511	0.00485	0.00486	0.00623	0.00426	0.00510	0.00528	0.00420	0.00460	0.00473
Antimony (Sb)-Dissolved	0.000043	0.000039	0.000037	0.000040	0.000041	0.000040	0.000055	0.000041	0.000037	0.000043	0.000038
Arsenic (As)-Dissolved	0.000235	0.000226	0.000216	0.000242	0.000235	0.000234	0.000409	0.000259	0.000221	0.000231	0.000234
Barium (Ba)-Dissolved	0.0198	0.0199	0.0199	0.0204	0.0203	0.0200	0.0204	0.0226	0.0202	0.0203	0.0202
Beryllium (Be)-Dissolved	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Dissolved	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Dissolved	<0.0050	<0.0050	<0.0050	<0.0050	0.0063	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Dissolved	0.0000184	0.0000142	0.0000151	0.0000105	0.0000160	0.0000118	0.0000232	0.0000165	0.0000131	0.0000109	0.0000110
Calcium (Ca)-Dissolved	19.2	19.9	19.5	19.4	19.6	19.6	19.2	18.8	19.3	19.4	19.5
Chromium (Cr)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Dissolved	0.0000054	0.0000066	<0.0000050	0.0000088	0.0000067	0.0000063	0.0000073	0.0000065	0.0000059	0.0000080	0.0000081
Copper (Cu)-Dissolved	0.00032	0.00032	0.00030	0.00030	0.00029	0.00028	0.00029	0.00032	0.00028	0.00027	0.00029
Iron (Fe)-Dissolved	0.0025	0.0025	0.0025	0.0026	0.0027	0.0025	0.0026	0.0027	0.0025	0.0026	0.0024
Lead (Pb)-Dissolved	0.0000318	0.0000242	0.0000149	0.0000140	0.0000170	0.0000131	0.0000334	0.0000146	0.0000145	0.0000143	0.0000123
Lithium (Li)-Dissolved	0.00113	0.00120	0.00110	0.00121	0.00116	0.00112	0.00110	0.00114	0.00110	0.00110	0.00104
Magnesium (Mg)-Dissolved	4.27	4.43	4.31	4.29	4.32	4.31	4.22	4.13	4.25	4.29	4.29
Manganese (Mn)-Dissolved	0.000751	0.000831	0.000778	0.000786	0.000785	0.000702	0.000893	0.000878	0.000746	0.000773	0.000759
Mercury (Hg)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Molybdenum (Mo)-Dissolved	0.000557	0.000556	0.000555	0.000578	0.000568	0.000557	0.000569	0.000547	0.000557	0.000562	0.000587
Nickel (Ni)-Dissolved	0.000272	0.000236	0.000231	0.000224	0.000243	0.000247	0.000237	0.000279	0.000265	0.000231	0.000262
Phosphorus (P)-Dissolved	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Dissolved	0.564	0.601	0.595	0.577	0.575	0.593	0.545	0.562	0.573	0.577	0.612
Selenium (Se)-Dissolved	0.000285	0.000285	0.000235	0.000278	0.000282	0.000264	0.000269	0.000303	0.000253	0.000282	0.000243
Silicon (Si)-Dissolved	2.24	2.33	2.25	2.26	2.27	2.27	2.27	2.18	2.22	2.26	2.26
Silver (Ag)-Dissolved	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Dissolved	1.50	1.53	1.55	1.54	1.55	1.54	1.56	1.75	1.55	1.57	1.55
Strontium (Sr)-Dissolved	0.109	0.111	0.106	0.112	0.108	0.110	0.108	0.110	0.111	0.107	0.108
Thallium (Tl)-Dissolved	0.0000025	0.0000023	<0.0000020	0.0000027	<0.0000020	0.0000020	0.0000025	<0.0000020	0.0000020	<0.0000020	<0.0000020
Tin (Sn)-Dissolved	0.000011	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Titanium (Ti)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Uranium (U)-Dissolved	0.000511	0.000504	0.000507	0.000520	0.000500	0.000519	0.000528	0.000498	0.000502	0.000519	0.000520
Vanadium (V)-Dissolved	0.000133	0.000117	0.000105	0.000108	0.000117	0.000106	0.000119	0.000127	0.000116	0.000110	0.000116
Zinc (Zn)-Dissolved	0.00190	0.00163	0.00114	0.00104	0.00169	0.00106	0.00159	0.00125	0.00175	0.00154	0.00108
Zirconium (Zr)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Aggregate Organics											
BOD	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
COD	<20	28	<20	<20	<20	<20	23	<20	<20	<20	<20

Sample ID	STONEY CK LSH	OLD BRIDGE RSH	OLD BRIDGE R 1M DEEP	OLD BRIDGE R 1M ABOVE BED	OLD BRIDGE L 1M ABOVE BED	OLD BRIDGE L 1M DEEP	OLD BRIDGE LSH	NEW BRIDGE RSH	NEW BRIDGE R 1M DEEP	NEW BRIDGE R 1M ABOVE BED	NEW BRIDGE L 1M ABOVE BED
Date Sampled	28-APR-15	28-APR-15	28-APR-15	28-APR-15	28-APR-15	28-APR-15	28-APR-15	28-APR-15	28-APR-15	28-APR-15	28-APR-15
Time Sampled	17:39	11:00	11:18	11:40	11:53	12:00	12:10	12:30	12:50	13:15	13:26
ALS Sample ID	L1605547-12	L1605547-13	L1605547-14	L1605547-15	L1605547-16	L1605547-17	L1605547-18	L1605547-19	L1605547-20	L1605547-21	L1605547-22
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests											
Conductivity	136	140	139	137	137	138	140	154	137	138	138
Hardness (as CaCO3)	66.1	66.0	67.4	66.8	66.9	67.3	67.8	69.5	67.5	66.2	67.1
pH	8.11	8.09	8.08	8.04	8.09	8.08	8.09	8.09	8.10	8.11	8.11
Total Suspended Solids	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Total Dissolved Solids	70	88	81	80	79	79	80	88	79	80	81
Turbidity	0.36	0.37	0.50	0.36	0.45	0.50	0.40	0.32	0.35	0.29	0.42
Anions and Nutrients											
Alkalinity, Total (as CaCO3)	65.5	64.7	62.1	64.2	64.3	64.2	63.5	64.6	63.2	64.0	64.5
Ammonia, Total (as N)	<0.0050	0.0137	0.0082	0.0097	0.0051	<0.0050	0.0203	0.0344	0.0059	0.0058	0.0053
Bromide (Br)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	0.86	0.93	0.90	0.90	0.86	0.86	0.95	1.20	0.86	0.86	0.86
Fluoride (F)	0.069	0.077	0.074	0.074	0.070	0.070	0.070	0.126	0.070	0.070	0.070
Nitrate (as N)	0.125	0.133	0.131	0.133	0.128	0.128	0.142	0.144	0.127	0.127	0.127
Nitrite (as N)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	0.089	0.106	0.086	0.156	0.092	0.116	0.092	0.135	0.089	0.087	0.076
Phosphorus (P)-Total Dissolved	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	<0.0020	<0.0020	<0.0020
Phosphorus (P)-Total	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0024	0.0027	<0.0020	<0.0020
Sulfate (SO4)	10.8	11.9	11.5	11.6	10.9	10.9	11.7	18.0	10.9	10.9	10.9
Organic / Inorganic Carbon											
Total Organic Carbon	1.43	1.35	1.58	1.43	1.24	1.41	1.57	1.54	1.48	1.34	1.27
Total Metals											
Mercury (Hg)-Total	<0.00050	0.00075	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00175	<0.00050	<0.00050	<0.00050
Total Metals (Undigested)											
Aluminum (Al)-Total	0.0107	0.00951	0.00848	0.00988	0.00915	0.0101	0.0103	0.0137	0.0113	0.0113	0.0116
Antimony (Sb)-Total	0.000038	0.000221	0.000100	0.000122	0.000040	0.000035	0.000037	0.000864	0.000040	0.000043	0.000045
Arsenic (As)-Total	0.000220	0.000346	0.000261	0.000396	0.000239	0.000232	0.000224	0.000481	0.000258	0.000251	0.000222
Barium (Ba)-Total	0.0203	0.0205	0.0202	0.0205	0.0205	0.0204	0.0204	0.0234	0.0202	0.0205	0.0203
Beryllium (Be)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Total	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Total	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Total	0.0000110	0.0000610	0.0000327	0.0000367	0.0000140	0.0000153	0.0000179	0.000389	0.0000189	0.0000199	0.0000179
Calcium (Ca)-Total	19.5	19.8	19.8	19.7	19.9	19.9	19.9	20.3	19.9	19.5	19.2
Chromium (Cr)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Total	0.0000128	0.0000140	0.0000103	0.0000144	0.0000106	0.0000102	0.0000111	0.0000240	0.0000120	0.0000104	0.0000130
Copper (Cu)-Total	0.00031	0.00038	0.00032	0.00033	0.00031	0.00031	0.00032	0.00062	0.00033	0.00035	0.00034
Iron (Fe)-Total	0.0097	0.0100	0.0079	0.0090	0.0097	0.0097	0.0097	0.0137	0.0094	0.0110	0.0097
Lead (Pb)-Total	0.0000461	0.000247	0.0000761	0.0000896	0.0000637	0.0000458	0.0000647	0.000390	0.0000476	0.0000669	0.0000629
Lithium (Li)-Total	0.00107	0.00106	0.00102	0.00107	0.00108	0.00109	0.00101	0.00139	0.00110	0.00111	0.00112
Magnesium (Mg)-Total	4.32	4.35	4.39	4.34	4.41	4.38	4.40	4.33	4.42	4.34	4.29
Manganese (Mn)-Total	0.00199	0.00253	0.00219	0.00234	0.00208	0.00214	0.00300	0.00482	0.00201	0.00228	0.00203
Molybdenum (Mo)-Total	0.000553	0.000583	0.000549	0.000579	0.000557	0.000555	0.000541	0.000847	0.000557	0.000564	0.000565
Nickel (Ni)-Total	0.000299	0.000265	0.000240	0.000265	0.000245	0.000241	0.000251	0.000242	0.000241	0.000243	0.000231
Phosphorus (P)-Total	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Total	0.641	0.615	0.604	0.586	0.603	0.615	0.613	0.609	0.577	0.594	0.576
Selenium (Se)-Total	0.000271	0.000435	0.000390	0.000318	0.000283	0.000256	0.000278	0.000816	0.000311	0.000301	0.000307
Silicon (Si)-Total	2.30	2.32	2.34	2.32	2.33	2.31	2.28	2.30	2.35	2.30	2.26
Silver (Ag)-Total	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Total	1.54	1.83	1.59	1.71	1.56	1.55	1.62	2.99	1.54	1.57	1.53
Strontium (Sr)-Total	0.108	0.108	0.106	0.111	0.110	0.110	0.108	0.105	0.108	0.109	0.113
Thallium (Tl)-Total	0.0000028	0.0000538	0.0000176	0.0000333	0.0000022	0.0000023	0.0000024	0.000242	0.0000024	0.0000024	0.0000066
Tin (Sn)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Titanium (Ti)-Total	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Uranium (U)-Total	0.000540	0.000527	0.000526	0.000515	0.000509	0.000516	0.000530	0.000505	0.000526	0.000523	0.000517
Vanadium (V)-Total	0.000139	0.000125	0.000114	0.000116	0.000130	0.000121	0.000131	0.000151	0.000114	0.000144	0.000124
Zinc (Zn)-Total	0.00116	0.00224	0.00144	0.00176	0.00120	0.00119	0.00139	0.00654	0.00131	0.00128	0.00181
Zirconium (Zr)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Metals											
Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Aluminum (Al)-Dissolved	0.00490	0.00439	0.00465	0.00452	0.00495	0.00516	0.00467	0.00627	0.00534	0.00468	0.00548
Antimony (Sb)-Dissolved	0.000038	0.000212	0.000100	0.000124	0.000038	0.000037	0.000042	0.00108	0.000043	0.000037	0.000039
Arsenic (As)-Dissolved	0.000266	0.000334	0.000278	0.000284	0.000225	0.000238	0.000241	0.000502	0.000260	0.000258	0.000224
Barium (Ba)-Dissolved	0.0202	0.0204	0.0203	0.0206	0.0204	0.0203	0.0202	0.0233	0.0197	0.0200	0.0198
Beryllium (Be)-Dissolved	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Dissolved	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Dissolved	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Dissolved	0.0000120	0.0000682	0.0000290	0.0000373	0.0000069	0.0000116	0.0000126	**0.000797**	0.0000161	0.0000180	0.0000097
Calcium (Ca)-Dissolved	19.4	19.4	19.8	19.6	19.6	19.7	19.9	20.7	19.8	19.4	19.7
Chromium (Cr)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Dissolved	<0.0000050	0.0000079	0.0000084	0.0000071	0.0000083	0.0000064	0.0000093	0.0000195	0.0000089	0.0000055	0.0000064
Copper (Cu)-Dissolved	0.00029	0.00036	0.00031	0.00040	0.00028	0.00031	0.00030	0.00085	0.00029	0.00031	0.00028
Iron (Fe)-Dissolved	0.0025	0.0028	0.0025	0.0027	0.0025	0.0025	0.0026	0.0029	0.0026	0.0025	0.0024
Lead (Pb)-Dissolved	0.0000127	0.0000703	0.0000271	0.0000365	0.0000121	0.0000133	0.0000220	0.000391	0.0000173	0.0000222	0.0000134
Lithium (Li)-Dissolved	0.00102	0.00099	0.00096	0.00104	0.00100	0.00104	0.00100	0.00138	0.00109	0.00101	0.00105
Magnesium (Mg)-Dissolved	4.29	4.27	4.37	4.33	4.35	4.37	4.38	4.36	4.39	4.32	4.37
Manganese (Mn)-Dissolved	0.000782	0.00132	0.000979	0.00110	0.000911	0.000931	0.00168	0.00372	0.000905	0.00104	0.000998
Mercury (Hg)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00069	<0.00050	<0.00050	0.00054
Molybdenum (Mo)-Dissolved	0.000559	0.000592	0.000565	0.000602	0.000551	0.000547	0.000556	0.000941	0.000575	0.000541	0.000525
Nickel (Ni)-Dissolved	0.000218	0.000236	0.000206	0.000222	0.000215	0.000249	0.000233	0.000244	0.000224	0.000229	0.000247
Phosphorus (P)-Dissolved	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Dissolved	0.580	0.594	0.609	0.597	0.587	0.577	0.582	0.651	0.588	0.583	0.585
Selenium (Se)-Dissolved	0.000264	0.000395	0.000288	0.000347	0.000305	0.000240	0.000290	0.000850	0.000283	0.000234	0.000251
Silicon (Si)-Dissolved	2.25	2.28	2.32	2.29	2.28	2.29	2.27	2.29	2.31	2.26	2.27
Silver (Ag)-Dissolved	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Dissolved	1.57	1.86	1.63	1.71	1.57	1.57	1.59	3.29	1.55	1.54	1.50
Strontium (Sr)-Dissolved	0.109	0.110	0.106	0.110	0.109	0.107	0.108	0.105	0.107	0.110	0.106
Thallium (Tl)-Dissolved	0.0000022	0.0000544	0.0000160	0.0000332	0.0000025	<0.0000020	0.0000022	0.000291	0.0000025	0.0000021	0.0000030
Tin (Sn)-Dissolved	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Titanium (Ti)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Uranium (U)-Dissolved	0.000521	0.000519	0.000521	0.000532	0.000521	0.000527	0.000531	0.000485	0.000529	0.000530	0.000508
Vanadium (V)-Dissolved	0.000114	0.000121	0.000104	0.000104	0.000113	0.000119	0.000099	0.000126	0.000117	0.000110	0.000108
Zinc (Zn)-Dissolved	0.00105	0.00217	0.00139	0.00144	0.00108	0.00111	0.00167	0.00869	0.00118	0.00118	0.00121
Zirconium (Zr)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Aggregate Organics											
BOD	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
COD	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20

Sample ID	NEW BRIDGE L 1M DEEP	NEW BRIDGE LSH	WANETA COMP	MAGLIDS RSH	MAGLIDS R 1M DEEP	MAGLIDS R 1M ABOVE BED	MAGLIDS L 1M ABOVE BED	MAGLIDS L 1M DEEP	MAGLIDS LSH	DUPLICATE 1 (New Bridge RSH)	DUPLICATE 2 (New Bridge R 1M Deep)
Date Sampled	28-APR-15	28-APR-15	28-APR-15	28-APR-15	28-APR-15	28-APR-15	28-APR-15	28-APR-15	28-APR-15	28-APR-15	28-APR-15
Time Sampled	13:45	13:55	18:20	09:30	09:27	09:40	09:59	10:28	10:45	00:00	00:00
ALS Sample ID	L1605547-23	L1605547-24	L1605547-25	L1605547-26	L1605547-27	L1605547-28	L1605547-29	L1605547-30	L1605547-31	L1605547-32	L1605547-33
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests											
Conductivity	139	140	139	138	138	138	138	137	140	156	139
Hardness (as CaCO3)	66.6	67.0	66.6	65.5	66.5	66.3	65.5	66.4	67.1	68.4	68.1
pH	8.12	8.11	8.13	8.11	8.10	8.10	8.10	8.11	8.10	8.11	8.13
Total Suspended Solids	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Total Dissolved Solids	81	83	79	81	78	81	87	84	83	95	83
Turbidity	0.36	0.34	0.36	0.37	0.45	0.49	0.42	0.40	0.36	0.37	0.36
Anions and Nutrients											
Alkalinity, Total (as CaCO3)	63.0	62.6	62.5	62.1	62.0	59.8	62.8	62.6	61.2	67.0	66.2
Ammonia, Total (as N)	0.0083	0.0323	0.0081	0.0093	0.0076	0.0077	0.0073	0.0072	0.0073	0.0340	0.0052
Bromide (Br)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	0.86	0.90	0.89	0.89	0.88	0.88	0.88	0.88	0.88	1.19	0.86
Fluoride (F)	0.070	0.070	0.071	0.073	0.072	0.072	0.070	0.071	0.071	0.125	0.070
Nitrate (as N)	0.127	0.138	0.126	0.133	0.132	0.131	0.131	0.131	0.131	0.144	0.128
Nitrite (as N)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	0.079	0.103	0.097	0.092	0.116	0.107	0.108	0.079	0.088	0.118	0.092
Phosphorus (P)-Total Dissolved	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0021	<0.0020
Phosphorus (P)-Total	0.0040	<0.0020	<0.0020	0.0023	0.0020	<0.0020	0.0110	0.0108	0.0108	0.0060	0.0021
Sulfate (SO4)	10.9	11.7	11.1	11.4	11.2	11.2	11.1	11.1	11.1	18.0	10.9
Organic / Inorganic Carbon											
Total Organic Carbon	1.27	1.25	1.27	1.26	1.28	1.40	1.29	1.32	1.34	1.34	1.35
Total Metals											
Mercury (Hg)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00079	<0.00050	0.00194	<0.00050
Total Metals (Undigested)											
Aluminum (Al)-Total	0.00973	0.0105	0.0112	0.0114	0.0104	0.00913	0.0139	0.0120	0.00898	0.0149	0.0102
Antimony (Sb)-Total	0.000037	0.000043	0.000109	0.000111	0.000103	0.000101	0.000078	0.000067	0.000077	0.000942	0.000036
Arsenic (As)-Total	0.000240	0.000264	0.000292	0.000298	0.000286	0.000263	0.000275	0.000275	0.000257	0.000489	0.000235
Barium (Ba)-Total	0.0204	0.0205	0.0203	0.0205	0.0205	0.0197	0.0205	0.0235	0.0205	0.0214	0.0203
Beryllium (Be)-Total	<0.000010	<0.000010	0.000020	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Total	<0.0000050	0.0000080	0.0000053	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Total	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Total	0.0000175	0.0000142	0.0000252	0.0000367	0.0000222	0.0000369	0.0000275	0.0000263	0.0000230	0.000352	0.0000189
Calcium (Ca)-Total	19.9	19.9	19.7	19.2	19.5	19.2	19.6	19.4	19.6	20.2	19.9
Chromium (Cr)-Total	<0.00010	<0.00010	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Total	0.0000090	0.0000129	0.0000157	0.0000168	0.0000150	0.0000090	0.0000178	0.0000116	0.0000115	0.0000234	0.0000108
Copper (Cu)-Total	0.00030	0.00031	0.00036	0.00054	0.00035	0.00036	0.00041	0.00039	0.00034	0.00061	0.00030
Iron (Fe)-Total	0.0081	0.0098	0.0102	0.0161	0.0100	0.0073	0.0157	0.0110	0.0076	0.0152	0.0095
Lead (Pb)-Total	0.0000416	0.0000681	0.0000826	0.000167	0.0000737	0.0000764	0.000121	0.0000933	0.0000903	0.000654	0.0000501
Lithium (Li)-Total	0.00107	0.00110	0.00099	0.00098	0.00096	0.00092	0.00095	0.00140	0.00096	0.00157	0.00096
Magnesium (Mg)-Total	4.44	4.43	4.34	4.25	4.30	4.22	4.31	4.32	4.32	4.31	4.40
Manganese (Mn)-Total	0.00203	0.00343	0.00228	0.00250	0.00229	0.00201	0.00278	0.00258	0.00222	0.00484	0.00213
Molybdenum (Mo)-Total	0.000559	0.000551	0.000586	0.00135	0.000577	0.000557	0.000546	0.000539	0.000560	0.000910	0.000554
Nickel (Ni)-Total	0.000266	0.000307	0.000282	0.000308	0.000267	0.000240	0.000275	0.000233	0.000244	0.000196	0.000232
Phosphorus (P)-Total	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Total	0.618	0.602	0.621	0.573	0.571	0.543	0.571	0.583	0.558	0.585	0.552
Selenium (Se)-Total	0.000278	0.000243	0.000351	0.000340	0.000297	0.000355	0.000303	0.000255	0.000324	0.000783	0.000283
Silicon (Si)-Total	2.32	2.31	2.30	2.26	2.26	2.24	2.29	2.29	2.29	2.28	2.31
Silver (Ag)-Total	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Total	1.54	1.63	1.64	1.71	1.62	1.60	1.61	1.71	1.58	2.85	1.53
Strontium (Sr)-Total	0.107	0.111	0.111	0.109	0.112	0.104	0.108	0.108	0.106	0.110	0.107
Thallium (Tl)-Total	0.0000021	0.0000026	0.0000183	0.0000198	0.0000150	0.0000166	0.0000077	0.0000067	0.0000091	0.000263	0.0000030
Tin (Sn)-Total	<0.000010	<0.000010	<0.000010	0.000014	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000011	<0.000010
Titanium (Ti)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00057	<0.00050
Uranium (U)-Total	0.000526	0.000550	0.000543	0.000533	0.000519	0.000518	0.000530	0.000499	0.000530	0.000542	0.000516
Vanadium (V)-Total	0.000109	0.000130	0.000154	0.000140	0.000129	0.000131	0.000142	0.000133	0.000121	0.000134	0.000110
Zinc (Zn)-Total	0.00121	0.00139	0.00169	0.00347	0.00178	0.00204	0.00178	0.00283	0.00165	0.00653	0.00120
Zirconium (Zr)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Metals											
Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Aluminum (Al)-Dissolved	0.00507	0.00596	0.00484	0.00473	0.00442	0.00500	0.00463	0.00519	0.00517	0.00681	0.00515
Antimony (Sb)-Dissolved	0.000038	0.000041	0.000108	0.000104	0.000098	0.000097	0.000071	0.000078	0.000080	0.00118	0.000038
Arsenic (As)-Dissolved	0.000227	0.000226	0.000261	0.000277	0.000249	0.000274	0.000258	0.000295	0.000244	0.000471	0.000262
Barium (Ba)-Dissolved	0.0202	0.0202	0.0203	0.0203	0.0197	0.0201	0.0202	0.0235	0.0205	0.0220	0.0202
Beryllium (Be)-Dissolved	<0.000010	<0.000010	0.000026	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Dissolved	<0.0000050	<0.0000050	0.0000076	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Dissolved	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Dissolved	0.0000153	0.0000189	0.0000275	0.0000351	0.0000238	0.0000278	0.0000223	0.0000213	0.0000245	**0.000718**	0.0000239
Calcium (Ca)-Dissolved	19.5	19.6	19.6	19.2	19.6	19.5	19.2	19.5	19.7	20.3	20.0
Chromium (Cr)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Dissolved	0.0000062	0.0000092	0.0000139	0.0000073	0.0000074	0.0000087	0.0000069	0.0000064	0.0000076	0.0000177	0.0000078
Copper (Cu)-Dissolved	0.00028	0.00031	0.00033	0.00036	0.00031	0.00034	0.00038	0.00036	0.00035	0.00084	0.00029
Iron (Fe)-Dissolved	0.0026	0.0025	0.0033	0.0027	0.0026	0.0025	0.0031	0.0027	0.0026	0.0027	0.0025
Lead (Pb)-Dissolved	0.0000143	0.0000215	0.0000301	0.0000399	0.0000274	0.0000371	0.0000476	0.000177	0.0000288	0.000384	0.0000223
Lithium (Li)-Dissolved	0.00099	0.00110	0.00099	0.00092	0.00094	0.00103	0.00090	0.00152	0.00095	0.00154	0.00088
Magnesium (Mg)-Dissolved	4.32	4.38	4.30	4.23	4.30	4.29	4.25	4.30	4.34	4.30	4.43
Manganese (Mn)-Dissolved	0.000975	0.00231	0.00112	0.00111	0.000966	0.00102	0.00100	0.00134	0.00111	0.00333	0.000947
Mercury (Hg)-Dissolved	0.00061	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00071	<0.00050
Molybdenum (Mo)-Dissolved	0.000558	0.000548	0.000595	0.000553	0.000567	0.000569	0.000565	0.000541	0.000551	0.000997	0.000554
Nickel (Ni)-Dissolved	0.000218	0.000268	0.000236	0.000244	0.000254	0.000225	0.000275	0.000235	0.000254	0.000229	0.000236
Phosphorus (P)-Dissolved	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Dissolved	0.580	0.608	0.596	0.568	0.591	0.569	0.571	0.534	0.551	0.620	0.593
Selenium (Se)-Dissolved	0.000254	0.000245	0.000309	0.000325	0.000306	0.000307	0.000267	0.000326	0.000276	0.000870	0.000257
Silicon (Si)-Dissolved	2.25	2.26	2.26	2.24	2.26	2.25	2.23	2.25	2.27	2.26	2.32
Silver (Ag)-Dissolved	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Dissolved	1.56	1.59	1.62	1.66	1.60	1.63	1.62	1.73	1.61	3.21	1.55
Strontium (Sr)-Dissolved	0.111	0.110	0.112	0.105	0.105	0.109	0.106	0.107	0.109	0.111	0.109
Thallium (Tl)-Dissolved	0.0000021	0.0000020	0.0000177	0.0000204	0.0000142	0.0000179	0.0000078	0.0000062	0.0000085	0.000315	0.0000026
Tin (Sn)-Dissolved	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Titanium (Ti)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Uranium (U)-Dissolved	0.000536	0.000540	0.000536	0.000524	0.000523	0.000531	0.000535	0.000512	0.000527	0.000525	0.000531
Vanadium (V)-Dissolved	0.000132	0.000130	0.000161	0.000134	0.000119	0.000105	0.000118	0.000126	0.000109	0.000109	0.000107
Zinc (Zn)-Dissolved	0.00110	0.00098	0.00131	0.00259	0.00161	0.00197	0.00188	0.00250	0.00150	0.00754	0.00148
Zirconium (Zr)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Aggregate Organics											
BOD	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
COD	<20	<20	<20	<20	<20	<20	31	<20	<20	<20	<20

Sample ID	DUPLICATE 3 (New Bridge LSH)	FIELD BLANK	TRAVEL BLANK
Date Sampled	28-APR-15	28-APR-15	28-APR-15
Time Sampled	00:00	00:00	00:00
ALS Sample ID	L1605547-34	L1605547-35	L1605547-36
Matrix	Water	Water	Water
Physical Tests			
Conductivity	140	<2.0	<2.0
Hardness (as CaCO3)	67.8	<0.50	-
pH	8.11	5.71	5.70
Total Suspended Solids	<3.0	<3.0	<3.0
Total Dissolved Solids	81	<10	<10
Turbidity	0.36	<0.10	<0.10
Anions and Nutrients			
Alkalinity, Total (as CaCO3)	64.2	<2.0	<2.0
Ammonia, Total (as N)	0.0306	<0.0050	<0.0050
Bromide (Br)	<0.050	<0.050	<0.050
Chloride (Cl)	0.90	<0.50	<0.50
Fluoride (F)	0.070	<0.020	<0.020
Nitrate (as N)	0.138	<0.0050	<0.0050
Nitrite (as N)	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	0.116	<0.050	<0.050
Phosphorus (P)-Total Dissolved	<0.0020	<0.0020	<0.0020
Phosphorus (P)-Total	<0.0020	<0.0020	<0.0020
Sulfate (SO4)	11.7	<0.30	<0.30
Organic / Inorganic Carbon			
Total Organic Carbon	1.35	<0.50	<0.50
Total Metals			
Mercury (Hg)-Total	<0.00050	<0.00050	<0.00050
Total Metals (Undigested)			
Aluminum (Al)-Total	0.0103	<0.00050	<0.00050
Antimony (Sb)-Total	0.000043	<0.000020	<0.000020
Arsenic (As)-Total	0.000250	<0.000020	<0.000020
Barium (Ba)-Total	0.0204	<0.000020	<0.000020
Beryllium (Be)-Total	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Total	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Total	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Total	0.0000154	<0.0000050	<0.0000050
Calcium (Ca)-Total	20.1	<0.030	<0.030
Chromium (Cr)-Total	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Total	0.0000172	<0.0000050	<0.0000050
Copper (Cu)-Total	0.00032	<0.00010	<0.00010
Iron (Fe)-Total	0.0096	<0.0010	<0.0010
Lead (Pb)-Total	0.0000628	<0.0000050	<0.0000050
Lithium (Li)-Total	0.00092	<0.00050	<0.00050
Magnesium (Mg)-Total	4.47	<0.030	<0.030
Manganese (Mn)-Total	0.00350	<0.000050	<0.000050
Molybdenum (Mo)-Total	0.000533	<0.000050	<0.000050
Nickel (Ni)-Total	0.000292	<0.000050	<0.000050
Phosphorus (P)-Total	<0.050	<0.050	<0.050
Potassium (K)-Total	0.622	<0.050	<0.050
Selenium (Se)-Total	0.000270	<0.000040	<0.000040
Silicon (Si)-Total	2.32	<0.050	<0.050
Silver (Ag)-Total	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Total	1.59	<0.010	<0.010
Strontium (Sr)-Total	0.113	<0.000050	<0.000050
Thallium (Tl)-Total	<0.0000020	<0.0000020	<0.0000020
Tin (Sn)-Total	<0.000010	<0.000010	<0.000010
Titanium (Ti)-Total	<0.00050	<0.00050	<0.00050
Uranium (U)-Total	0.000546	<0.0000020	<0.0000020
Vanadium (V)-Total	0.000108	<0.000050	<0.000050
Zinc (Zn)-Total	0.00115	<0.00050	<0.00050
Zirconium (Zr)-Total	<0.00010	<0.00010	<0.00010
Dissolved Metals			
Dissolved Mercury Filtration Location	FIELD	FIELD	-
Dissolved Metals Filtration Location	FIELD	FIELD	-
Aluminum (Al)-Dissolved	0.00667	<0.00050	-
Antimony (Sb)-Dissolved	0.000048	<0.000020	-
Arsenic (As)-Dissolved	0.000233	<0.000020	-
Barium (Ba)-Dissolved	0.0204	<0.000020	-
Beryllium (Be)-Dissolved	<0.000010	<0.000010	-
Bismuth (Bi)-Dissolved	<0.0000050	<0.0000050	-
Boron (B)-Dissolved	<0.0050	<0.0050	-
Cadmium (Cd)-Dissolved	0.0000153	<0.0000050	-
Calcium (Ca)-Dissolved	19.9	<0.030	-
Chromium (Cr)-Dissolved	<0.00010	<0.00010	-
Cobalt (Co)-Dissolved	0.0000062	<0.0000050	-
Copper (Cu)-Dissolved	0.00034	<0.00010	-
Iron (Fe)-Dissolved	0.0027	<0.0010	-
Lead (Pb)-Dissolved	0.0000223	0.0000136	-
Lithium (Li)-Dissolved	0.00089	<0.00050	-
Magnesium (Mg)-Dissolved	4.41	<0.030	-
Manganese (Mn)-Dissolved	0.00237	0.000089	-
Mercury (Hg)-Dissolved	<0.00050	<0.00050	-
Molybdenum (Mo)-Dissolved	0.000549	<0.000050	-
Nickel (Ni)-Dissolved	0.000276	<0.000050	-
Phosphorus (P)-Dissolved	<0.050	<0.050	-
Potassium (K)-Dissolved	0.591	<0.050	-
Selenium (Se)-Dissolved	0.000287	<0.000040	-
Silicon (Si)-Dissolved	2.28	<0.050	-
Silver (Ag)-Dissolved	<0.0000050	<0.0000050	-
Sodium (Na)-Dissolved	1.59	0.014	-
Strontium (Sr)-Dissolved	0.110	<0.000050	-
Thallium (Tl)-Dissolved	0.0000022	<0.0000020	-
Tin (Sn)-Dissolved	<0.000010	<0.000010	-
Titanium (Ti)-Dissolved	<0.00050	<0.00050	-
Uranium (U)-Dissolved	0.000535	<0.0000020	-
Vanadium (V)-Dissolved	0.000113	<0.000050	-
Zinc (Zn)-Dissolved	0.00111	0.00099	-
Zirconium (Zr)-Dissolved	<0.00010	<0.00010	-
Aggregate Organics			
BOD	<2.0	<2.0	<2.0
COD	<20	<20	<20

Client Sample ID			BIRCHBANK R SH	BIRCHBANK R 1M DEEP	BIRCHBANK R 1M ABOVE BED	BIRCHBANK L 1M ABOVE BED	BIRCHBANK L 1M DEEP	BIRCHBANK L SH	STONEY CK R SH	STONEY CK R 1M DEEP	STONEY CK R 1M ABOVE BED
Date Sampled			16-Jul-2015	16-Jul-2015	16-Jul-2015	16-Jul-2015	16-Jul-2015	16-Jul-2015	16-Jul-2015	16-Jul-2015	16-Jul-2015
Time Sampled			16:00	16:20	16:40	17:00	17:10	17:20	18:00	18:10	18:25
ALS Sample ID			L1645254-1	L1645254-2	L1645254-3	L1645254-4	L1645254-5	L1645254-6	L1645254-7	L1645254-8	L1645254-9
Parameter	Lowest Detection Limit	Units	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests (Water)											
Conductivity	2.0	uS/cm	131	131	129	129	129	129	129	129	130
Hardness (as CaCO3)	0.50	mg/L	59.8	60.3	60.7	61.4	62.2	61.7	61.8	62.4	62.5
pH	0.10	pH	8.15	8.12	8.09	8.11	8.11	8.11	8.11	8.10	8.12
Total Suspended Solids	3.0	mg/L	<3.0	<3.0	<3.0	3.8	<3.0	<3.0	<3.0	<3.0	<3.0
Total Dissolved Solids	10	mg/L	73	73	72	68	73	75	73	73	72
Turbidity	0.10	NTU	0.60	0.69	0.78	0.76	0.83	0.89	0.89	0.70	0.76
Anions and Nutrients (Water)											
Alkalinity, Total (as CaCO3)	2.0	mg/L	52.6	61.1	56.8	60.7	54.2	56.9	60.6	54.8	54.5
Ammonia, Total (as N)	0.0050	mg/L	0.0066	0.0075	0.0067	0.0066	0.0072	0.0069	0.0120	0.0072	0.0074
Bromide (Br)	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	0.50	mg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Fluoride (F)	0.020	mg/L	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060
Nitrate (as N)	0.0050	mg/L	0.0521	0.0519	0.0522	0.0524	0.0515	0.0518	0.0530	0.0517	0.0516
Nitrite (as N)	0.0010	mg/L	0.0018	0.0013	0.0012	0.0014	0.0013	<0.0010	0.0013	0.0011	0.0011
Total Kjeldahl Nitrogen	0.050	mg/L	0.092	0.099	0.092	0.102	0.118	0.087	0.090	0.089	0.104
Phosphorus (P)-Total Dissolved	0.0020	mg/L	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Phosphorus (P)-Total	0.0020	mg/L	0.0031	0.0027	0.0029	0.0023	0.0022	0.0022	0.0026	0.0029	0.0020
Sulfate (SO4)	0.30	mg/L	9.99	9.99	10.0	9.99	10.0	10.0	10.0	10.0	10.0
Organic / Inorganic Carbon (Water)											
Total Organic Carbon	0.50	mg/L	1.42	1.20	1.30	1.19	1.19	1.23	1.23	1.27	1.37
Total Metals (Water)											
Mercury (Hg)-Total	0.00050	ug/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Total Metals (Undigested) (Water)											
Aluminum (Al)-Total	0.00050	mg/L	0.0157	0.0171	0.0155	0.0158	0.0160	0.0164	0.0151	0.0158	0.0164
Antimony (Sb)-Total	0.000020	mg/L	0.000033	0.000026	0.000027	0.000027	0.000021	0.000025	0.000034	0.000026	0.000024
Arsenic (As)-Total	0.000020	mg/L	0.000151	0.000149	0.000151	0.000141	0.000160	0.000143	0.000221	0.000153	0.000162
Barium (Ba)-Total	0.000020	mg/L	0.0169	0.0178	0.0167	0.0170	0.0170	0.0170	0.0169	0.0167	0.0169
Beryllium (Be)-Total	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Total	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Total	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Total	0.0000050	mg/L	0.0000129	0.0000117	0.0000085	0.0000087	0.0000087	0.0000114	0.0000134	0.0000106	0.0000086
Calcium (Ca)-Total	0.030	mg/L	18.0	18.0	17.8	18.2	17.9	17.9	17.9	18.5	18.2
Chromium (Cr)-Total	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Total	0.0000050	mg/L	0.0000140	0.0000166	0.0000113	0.0000127	0.0000122	0.0000120	0.0000129	0.0000099	0.0000136
Copper (Cu)-Total	0.00010	mg/L	0.00033	0.00033	0.00029	0.00031	0.00031	0.00030	0.00030	0.00030	0.00029
Iron (Fe)-Total	0.0010	mg/L	0.0084	0.0108	0.0085	0.0086	0.0092	0.0091	0.0086	0.0084	0.0078
Lead (Pb)-Total	0.0000050	mg/L	0.0000604	0.0000551	0.0000495	0.0000458	0.0000493	0.0000484	0.0000536	0.0000426	0.0000420
Lithium (Li)-Total	0.00050	mg/L	0.00094	0.00125	0.00088	0.00083	0.00088	0.00081	0.00090	0.00079	0.00083
Magnesium (Mg)-Total	0.030	mg/L	3.96	3.96	3.87	3.98	3.90	3.93	3.90	4.08	3.94
Manganese (Mn)-Total	0.000050	mg/L	0.00163	0.00164	0.00156	0.00159	0.00162	0.00158	0.00160	0.00160	0.00156
Molybdenum (Mo)-Total	0.000050	mg/L	0.000513	0.000520	0.000515	0.000486	0.000504	0.000489	0.000513	0.000496	0.000502
Nickel (Ni)-Total	0.000050	mg/L	0.000308	0.000339	0.000272	0.000285	0.000260	0.000276	0.000260	0.000254	0.000278
Phosphorus (P)-Total	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Total	0.050	mg/L	0.630	0.581	0.561	0.577	0.556	0.576	0.572	0.600	0.567
Selenium (Se)-Total	0.000040	mg/L	0.000137	0.000136	0.000137	0.000164	0.000143	0.000163	0.000157	0.000167	0.000155
Silicon (Si)-Total	0.050	mg/L	1.36	1.34	1.35	1.35	1.35	1.34	1.33	1.39	1.36
Silver (Ag)-Total	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Total	0.010	mg/L	1.03	1.06	1.04	1.05	1.04	1.05	1.04	1.06	1.06
Strontium (Sr)-Total	0.000050	mg/L	0.108	0.109	0.108	0.106	0.105	0.105	0.104	0.104	0.108
Thallium (Tl)-Total	0.0000020	mg/L	0.0000025	0.0000035	0.0000025	<0.0000020	0.0000025	0.0000023	0.0000021	0.0000022	0.0000024
Tin (Sn)-Total	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Titanium (Ti)-Total	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Uranium (U)-Total	0.0000020	mg/L	0.000403	0.000433	0.000405	0.000407	0.000403	0.000397	0.000397	0.000400	0.000389
Vanadium (V)-Total	0.000050	mg/L	0.000119	0.000141	0.000129	0.000136	0.000143	0.000152	0.000154	0.000132	0.000141
Zinc (Zn)-Total	0.00050	mg/L	0.00189	0.00078	0.00096	0.00084	0.00090	0.00082	0.00090	0.00125	0.00089
Zirconium (Zr)-Total	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Metals (Water)											
Dissolved Mercury Filtration Location		-	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location		-	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location		-	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Aluminum (Al)-Dissolved	0.00050	mg/L	0.0104	0.00967	0.0103	0.00953	0.00978	0.00931	0.00968	0.00998	0.00933
Antimony (Sb)-Dissolved	0.000020	mg/L	0.000030	0.000030	0.000026	0.000024	0.000026	0.000023	0.000036	0.000023	0.000028
Arsenic (As)-Dissolved	0.000020	mg/L	0.000151	0.000146	0.000156	0.000147	0.000153	0.000146	0.000236	0.000143	0.000148
Barium (Ba)-Dissolved	0.000020	mg/L	0.0171	0.0166	0.0168	0.0164	0.0166	0.0168	0.0172	0.0168	0.0167
Beryllium (Be)-Dissolved	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Dissolved	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Dissolved	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Dissolved	0.0000050	mg/L	0.0000073	0.0000068	0.0000081	0.0000059	0.0000092	0.0000066	0.0000097	0.0000073	0.0000053
Calcium (Ca)-Dissolved	0.030	mg/L	17.6	17.7	17.9	18.1	18.3	18.2	18.2	18.4	18.4
Chromium (Cr)-Dissolved	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Dissolved	0.0000050	mg/L	0.0000081	0.0000069	0.0000062	0.0000074	0.0000058	0.0000074	0.0000060	0.0000069	0.0000081
Copper (Cu)-Dissolved	0.00010	mg/L	0.00031	0.00031	0.00030	0.00027	0.00029	0.00028	0.00031	0.00026	0.00034
Iron (Fe)-Dissolved	0.0010	mg/L	0.0016	0.0017	0.0016	0.0014	0.0015	0.0013	0.0014	0.0013	0.0018
Lead (Pb)-Dissolved	0.0000050	mg/L	0.0000391	0.0000244	0.0000245	0.0000202	0.0000564	0.0000187	0.0000237	0.0000120	0.0000241
Lithium (Li)-Dissolved	0.00050	mg/L	0.00085	0.00086	0.00092	0.00083	0.00087	0.00091	0.00082	0.00081	0.00087
Magnesium (Mg)-Dissolved	0.030	mg/L	3.84	3.88	3.90	3.95	3.98	3.95	3.96	3.98	4.01
Manganese (Mn)-Dissolved	0.000050	mg/L	0.000400	0.000396	0.000355	0.000302	0.000390	0.000313	0.000379	0.000307	0.000370
Mercury (Hg)-Dissolved	0.00050	ug/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Molybdenum (Mo)-Dissolved	0.000050	mg/L	0.000525	0.000489	0.000490	0.000491	0.000481	0.000502	0.000501	0.000494	0.000501
Nickel (Ni)-Dissolved	0.000050	mg/L	0.000259	0.000266	0.000245	0.000260	0.000266	0.000251	0.000269	0.000263	0.000275
Phosphorus (P)-Dissolved	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Dissolved	0.050	mg/L	0.601	0.555	0.565	0.562	0.550	0.560	0.559	0.559	0.579
Selenium (Se)-Dissolved	0.000040	mg/L	0.000146	0.000140	0.000148	0.000169	0.000140	0.000152	0.000164	0.000127	0.000156
Silicon (Si)-Dissolved	0.050	mg/L	1.29	1.31	1.31	1.33	1.34	1.34	1.33	1.35	1.35
Silver (Ag)-Dissolved	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Dissolved	0.010	mg/L	1.02	1.04	1.06	1.03	1.05	1.05	1.04	1.05	1.05
Strontium (Sr)-Dissolved	0.000050	mg/L	0.108	0.103	0.108	0.105	0.107	0.108	0.108	0.106	0.108
Thallium (Tl)-Dissolved	0.0000020	mg/L	0.0000020	0.0000029	0.0000024	0.0000021	0.0000022	<0.0000020	0.0000022	0.0000020	<0.0000020
Tin (Sn)-Dissolved	0.000010	mg/L	0.000021	0.000019	0.000011	<0.000010	<0.000010	<0.000010	0.000016	<0.000010	0.000028
Titanium (Ti)-Dissolved	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Uranium (U)-Dissolved	0.0000020	mg/L	0.000400	0.000405	0.000406	0.000397	0.000390	0.000405	0.000404	0.000395	0.000408
Vanadium (V)-Dissolved	0.000050	mg/L	0.000112	0.000111	0.000125	0.000123	0.000117	0.000123	0.000131	0.000113	0.000141
Zinc (Zn)-Dissolved	0.00050	mg/L	0.00215	0.00307	0.00238	0.00085	0.00125	0.00136	0.00180	0.00079	0.00294
Zirconium (Zr)-Dissolved	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Aggregate Organics (Water)											
BOD	2.0	mg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
COD	20	mg/L	<20	<20	<20	<20	<20	<20	<20	<20	<20

Qualifier Legend

DTC	Dissolved concentration exceeds total. Results were confirmed by re-analysis.
RRV	Reported Result Verified By Repeat Analysis

Client Sample ID		STONEY CK L 1M ABOVE BED	STONEY CK L 1M DEEP	STONEY CK L SH	WANETA COMP	MAGLIOS R SH	MAGLIOS R 1M DEEP	MAGLIOS R 1M ABOVE BED	MAGLIOS L 1M ABOVE BED	MAGLIOS L 1M DEEP	MAGLIOS L SH	DUPLICATE 1 (New Bridge RSH)
Date Sampled		16-Jul-2015	16-Jul-2015	16-Jul-2015	16-Jul-2015	17-Jul-2015	17-Jul-2015	17-Jul-2015	17-Jul-2015	17-Jul-2015	17-Jul-2015	
Time Sampled		18:40	18:50	19:00	19:40	9:00	9:10	9:25	9:40	9:50	10:00	
ALS Sample ID		L1645254-10	L1645254-11	L1645254-12	L1645254-13	L1645254-14	L1645254-15	L1645254-16	L1645254-17	L1645254-18	L1645254-19	L1645254-20
Parameter	Lowest Detection Limit	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests (Water)												
Conductivity	2.0	130	130	129	129	130	129	129	128	128	129	130
Hardness (as CaCO3)	0.50	62.6	61.1	60.9	60.5	60.3	60	59.4	61.2	60.5	60.9	61.5
pH	0.10	8.13	8.10	8.11	8.11	8.11	8.11	8.12	8.11	8.04	8.11	8.10
Total Suspended Solids	3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Total Dissolved Solids	10	72	74	76	77	73	74	73	72	71	71	78
Turbidity	0.10	0.68	0.76	0.76	0.64	0.74	0.55	0.55	0.57	0.66	0.58	0.52
Anions and Nutrients (Water)												
Alkalinity, Total (as CaCO3)	2.0	55.1	54.1	54.9	57.0	56.7	54.5	52.4	56.3	56.3	52.5	54.0
Ammonia, Total (as N)	0.0050	0.0075	0.0071	0.0076	0.0097	0.0082	0.0095	0.0080	0.0080	0.0076	0.0078	0.0154
Bromide (Br)	0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.66
Fluoride (F)	0.020	0.060	0.060	0.060	0.062	0.061	0.061	0.062	0.062	0.062	0.060	0.098
Nitrate (as N)	0.0050	0.0517	0.0514	0.0521	0.0529	0.0484	0.0480	0.0480	0.0478	0.0482	0.0478	0.0561
Nitrite (as N)	0.0010	<0.0010	0.0012	0.0011	0.0015	0.0011	0.0011	<0.0010	<0.0010	0.0012	0.0011	0.0011
Total Kjeldahl Nitrogen	0.050	0.106	0.092	0.096	0.246	0.135	0.096	0.082	0.086	0.078	0.083	0.088
Phosphorus (P)-Total Dissolved	0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Phosphorus (P)-Total	0.0020	0.0020	0.0029	0.0032	0.0042	0.0028	0.0023	0.0029	0.0034	0.0027	0.0023	0.0030
Sulfate (SO4)	0.30	10.0	10.0	10.0	10.1	10.1	10.1	10.1	10.1	10.1	10.0	12.5
Organic / Inorganic Carbon (Water)												
Total Organic Carbon	0.50	1.21	1.47	1.23	1.31	1.37	1.34	1.28	1.37	1.43	1.38	1.45
Total Metals (Water)												
Mercury (Hg)-Total	0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00121
Total Metals (Undigested) (Water)												
Aluminum (Al)-Total	0.00050	0.0156	0.0156	0.0174	0.0177	0.0160	0.0169	0.0182	0.0167	0.0160	0.0151	0.0182
Antimony (Sb)-Total	0.000020	0.000027	0.000026	0.000025	0.000055	0.000057	0.000049	0.000059	0.000049	0.000057	0.000043	0.000446
Arsenic (As)-Total	0.000020	0.000167	0.000155	0.000152	0.000146	0.000151	0.000157	0.000162	0.000137	0.000163	0.000139	0.000241
Barium (Ba)-Total	0.000020	0.0171	0.0170	0.0169	0.0169	0.0166	0.0175	0.0166	0.0167	0.0170	0.0167	0.0169
Beryllium (Be)-Total	0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Total	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Total	0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Total	0.0000050	0.0000111	0.0000123	0.0000099	0.0000169	0.0000201	0.0000140	0.0000205	0.0000151	0.0000180	0.0000163	0.000343
Calcium (Ca)-Total	0.030	18.1	18.1	18.1	17.9	17.7	17.5	18.0	17.8	17.9	17.6	18.2
Chromium (Cr)-Total	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Total	0.0000050	0.0000103	0.0000136	0.0000154	0.0000134	0.0000121	0.0000069	0.0000160	0.0000139	0.0000129	0.0000150	0.0000155
Copper (Cu)-Total	0.00010	0.00030	0.00029	0.00031	0.00033	0.00033	0.00033	0.00033	0.00032	0.00033	0.00030	0.00055
Iron (Fe)-Total	0.0010	0.0087	0.0090	0.0114	0.0104	0.0082	0.0121	0.0101	0.0086	0.0097	0.0081	0.0083
Lead (Pb)-Total	0.0000050	0.0000419	0.0000447	0.0000593	0.0000857	0.0000671	0.000149	0.0000817	0.0000601	0.0000709	0.0000482	0.000491
Lithium (Li)-Total	0.00050	0.00085	0.00076	0.00078	0.00077	0.00070	<0.00050	0.00075	0.00073	0.00078	0.00071	0.00073
Magnesium (Mg)-Total	0.030	3.94	3.90	3.97	3.89	3.85	3.77	3.90	3.84	3.86	3.80	3.84
Manganese (Mn)-Total	0.000050	0.00158	0.00164	0.00168	0.00168	0.00164	0.00175	0.00166	0.00165	0.00174	0.00160	0.00217
Molybdenum (Mo)-Total	0.000050	0.000500	0.000488	0.000499	0.000476	0.000512	0.000478	0.000514	0.000513	0.000505	0.000504	0.000553
Nickel (Ni)-Total	0.000050	0.000272	0.000360	0.000330	0.000332	0.000317	0.000312	0.000337	0.000352	0.000340	0.000318	0.000369
Phosphorus (P)-Total	0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Total	0.050	0.566	0.547	0.558	0.573	0.547	0.534	0.563	0.560	0.557	0.535	0.600
Selenium (Se)-Total	0.000040	0.000137	0.000138	0.000151	0.000185	0.000175	0.000184	0.000166	0.000154	0.000178	0.000161	0.000849
Silicon (Si)-Total	0.050	1.35	1.36	1.37	1.36	1.28	1.27	1.33	1.28	1.27	1.26	1.27
Silver (Ag)-Total	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Total	0.010	1.05	1.06	1.05	1.07	1.07	1.01	1.06	1.07	1.06	1.04	1.99
Strontium (Sr)-Total	0.000050	0.105	0.108	0.110	0.108	0.106	0.103	0.105	0.107	0.109	0.110	0.108
Thallium (Tl)-Total	0.0000020	0.0000025	0.0000025	0.0000027	0.0000083	0.0000089	0.0000081	0.0000081	0.0000066	0.0000065	0.0000044	0.000114
Tin (Sn)-Total	0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Titanium (Ti)-Total	0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Uranium (U)-Total	0.0000020	0.000387	0.000394	0.000394	0.000398	0.000395	0.000384	0.000393	0.000391	0.000406	0.000391	0.000393
Vanadium (V)-Total	0.000050	0.000147	0.000144	0.000149	0.000145	0.000145	0.000133	0.000129	0.000140	0.000157	0.000128	0.000131
Zinc (Zn)-Total	0.00050	0.00072	0.00064	0.00097	0.00072	0.00133	0.00206	0.00080	0.00078	0.00126	0.00070	0.00535
Zirconium (Zr)-Total	0.00010	<0.00010	<0.00010	<0.00010	0.00024	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Metals (Water)												
Dissolved Mercury Filtration Location		FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location		FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location		FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Aluminum (Al)-Dissolved	0.00050	0.0102	0.00952	0.0100	0.0100	0.0109	0.00974	0.0105	0.0103	0.0111	0.0104	0.0106
Antimony (Sb)-Dissolved	0.000020	0.000025	0.000033	0.000027	0.000053	0.000059	0.000074	0.000059	0.000050	0.000049	0.000041	0.000480
Arsenic (As)-Dissolved	0.000020	0.000141	0.000145	0.000155	0.000145	0.000157	0.000159	0.000152	0.000151	0.000143	0.000143	0.000245
Barium (Ba)-Dissolved	0.000020	0.0171	0.0169	0.0170	0.0169	0.0166	0.0171	0.0168	0.0166	0.0168	0.0167	0.0169
Beryllium (Be)-Dissolved	0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000011
Bismuth (Bi)-Dissolved	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000068	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Dissolved	0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Dissolved	0.0000050	0.0000080	0.0000073	0.0000069	0.0000119	0.0000104	0.0000153	0.0000138	0.0000096	0.0000134	0.0000092	**0.000309**
Calcium (Ca)-Dissolved	0.030	18.4	18.0	17.9	17.8	17.7	17.7	17.5	18.0	17.9	18.0	18.3
Chromium (Cr)-Dissolved	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Dissolved	0.0000050	0.0000054	0.0000107	0.0000070	0.0000062	0.0000073	0.0000106	0.0000066	0.0000081	<0.0000050	<0.0000050	0.0000092
Copper (Cu)-Dissolved	0.00010	0.00028	0.00027	0.00027	0.00029	0.00034	0.00032	0.00031	0.00030	0.00030	0.00029	0.00046
Iron (Fe)-Dissolved	0.0010	0.0013	0.0116	0.0013	0.0012	0.0020	0.0031	0.0016	0.0016	0.0018	0.0016	0.0019
Lead (Pb)-Dissolved	0.0000050	0.0000199	0.0000182	0.0000414	0.0000123	0.0000367	0.0000414	0.0000231	0.0000212	0.0000314	0.0000129	0.000230
Lithium (Li)-Dissolved	0.00050	0.00078	0.00079	0.00075	0.00074	0.00073	<0.00050	0.00070	0.00070	0.00076	0.00078	0.00066
Magnesium (Mg)-Dissolved	0.030	4.02	3.92	3.94	3.87	3.88	3.84	3.78	3.93	3.84	3.89	3.84
Manganese (Mn)-Dissolved	0.000050	0.000350	0.000391	0.000339	0.000326	0.000315	0.000264	0.000266	0.000270	0.000286	0.000242	0.000901
Mercury (Hg)-Dissolved	0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Molybdenum (Mo)-Dissolved	0.000050	0.000485	0.000512	0.000502	0.000511	0.000492	0.000514	0.000510	0.000511	0.000525	0.000515	0.000572
Nickel (Ni)-Dissolved	0.000050	0.000250	0.000311	0.000305	0.000317	0.000287	0.000305	0.000276	0.000283	0.000271	0.000291	0.000298
Phosphorus (P)-Dissolved	0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Dissolved	0.050	0.570	0.555	0.593	0.560	0.571	0.542	0.543	0.561	0.547	0.540	0.597
Selenium (Se)-Dissolved	0.000040	0.000162	0.000153	0.000157	0.000157	0.000169	0.000200	0.000159	0.000162	0.000178	0.000149	0.000884
Silicon (Si)-Dissolved	0.050	1.35	1.32	1.31	1.32	1.26	1.24	1.23	1.26	1.24	1.25	1.24
Silver (Ag)-Dissolved	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000066
Sodium (Na)-Dissolved	0.010	1.05	1.05	1.07	1.06	1.09	1.03	1.08	1.07	1.07	1.04	2.01
Strontium (Sr)-Dissolved	0.000050	0.109	0.108	0.105	0.105	0.105	0.108	0.108	0.110	0.109	0.108	0.108
Thallium (Tl)-Dissolved	0.0000020	0.0000020	0.0000048	0.0000024	0.0000080	0.0000078	0.0000086	0.0000076	0.0000068	0.0000067	0.0000048	0.000119
Tin (Sn)-Dissolved	0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000013	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Titanium (Ti)-Dissolved	0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Uranium (U)-Dissolved	0.0000020	0.000403	0.000406	0.000398	0.000403	0.000389	0.000386	0.000396	0.000400	0.000394	0.000389	0.000386
Vanadium (V)-Dissolved	0.000050	0.000121	0.000126	0.000133	0.000148	0.000123	0.000197	0.000130	0.000113	0.000120	0.000127	0.000150
Zinc (Zn)-Dissolved	0.00050	0.00123	0.00078	0.00091	<0.00050	0.00130	0.00138	0.00101	0.00072	0.00072	0.00062	0.00467
Zirconium (Zr)-Dissolved	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Aggregate Organics (Water)												
BOD	2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
COD	20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20

Qualifier Legend

DTC	Dissolved concentration exceec
RRV	Reported Result Verified By Re

Client Sample ID		DUPLICATE 2 (New Bridge R 1M	DUPLICATE 3 (New Bridge LSH)	FIELD BLANK	TRAVEL BLANK	OLD BRIDGE R SH	OLD BRIDGE R 1M DEEP	OLD BRIDGE R 1M ABOVE BED	OLD BRIDGE L 1M ABOVE BED	OLD BRIDGE L 1M DEEP	OLD BRIDGE L SH
Date Sampled						17-Jul-2015	17-Jul-2015	17-Jul-2015	17-Jul-2015	17-Jul-2015	17-Jul-2015
Time Sampled						11:00	11:10	11:25	11:40	11:50	12:00
ALS Sample ID		L1645254-21	L1645254-22	L1645254-23	L1645254-24	L1645254-25	L1645254-26	L1645254-27	L1645254-28	L1645254-29	L1645254-30
Parameter	Lowest Detection Limit	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests (Water)											
Conductivity	2.0	123	123	<2.0	<2.0	130	129	129	128	129	130
Hardness (as CaCO3)	0.50	59.5	59.8	<0.50	<0.50	60.3	61.3	60.8	60.7	61	61.2
pH	0.10	8.00	8.06	5.68	5.56	8.10	8.10	8.11	8.12	8.13	8.10
Total Suspended Solids	3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Total Dissolved Solids	10	66	67	<10	<10	67	69	66	69	68	70
Turbidity	0.10	0.73	0.73	<0.10	<0.10	0.47	0.50	0.63	0.64	0.66	0.70
Anions and Nutrients (Water)											
Alkalinity, Total (as CaCO3)	2.0	53.1	53.6	<2.0	<2.0	54.8	54.5	57.0	57.3	53.7	55.0
Ammonia, Total (as N)	0.0050	0.0079	0.0076	<0.0050	<0.0050	0.0103	0.0068	0.0081	0.0070	0.0076	0.0086
Bromide (Br)	0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Fluoride (F)	0.020	0.060	0.059	<0.020	<0.020	0.068	0.061	0.062	0.059	0.059	0.059
Nitrate (as N)	0.0050	0.0480	0.0468	<0.0050	<0.0050	0.0495	0.0475	0.0492	0.0472	0.0477	0.0476
Nitrite (as N)	0.0010	<0.0010	0.0012	<0.0010	<0.0010	0.0012	0.0011	0.0011	0.0012	0.0014	<0.0010
Total Kjeldahl Nitrogen	0.050	0.059	0.064	<0.050	<0.050	0.092	0.086	0.084	0.081	0.085	0.082
Phosphorus (P)-Total Dissolved	0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Phosphorus (P)-Total	0.0020	0.0026	0.0021	<0.0020	<0.0020	0.0036	0.0031	0.0029	0.0024	0.0023	0.0027
Sulfate (SO4)	0.30	10.0	9.98	<0.30	<0.30	10.6	10.1	10.2	10.0	9.97	9.98
Organic / Inorganic Carbon (Water)											
Total Organic Carbon	0.50	0.98	1.23	<0.50	<0.50	1.26	1.41	1.43	1.22	1.29	1.31
Total Metals (Water)											
Mercury (Hg)-Total	0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Total Metals (Undigested) (Water)											
Aluminum (Al)-Total	0.00050	0.0156	0.0154	<0.00050	<0.00050	0.0161	0.0163	0.0161	0.0174	0.0157	0.0183
Antimony (Sb)-Total	0.000020	0.000026	0.000022	<0.000020	<0.000020	0.000120	0.000045	0.000066	0.000028	<0.000020	0.000023
Arsenic (As)-Total	0.000020	0.000152	0.000153	<0.000020	<0.000020	0.000177	0.000148	0.000168	0.000150	0.000155	0.000154
Barium (Ba)-Total	0.000020	0.0167	0.0166	<0.000020	<0.000020	0.0169	0.0169	0.0168	0.0167	0.0166	0.0173
Beryllium (Be)-Total	0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Total	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Total	0.0050	<0.0050	<0.0050	<0.0050	0.0059	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Total	0.0000050	0.0000110	0.0000114	<0.0000050	<0.0000050	0.0000412	0.0000160	0.0000174	0.0000124	0.0000096	0.0000125
Calcium (Ca)-Total	0.030	17.3	17.8	<0.030	<0.030	18.0	17.9	18.0	17.9	18.1	18.1
Chromium (Cr)-Total	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Total	0.0000050	0.0000122	0.0000121	<0.0000050	<0.0000050	0.0000118	0.0000127	0.0000144	0.0000131	0.0000137	0.0000125
Copper (Cu)-Total	0.00010	0.00029	0.00029	<0.00010	<0.00010	0.00034	0.00030	0.00032	0.00030	0.00029	0.00030
Iron (Fe)-Total	0.0010	0.0085	0.0081	<0.0010	<0.0010	0.0090	0.0097	0.0080	0.0080	0.0077	0.0101
Lead (Pb)-Total	0.0000050	0.0000378	0.0000470	<0.0000050	<0.0000050	0.000107	0.0000601	0.0000610	0.0000396	0.0000376	0.0000994
Lithium (Li)-Total	0.00050	0.00065	0.00073	<0.00050	<0.00050	0.00071	0.00080	0.00084	0.00078	0.00084	0.00079
Magnesium (Mg)-Total	0.030	3.71	3.83	<0.030	<0.030	3.91	3.88	3.94	3.91	3.95	3.92
Manganese (Mn)-Total	0.000050	0.00167	0.00159	<0.000050	<0.000050	0.00175	0.00169	0.00162	0.00163	0.00162	0.00187
Molybdenum (Mo)-Total	0.000050	0.000510	0.000492	<0.000050	<0.000050	0.000501	0.000514	0.000497	0.000481	0.000499	0.000503
Nickel (Ni)-Total	0.000050	0.000304	0.000298	<0.000050	<0.000050	0.000298	0.000290	0.000323	0.000294	0.000317	0.000313
Phosphorus (P)-Total	0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Total	0.050	0.520	0.560	<0.050	<0.050	0.567	0.572	0.601	0.558	0.586	0.557
Selenium (Se)-Total	0.000040	0.000139	0.000126	<0.000040	<0.000040	0.000314	0.000177	0.000197	0.000180	0.000158	0.000147
Silicon (Si)-Total	0.050	1.24	1.28	<0.050	<0.050	1.29	1.28	1.32	1.27	1.29	1.29
Silver (Ag)-Total	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000079	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Total	0.010	1.02	1.02	<0.010	<0.010	1.20	1.06	1.09	1.05	1.04	1.05
Strontium (Sr)-Total	0.000050	0.106	0.106	<0.000050	<0.000050	0.105	0.110	0.106	0.102	0.106	0.107
Thallium (Tl)-Total	0.0000020	0.0000040	<0.0000020	<0.0000020	<0.0000020	0.0000230	0.0000066	0.0000094	0.0000029	0.0000022	0.0000022
Tin (Sn)-Total	0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Titanium (Ti)-Total	0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0015	<0.00050
Uranium (U)-Total	0.0000020	0.000386	0.000383	<0.0000020	<0.0000020	0.000385	0.000391	0.000390	0.000368	0.000388	0.000386
Vanadium (V)-Total	0.000050	0.000135	0.000153	<0.000050	<0.000050	0.000128	0.000138	0.000149	0.000153	0.000154	0.000149
Zinc (Zn)-Total	0.00050	<0.00050	0.00085	<0.00050	<0.00050	0.00115	0.00080	0.00085	0.00052	0.00062	0.00073
Zirconium (Zr)-Total	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Metals (Water)											
Dissolved Mercury Filtration Location		FIELD	FIELD	FIELD		FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location		FIELD	FIELD	FIELD		FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location		FIELD	FIELD	FIELD		FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Aluminum (Al)-Dissolved	0.00050	0.00969	0.0117	<0.00050		0.0102	0.00973	0.00953	0.0178	0.0102	0.00960
Antimony (Sb)-Dissolved	0.000020	0.000025	0.000029	<0.000020		0.000131	0.000042	0.000063	0.000027	0.000025	0.000031
Arsenic (As)-Dissolved	0.000020	0.000146	0.000144	<0.000020		0.000171	0.000143	0.000155	0.000158	0.000147	0.000140
Barium (Ba)-Dissolved	0.000020	0.0168	0.0168	<0.000020		0.0169	0.0170	0.0170	0.0167	0.0168	0.0177
Beryllium (Be)-Dissolved	0.000010	<0.000010	<0.000010	<0.000010		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Dissolved	0.0000050	<0.0000050	<0.0000050	<0.0000050		<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Dissolved	0.0050	<0.0050	<0.0050	<0.0050		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Dissolved	0.0000050	0.0000110	0.0000093	<0.0000050		0.0000386	0.0000120	0.0000159	0.0000064	0.0000069	0.0000087
Calcium (Ca)-Dissolved	0.030	17.6	17.7	<0.030		17.8	18.0	17.9	17.9	18.0	18.0
Chromium (Cr)-Dissolved	0.00010	<0.00010	<0.00010	<0.00010		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Dissolved	0.0000050	0.0000062	0.0000070	<0.0000050		0.0000072	0.0000066	0.0000054	0.0000062	0.0000061	0.0000083
Copper (Cu)-Dissolved	0.00010	0.00026	0.00026	<0.00010		0.00032	0.00029	0.00030	0.00028	0.00026	0.00030
Iron (Fe)-Dissolved	0.0010	0.0013	0.0015	<0.0010		0.0016	0.0012	0.0013	0.0015	0.0012	0.0020
Lead (Pb)-Dissolved	0.0000050	0.0000142	0.0000218	<0.0000050		0.0000489	0.0000206	0.0000209	0.0000101	0.0000083	0.0000284
Lithium (Li)-Dissolved	0.00050	0.00069	0.00076	<0.00050		0.00080	0.00086	0.00085	0.00084	0.00088	0.00131
Magnesium (Mg)-Dissolved	0.030	3.77	3.80	<0.030		3.84	3.95	3.88	3.86	3.91	3.94
Manganese (Mn)-Dissolved	0.000050	0.000281	0.000319	<0.000050		0.000357	0.000314	0.000320	0.000258	0.000237	0.000309
Mercury (Hg)-Dissolved	0.00050	<0.00050	<0.00050	<0.00050		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Molybdenum (Mo)-Dissolved	0.000050	0.000507	0.000513	<0.000050		0.000542	0.000530	0.000510	0.000516	0.000506	0.000512
Nickel (Ni)-Dissolved	0.000050	0.000277	0.000285	<0.000050		0.000274	0.000303	0.000267	0.000292	0.000285	0.000278
Phosphorus (P)-Dissolved	0.050	<0.050	<0.050	<0.050		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Dissolved	0.050	0.542	0.524	<0.050		0.545	0.565	0.580	0.573	0.564	0.573
Selenium (Se)-Dissolved	0.000040	0.000143	0.000126	<0.000040		0.000305	0.000188	0.000195	0.000147	0.000131	0.000150
Silicon (Si)-Dissolved	0.050	1.22	1.22	<0.050		1.24	1.27	1.26	1.26	1.25	1.27
Silver (Ag)-Dissolved	0.0000050	<0.0000050	<0.0000050	<0.0000050		<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Dissolved	0.010	1.02	1.03	<0.010		1.19	1.07	1.08	1.05	1.05	1.08
Strontium (Sr)-Dissolved	0.000050	0.108	0.106	<0.000050		0.108	0.108	0.107	0.108	0.106	0.108
Thallium (Tl)-Dissolved	0.0000020	0.0000028	0.0000022	<0.0000020		0.0000240	0.0000061	0.0000093	0.0000028	0.0000024	0.0000033
Tin (Sn)-Dissolved	0.000010	<0.000010	<0.000010	<0.000010		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Titanium (Ti)-Dissolved	0.00050	<0.00050	<0.00050	<0.00050		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Uranium (U)-Dissolved	0.0000020	0.000389	0.000394	<0.0000020		0.000405	0.000396	0.000390	0.000398	0.000400	0.000428
Vanadium (V)-Dissolved	0.000050	0.000135	0.000120	<0.000050		0.000126	0.000123	0.000126	0.000140	0.000120	0.000112
Zinc (Zn)-Dissolved	0.00050	0.00057	0.00075	<0.00050		0.00112	0.00120	0.00149	0.00056	<0.00050	0.00235
Zirconium (Zr)-Dissolved	0.00010	<0.00010	<0.00010	<0.00010		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Aggregate Organics (Water)											
BOD	2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
COD	20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20

Qualifier Legend

DTC	Dissolved concentration exceec
RRV	Reported Result Verified By Re

Client Sample ID		NEW BRIDGE R SH	NEW BRIDGE R 1M DEEP	NEW BRIDGE R 1M ABOVE BED	NEW BRIDGE L 1M ABOVE BED	NEW BRIDGE L 1M DEEP	NEW BRIDGE L SH
Date Sampled		17-Jul-2015	17-Jul-2015	17-Jul-2015	17-Jul-2015	17-Jul-2015	17-Jul-2015
Time Sampled		12:20	12:30	12:45	13:00	13:10	13:20
ALS Sample ID		L1645254-31	L1645254-32	L1645254-33	L1645254-34	L1645254-35	L1645254-36
Parameter	Lowest Detection Limit	Water	Water	Water	Water	Water	Water
Physical Tests (Water)							
Conductivity	2.0	135	128	129	128	128	128
Hardness (as CaCO3)	0.50	61.3	60.2	60.8	60.1	60.1	61
pH	0.10	8.11	8.12	8.12	8.11	8.13	8.12
Total Suspended Solids	3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Total Dissolved Solids	10	75	80	67	69	71	74
Turbidity	0.10	0.67	0.70	0.78	0.68	0.86	0.77
Anions and Nutrients (Water)							
Alkalinity, Total (as CaCO3)	2.0	54.6	55.4	53.9	56.8	58.8	58.2
Ammonia, Total (as N)	0.0050	0.0158	0.0077	0.0090	0.0068	0.0065	0.0066
Bromide (Br)	0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	0.50	0.66	<0.50	<0.50	<0.50	<0.50	<0.50
Fluoride (F)	0.020	0.098	0.060	0.060	0.059	0.060	0.059
Nitrate (as N)	0.0050	0.0559	0.0475	0.0478	0.0472	0.0470	0.0472
Nitrite (as N)	0.0010	0.0011	0.0010	0.0011	0.0011	0.0012	0.0011
Total Kjeldahl Nitrogen	0.050	0.117	0.093	0.076	0.077	0.082	0.117
Phosphorus (P)-Total Dissolved	0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Phosphorus (P)-Total	0.0020	0.0029	0.0025	0.0037	0.0024	0.0025	0.0021
Sulfate (SO4)	0.30	12.5	10.0	10.0	9.98	9.98	9.99
Organic / Inorganic Carbon (Water)							
Total Organic Carbon	0.50	1.84	1.10	1.18	1.21	1.30	1.28
Total Metals (Water)							
Mercury (Hg)-Total	0.00050	0.00085	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Total Metals (Undigested) (Water)							
Aluminum (Al)-Total	0.00050	0.0183	0.0182	0.0162	0.0183	0.0159	0.0171
Antimony (Sb)-Total	0.000020	0.000489	0.000023	0.000041	0.000028	0.000037	0.000028
Arsenic (As)-Total	0.000020	0.000264	0.000152	0.000150	0.000148	0.000147	0.000167
Barium (Ba)-Total	0.000020	0.0175	0.0167	0.0172	0.0165	0.0167	0.0177
Beryllium (Be)-Total	0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Total	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Total	0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Total	0.0000050	0.000339	0.0000116	0.0000110	0.0000108	0.0000103	0.0000096
Calcium (Ca)-Total	0.030	18.5	17.9	17.6	17.7	17.9	18.0
Chromium (Cr)-Total	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Total	0.0000050	0.0000162	0.0000120	0.0000099	0.0000147	0.0000163	0.0000166
Copper (Cu)-Total	0.00010	0.00054	0.00030	0.00028	0.00029	0.00031	0.00031
Iron (Fe)-Total	0.0010	0.0085	0.0080	0.0086	0.0111	0.0089	0.0105
Lead (Pb)-Total	0.0000050	0.000486	0.0000392	0.0000446	0.0000505	0.0000465	0.0000553
Lithium (Li)-Total	0.00050	0.00076	0.00076	0.00085	0.00069	0.00077	0.00130
Magnesium (Mg)-Total	0.030	3.92	3.91	3.86	3.83	3.89	3.91
Manganese (Mn)-Total	0.000050	0.00216	0.00159	0.00160	0.00175	0.00162	0.00168
Molybdenum (Mo)-Total	0.000050	0.000543	0.000489	0.000496	0.000502	0.000531	0.000497
Nickel (Ni)-Total	0.000050	0.000319	0.000323	0.000301	0.000291	0.000321	0.000309
Phosphorus (P)-Total	0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Total	0.050	0.609	0.556	0.569	0.560	0.569	0.562
Selenium (Se)-Total	0.000040	0.000901	0.000141	0.000152	0.000139	0.000169	0.000166
Silicon (Si)-Total	0.050	1.28	1.29	1.29	1.28	1.27	1.27
Silver (Ag)-Total	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Total	0.010	2.06	1.04	1.04	1.03	1.03	1.10
Strontium (Sr)-Total	0.000050	0.105	0.105	0.105	0.106	0.105	0.107
Thallium (Tl)-Total	0.0000020	0.000117	0.0000027	0.0000050	0.0000025	0.0000041	0.0000026
Tin (Sn)-Total	0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Titanium (Ti)-Total	0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Uranium (U)-Total	0.0000020	0.000391	0.000390	0.000387	0.000395	0.000402	0.000419
Vanadium (V)-Total	0.000050	0.000146	0.000124	0.000145	0.000141	0.000166	0.000142
Zinc (Zn)-Total	0.00050	0.00515	<0.00050	0.00053	0.00098	0.00061	<0.00050
Zirconium (Zr)-Total	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Metals (Water)							
Dissolved Mercury Filtration Location		FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location		FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location		FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Aluminum (Al)-Dissolved	0.00050	0.0108	0.0108	0.00985	0.00971	0.0100	0.0106
Antimony (Sb)-Dissolved	0.000020	0.000465	0.000022	0.000055	0.000024	0.000027	0.000027
Arsenic (As)-Dissolved	0.000020	0.000223	0.000159	0.000165	0.000161	0.000155	0.000161
Barium (Ba)-Dissolved	0.000020	0.0168	0.0165	0.0162	0.0165	0.0169	0.0176
Beryllium (Be)-Dissolved	0.000010	<0.000010	<0.000010	0.000020	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Dissolved	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Dissolved	0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Dissolved	0.0000050	**0.000326**	0.0000088	0.0000093	0.0000093	0.0000080	0.0000094
Calcium (Ca)-Dissolved	0.030	18.2	17.7	17.9	17.7	17.7	18.0
Chromium (Cr)-Dissolved	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Dissolved	0.0000050	0.0000101	0.0000084	0.0000093	0.0000067	0.0000084	0.0000096
Copper (Cu)-Dissolved	0.00010	0.00049	0.00027	0.00026	0.00028	0.00028	0.00031
Iron (Fe)-Dissolved	0.0010	0.0016	0.0017	0.0016	0.0014	0.0014	0.0017
Lead (Pb)-Dissolved	0.0000050	0.000226	0.0000109	0.0000239	0.0000211	0.0000147	0.0000229
Lithium (Li)-Dissolved	0.00050	0.00082	0.00077	0.00077	0.00070	0.00067	0.00136
Magnesium (Mg)-Dissolved	0.030	3.85	3.86	3.89	3.84	3.85	3.91
Manganese (Mn)-Dissolved	0.000050	0.000894	0.000306	0.000307	0.000370	0.000324	0.000386
Mercury (Hg)-Dissolved	0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Molybdenum (Mo)-Dissolved	0.000050	0.000548	0.000508	0.000523	0.000491	0.000490	0.000524
Nickel (Ni)-Dissolved	0.000050	0.000308	0.000256	0.000267	0.000280	0.000249	0.000308
Phosphorus (P)-Dissolved	0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Dissolved	0.050	0.588	0.530	0.579	0.544	0.552	0.573
Selenium (Se)-Dissolved	0.000040	0.000851	0.000129	0.000149	0.000144	0.000158	0.000147
Silicon (Si)-Dissolved	0.050	1.24	1.25	1.26	1.25	1.24	1.25
Silver (Ag)-Dissolved	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Dissolved	0.010	2.05	1.03	1.04	1.03	1.04	1.10
Strontium (Sr)-Dissolved	0.000050	0.108	0.106	0.108	0.106	0.104	0.108
Thallium (Tl)-Dissolved	0.0000020	0.000111	0.0000033	0.0000075	0.0000024	0.0000026	0.0000028
Tin (Sn)-Dissolved	0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000021
Titanium (Ti)-Dissolved	0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Uranium (U)-Dissolved	0.0000020	0.000379	0.000389	0.000394	0.000394	0.000387	0.000418
Vanadium (V)-Dissolved	0.000050	0.000131	0.000142	0.000132	0.000136	0.000130	0.000118
Zinc (Zn)-Dissolved	0.00050	0.00479	<0.00050	0.00058	0.00180	0.00098	0.00214
Zirconium (Zr)-Dissolved	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Aggregate Organics (Water)							
BOD	2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
COD	20	<20	<20	<20	<20	<20	<20

Qualifier Legend

DTC	Dissolved concentration exceec
RRV	Reported Result Verified By Re

Client Sample ID			BIRCH BANK R SH	BIRCH BANK R 1M DEEP	BIRCH BANK R 1M ABOVE BED	BIRCH BANK L 1M ABOVE BED	BIRCH BANK L 1M DEEP	BIRCH BANK L SH	STONEY CK R SH	STONEY CK R 1M DEEP	STONEY CK R 1M ABOVE BED
Date Sampled			19-Oct-2015	19-Oct-2015	19-Oct-2015	19-Oct-2015	19-Oct-2015	19-Oct-2015	19-Oct-2015	19-Oct-2015	19-Oct-2015
Time Sampled			16:00	16:01	16:03	16:05	16:08	16:10	16:20	16:22	16:24
ALS Sample ID			L1691592-1	L1691592-2	L1691592-3	L1691592-4	L1691592-5	L1691592-6	L1691592-7	L1691592-8	L1691592-9
Parameter	Lowest Detection Limit	Units	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests (Water)											
Conductivity	2.0	uS/cm	135	136	136	132	134	134	135	136	133
Hardness (as CaCO3)	0.50	mg/L	62.5	61.1	63.4	61.7	62.7	63.5	63.2	63.1	62.2
pH	0.10	pH	7.97	7.99	7.94	7.95	7.98	7.99	7.98	7.97	8.00
Total Suspended Solids	3.0	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Total Dissolved Solids	10	mg/L	85	85	82	83	84	85	85	85	82
Turbidity	0.10	NTU	0.45	0.41	0.39	0.38	0.44	0.39	0.39	0.35	0.35
Anions and Nutrients (Water)											
Alkalinity, Total (as CaCO3)	2.0	mg/L	55.4	54.0	58.6	59.2	58.3	57.7	57.8	56.9	58.0
Ammonia, Total (as N)	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0089	0.0064	0.0059
Bromide (Br)	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	0.50	mg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Fluoride (F)	0.020	mg/L	0.053	0.053	0.052	0.053	0.052	0.052	0.053	0.054	0.053
Nitrate (as N)	0.0050	mg/L	0.0717	0.0719	0.0707	0.0709	0.0711	0.0722	0.0738	0.0726	0.0720
Nitrite (as N)	0.0010	mg/L	<0.0010	0.0011	0.0011	0.0011	<0.0010	0.0012	0.0011	<0.0010	<0.0010
Total Kjeldahl Nitrogen	0.050	mg/L	0.080	0.085	0.079	0.083	0.082	0.078	0.080	0.080	0.082
Phosphorus (P)-Total Dissolved	0.0020	mg/L	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Phosphorus (P)-Total	0.0020	mg/L	0.0029	0.0025	0.0022	0.0023	0.0057	0.0026	0.0025	<0.0020	0.0024
Sulfate (SO4)	0.30	mg/L	11.1	11.1	11.2	11.2	11.1	11.2	11.2	11.1	11.2
Organic / Inorganic Carbon (Water)											
Total Organic Carbon	0.50	mg/L	0.89	1.01	0.96	0.99	0.94	1.00	0.99	0.96	0.96
Total Metals (Water)											
Mercury (Hg)-Total	0.00050	ug/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00100	<0.00050	<0.00050
Total Metals (Undigested) (Water)											
Aluminum (Al)-Total	0.00050	mg/L	0.0125	0.0112	0.0104	0.0103	0.0111	0.0104	0.0119	0.0107	0.0111
Antimony (Sb)-Total	0.000020	mg/L	0.000022	0.000026	<0.000020	<0.000020	<0.000020	<0.000020	0.000029	<0.000020	0.000021
Arsenic (As)-Total	0.000020	mg/L	0.000136	0.000141	0.000139	0.000136	0.000134	0.000143	0.000172	0.000141	0.000136
Barium (Ba)-Total	0.000020	mg/L	0.0167	0.0165	0.0168	0.0167	0.0165	0.0165	0.0168	0.0167	0.0167
Beryllium (Be)-Total	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Total	0.0000050	mg/L	0.0000078	0.0000057	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Total	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Total	0.0000050	mg/L	0.0000085	0.0000073	0.0000068	<0.0000050	0.0000078	0.0000077	<0.0000050	<0.0000050	<0.0000050
Calcium (Ca)-Total	0.030	mg/L	17.8	17.5	18.2	17.9	18.2	17.9	18.4	18.3	18.2
Chromium (Cr)-Total	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Total	0.0000050	mg/L	0.0000092	0.0000075	0.0000069	0.0000080	0.0000089	0.0000087	0.0000104	0.0000076	0.0000107
Copper (Cu)-Total	0.00010	mg/L	0.00034	0.00027	0.00029	0.00027	0.00028	0.00028	0.00031	0.00028	0.00029
Iron (Fe)-Total	0.0010	mg/L	0.0067	0.0064	0.0063	0.0061	0.0057	0.0056	0.0080	0.0055	0.0054
Lead (Pb)-Total	0.0000050	mg/L	0.0000373	0.0000282	0.0000268	0.0000217	0.0000341	0.0000219	0.000135	0.0000345	0.0000253
Lithium (Li)-Total	0.00050	mg/L	0.00109	0.00108	0.00110	0.00108	0.00108	0.00101	0.00091	0.00111	0.00102
Magnesium (Mg)-Total	0.030	mg/L	4.23	4.13	4.31	4.24	4.33	4.27	4.36	4.34	4.31
Manganese (Mn)-Total	0.000050	mg/L	0.00128	0.00116	0.00114	0.00126	0.00115	0.00131	0.00133	0.00125	0.00127
Molybdenum (Mo)-Total	0.000050	mg/L	0.000450	0.000452	0.000462	0.000450	0.000440	0.000449	0.000472	0.000464	0.000463
Nickel (Ni)-Total	0.000050	mg/L	0.000403	0.000350	0.000380	0.000369	0.000396	0.000353	0.000359	0.000400	0.000367
Phosphorus (P)-Total	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Total	0.050	mg/L	0.625	0.631	0.597	0.609	0.591	0.591	0.624	0.599	0.596
Selenium (Se)-Total	0.000040	mg/L	0.000087	0.000114	0.000100	0.000118	0.000121	0.000088	0.000119	0.000092	0.000090
Silicon (Si)-Total	0.050	mg/L	1.17	1.13	1.18	1.16	1.18	1.18	1.20	1.20	1.18
Silver (Ag)-Total	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Total	0.010	mg/L	1.14	1.12	1.17	1.14	1.16	1.15	1.15	1.16	1.16
Strontium (Sr)-Total	0.000050	mg/L	0.116	0.115	0.116	0.117	0.115	0.114	0.115	0.116	0.115
Thallium (Tl)-Total	0.0000020	mg/L	0.0000082	0.0000056	0.0000048	0.0000053	0.0000047	0.0000035	0.0000042	0.0000038	0.0000047
Tin (Sn)-Total	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Titanium (Ti)-Total	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Uranium (U)-Total	0.0000020	mg/L	0.000394	0.000382	0.000394	0.000387	0.000391	0.000385	0.000391	0.000390	0.000394
Vanadium (V)-Total	0.000050	mg/L	0.000099	0.000104	0.000096	0.000094	0.000096	0.000098	0.000099	0.000092	0.000094
Zinc (Zn)-Total	0.00050	mg/L	0.00364	0.00104	0.00076	0.00060	0.00081	<0.00050	0.00077	0.00108	0.00078
Zirconium (Zr)-Total	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Metals (Water)											
Dissolved Mercury Filtration Location		-	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location		-	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location		-	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Aluminum (Al)-Dissolved	0.00050	mg/L	0.00760	0.00753	0.00662	0.00659	0.00704	0.00666	0.00668	0.00797	0.00695
Antimony (Sb)-Dissolved	0.000020	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	0.000022	0.000028	<0.000020
Arsenic (As)-Dissolved	0.000020	mg/L	0.000136	0.000130	0.000135	0.000120	0.000127	0.000145	0.000147	0.000129	0.000126
Barium (Ba)-Dissolved	0.000020	mg/L	0.0166	0.0163	0.0168	0.0162	0.0165	0.0166	0.0166	0.0164	0.0165
Beryllium (Be)-Dissolved	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Dissolved	0.0000050	mg/L	0.0000066	0.0000055	<0.0000050	<0.0000050	<0.0000050	0.0000077	<0.0000050	0.0000053	<0.0000050
Boron (B)-Dissolved	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Dissolved	0.0000050	mg/L	0.0000052	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000053	<0.0000050
Calcium (Ca)-Dissolved	0.030	mg/L	18.0	17.6	18.3	17.8	18.1	18.3	18.2	18.2	17.9
Chromium (Cr)-Dissolved	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Dissolved	0.0000050	mg/L	0.0000054	<0.0000050	0.0000052	<0.0000050	<0.0000050	0.0000063	0.0000053	<0.0000050	0.0000056
Copper (Cu)-Dissolved	0.00010	mg/L	0.00027	0.00026	0.00027	0.00025	0.00029	0.00028	0.00028	0.00028	0.00027
Iron (Fe)-Dissolved	0.0010	mg/L	0.0012	<0.0010	<0.0010	<0.0010	0.0011	0.0016	0.0011	0.0013	0.0011
Lead (Pb)-Dissolved	0.0000050	mg/L	0.0000141	0.0000126	0.0000087	0.0000076	0.0000096	0.0000179	0.0000175	0.0000153	0.0000068
Lithium (Li)-Dissolved	0.00050	mg/L	0.00111	0.00111	0.00104	0.00102	0.00101	0.00098	0.00099	0.00105	0.00105
Magnesium (Mg)-Dissolved	0.030	mg/L	4.27	4.17	4.33	4.21	4.29	4.34	4.32	4.30	4.24
Manganese (Mn)-Dissolved	0.000050	mg/L	0.000264	0.000190	0.000209	0.000168	0.000196	0.000246	0.000215	0.000216	0.000207
Mercury (Hg)-Dissolved	0.00050	ug/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00055
Molybdenum (Mo)-Dissolved	0.000050	mg/L	0.000449	0.000464	0.000452	0.000462	0.000465	0.000505	0.000455	0.000456	0.000472
Nickel (Ni)-Dissolved	0.000050	mg/L	0.000344	0.000333	0.000347	0.000332	0.000381	0.000358	0.000361	0.000359	0.000360
Phosphorus (P)-Dissolved	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Dissolved	0.050	mg/L	0.614	0.575	0.609	0.573	0.578	0.599	0.613	0.622	0.614
Selenium (Se)-Dissolved	0.000040	mg/L	0.000118	0.000104	0.000099	0.000113	0.000093	0.000123	0.000116	0.000109	0.000090
Silicon (Si)-Dissolved	0.050	mg/L	1.16	1.14	1.18	1.14	1.16	1.19	1.18	1.18	1.15
Silver (Ag)-Dissolved	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000075	<0.0000050
Sodium (Na)-Dissolved	0.010	mg/L	1.14	1.15	1.14	1.12	1.16	1.15	1.15	1.16	1.13
Strontium (Sr)-Dissolved	0.000050	mg/L	0.116	0.115	0.115	0.113	0.114	0.117	0.115	0.115	0.116
Thallium (Tl)-Dissolved	0.0000020	mg/L	0.0000056	0.0000043	0.0000039	0.0000040	0.0000044	0.0000049	0.0000040	<0.0000020	0.0000035
Tin (Sn)-Dissolved	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Titanium (Ti)-Dissolved	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Uranium (U)-Dissolved	0.0000020	mg/L	0.000393	0.000386	0.000393	0.000383	0.000386	0.000393	0.000398	0.000400	0.000386
Vanadium (V)-Dissolved	0.000050	mg/L	0.000099	0.000072	0.000088	0.000091	0.000104	0.000130	0.000098	0.000086	0.000088
Zinc (Zn)-Dissolved	0.00050	mg/L	0.00329	0.00126	0.00121	0.00052	0.00070	0.00083	0.00073	0.00089	0.00051
Zirconium (Zr)-Dissolved	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Aggregate Organics (Water)											
BOD	2.0	mg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
COD	20	mg/L	<20	<20	<20	<20	<20	<20	<20	<20	<20

Qualifier Legend

HTD	Hold time exceeded for re-analysis or dilution, but initial testing was conducted within hold time.
SP	Sample was Preserved at the laboratory
DTC	Dissolved concentration exceeds total. Results were confirmed by re-analysis.

Client Sample ID		STONEY CK L 1M ABOVE BED	STONEY CK L 1M DEEP	STONEY CK L SH	MAGLIOS R SH	MAGLIOS R 1M DEEP	MAGLIOS R 1M ABOVE BED	MAGLIOS L 1M ABOVE BED	MAGLIOS L 1M DEEP	MAGLIOS L SH	WANETA COMP	DUPLICATE 1 (New Bridge RSH)
Date Sampled		19-Oct-2015	19-Oct-2015	19-Oct-2015	19-Oct-2015	19-Oct-2015	19-Oct-2015	19-Oct-2015	19-Oct-2015	19-Oct-2015	20-Oct-2015	20-Oct-2015
Time Sampled		16:25	16:26	16:27	18:00	18:10	18:20	18:30	18:40	18:50	9:00	9:00
ALS Sample ID		L1691592-10	L1691592-11	L1691592-12	L1691592-13	L1691592-14	L1691592-15	L1691592-16	L1691592-17	L1691592-18	L1691592-19	L1691592-20
Parameter	Lowest Detection Limit	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests (Water)												
Conductivity	2.0	134	134	134	134	133	135	135	137	136	136	150
Hardness (as CaCO3)	0.50	62.6	62	62.9	63.4	62.2	64.8	62.5	62.8	61.7	62.1	68.4
pH	0.10	8.02	8.01	7.99	7.97	7.98	8.01	8.00	7.99	8.02	7.99	8.01
Total Suspended Solids	3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Total Dissolved Solids	10	80	81	81	83	86	86	79	78	84	83	91
Turbidity	0.10	0.36	0.31	0.38	0.35	0.40	0.36	0.44	0.32	0.61	0.50	0.37
Anions and Nutrients (Water)												
Alkalinity, Total (as CaCO3)	2.0	58.3	59.6	56.2	60.8	59.8	58.3	56.7	58.3	58.0	58.7	57.5
Ammonia, Total (as N)	0.0050	<0.0050	<0.0050	<0.0050	0.0096	0.0211	0.0082	0.0075	0.0086	0.0075	0.0086	0.0424
Bromide (Br)	0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.84
Fluoride (F)	0.020	0.053	0.054	0.055	0.056	0.056	0.056	0.055	0.056	0.054	0.058	0.108
Nitrate (as N)	0.0050	0.0719	0.0720	0.0720	0.076	0.0747	0.0746	0.0747	0.0747	0.0767	0.0776	0.0906
Nitrite (as N)	0.0010	<0.0010	0.0013	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0011	<0.0010	<0.0010
Total Kjeldahl Nitrogen	0.050	0.104	0.081	0.088	0.089	0.100	0.083	0.101	0.090	0.088	0.097	0.126
Phosphorus (P)-Total Dissolved	0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Phosphorus (P)-Total	0.0020	0.0020	0.0024	0.0027	0.0028	0.0028	0.0026	0.0024	0.0034	0.0031	0.0026	0.0024
Sulfate (SO4)	0.30	11.2	11.2	11.2	11.6	11.5	11.6	11.4	11.5	11.5	11.6	17.0
Organic / Inorganic Carbon (Water)												
Total Organic Carbon	0.50	0.97	0.87	1.06	1.03	1.09	0.84	0.79	0.97	0.91	0.98	0.98
Total Metals (Water)												
Mercury (Hg)-Total	0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00124
Total Metals (Undigested) (Water)												
Aluminum (Al)-Total	0.00050	0.0107	0.0105	0.0131	0.0114	0.0106	0.0102	0.00950	0.0107	0.0100	0.0110	0.0113
Antimony (Sb)-Total	0.000020	<0.000020	<0.000020	<0.000020	0.000070	0.000061	0.000056	0.000046	0.000062	0.000048	0.000057	0.000378
Arsenic (As)-Total	0.000020	0.000129	0.000120	0.000171	0.000138	0.000126	0.000150	0.000139	0.000142	0.000120	0.000149	0.000256
Barium (Ba)-Total	0.000020	0.0166	0.0168	0.0186	0.0166	0.0171	0.0168	0.0167	0.0166	0.0164	0.0168	0.0171
Beryllium (Be)-Total	0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Total	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Total	0.0050	0.0054	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Total	0.0000050	0.0000053	0.0000064	0.0000054	0.0000217	0.0000207	0.0000172	0.0000137	0.0000128	0.0000125	0.0000212	0.000677
Calcium (Ca)-Total	0.030	18.4	18.1	18.1	18.5	18.1	18.1	18.1	18.1	18.0	18.0	19.8
Chromium (Cr)-Total	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Total	0.0000050	0.0000074	0.0000075	0.0000122	0.0000076	0.0000088	0.0000078	0.0000087	0.0000138	0.0000083	0.0000092	0.0000203
Copper (Cu)-Total	0.00010	0.00031	0.00027	0.00032	0.00033	0.00032	0.00032	0.00031	0.00031	0.00030	0.00059	0.00091
Iron (Fe)-Total	0.0010	0.0059	0.0056	0.0061	0.0058	0.0062	0.0059	0.0064	0.0058	0.0058	0.0062	0.0056
Lead (Pb)-Total	0.0000050	0.0000276	0.0000459	0.0000381	0.0000709	0.000234	0.0000593	0.0000410	0.0000527	0.0000409	0.0000570	0.000757
Lithium (Li)-Total	0.00050	0.00105	0.00106	0.00111	0.00118	0.00102	0.00113	0.00121	0.00105	0.00110	0.00100	0.00122
Magnesium (Mg)-Total	0.030	4.36	4.30	4.29	4.35	4.30	4.26	4.27	4.26	4.22	4.24	4.26
Manganese (Mn)-Total	0.000050	0.00126	0.00118	0.00137	0.00163	0.00154	0.00142	0.00146	0.00144	0.00148	0.00163	0.00412
Molybdenum (Mo)-Total	0.000050	0.000457	0.000426	0.000458	0.000461	0.000457	0.000452	0.000467	0.000477	0.000441	0.00141	0.000521
Nickel (Ni)-Total	0.000050	0.000442	0.000393	0.000453	0.000395	0.000368	0.000397	0.000410	0.000417	0.000365	0.000397	0.000400
Phosphorus (P)-Total	0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Total	0.050	0.662	0.607	0.639	0.603	0.722	0.634	0.613	0.590	0.612	0.622	0.591
Selenium (Se)-Total	0.000040	0.000110	0.000123	0.000116	0.000194	0.000166	0.000164	0.000109	0.000152	0.000167	0.000169	**0.000921**
Silicon (Si)-Total	0.050	1.20	1.18	1.19	1.22	1.20	1.18	1.19	1.18	1.18	1.19	1.20
Silver (Ag)-Total	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000087	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Total	0.010	1.16	1.14	1.29	1.26	1.25	1.26	1.22	1.22	1.20	1.22	1.71
Strontium (Sr)-Total	0.000050	0.116	0.115	0.116	0.117	0.116	0.117	0.117	0.116	0.115	0.119	0.120
Thallium (Tl)-Total	0.0000020	0.0000041	0.0000038	0.0000028	0.0000277	0.0000252	0.0000276	0.0000137	0.0000199	0.0000152	0.0000178	**0.000409**
Tin (Sn)-Total	0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Titanium (Ti)-Total	0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Uranium (U)-Total	0.0000020	0.000386	0.000388	0.000391	0.000392	0.000388	0.000391	0.000391	0.000392	0.000388	0.000388	0.000409
Vanadium (V)-Total	0.000050	0.000097	0.000118	0.000115	0.000114	0.000110	0.000096	0.000089	0.000105	0.000110	0.000096	0.000104
Zinc (Zn)-Total	0.00050	0.00053	0.00058	0.00062	0.00096	0.00075	0.00105	0.00078	0.00069	0.00053	0.00078	**0.00788**
Zirconium (Zr)-Total	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Metals (Water)												
Dissolved Mercury Filtration Location		FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location		FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location		FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Aluminum (Al)-Dissolved	0.00050	0.00723	0.00696	0.00641	0.00723	0.00654	0.00725	0.00665	0.00708	0.00723	0.00678	0.00713
Antimony (Sb)-Dissolved	0.000020	<0.000020	<0.000020	<0.000020	0.000076	0.000057	0.000065	0.000056	0.000045	0.000043	0.000052	0.000367
Arsenic (As)-Dissolved	0.000020	0.000128	0.000137	0.000127	0.000156	0.000125	0.000139	0.000141	0.000157	0.000147	0.000156	0.000190
Barium (Ba)-Dissolved	0.000020	0.0166	0.0167	0.0170	0.0166	0.0164	0.0166	0.0166	0.0168	0.0166	0.0169	0.0167
Beryllium (Be)-Dissolved	0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Dissolved	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Dissolved	0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Dissolved	0.0000050	0.0000051	<0.0000050	<0.0000050	0.0000183	0.0000157	0.0000179	0.0000103	0.0000119	0.0000095	0.0000158	**0.000645**
Calcium (Ca)-Dissolved	0.030	18.0	17.9	18.2	18.3	17.9	18.8	18.0	18.1	17.8	17.9	20.2
Chromium (Cr)-Dissolved	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Dissolved	0.0000050	<0.0000050	0.0000052	0.0000052	<0.0000050	<0.0000050	<0.0000050	0.0000055	0.0000061	<0.0000050	0.0000058	0.0000170
Copper (Cu)-Dissolved	0.00010	0.00027	0.00026	0.00026	0.00031	0.00029	0.00028	0.00029	0.00028	0.00028	0.00034	0.00079
Iron (Fe)-Dissolved	0.0010	0.0012	0.0011	0.0015	<0.0010	<0.0010	0.0010	<0.0010	0.0010	0.0011	<0.0010	0.0014
Lead (Pb)-Dissolved	0.0000050	0.0000082	0.0000290	0.0000106	0.0000183	0.0000187	0.0000173	0.0000254	0.0000110	0.0000108	0.0000137	0.000408
Lithium (Li)-Dissolved	0.00050	0.00108	0.00107	0.00106	0.00112	0.00111	0.00109	0.00116	0.00107	0.00104	0.00114	0.00124
Magnesium (Mg)-Dissolved	0.030	4.27	4.23	4.28	4.31	4.23	4.37	4.24	4.27	4.20	4.22	4.36
Manganese (Mn)-Dissolved	0.000050	0.000187	0.000274	0.000242	0.000466	0.000434	0.000446	0.000406	0.000426	0.000461	0.000460	0.00276
Mercury (Hg)-Dissolved	0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00057
Molybdenum (Mo)-Dissolved	0.000050	0.000455	0.000455	0.000453	0.000458	0.000458	0.000446	0.000449	0.000471	0.000462	0.00148	0.000507
Nickel (Ni)-Dissolved	0.000050	0.000348	0.000358	0.000358	0.000394	0.000380	0.000392	0.000382	0.000394	0.000363	0.000405	0.000361
Phosphorus (P)-Dissolved	0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Dissolved	0.050	0.606	0.590	0.578	0.577	0.640	0.600	0.609	0.652	0.586	0.561	0.632
Selenium (Se)-Dissolved	0.000040	0.000096	0.000091	0.000124	0.000185	0.000169	0.000151	0.000107	0.000143	0.000110	0.000163	0.000873
Silicon (Si)-Dissolved	0.050	1.16	1.16	1.18	1.19	1.16	1.20	1.17	1.18	1.15	1.18	1.21
Silver (Ag)-Dissolved	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Dissolved	0.010	1.16	1.14	1.16	1.28	1.24	1.27	1.21	1.19	1.18	1.22	1.70
Strontium (Sr)-Dissolved	0.000050	0.116	0.115	0.115	0.117	0.116	0.116	0.117	0.117	0.116	0.122	0.120
Thallium (Tl)-Dissolved	0.0000020	0.0000032	0.0000035	0.0000031	0.0000272	0.0000232	0.0000281	0.0000154	0.0000166	0.0000151	0.0000178	0.000405
Tin (Sn)-Dissolved	0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Titanium (Ti)-Dissolved	0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Uranium (U)-Dissolved	0.0000020	0.000389	0.000392	0.000380	0.000388	0.000396	0.000388	0.000390	0.000398	0.000390	0.000394	0.000409
Vanadium (V)-Dissolved	0.000050	0.000092	0.000083	0.000098	0.000093	0.000086	0.000105	0.000087	0.000094	0.000096	0.000101	0.000099
Zinc (Zn)-Dissolved	0.00050	<0.00050	<0.00050	<0.00050	0.00069	0.00058	0.00071	0.00060	<0.00050	0.00055	0.00093	0.00756
Zirconium (Zr)-Dissolved	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Aggregate Organics (Water)												
BOD	2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
COD	20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20

Qualifier Legend

HTD	Hold time exceeded for re-analysis
SP	Sample was Preserved at the labor
DTC	Dissolved concentration exceeds t

Client Sample ID		DUPLICATE 2 (New Bridge R 1M Deep)	DUPLICATE 3 (New Bridge LSH)	FIELD BLANK	TRAVEL BLANK	OLD BRIDGE R SH	OLD BRIDGE R 1M DEEP	OLD BRIDGE R 1M ABOVE BED	OLD BRIDGE L 1M ABOVE BED	OLD BRIDGE L 1M DEEP	OLD BRIDGE L SH
Date Sampled		20-Oct-2015	20-Oct-2015	20-Oct-2015	20-Oct-2015	20-Oct-2015	20-Oct-2015	20-Oct-2015	20-Oct-2015	20-Oct-2015	20-Oct-2015
Time Sampled		9:00	9:00	9:00	9:00	10:45	10:46	10:47	10:48	10:49	10:50
ALS Sample ID		L1691592-21	L1691592-22	L1691592-23	L1691592-24	L1691592-25	L1691592-26	L1691592-27	L1691592-28	L1691592-29	L1691592-30
Parameter	Lowest Detection Limit	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests (Water)											
Conductivity	2.0	134	137	<2.0	<2.0	135	136	134	134	135	137
Hardness (as CaCO3)	0.50	62	63.5	<0.50	<0.50	64.8	62.4	63.4	62.6	62.5	64
pH	0.10	8.00	8.02	5.81	5.72	7.97	7.99	7.99	8.02	8.06	8.02
Total Suspended Solids	3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Total Dissolved Solids	10	84	84	<10	<10	85	84	83	83	87	85
Turbidity	0.10	0.36	0.34	<0.10	<0.10	0.35	0.37	0.37	0.36	0.32	0.33
Anions and Nutrients (Water)											
Alkalinity, Total (as CaCO3)	2.0	57.7	39.9	<2.0	<2.0	60.0	59.3	57.2	57.3	56.8	57.5
Ammonia, Total (as N)	0.0050	0.0059	0.0247	<0.0050	<0.0050	0.0141	0.0122	0.0099	0.0059	0.0056	0.0195
Bromide (Br)	0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.52
Fluoride (F)	0.020	0.053	0.054	<0.020	<0.020	0.061	0.058	0.057	0.053	0.055	0.054
Nitrate (as N)	0.0050	0.0734	0.0849	<0.0050	<0.0050	0.0785	0.0772	0.0765	0.0764	0.0730	0.0858
Nitrite (as N)	0.0010	<0.0010	0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0011	<0.0010	<0.0010
Total Kjeldahl Nitrogen	0.050	0.086	0.111	<0.050	<0.050	0.093	0.089	0.078	0.078	0.089	0.096
Phosphorus (P)-Total Dissolved	0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Phosphorus (P)-Total	0.0020	0.0021	0.0024	<0.0020	<0.0020	0.0031	0.0026	<0.0020	0.0040	0.0023	0.0024
Sulfate (SO4)	0.30	11.1	11.6	<0.30	<0.30	11.9	11.6	11.6	11.2	11.2	11.7
Organic / Inorganic Carbon (Water)											
Total Organic Carbon	0.50	0.78	0.85	<0.50	<0.50	0.90	0.73	0.71	0.80	0.74	0.74
Total Metals (Water)											
Mercury (Hg)-Total	0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Total Metals (Undigested) (Water)											
Aluminum (Al)-Total	0.00050	0.00944	0.00952	<0.00050	<0.00050	0.0105	0.0110	0.0115	0.0104	0.0123	0.0108
Antimony (Sb)-Total	0.000020	<0.000020	<0.000020	<0.000020	<0.000020	0.000083	0.000060	0.000050	0.000022	0.000024	0.000021
Arsenic (As)-Total	0.000020	0.000135	0.000131	<0.000020	<0.000020	0.000144	0.000162	0.000148	0.000133	0.000142	0.000166
Barium (Ba)-Total	0.000020	0.0166	0.0169	<0.000020	<0.000020	0.0166	0.0169	0.0166	0.0167	0.0166	0.0168
Beryllium (Be)-Total	0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Total	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000329	<0.0000050	<0.0000050	<0.0000050	0.0000051	<0.0000050
Boron (B)-Total	0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Total	0.0000050	0.0000083	0.0000060	<0.0000050	<0.0000050	0.0000543	0.0000394	0.0000269	0.0000084	0.0000082	0.0000093
Calcium (Ca)-Total	0.030	17.8	18.1	<0.030	<0.030	18.5	18.1	18.1	18.2	18.2	18.1
Chromium (Cr)-Total	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Total	0.0000050	0.0000094	0.0000102	<0.0000050	<0.0000050	0.0000111	0.0000121	0.0000099	0.0000092	0.0000096	0.0000082
Copper (Cu)-Total	0.00010	0.00027	0.00027	<0.00010	<0.00010	0.00035	0.00034	0.00033	0.00028	0.00029	0.00029
Iron (Fe)-Total	0.0010	0.0052	0.0056	<0.0010	<0.0010	0.0056	0.0060	0.0057	0.0058	0.0060	0.0053
Lead (Pb)-Total	0.0000050	0.0000224	0.0000323	<0.0000050	<0.0000050	0.0000838	0.000128	0.0000685	0.0000334	0.0000284	0.0000837
Lithium (Li)-Total	0.00050	0.00112	0.00108	<0.00050	<0.00050	0.00107	0.00117	0.00105	0.00102	0.00111	0.00116
Magnesium (Mg)-Total	0.030	4.20	4.27	<0.030	<0.030	4.33	4.28	4.27	4.31	4.30	4.27
Manganese (Mn)-Total	0.000050	0.00127	0.00214	<0.000050	<0.000050	0.00180	0.00169	0.00150	0.00138	0.00144	0.00207
Molybdenum (Mo)-Total	0.000050	0.000454	0.000458	<0.000050	<0.000050	0.000442	0.000463	0.000472	0.000455	0.000455	0.000459
Nickel (Ni)-Total	0.000050	0.000388	0.000409	<0.000050	<0.000050	0.000391	0.000394	0.000377	0.000380	0.000384	0.000385
Phosphorus (P)-Total	0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Total	0.050	0.632	0.596	<0.050	<0.050	0.597	0.607	0.610	0.617	0.617	0.586
Selenium (Se)-Total	0.000040	0.000107	0.000099	<0.000040	<0.000040	0.000241	0.000150	0.000191	0.000118	0.000113	0.000134
Silicon (Si)-Total	0.050	1.18	1.18	<0.050	<0.050	1.22	1.20	1.20	1.20	1.19	1.20
Silver (Ag)-Total	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000080	<0.0000050
Sodium (Na)-Total	0.010	1.07	1.12	<0.010	<0.010	1.25	1.19	1.17	1.13	1.13	1.19
Strontium (Sr)-Total	0.000050	0.117	0.118	<0.000050	<0.000050	0.118	0.117	0.116	0.116	0.118	0.119
Thallium (Tl)-Total	0.0000020	0.0000036	0.0000031	<0.0000020	<0.0000020	0.0000554	0.0000362	0.0000371	0.0000065	0.0000079	0.0000032
Tin (Sn)-Total	0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Titanium (Ti)-Total	0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Uranium (U)-Total	0.0000020	0.000382	0.000405	<0.0000020	<0.0000020	0.000394	0.000385	0.000399	0.000391	0.000395	0.000410
Vanadium (V)-Total	0.000050	0.000104	0.000108	<0.000050	<0.000050	0.000128	0.000093	0.000099	0.000104	0.000106	0.000100
Zinc (Zn)-Total	0.00050	0.00050	<0.00050	<0.00050	<0.00050	0.00138	0.00145	0.00087	0.00051	<0.00050	0.00059
Zirconium (Zr)-Total	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Metals (Water)											
Dissolved Mercury Filtration Location		FIELD	FIELD	FIELD		FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location		FIELD	FIELD	FIELD		FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location		FIELD	FIELD	FIELD		FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Aluminum (Al)-Dissolved	0.00050	0.00627	0.00680	<0.00050		0.00825	0.00646	0.00687	0.00724	0.00681	0.00665
Antimony (Sb)-Dissolved	0.000020	<0.000020	<0.000020	<0.000020		0.000132	0.000052	0.000051	<0.000020	<0.000020	<0.000020
Arsenic (As)-Dissolved	0.000020	0.000133	0.000122	<0.000020		0.000166	0.000137	0.000131	0.000119	0.000133	0.000125
Barium (Ba)-Dissolved	0.000020	0.0166	0.0168	<0.000020		0.0169	0.0165	0.0164	0.0168	0.0161	0.0169
Beryllium (Be)-Dissolved	0.000010	<0.000010	<0.000010	<0.000010		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Dissolved	0.0000050	<0.0000050	<0.0000050	0.0000112		<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Dissolved	0.0050	<0.0050	<0.0050	<0.0050		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Dissolved	0.0000050	0.0000089	0.0000066	<0.0000050		0.0000442	0.0000331	0.0000285	0.0000080	0.0000065	0.0000082
Calcium (Ca)-Dissolved	0.030	17.9	18.3	<0.030		19.0	18.0	18.3	18.0	18.0	18.4
Chromium (Cr)-Dissolved	0.00010	<0.00010	<0.00010	<0.00010		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Dissolved	0.0000050	0.0000057	0.0000066	<0.0000050		0.0000106	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000073
Copper (Cu)-Dissolved	0.00010	0.00025	0.00026	<0.00010		0.00082	0.00029	0.00029	0.00027	0.00026	0.00027
Iron (Fe)-Dissolved	0.0010	0.0010	0.0012	<0.0010		0.0093	0.0029	0.0010	0.0016	0.0011	0.0011
Lead (Pb)-Dissolved	0.0000050	0.0000143	0.0000095	<0.0000050		0.000123	0.0000207	0.0000206	0.0000146	0.0000121	0.0000221
Lithium (Li)-Dissolved	0.00050	0.00101	0.00107	<0.00050		0.00112	0.00113	0.00110	0.00114	0.00108	0.00105
Magnesium (Mg)-Dissolved	0.030	4.22	4.33	<0.030		4.23	4.22	4.30	4.28	4.25	4.36
Manganese (Mn)-Dissolved	0.000050	0.000312	0.00114	<0.000050		0.00188	0.000594	0.000515	0.000357	0.000330	0.000942
Mercury (Hg)-Dissolved	0.00050	<0.00050	<0.00050	<0.00050		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Molybdenum (Mo)-Dissolved	0.000050	0.000441	0.000440	<0.000050		0.000487	0.000467	0.000470	0.000466	0.000457	0.000456
Nickel (Ni)-Dissolved	0.000050	0.000403	0.000373	<0.000050		0.000539	0.000346	0.000362	0.000354	0.000370	0.000390
Phosphorus (P)-Dissolved	0.050	<0.050	<0.050	<0.050		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Dissolved	0.050	0.600	0.614	<0.050		0.619	0.638	0.629	0.579	0.597	0.658
Selenium (Se)-Dissolved	0.000040	0.000108	0.000089	<0.000040		0.000230	0.000156	0.000150	0.000103	0.000072	0.000110
Silicon (Si)-Dissolved	0.050	1.17	1.20	<0.050		1.19	1.18	1.19	1.19	1.18	1.19
Silver (Ag)-Dissolved	0.0000050	<0.0000050	<0.0000050	<0.0000050		<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Dissolved	0.010	1.09	1.12	<0.010		1.53	1.17	1.17	1.12	1.10	1.19
Strontium (Sr)-Dissolved	0.000050	0.116	0.117	<0.000050		0.120	0.117	0.116	0.117	0.114	0.120
Thallium (Tl)-Dissolved	0.0000020	0.0000035	0.0000031	<0.0000020		0.0000566	0.0000342	0.0000353	0.0000061	0.0000038	0.0000032
Tin (Sn)-Dissolved	0.000010	<0.000010	<0.000010	<0.000010		0.000016	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Titanium (Ti)-Dissolved	0.00050	<0.00050	<0.00050	<0.00050		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Uranium (U)-Dissolved	0.0000020	0.000384	0.000398	<0.0000020		0.000398	0.000397	0.000390	0.000393	0.000383	0.000386
Vanadium (V)-Dissolved	0.000050	0.000093	0.000092	<0.000050		0.000104	0.000090	0.000088	0.000087	0.000093	0.000091
Zinc (Zn)-Dissolved	0.00050	0.00053	<0.00050	<0.00050		0.00238	0.00085	0.00080	<0.00050	<0.00050	0.00054
Zirconium (Zr)-Dissolved	0.00010	<0.00010	<0.00010	<0.00010		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Aggregate Organics (Water)											
BOD	2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
COD	20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20

Qualifier Legend

HTD	Hold time exceeded for re-analysis
SP	Sample was Preserved at the labor
DTC	Dissolved concentration exceeds t

Client Sample ID		NEW BRIDGE R SH	NEW BRIDGE R 1M DEEP	NEW BRIDGE R 1M ABOVE BED	NEW BRIDGE L 1M ABOVE BED	NEW BRIDGE L 1M DEEP	NEW BRIDGE L SH
Date Sampled		20-Oct-2015	20-Oct-2015	20-Oct-2015	20-Oct-2015	20-Oct-2015	
Time Sampled		10:55	10:56	10:57	10:58	10:59	
ALS Sample ID		L1691592-31	L1691592-32	L1691592-33	L1691592-34	L1691592-35	L1691592-36
Parameter	Lowest Detection Limit	Water	Water	Water	Water	Water	Water
Physical Tests (Water)							
Conductivity	2.0	152	135	136	135	134	133
Hardness (as CaCO3)	0.50	66.8	62	61.8	61.6	62.4	62.7
pH	0.10	8.03	8.03	8.01	8.03	8.05	7.92
Total Suspended Solids	3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Total Dissolved Solids	10	94	82	84	85	83	85
Turbidity	0.10	0.51	0.34	0.35	0.39	0.36	0.33
Anions and Nutrients (Water)							
Alkalinity, Total (as CaCO3)	2.0	57.2	57.5	58.0	58.7	56.2	58.9
Ammonia, Total (as N)	0.0050	0.0420	0.0057	0.0059	0.0072	0.0065	0.0251
Bromide (Br)	0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	0.50	0.84	<0.50	<0.50	<0.50	<0.50	<0.50
Fluoride (F)	0.020	0.109	0.055	0.055	0.053	0.053	0.053
Nitrate (as N)	0.0050	0.0914	0.0743	0.0717	0.0753	0.0751	0.0832
Nitrite (as N)	0.0010	0.0015	<0.0010	0.0012	<0.0010	0.0011	<0.0010
Total Kjeldahl Nitrogen	0.050	0.123	0.082	0.090	0.106	0.100	0.124
Phosphorus (P)-Total Dissolved	0.0020	0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Phosphorus (P)-Total	0.0020	0.0023	0.0022	0.0023	0.0026	0.0031	0.0021
Sulfate (SO4)	0.30	17.0	11.1	11.1	11.1	11.1	11.7
Organic / Inorganic Carbon (Water)							
Total Organic Carbon	0.50	0.80	0.75	0.69	0.86	0.78	0.74
Total Metals (Water)							
Mercury (Hg)-Total	0.00050	0.00128	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Total Metals (Undigested) (Water)							
Aluminum (Al)-Total	0.00050	0.00999	0.0105	0.00991	0.0115	0.0108	0.0124
Antimony (Sb)-Total	0.000020	0.000380	<0.000020	<0.000020	<0.000020	<0.000020	0.000073
Arsenic (As)-Total	0.000020	0.000224	0.000130	0.000130	0.000145	0.000127	0.000240
Barium (Ba)-Total	0.000020	0.0171	0.0168	0.0168	0.0170	0.0169	0.0169
Beryllium (Be)-Total	0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Total	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Total	0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Total	0.0000050	0.000666	0.0000116	0.0000096	0.0000069	0.0000091	0.0000083
Calcium (Ca)-Total	0.030	19.9	19.0	17.8	17.8	17.9	17.9
Chromium (Cr)-Total	0.00010	<0.00010	<0.00010	0.00019	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Total	0.0000050	0.0000204	0.0000083	0.0000114	0.0000076	0.0000082	0.0000108
Copper (Cu)-Total	0.00010	0.00092	0.00029	0.00029	0.00029	0.00027	0.00028
Iron (Fe)-Total	0.0010	0.0064	0.0065	0.0067	0.0058	0.0073	0.0056
Lead (Pb)-Total	0.0000050	0.000824	0.0000324	0.0000224	0.0000246	0.0000222	0.0000333
Lithium (Li)-Total	0.00050	0.00129	0.00110	0.00113	0.00111	0.00116	0.00119
Magnesium (Mg)-Total	0.030	4.30	4.27	4.21	4.21	4.22	4.23
Manganese (Mn)-Total	0.000050	0.00401	0.00138	0.00135	0.00141	0.00136	0.00225
Molybdenum (Mo)-Total	0.000050	0.000525	0.000450	0.000437	0.000456	0.000437	0.000461
Nickel (Ni)-Total	0.000050	0.000385	0.000382	0.000387	0.000381	0.000387	0.000394
Phosphorus (P)-Total	0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Total	0.050	0.651	0.594	0.598	0.640	0.605	0.588
Selenium (Se)-Total	0.000040	**0.00102**	0.000092	0.000081	0.000093	0.000097	0.000112
Silicon (Si)-Total	0.050	1.20	1.19	1.17	1.17	1.17	1.17
Silver (Ag)-Total	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Total	0.010	1.73	1.10	1.10	1.09	1.09	1.14
Strontium (Sr)-Total	0.000050	0.122	0.119	0.118	0.118	0.118	0.119
Thallium (Tl)-Total	0.0000020	**0.000411**	0.0000036	0.0000032	0.0000024	0.0000022	0.0000029
Tin (Sn)-Total	0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Titanium (Ti)-Total	0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Uranium (U)-Total	0.0000020	0.000411	0.000393	0.000391	0.000385	0.000387	0.000400
Vanadium (V)-Total	0.000050	0.000105	0.000103	0.000112	0.000114	0.000099	0.000110
Zinc (Zn)-Total	0.00050	**0.00755**	0.00054	<0.00050	<0.00050	<0.00050	<0.00050
Zirconium (Zr)-Total	0.00010	<0.00010	0.00024	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Metals (Water)							
Dissolved Mercury Filtration Location		FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location		FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location		FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Aluminum (Al)-Dissolved	0.00050	0.00683	0.00662	0.00702	0.00674	0.00695	0.00603
Antimony (Sb)-Dissolved	0.000020	0.000362	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Arsenic (As)-Dissolved	0.000020	0.000229	0.000130	0.000125	0.000138	0.000127	0.000150
Barium (Ba)-Dissolved	0.000020	0.0168	0.0166	0.0166	0.0166	0.0168	0.0167
Beryllium (Be)-Dissolved	0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Dissolved	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Dissolved	0.0050	0.0051	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Dissolved	0.0000050	**0.000652**	0.0000075	<0.0000050	<0.0000050	<0.0000050	0.0000066
Calcium (Ca)-Dissolved	0.030	19.7	17.9	17.8	17.7	18.0	18.1
Chromium (Cr)-Dissolved	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Dissolved	0.0000050	0.0000146	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000065
Copper (Cu)-Dissolved	0.00010	0.00080	0.00027	0.00025	0.00025	0.00025	0.00026
Iron (Fe)-Dissolved	0.0010	0.0012	0.0012	0.0011	0.0011	0.0037	0.0011
Lead (Pb)-Dissolved	0.0000050	0.000436	0.0000090	0.0000077	<0.0000050	0.0000063	0.0000083
Lithium (Li)-Dissolved	0.00050	0.00115	0.00114	0.00102	0.00111	0.00111	0.00115
Magnesium (Mg)-Dissolved	0.030	4.27	4.22	4.20	4.20	4.24	4.27
Manganese (Mn)-Dissolved	0.000050	0.00297	0.000333	0.000328	0.000465	0.000450	0.00110
Mercury (Hg)-Dissolved	0.00050	0.00056	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Molybdenum (Mo)-Dissolved	0.000050	0.000491	0.000463	0.000447	0.000448	0.000444	0.000449
Nickel (Ni)-Dissolved	0.000050	0.000366	0.000350	0.000352	0.000355	0.000368	0.000374
Phosphorus (P)-Dissolved	0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Dissolved	0.050	0.638	0.621	0.607	0.605	0.586	0.631
Selenium (Se)-Dissolved	0.000040	0.000948	0.000110	0.000102	0.000107	0.000098	0.000090
Silicon (Si)-Dissolved	0.050	1.18	1.17	1.15	1.16	1.17	1.18
Silver (Ag)-Dissolved	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Dissolved	0.010	1.78	1.11	1.08	1.10	1.09	1.13
Strontium (Sr)-Dissolved	0.000050	0.118	0.117	0.116	0.117	0.118	0.118
Thallium (Tl)-Dissolved	0.0000020	0.000407	0.0000039	0.0000034	0.0000025	0.0000025	0.0000027
Tin (Sn)-Dissolved	0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Titanium (Ti)-Dissolved	0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Uranium (U)-Dissolved	0.0000020	0.000409	0.000388	0.000389	0.000395	0.000391	0.000403
Vanadium (V)-Dissolved	0.000050	0.000100	0.000097	0.000099	0.000089	0.000093	0.000088
Zinc (Zn)-Dissolved	0.00050	0.00765	0.00063	<0.00050	<0.00050	<0.00050	<0.00050
Zirconium (Zr)-Dissolved	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Aggregate Organics (Water)							
BOD	2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
COD	20	<20	<20	<20	<20	<20	<20

Qualifier Legend

HTD	Hold time exceeded for re-analysis
SP	Sample was Preserved at the labor
DTC	Dissolved concentration exceeds t

Client Sample ID			BIRCHBANK RSH	STONEY CREEK RUSH	WANETA RSH	MAGLIOS RSH	OLD BRIDGE RSH	NEW BRIDGE RSH	DUPLICATE (NEW BRIDGE RSH)	FIELD BLANK	TRAVEL BLANK
Date Sampled			9-Mar-2016	9-Mar-2016	9-Mar-2016	9-Mar-2016	9-Mar-2016	9-Mar-2016	9-Mar-2016	9-Mar-2016	9-Mar-2016
Time Sampled			11:35	12:01	12:43	13:30	13:58	14:35	0:00	0:00	0:00
ALS Sample ID			L1743861-1	L1743861-2	L1743861-3	L1743861-4	L1743861-5	L1743861-6	L1743861-7	L1743861-8	L1743861-9
Parameter	Lowest Detection Limit	Units	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests (Water)											
Conductivity	2.0	uS/cm	155	156	156	156	161	176	174	<2.0	<2.0
Hardness (as CaCO3)	0.50	mg/L	73.4	71.9	72.7	75.1	74.6	79.1	78.3	<0.50	
pH	0.10	pH	8.02	7.98	7.99	8.06	7.97	8.00	8.00	5.48	5.59
Total Suspended Solids	3.0	mg/L	<3.0	4.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Total Dissolved Solids	10	mg/L	93	83	97	89	87	98	103	<10	<10
Turbidity	0.10	NTU	0.36	0.36	0.33	0.30	0.36	0.35	0.34	<0.10	<0.10
Anions and Nutrients (Water)											
Alkalinity, Total (as CaCO3)	2.0	mg/L	68.5	66.3	65.8	67.3	67.0	66.2	65.0	<2.0	<2.0
Ammonia, Total (as N)	0.0050	mg/L	<0.0050	0.0123	0.0118	0.0127	0.0218	0.0603	0.0600		
Bromide (Br)	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	0.50	mg/L	1.16	1.25	1.24	1.21	1.34	1.88	1.86	<0.50	<0.50
Fluoride (F)	0.020	mg/L	0.072	0.073	0.075	0.075	0.086	0.154	0.152	<0.020	<0.020
Nitrate (as N)	0.0050	mg/L	0.153	0.155	0.159	0.158	0.162	0.177	0.175	<0.0050	<0.0050
Nitrite (as N)	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	0.050	mg/L	0.082	0.089	0.105	0.103	0.116	0.135	0.152		
Phosphorus (P)-Total Dissolved	0.0020	mg/L	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Phosphorus (P)-Total	0.0020	mg/L	0.0043	0.0043	0.0038	0.0048	0.0032	0.0040	0.0044		
Sulfate (SO4)	0.30	mg/L	12.2	12.3	12.7	12.6	13.7	19.6	19.3	<0.30	<0.30
Organic / Inorganic Carbon (Water)											
Total Organic Carbon	0.50	mg/L	1.10	1.34	1.43	1.29	1.26	1.27	1.29		
Total Metals (Water)											
Mercury (Hg)-Total	0.00050	ug/L	<0.00050	0.00118	0.00060	0.00061	0.00099	0.00187	0.00209	<0.00050	<0.00050
Total Metals (Undigested) (Water)											
Aluminum (Al)-Total	0.00050	mg/L	0.0121	0.0158	0.0146	0.0146	0.0142	0.0132	0.0150	<0.00050	<0.00050
Antimony (Sb)-Total	0.000020	mg/L	0.000053	0.000109	0.000121	0.000099	0.000222	0.00115	0.00117	<0.000020	<0.000020
Arsenic (As)-Total	0.000020	mg/L	0.000270	0.000560	0.000331	0.000323	0.000456	0.00154	0.00158	<0.000020	<0.000020
Barium (Ba)-Total	0.000020	mg/L	0.0244	0.0241	0.0242	0.0241	0.0241	0.0243	0.0246	<0.000020	<0.000020
Beryllium (Be)-Total	0.000010	mg/L	<0.000010	<0.000010	<0.000010	0.000012	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Total	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Total	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Total	0.0000050	mg/L	0.0000100	0.0000456	0.0000335	0.0000408	0.0000959	0.000411	0.000420	<0.0000050	<0.0000050
Calcium (Ca)-Total	0.030	mg/L	21.1	20.8	21.3	21.4	21.6	23.2	23.1	<0.030	<0.030
Chromium (Cr)-Total	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Total	0.0000050	mg/L	0.0000131	0.0000148	0.0000149	0.0000162	0.0000144	0.0000236	0.0000323	<0.0000050	<0.0000050
Copper (Cu)-Total	0.00010	mg/L	0.00037	0.00038	0.00040	0.00038	0.00049	0.00067	0.00078	<0.00010	<0.00010
Iron (Fe)-Total	0.0010	mg/L	0.0146	0.0158	0.0144	0.0140	0.0141	0.0133	0.0161	<0.0010	<0.0010
Lead (Pb)-Total	0.000010	mg/L	0.000090	0.000149	0.000101	0.000113	0.000190	0.000711	0.000791	<0.000010	<0.000010
Lithium (Li)-Total	0.00050	mg/L	0.00164	0.00164	0.00161	0.00157	0.00147	0.00162	0.00160	<0.00050	<0.00050
Magnesium (Mg)-Total	0.030	mg/L	4.91	4.85	4.92	5.01	4.98	5.06	5.09	<0.030	<0.030
Manganese (Mn)-Total	0.000050	mg/L	0.00179	0.00197	0.00236	0.00237	0.00272	0.00507	0.00522	<0.000050	<0.000050
Molybdenum (Mo)-Total	0.000050	mg/L	0.000544	0.000555	0.000547	0.000551	0.000610	0.000941	0.000926	<0.000050	<0.000050
Nickel (Ni)-Total	0.000050	mg/L	0.000263	0.000235	0.000230	0.000267	0.000249	0.000241	0.000333	<0.000050	<0.000050
Phosphorus (P)-Total	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Total	0.050	mg/L	0.634	0.671	0.661	0.657	0.681	0.752	0.759	<0.050	<0.050
Selenium (Se)-Total	0.000040	mg/L	0.000362	0.000356	0.000413	0.000417	0.000650	**0.00217**	**0.00213**	<0.000040	<0.000040
Silicon (Si)-Total	0.050	mg/L	2.34	2.52	2.48	2.45	2.51	2.46	2.47	<0.050	<0.050
Silver (Ag)-Total	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Total	0.010	mg/L	1.98	2.04	2.15	2.08	2.34	4.21	4.27	<0.010	<0.010
Strontium (Sr)-Total	0.000050	mg/L	0.107	0.106	0.106	0.107	0.107	0.108	0.109	<0.000050	<0.000050
Thallium (Tl)-Total	0.0000020	mg/L	<0.0000020	<0.0000020	0.0000201	0.0000272	0.000119	**0.000837**	**0.000851**	<0.0000020	<0.0000020
Tin (Sn)-Total	0.000020	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Titanium (Ti)-Total	0.00050	mg/L	<0.00050	0.00054	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	<0.00050	<0.00050
Uranium (U)-Total	0.0000020	mg/L	0.000577	0.000559	0.000565	0.000574	0.000564	0.000576	0.000584	<0.0000020	<0.0000020
Vanadium (V)-Total	0.000050	mg/L	0.000080	0.000136	0.000135	0.000139	0.000132	0.000129	0.000154	<0.000050	<0.000050
Zinc (Zn)-Total	0.00050	mg/L	0.00380	0.00437	0.00291	0.00266	0.00426	**0.00907**	**0.00978**	<0.00050	<0.00050
Zirconium (Zr)-Total	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Metals (Water)											
Dissolved Mercury Filtration Location		-	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location		-	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	LAB	
Dissolved Metals Filtration Location		-	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	LAB	
Aluminum (Al)-Dissolved	0.00050	mg/L	0.00576	0.00652	0.00608	0.00544	0.00581	0.00619	0.00614	<0.00050	
Antimony (Sb)-Dissolved	0.000020	mg/L	0.000056	0.000103	0.000138	0.000094	0.000229	0.00112	0.00116	<0.000020	
Arsenic (As)-Dissolved	0.000020	mg/L	0.000284	0.000581	0.000326	0.000286	0.000464	0.00155	0.00155	<0.000020	
Barium (Ba)-Dissolved	0.000020	mg/L	0.0246	0.0239	0.0237	0.0239	0.0240	0.0243	0.0248	<0.000020	
Beryllium (Be)-Dissolved	0.000010	mg/L	<0.000010	<0.000010	0.000018	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Bismuth (Bi)-Dissolved	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
Boron (B)-Dissolved	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Cadmium (Cd)-Dissolved	0.0000050	mg/L	0.0000105	0.0000411	0.0000236	0.0000310	0.0000849	**0.000392**	**0.000407**	<0.0000050	
Calcium (Ca)-Dissolved	0.030	mg/L	21.2	20.8	21.1	21.6	21.6	23.2	23.1	<0.030	
Chromium (Cr)-Dissolved	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Cobalt (Co)-Dissolved	0.0000050	mg/L	0.0000059	0.0000071	0.0000110	0.0000089	0.0000109	0.0000216	0.0000231	<0.0000050	
Copper (Cu)-Dissolved	0.00010	mg/L	0.00034	0.00034	0.00038	0.00039	0.00042	0.00066	0.00066	<0.00010	
Iron (Fe)-Dissolved	0.0010	mg/L	0.0044	0.0049	0.0052	0.0046	0.0046	0.0040	0.0041	<0.0010	
Lead (Pb)-Dissolved	0.0000050	mg/L	0.0000344	0.0000452	0.0000379	0.0000840	0.0000758	0.000355	0.000369	<0.0000050	
Lithium (Li)-Dissolved	0.00050	mg/L	0.00152	0.00163	0.00161	0.00148	0.00148	0.00154	0.00161	<0.00050	
Magnesium (Mg)-Dissolved	0.030	mg/L	4.96	4.85	4.86	5.13	5.01	5.13	5.03	<0.030	
Manganese (Mn)-Dissolved	0.000050	mg/L	0.000980	0.00102	0.00150	0.00149	0.00192	0.00442	0.00444	<0.000050	
Mercury (Hg)-Dissolved	0.00050	ug/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00079	0.00073	<0.00050	<0.00050
Molybdenum (Mo)-Dissolved	0.000050	mg/L	0.000546	0.000558	0.000573	0.000571	0.000610	0.000920	0.000936	<0.000050	
Nickel (Ni)-Dissolved	0.000050	mg/L	0.000222	0.000217	0.000207	0.000241	0.000216	0.000230	0.000223	<0.000050	
Phosphorus (P)-Dissolved	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
Potassium (K)-Dissolved	0.050	mg/L	0.650	0.672	0.665	0.675	0.681	0.776	0.755	<0.050	
Selenium (Se)-Dissolved	0.000040	mg/L	0.000365	0.000372	0.000437	0.000384	0.000615	0.00220	0.00222	<0.000040	
Silicon (Si)-Dissolved	0.050	mg/L	2.35	2.50	2.43	2.47	2.51	2.48	2.44	<0.050	
Silver (Ag)-Dissolved	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
Sodium (Na)-Dissolved	0.010	mg/L	2.01	2.04	2.14	2.03	2.32	4.25	4.29	<0.010	
Strontium (Sr)-Dissolved	0.00010	mg/L	0.107	0.105	0.107	0.106	0.106	0.108	0.109	<0.00010	
Thallium (Tl)-Dissolved	0.0000020	mg/L	<0.0000020	0.0000024	0.0000236	0.0000204	0.000118	0.000838	0.000846	<0.0000020	
Tin (Sn)-Dissolved	0.000010	mg/L	0.000013	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Titanium (Ti)-Dissolved	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	
Uranium (U)-Dissolved	0.0000020	mg/L	0.000574	0.000546	0.000558	0.000567	0.000566	0.000579	0.000589	<0.0000020	
Vanadium (V)-Dissolved	0.000050	mg/L	0.000094	0.000116	0.000131	0.000100	0.000112	0.000097	0.000120	<0.000050	
Zinc (Zn)-Dissolved	0.00050	mg/L	0.00335	0.00468	0.00266	0.00277	0.00417	0.00834	0.00858	<0.00050	
Zirconium (Zr)-Dissolved	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Aggregate Organics (Water)											
BOD	2.0	mg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
COD	20	mg/L	<20	<20	<20	<20	<20	<20	<20		

Client Sample ID			BIRCH BANK R-SH	BIRCH BANK R-1MD	BIRCH BANK R- 1MAB	BIRCH BANK L- 1MAB	BIRCH BANK L-1MD	BIRCH BANK L-SH	STONEY CK R-SH	STONEY CK R-1MD	STONEY CK R-1MAB	STONEY CK L-1MAB	STONEY CK L-1MD	STONEY CK L-SH
Date Sampled			15-Mar-2016	15-Mar-2016	15-Mar-2016	15-Mar-2016	15-Mar-2016	15-Mar-2016	15-Mar-2016	15-Mar-2016	15-Mar-2016	15-Mar-2016	15-Mar-2016	15-Mar-2016
Time Sampled			16:17	16:18	16:21	16:23	16:24	16:25	17:36	17:38	17:39	17:42	17:43	17:44
ALS Sample ID			L1746315-1	L1746315-2	L1746315-3	L1746315-4	L1746315-5	L1746315-6	L1746315-7	L1746315-8	L1746315-9	L1746315-10	L1746315-11	L1746315-12
Parameter	Lowest Detection Limit	Units	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests (Water)														
Conductivity	2.0	uS/cm	158	157	159	158	158	156	156	158	159	157	159	159
Hardness (as CaCO3)	0.50	mg/L	73.5	72.6	72.6	72.5	72.8	72.5	70.8	71.4	72.2	72.2	72.5	72.5
pH	0.10	pH	8.03	8.03	8.04	8.04	8.03	8.04	8.04	8.05	8.06	8.05	8.06	8.06
Total Suspended Solids	3.0	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Total Dissolved Solids	10	mg/L	90	87	80	89	92	81	77	81	88	84	98	91
Turbidity	0.10	NTU	0.33	0.35	0.34	0.33	0.35	0.38	0.38	0.37	0.41	0.43	0.37	0.36
Anions and Nutrients (Water)														
Alkalinity, Total (as CaCO3)	1.0	mg/L	64.2	65.2	64.9	64.6	64.4	65.2	64.1	65.2	65.3	64.0	65.0	64.7
Ammonia, Total (as N)	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0135	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Bromide (Br)	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	0.10	mg/L	1.14	1.13	1.13	1.13	1.13	1.12	1.20	1.13	1.13	1.13	1.13	1.14
Fluoride (F)	0.020	mg/L	0.073	0.073	0.073	0.073	0.073	0.073	0.073	0.072	0.073	0.073	0.073	0.073
Nitrate (as N)	0.0050	mg/L	0.151	0.152	0.152	0.152	0.152	0.150	0.150	0.150	0.150	0.151	0.150	0.152
Nitrite (as N)	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	0.050	mg/L	0.058	0.057	0.065	0.085	0.081	0.070	0.062	0.054	<0.050	<0.050	0.051	0.057
Phosphorus (P)-Total Dissolved	0.0020	mg/L	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0031	<0.0020
Phosphorus (P)-Total	0.0020	mg/L	0.0034	0.0037	0.0027	0.0038	0.0025	0.0036	0.0037	0.0036	0.0029	0.0045	0.0043	0.0041
Sulfate (SO4)	0.050	mg/L	11.9	11.9	11.9	11.9	11.9	11.9	12.1	11.9	11.9	11.9	11.9	12.0
Organic / Inorganic Carbon (Water)														
Total Organic Carbon	0.50	mg/L	1.34	1.21	1.24	1.37	1.20	1.19	1.19	1.29	1.30	1.31	1.21	1.21
Total Metals (Water)														
Mercury (Hg)-Total	0.00050	ug/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00054	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Total Metals (Undigested) (Water)														
Aluminum (Al)-Total	0.00050	mg/L	0.0126	0.0124	0.0119	0.0121	0.0127	0.0123	0.0142	0.0128	0.0125	0.0114	0.0124	0.0114
Antimony (Sb)-Total	0.000020	mg/L	0.000054	0.000051	0.000053	0.000039	0.000043	0.000043	0.000124	0.000046	0.000047	0.000049	0.000050	0.000050
Arsenic (As)-Total	0.000020	mg/L	0.000281	0.000332	0.000288	0.000274	0.000297	0.000288	0.000727	0.000303	0.000307	0.000304	0.000305	0.000284
Barium (Ba)-Total	0.000020	mg/L	0.0244	0.0246	0.0242	0.0243	0.0242	0.0244	0.0245	0.0242	0.0243	0.0245	0.0244	0.0238
Beryllium (Be)-Total	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Total	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Total	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Total	0.0000050	mg/L	0.0000198	0.0000138	0.0000160	0.0000120	0.0000118	0.0000146	0.0000580	0.0000171	0.0000109	0.0000118	0.0000090	0.0000118
Calcium (Ca)-Total	0.030	mg/L	20.9	20.9	20.8	20.9	21.1	21.0	20.3	20.6	20.7	20.7	20.6	20.7
Chromium (Cr)-Total	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Total	0.0000050	mg/L	0.0000110	0.0000142	0.0000147	0.0000147	0.0000107	0.0000152	0.0000137	0.0000121	0.0000106	0.0000115	0.0000145	0.0000103
Copper (Cu)-Total	0.00010	mg/L	0.00039	0.00035	0.00034	0.00032	0.00035	0.00035	0.00040	0.00035	0.00032	0.00034	0.00034	0.00032
Iron (Fe)-Total	0.0010	mg/L	0.0157	0.0147	0.0135	0.0133	0.0129	0.0139	0.0147	0.0146	0.0131	0.0134	0.0132	0.0130
Lead (Pb)-Total	0.000010	mg/L	0.000139	0.000084	0.000068	0.000068	0.000066	0.000067	0.000153	0.000071	0.000066	0.000071	0.000065	0.000082
Lithium (Li)-Total	0.00050	mg/L	0.00118	0.00128	0.00118	0.00119	0.00150	0.00151	0.00139	0.00137	0.00141	0.00136	0.00134	0.00142
Magnesium (Mg)-Total	0.030	mg/L	4.90	4.91	4.90	4.94	4.96	4.95	4.77	4.87	4.92	4.93	4.92	4.90
Manganese (Mn)-Total	0.000050	mg/L	0.00199	0.00189	0.00181	0.00171	0.00193	0.00179	0.00192	0.00180	0.00168	0.00172	0.00176	0.00166
Molybdenum (Mo)-Total	0.000050	mg/L	0.000575	0.000588	0.000578	0.000547	0.000586	0.000581	0.000588	0.000558	0.000551	0.000568	0.000557	0.000590
Nickel (Ni)-Total	0.000050	mg/L	0.000269	0.000256	0.000226	0.000215	0.000246	0.000203	0.000248	0.000247	0.000253	0.000242	0.000315	0.000225
Phosphorus (P)-Total	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Total	0.050	mg/L	0.661	0.657	0.640	0.664	0.651	0.652	0.657	0.651	0.657	0.654	0.661	0.664
Selenium (Se)-Total	0.000040	mg/L	0.000326	0.000356	0.000390	0.000354	0.000323	0.000360	0.000338	0.000357	0.000355	0.000357	0.000340	0.000336
Silicon (Si)-Total	0.050	mg/L	2.36	2.37	2.36	2.38	2.38	2.38	2.56	2.38	2.41	2.41	2.41	2.38
Silver (Ag)-Total	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Total	0.010	mg/L	1.98	2.00	1.98	1.95	2.02	1.97	2.02	1.96	1.98	1.94	1.94	1.92
Strontium (Sr)-Total	0.000050	mg/L	0.108	0.110	0.109	0.102	0.107	0.108	0.105	0.106	0.106	0.105	0.105	0.111
Thallium (Tl)-Total	0.0000020	mg/L	0.0000073	0.0000063	0.0000078	<0.0000020	0.0000020	0.0000021	0.0000024	<0.0000020	0.0000023	<0.0000020	0.0000022	<0.0000020
Tin (Sn)-Total	0.000020	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Titanium (Ti)-Total	0.00050	mg/L	0.00053	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00052	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Uranium (U)-Total	0.0000020	mg/L	0.000598	0.000609	0.000616	0.000575	0.000603	0.000603	0.000588	0.000594	0.000603	0.000600	0.000602	0.000649
Vanadium (V)-Total	0.000050	mg/L	0.000147	0.000155	0.000155	0.000145	0.000172	0.000164	0.000169	0.000160	0.000155	0.000160	0.000140	0.000154
Zinc (Zn)-Total	0.00050	mg/L	0.00420	0.00154	0.00155	0.00140	0.00173	0.00164	0.00375	0.00141	0.00168	0.00138	0.00168	0.00175
Zirconium (Zr)-Total	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Metals (Water)														
Dissolved Mercury Filtration Location		-	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location		-	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location		-	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Aluminum (Al)-Dissolved	0.00050	mg/L	0.00555	0.00562	0.00554	0.00588	0.00545	0.00528	0.00706	0.00600	0.00520	0.00695	0.00668	0.00846
Antimony (Sb)-Dissolved	0.000020	mg/L	0.000048	0.000046	0.000046	0.000046	0.000042	0.000052	0.000130	0.000050	0.000043	0.000050	0.000046	0.000045
Arsenic (As)-Dissolved	0.000020	mg/L	0.000278	0.000282	0.000294	0.000279	0.000284	0.000287	0.000724	0.000286	0.000273	0.000290	0.000277	0.000300
Barium (Ba)-Dissolved	0.000020	mg/L	0.0243	0.0242	0.0244	0.0241	0.0238	0.0241	0.0243	0.0243	0.0243	0.0240	0.0243	0.0243
Beryllium (Be)-Dissolved	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Dissolved	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Dissolved	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Dissolved	0.0000050	mg/L	0.0000177	0.0000142	0.0000106	0.0000059	0.0000102	0.0000080	0.0000518	0.0000144	0.0000122	0.0000149	0.0000089	0.0000100
Calcium (Ca)-Dissolved	0.030	mg/L	21.2	20.9	21.0	20.9	21.0	20.9	20.4	20.6	20.8	20.8	20.9	20.9
Chromium (Cr)-Dissolved	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Dissolved	0.0000050	mg/L	0.0000065	0.0000074	0.0000072	0.0000069	0.0000077	0.0000060	0.0000092	0.0000082	0.0000066	0.0000113	0.0000082	0.0000090
Copper (Cu)-Dissolved	0.00010	mg/L	0.00032	0.00033	0.00031	0.00031	0.00031	0.00032	0.00036	0.00031	0.00033	0.00034	0.00032	0.00033
Iron (Fe)-Dissolved	0.0010	mg/L	0.0042	0.0043	0.0043	0.0045	0.0046	0.0040	0.0048	0.0042	0.0042	0.0046	0.0045	0.0077
Lead (Pb)-Dissolved	0.0000050	mg/L	0.0000318	0.0000193	0.0000164	0.0000155	0.0000150	0.0000132	0.0000471	0.0000157	0.0000203	0.0000209	0.0000197	0.0000222
Lithium (Li)-Dissolved	0.00050	mg/L	0.00130	0.00128	0.00129	0.00142	0.00141	0.00149	0.00142	0.00133	0.00144	0.00128	0.00133	0.00130
Magnesium (Mg)-Dissolved	0.030	mg/L	4.97	4.93	4.93	4.92	4.95	4.94	4.82	4.85	4.93	4.92	4.95	4.96
Manganese (Mn)-Dissolved	0.000050	mg/L	0.00104	0.00108	0.00102	0.000966	0.000997	0.00105	0.00118	0.000976	0.00100	0.000982	0.000981	0.00106
Mercury (Hg)-Dissolved	0.00050	ug/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Molybdenum (Mo)-Dissolved	0.000050	mg/L	0.000586	0.000571	0.000588	0.000579	0.000571	0.000583	0.000600	0.000563	0.000566	0.000576	0.000570	0.000567
Nickel (Ni)-Dissolved	0.000050	mg/L	0.000229	0.000230	0.000217	0.000210	0.000236	0.000221	0.000212	0.000255	0.000222	0.000271	0.000218	0.000224
Phosphorus (P)-Dissolved	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Dissolved	0.050	mg/L	0.666	0.674	0.642	0.654	0.653	0.653	0.675	0.648	0.661	0.650	0.648	0.655
Selenium (Se)-Dissolved	0.000040	mg/L	0.000365	0.000333	0.000345	0.000382	0.000302	0.000319	0.000361	0.000332	0.000392	0.000342	0.000330	0.000321
Silicon (Si)-Dissolved	0.050	mg/L	2.37	2.36	2.36	2.36	2.35	2.36	2.56	2.36	2.40	2.37	2.41	2.39
Silver (Ag)-Dissolved	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Dissolved	0.010	mg/L	1.97	1.96	1.97	1.97	1.93	1.95	2.04	1.95	1.96	1.99	1.94	1.96
Strontium (Sr)-Dissolved	0.00010	mg/L	0.109	0.108	0.110	0.109	0.105	0.107	0.106	0.106	0.107	0.106	0.104	0.106
Thallium (Tl)-Dissolved	0.0000020	mg/L	0.0000064	0.0000031	0.0000022	<0.0000020	<0.0000020	<0.0000020	0.0000024	<0.0000020	<0.0000020	0.0000055	<0.0000020	<0.0000020
Tin (Sn)-Dissolved	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Titanium (Ti)-Dissolved	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Uranium (U)-Dissolved	0.0000020	mg/L	0.000602	0.000604	0.000603	0.000601	0.000596	0.000599	0.000591	0.000609	0.000589	0.000607	0.000584	0.000603
Vanadium (V)-Dissolved	0.000050	mg/L	0.000130	0.000132	0.000132	0.000138	0.000148	0.000140	0.000151	0.000140	0.000145	0.000125	0.000133	0.000154
Zinc (Zn)-Dissolved	0.00050	mg/L	0.00339	0.00167	0.00184	0.00183	0.00123	0.00114	0.00379	0.00140	0.00187	0.00193	0.00142	0.00146
Zirconium (Zr)-Dissolved	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Aggregate Organics (Water)														
BOD	2.0	mg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
COD	20	mg/L	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20

Qualifier Legend

RRV	Reported Result Verified By Repeat Analysis

Client Sample ID		WANETA COMP	MAGLIOS R-SH	MAGLIOS R-1MD	MAGLIOS R-1MAB	MAGLIOS L-1MAB	MAGLIOS L-1MD	MAGLIOS L-SH	DUPLICATE 1 (New Bridge RSH)	DUPLICATE 2 (New Bridge R 1M	DUPLICATE 3 (New Bridge LSH)	FIELD BLANK	TRAVEL BLANK	OLD BRIDGE R-SH
Date Sampled		16-Mar-2016	16-Mar-2016	16-Mar-2016	16-Mar-2016	16-Mar-2016	16-Mar-2016	16-Mar-2016	16-Mar-2016	16-Mar-2016	16-Mar-2016	16-Mar-2016	16-Mar-2016	16-Mar-2016
Time Sampled		8:59	10:38	10:42	10:43	10:45	10:46	10:47	8:59	8:59	8:59	8:59	8:59	11:48
ALS Sample ID		L1746315-13	L1746315-14	L1746315-15	L1746315-16	L1746315-17	L1746315-18	L1746315-19	L1746315-20	L1746315-21	L1746315-22	L1746315-23	L1746315-24	L1746315-25
Parameter	Lowest Detection Limit	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests (Water)														
Conductivity	2.0	162	162	162	161	159	159	159	187	161	158	<2.0	<2.0	160
Hardness (as CaCO3)	0.50	73	73.1	73.5	73.5	73.1	72.8	72.8	78.2	72.5	70.7	<0.50	<0.50	72.6
pH	0.10	8.05	8.05	8.05	8.05	8.04	8.04	8.05	8.06	8.04	8.04	5.52	5.53	8.03
Total Suspended Solids	3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Total Dissolved Solids	10	90	88	90	89	81	90	77	93	93	93	<10	<10	97
Turbidity	0.10	0.37	0.36	0.36	0.38	0.40	0.38	0.35	0.38	0.35	0.36	<0.10	<0.10	0.40
Anions and Nutrients (Water)														
Alkalinity, Total (as CaCO3)	1.0	63.6	66.1	66.9	65.8	66.4	65.2	65.2	64.4	66.2	62.5	<1.0	<1.0	64.6
Ammonia, Total (as N)	0.0050	0.0096	0.0105	0.0106	0.0108	0.0097	0.0097	0.0096	0.0572	0.0059	0.0617	<0.0050		0.0185
Bromide (Br)	0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	0.10	1.22	1.25	1.24	1.24	1.23	1.23	1.22	1.93	1.13	1.12	<0.10	<0.10	1.29
Fluoride (F)	0.020	0.077	0.078	0.078	0.078	0.077	0.075	0.077	0.184	0.073	0.075	<0.020	<0.020	0.085
Nitrate (as N)	0.0050	0.156	0.157	0.157	0.157	0.156	0.156	0.155	0.179	0.153	0.158	<0.0050	<0.0050	0.161
Nitrite (as N)	0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	0.050	0.065	0.066	0.065	0.070	0.091	0.062	0.059	0.109	<0.050	0.252	<0.050		0.078
Phosphorus (P)-Total Dissolved	0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Phosphorus (P)-Total	0.0020	0.0046	0.0041	0.0037	0.0043	0.0029	0.0032	0.0049	0.0045	0.0048	0.0035	0.0049	<0.0020	0.0029
Sulfate (SO4)	0.050	12.6	12.8	12.8	12.7	12.6	12.6	12.6	22.6	12.0	13.7	<0.050	<0.050	13.2
Organic / Inorganic Carbon (Water)														
Total Organic Carbon	0.50	1.26	1.21	1.32	1.26	1.43	1.26	1.25	1.21	1.10	1.38	<0.50		1.25
Total Metals (Water)														
Mercury (Hg)-Total	0.00050	<0.00050	0.00054	<0.00050	<0.00050	0.00058	<0.00050	<0.00050	0.00223	<0.00050	<0.00050	<0.00050		0.00066
Total Metals (Undigested) (Water)														
Aluminum (Al)-Total	0.00050	0.0121	0.0134	0.0139	0.0111	0.0129	0.0134	0.0133	0.0126	0.0136	0.0105	<0.00050	<0.00050	0.0136
Antimony (Sb)-Total	0.000020	0.000130	0.000122	0.000116	0.000117	0.000094	0.000097	0.000121	0.00157	0.000048	0.000234	<0.000020	<0.000020	0.000245
Arsenic (As)-Total	0.000020	0.000368	0.000337	0.000336	0.000349	0.000313	0.000330	0.000329	0.00124	0.000311	0.000338	<0.000020	<0.000020	0.000368
Barium (Ba)-Total	0.000020	0.0246	0.0244	0.0243	0.0244	0.0245	0.0248	0.0248	0.0250	0.0246	0.0246	<0.000020	<0.000020	0.0244
Beryllium (Be)-Total	0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Total	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Total	0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0057	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Total	0.0000050	0.0000385	0.0000432	0.0000325	0.0000296	0.0000211	0.0000273	0.0000329	0.000549	0.0000144	0.0000271	<0.0000050	<0.0000050	0.0000977
Calcium (Ca)-Total	0.030	21.0	21.1	21.1	21.1	21.1	21.4	21.1	23.3	20.9	20.7	<0.030	<0.030	21.2
Chromium (Cr)-Total	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00011	<0.00010	0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Total	0.0000050	0.0000138	0.0000138	0.0000127	0.0000149	0.0000141	0.0000119	0.0000208	0.0000311	0.0000128	0.0000157	<0.0000050	<0.0000050	0.0000193
Copper (Cu)-Total	0.00010	0.00043	0.00041	0.00039	0.00041	0.00038	0.00037	0.00039	0.00080	0.00033	0.00041	<0.00010	<0.00010	0.00050
Iron (Fe)-Total	0.0010	0.0138	0.0149	0.0153	0.0141	0.0151	0.0148	0.0161	0.0145	0.0136	0.0116	<0.0010	<0.0010	0.0152
Lead (Pb)-Total	0.000010	0.000115	0.000121	0.000102	0.000101	0.000087	0.000104	0.000110	0.00111	0.000073	0.000170	<0.000010	<0.000010	0.000235
Lithium (Li)-Total	0.00050	0.00134	0.00139	0.00129	0.00124	0.00126	0.00135	0.00122	0.00131	0.00129	0.00118	<0.00050	<0.00050	0.00131
Magnesium (Mg)-Total	0.030	4.92	4.97	4.92	4.94	4.94	4.98	4.93	4.93	4.95	4.74	<0.030	<0.030	4.90
Manganese (Mn)-Total	0.000050	0.00229	0.00240	0.00240	0.00236	0.00230	0.00242	0.00234	0.00541	0.00218	0.00500	<0.000050	<0.000050	0.00281
Molybdenum (Mo)-Total	0.000050	0.000587	0.000583	0.000560	0.000569	0.000567	0.000569	0.000596	0.000873	0.000575	0.000542	<0.000050	<0.000050	0.000584
Nickel (Ni)-Total	0.000050	0.000224	0.000258	0.000228	0.000251	0.000215	0.000247	0.000295	0.000282	0.000243	0.000282	<0.000050	<0.000050	0.000268
Phosphorus (P)-Total	0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Total	0.050	0.700	0.683	0.668	0.675	0.666	0.661	0.679	0.747	0.647	0.722	<0.050	<0.050	0.678
Selenium (Se)-Total	0.000040	0.000452	0.000448	0.000343	0.000408	0.000379	0.000398	0.000380	**0.00245**	0.000332	0.000329	<0.000040	<0.000040	**0.00216**
Silicon (Si)-Total	0.050	2.49	2.43	2.40	2.40	2.41	2.45	2.46	2.42	2.40	2.95	<0.050	<0.050	2.48
Silver (Ag)-Total	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Total	0.010	2.17	2.13	2.10	2.07	2.07	2.07	2.07	4.19	1.98	2.05	<0.010	<0.010	2.11
Strontium (Sr)-Total	0.000050	0.107	0.106	0.107	0.106	0.106	0.109	0.107	0.109	0.107	0.108	<0.000050	<0.000050	0.107
Thallium (Tl)-Total	0.0000020	0.0000418	0.0000536	0.0000503	0.0000508	0.0000301	0.0000306	0.0000342	**0.00164**	0.0000048	0.0000026	<0.0000020	<0.0000020	0.000201
Tin (Sn)-Total	0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Titanium (Ti)-Total	0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Uranium (U)-Total	0.0000020	0.000583	0.000587	0.000606	0.000595	0.000578	0.000588	0.000598	0.000605	0.000592	0.000579	<0.0000020	<0.0000020	0.000590
Vanadium (V)-Total	0.000050	0.000161	0.000167	0.000152	0.000157	0.000160	0.000150	0.000207	0.000153	0.000157	0.000202	<0.000050	<0.000050	0.000145
Zinc (Zn)-Total	0.00050	0.00245	0.00295	0.00249	0.00242	0.00229	0.00398	0.00255	**0.0127**	0.00233	0.00396	<0.00050	<0.00050	0.00420
Zirconium (Zr)-Total	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Metals (Water)														
Dissolved Mercury Filtration Location		FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD			FIELD
Dissolved Metals Filtration Location		FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	LAB		FIELD
Dissolved Metals Filtration Location		FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	LAB		FIELD
Aluminum (Al)-Dissolved	0.00050	0.00498	0.00491	0.00532	0.00511	0.00505	0.00488	0.00521	0.00539	0.00506	0.00663	<0.00050		0.00441
Antimony (Sb)-Dissolved	0.000020	0.000133	0.000124	0.000138	0.000116	0.000091	0.000108	0.000108	0.00157	0.000051	0.000235	<0.000020		0.000246
Arsenic (As)-Dissolved	0.000020	0.000372	0.000328	0.000353	0.000319	0.000319	0.000325	0.000323	0.00118	0.000299	0.000348	<0.000020		0.000363
Barium (Ba)-Dissolved	0.000020	0.0242	0.0245	0.0243	0.0246	0.0244	0.0242	0.0247	0.0246	0.0239	0.0248	<0.000020		0.0240
Beryllium (Be)-Dissolved	0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010		<0.000010
Bismuth (Bi)-Dissolved	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050		<0.0000050
Boron (B)-Dissolved	0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		<0.010
Cadmium (Cd)-Dissolved	0.0000050	0.0000368	0.0000399	0.0000300	0.0000338	0.0000256	0.0000253	0.0000266	**0.000510**	0.0000157	0.0000271	<0.0000050		0.0000827
Calcium (Ca)-Dissolved	0.030	21.1	21.1	21.3	21.2	21.1	21.0	21.0	23.2	20.9	20.5	<0.030		21.1
Chromium (Cr)-Dissolved	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010
Cobalt (Co)-Dissolved	0.0000050	0.0000090	0.0000059	0.0000151	0.0000100	0.0000089	0.0000098	0.0000112	0.0000241	0.0000069	0.0000117	<0.0000050		0.0000112
Copper (Cu)-Dissolved	0.00010	0.00039	0.00037	0.00038	0.00035	0.00036	0.00035	0.00036	0.00071	0.00033	0.00041	<0.00010		0.00042
Iron (Fe)-Dissolved	0.0010	0.0042	0.0041	0.0049	0.0040	0.0044	0.0043	0.0045	0.0039	0.0041	0.0042	<0.0010		0.0038
Lead (Pb)-Dissolved	0.0000050	0.0000367	0.0000362	0.0000438	0.0000302	0.0000247	0.0000259	0.0000313	0.000584	0.0000189	0.0000849	0.0000070		0.0000536
Lithium (Li)-Dissolved	0.00050	0.00126	0.00137	0.00123	0.00128	0.00130	0.00130	0.00120	0.00133	0.00124	0.00129	<0.00050		0.00125
Magnesium (Mg)-Dissolved	0.030	4.91	4.96	4.95	4.97	4.94	4.93	4.92	4.91	4.94	4.74	<0.030		4.83
Manganese (Mn)-Dissolved	0.000050	0.00156	0.00148	0.00155	0.00155	0.00150	0.00150	0.00153	0.00465	0.00122	0.00431	<0.000050		0.00190
Mercury (Hg)-Dissolved	0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050			<0.00050
Molybdenum (Mo)-Dissolved	0.000050	0.000596	0.000584	0.000602	0.000573	0.000571	0.000568	0.000582	0.000876	0.000559	0.000548	<0.000050		0.000583
Nickel (Ni)-Dissolved	0.000050	0.000220	0.000211	0.000259	0.000210	0.000207	0.000203	0.000243	0.000227	0.000223	0.000271	<0.000050		0.000239
Phosphorus (P)-Dissolved	0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050		<0.050
Potassium (K)-Dissolved	0.050	0.669	0.688	0.658	0.662	0.660	0.667	0.667	0.727	0.658	0.737	<0.050		0.645
Selenium (Se)-Dissolved	0.000040	0.000423	0.000466	0.000404	0.000397	0.000382	0.000350	0.000353	0.00235	0.000342	0.000318	<0.000040		0.000436
Silicon (Si)-Dissolved	0.050	2.46	2.39	2.39	2.42	2.40	2.43	2.45	2.39	2.38	2.96	<0.050		2.43
Silver (Ag)-Dissolved	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050		<0.0000050
Sodium (Na)-Dissolved	0.010	2.20	2.12	2.09	2.09	2.04	2.03	2.07	4.16	1.95	2.05	<0.010		2.14
Strontium (Sr)-Dissolved	0.00010	0.107	0.107	0.105	0.105	0.106	0.107	0.107	0.108	0.106	0.110	<0.00010		0.106
Thallium (Tl)-Dissolved	0.0000020	0.0000420	0.0000539	0.0000539	0.0000510	0.0000297	0.0000284	0.0000314	0.00162	0.0000041	0.0000027	<0.0000020		0.000202
Tin (Sn)-Dissolved	0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010		<0.000010
Titanium (Ti)-Dissolved	0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030		<0.00030
Uranium (U)-Dissolved	0.0000020	0.000597	0.000600	0.000600	0.000588	0.000590	0.000590	0.000588	0.000601	0.000589	0.000585	<0.0000020		0.000594
Vanadium (V)-Dissolved	0.000050	0.000139	0.000131	0.000154	0.000144	0.000143	0.000146	0.000143	0.000124	0.000116	0.000190	<0.000050		0.000136
Zinc (Zn)-Dissolved	0.00050	0.00232	0.00285	0.00333	0.00218	0.00241	0.00189	0.00209	0.00879	0.00282	0.00440	0.00068		0.00403
Zirconium (Zr)-Dissolved	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010
Aggregate Organics (Water)														
BOD	2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
COD	20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20		<20

Qualifier Legend

RRV	Reported Result Verified By Re

Client Sample ID		OLD BRIDGE R-1MD	OLD BRIDGE R-1MAB	OLD BRIDGE L-1MAB	OLD BRIDGE L-1MD	OLD BRIDGE L-SH	NEW BRIDGE R-SH	NEW BRIDGE R-1MD	NEW BRIDGE R-1MAB	NEW BRIDGE L-1MAB	NEW BRIDGE L-1MD	NEW BRIDGE L-SH
Date Sampled		16-Mar-2016	16-Mar-2016	16-Mar-2016	16-Mar-2016	16-Mar-2016	16-Mar-2016	16-Mar-2016	16-Mar-2016	16-Mar-2016	16-Mar-2016	16-Mar-2016
Time Sampled		11:49	11:50	11:52	11:53	11:54	13:01	13:04	13:12	13:17	13:21	13:27
ALS Sample ID		L1746315-26	L1746315-27	L1746315-28	L1746315-29	L1746315-30	L1746315-31	L1746315-32	L1746315-33	L1746315-34	L1746315-35	L1746315-36
Parameter	Lowest Detection Limit	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests (Water)												
Conductivity	2.0	160	162	161	160	163	188	160	160	160	159	158
Hardness (as CaCO3)	0.50	72.7	73.2	72.7	73.2	74	79.2	72.5	72.4	72.9	72.4	70.8
pH	0.10	8.05	8.05	8.07	8.06	8.07	8.05	8.05	8.06	8.06	8.07	8.06
Total Suspended Solids	3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Total Dissolved Solids	10	88	81	85	91	91	101	86	90	84	86	94
Turbidity	0.10	0.35	0.33	0.38	0.30	0.32	0.35	0.29	0.31	0.29	0.31	0.30
Anions and Nutrients (Water)												
Alkalinity, Total (as CaCO3)	1.0	65.6	65.3	66.0	64.8	65.1	65.8	65.8	65.2	66.3	65.9	62.6
Ammonia, Total (as N)	0.0050	0.0067	0.0111	0.0063	0.0093	0.0304	0.0651	0.0065	0.0061	0.0080	0.0072	0.0630
Bromide (Br)	0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	0.10	1.19	1.23	1.17	1.17	1.24	1.98	1.16	1.17	1.16	1.16	1.16
Fluoride (F)	0.020	0.076	0.081	0.075	0.075	0.074	0.186	0.075	0.074	0.075	0.074	0.077
Nitrate (as N)	0.0050	0.154	0.156	0.153	0.155	0.169	0.179	0.152	0.153	0.153	0.153	0.157
Nitrite (as N)	0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	0.050	0.080	0.068	0.072	0.069	0.087	0.095	0.053	0.057	0.086	0.058	0.121
Phosphorus (P)-Total Dissolved	0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Phosphorus (P)-Total	0.0020	0.0031	0.0046	0.0039	0.0030	0.0040	0.0045	0.0035	0.0029	0.0023	0.0041	0.0037
Sulfate (SO4)	0.050	12.4	12.9	12.2	12.3	13.4	22.9	12.2	12.2	12.3	12.2	13.9
Organic / Inorganic Carbon (Water)												
Total Organic Carbon	0.50	1.22	1.14	1.16	1.12	1.20	1.21	1.23	1.10	1.16	1.17	1.43
Total Metals (Water)												
Mercury (Hg)-Total	0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00219	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Total Metals (Undigested) (Water)												
Aluminum (Al)-Total	0.00050	0.0110	0.0114	0.0115	0.0106	0.0103	0.0127	0.0119	0.0113	0.0129	0.0110	0.0102
Antimony (Sb)-Total	0.000020	0.000078	0.000145	0.000051	0.000042	0.000061	0.00160	0.000050	0.000050	0.000047	0.000047	0.000235
Arsenic (As)-Total	0.000020	0.000320	0.000401	0.000320	0.000286	0.000308	0.00123	0.000313	0.000336	0.000290	0.000286	0.000335
Barium (Ba)-Total	0.000020	0.0243	0.0245	0.0242	0.0238	0.0244	0.0247	0.0240	0.0241	0.0241	0.0243	0.0245
Beryllium (Be)-Total	0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Total	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Total	0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Total	0.0000050	0.0000231	0.0000503	0.0000151	0.0000121	0.0000168	0.000528	0.0000170	0.0000202	0.0000143	0.0000127	0.0000274
Calcium (Ca)-Total	0.030	21.0	20.9	21.1	21.1	21.6	23.5	21.1	20.8	20.9	21.1	20.6
Chromium (Cr)-Total	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00010	<0.00010
Cobalt (Co)-Total	0.0000050	0.0000093	0.0000131	0.0000122	0.0000112	0.0000156	0.0000298	0.0000118	0.0000140	0.0000120	0.0000105	0.0000151
Copper (Cu)-Total	0.00010	0.00034	0.00039	0.00031	0.00033	0.00033	0.00081	0.00030	0.00033	0.00033	0.00032	0.00039
Iron (Fe)-Total	0.0010	0.0135	0.0131	0.0130	0.0135	0.0123	0.0145	0.0146	0.0142	0.0129	0.0124	0.0111
Lead (Pb)-Total	0.000010	0.000108	0.000177	0.000077	0.000084	0.000096	0.00126	0.000138	0.000079	0.000060	0.000081	0.000161
Lithium (Li)-Total	0.00050	0.00132	0.00133	0.00127	0.00131	0.00133	0.00141	0.00139	0.00130	0.00125	0.00130	0.00128
Magnesium (Mg)-Total	0.030	4.95	4.89	4.96	4.98	5.04	4.96	4.94	4.91	4.94	4.94	4.77
Manganese (Mn)-Total	0.000050	0.00200	0.00234	0.00219	0.00242	0.00353	0.00546	0.00202	0.00207	0.00222	0.00221	0.00505
Molybdenum (Mo)-Total	0.000050	0.000559	0.000587	0.000564	0.000560	0.000551	0.000871	0.000564	0.000555	0.000563	0.000553	0.000545
Nickel (Ni)-Total	0.000050	0.000215	0.000248	0.000234	0.000247	0.000232	0.000261	0.000234	0.000247	0.000231	0.000220	0.000266
Phosphorus (P)-Total	0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Total	0.050	0.636	0.656	0.639	0.639	0.646	0.755	0.646	0.634	0.643	0.633	0.726
Selenium (Se)-Total	0.000040	0.000391	0.000474	0.000364	0.000327	0.000349	**0.00239**	0.000343	0.000398	0.000336	0.000327	0.000319
Silicon (Si)-Total	0.050	2.41	2.40	2.38	2.38	2.37	2.42	2.37	2.39	2.37	2.38	2.96
Silver (Ag)-Total	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Total	0.010	2.06	2.11	1.96	1.98	2.06	4.24	1.99	1.97	1.99	1.98	2.06
Strontium (Sr)-Total	0.000050	0.106	0.107	0.106	0.107	0.108	0.108	0.107	0.107	0.107	0.107	0.110
Thallium (Tl)-Total	0.0000020	0.0000294	0.0000882	0.0000024	0.0000021	0.0000032	**0.00165**	0.0000045	0.0000021	0.0000025	<0.0000020	0.0000025
Tin (Sn)-Total	0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Titanium (Ti)-Total	0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Uranium (U)-Total	0.0000020	0.000594	0.000591	0.000595	0.000595	0.000626	0.000604	0.000595	0.000582	0.000593	0.000594	0.000582
Vanadium (V)-Total	0.000050	0.000140	0.000144	0.000145	0.000147	0.000153	0.000146	0.000135	0.000134	0.000152	0.000141	0.000183
Zinc (Zn)-Total	0.00050	0.00172	0.00288	0.00137	0.00152	0.00143	**0.00965**	0.00143	0.00366	0.00264	0.00191	0.00219
Zirconium (Zr)-Total	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Metals (Water)												
Dissolved Mercury Filtration Location		FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location		FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location		FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Aluminum (Al)-Dissolved	0.00050	0.00532	0.00476	0.00468	0.00524	0.00444	0.00511	0.00527	0.00932	0.00480	0.00496	0.00500
Antimony (Sb)-Dissolved	0.000020	0.000074	0.000140	0.000046	0.000048	0.000059	0.00156	0.000066	0.000049	0.000040	0.000044	0.000232
Arsenic (As)-Dissolved	0.000020	0.000306	0.000357	0.000295	0.000263	0.000308	0.00122	0.000289	0.000313	0.000314	0.000279	0.000333
Barium (Ba)-Dissolved	0.000020	0.0239	0.0238	0.0242	0.0239	0.0242	0.0246	0.0240	0.0240	0.0243	0.0242	0.0242
Beryllium (Be)-Dissolved	0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Dissolved	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Dissolved	0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Dissolved	0.0000050	0.0000226	0.0000403	0.0000114	0.0000184	0.0000121	**0.000510**	0.0000182	0.0000169	0.0000121	0.0000133	0.0000246
Calcium (Ca)-Dissolved	0.030	21.0	21.1	20.9	21.1	21.4	23.6	20.9	20.9	21.1	20.9	20.5
Chromium (Cr)-Dissolved	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Dissolved	0.0000050	0.0000086	0.0000068	0.0000122	0.0000094	0.0000088	0.0000246	0.0000115	0.0000067	0.0000091	0.0000067	0.0000131
Copper (Cu)-Dissolved	0.00010	0.00033	0.00036	0.00037	0.00029	0.00032	0.00069	0.00030	0.00032	0.00029	0.00030	0.00039
Iron (Fe)-Dissolved	0.0010	0.0042	0.0040	0.0152	0.0044	0.0040	0.0034	0.0047	0.0040	0.0040	0.0038	0.0039
Lead (Pb)-Dissolved	0.0000050	0.0000248	0.0000437	0.0000133	0.0000189	0.0000266	0.000565	0.0000325	0.0000195	0.0000201	0.0000128	0.0000749
Lithium (Li)-Dissolved	0.00050	0.00126	0.00135	0.00124	0.00120	0.00135	0.00138	0.00124	0.00141	0.00135	0.00126	0.00122
Magnesium (Mg)-Dissolved	0.030	4.92	4.95	4.95	4.95	5.02	4.95	4.94	4.92	4.93	4.91	4.75
Manganese (Mn)-Dissolved	0.000050	0.00131	0.00149	0.00188	0.00155	0.00277	0.00480	0.00124	0.00146	0.00149	0.00147	0.00454
Mercury (Hg)-Dissolved	0.00050	<0.00050	0.00093	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Molybdenum (Mo)-Dissolved	0.000050	0.000554	0.000579	0.000617	0.000534	0.000567	0.000870	0.000592	0.000563	0.000577	0.000568	0.000552
Nickel (Ni)-Dissolved	0.000050	0.000303	0.000214	0.000281	0.000216	0.000290	0.000249	0.000232	0.000216	0.000191	0.000209	0.000263
Phosphorus (P)-Dissolved	0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Dissolved	0.050	0.652	0.656	0.649	0.617	0.655	0.737	0.659	0.651	0.629	0.632	0.731
Selenium (Se)-Dissolved	0.000040	0.000371	0.000459	0.000377	0.000373	0.000337	0.00242	0.000365	0.000351	0.000373	0.000341	0.000331
Silicon (Si)-Dissolved	0.050	2.37	2.41	2.37	2.35	2.38	2.39	2.38	2.38	2.37	2.34	2.96
Silver (Ag)-Dissolved	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Dissolved	0.010	2.00	2.15	1.99	1.95	2.05	4.28	1.96	1.96	1.97	1.95	2.11
Strontium (Sr)-Dissolved	0.00010	0.105	0.106	0.106	0.101	0.108	0.108	0.107	0.106	0.107	0.106	0.110
Thallium (Tl)-Dissolved	0.0000020	0.0000279	0.0000863	0.0000024	0.0000025	0.0000022	0.00165	0.0000054	0.0000023	0.0000028	<0.0000020	0.0000024
Tin (Sn)-Dissolved	0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Titanium (Ti)-Dissolved	0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Uranium (U)-Dissolved	0.0000020	0.000587	0.000583	0.000590	0.000570	0.000619	0.000609	0.000591	0.000589	0.000594	0.000604	0.000585
Vanadium (V)-Dissolved	0.000050	0.000126	0.000140	0.000145	0.000133	0.000129	0.000147	0.000134	0.000135	0.000124	0.000137	0.000174
Zinc (Zn)-Dissolved	0.00050	0.00164	0.00217	0.00129	0.00190	0.00142	0.00888	0.00149	0.00219	0.00192	0.00133	0.00213
Zirconium (Zr)-Dissolved	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Aggregate Organics (Water)												
BOD	2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
COD	20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20

Qualifier Legend

RRV	Reported Result Verified By Re

Client Sample ID			BIRCHBANK R-SH	STONEY CK R-SH	WANETA R-SH	MAGLIOS R-SH	OLD BRIDGE R-SH	NEW BRIDGE R-SH	DUPLICATE (New Bridge RSH)	FIELD BLANK	TRAVEL BLANK
Date Sampled			23-Mar-2016	23-Mar-2016	23-Mar-2016	23-Mar-2016	23-Mar-2016	23-Mar-2016	23-Mar-2016	23-Mar-2016	23-Mar-2016
Time Sampled			10:20	10:50	11:25	12:00	12:20	12:30	0:00	0:00	0:00
ALS Sample ID			L1748512-1	L1748512-2	L1748512-3	L1748512-4	L1748512-5	L1748512-6	L1748512-7	L1748512-8	L1748512-9
Parameter	Lowest Detection Limit	Units	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests (Water)											
Conductivity	2.0	uS/cm	164	162	166	164	167	190	188	<2.0	<2.0
Hardness (as CaCO3)	0.50	mg/L	75.5	74.2	74.9	75.6	74.6	79.4	79.5	<0.50	<0.50
pH	0.10	pH	8.00	8.01	8.02	8.02	8.01	8.02	8.03	5.53	5.41
Total Suspended Solids	3.0	mg/L	4.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Total Dissolved Solids	10	mg/L	94	99	98	95	94	106	111	<10	<10
Turbidity	0.10	NTU	0.41	0.41	0.39	0.34	0.35	0.30	0.33	<0.10	<0.10
Anions and Nutrients (Water)											
Alkalinity, Total (as CaCO3)	1.0	mg/L	67.6	66.0	66.4	66.3	66.7	66.8	68.5	<1.0	<1.0
Ammonia, Total (as N)	0.0050	mg/L	<0.0050	0.0211	0.0082	0.0094	0.0168	0.0496	0.0501	0.0125	
Bromide (Br)	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	0.10	mg/L	1.22	1.30	1.29	1.24	1.33	1.68	1.68	<0.10	<0.10
Fluoride (F)	0.020	mg/L	0.075	0.077	0.078	0.077	0.084	0.146	0.146	<0.020	<0.020
Nitrate (as N)	0.0050	mg/L	0.157	0.160	0.159	0.161	0.163	0.181	0.180	<0.0050	<0.0050
Nitrite (as N)	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	0.050	mg/L	0.056	0.067	0.068	0.104	0.092	0.120	0.128	<0.050	
Phosphorus (P)-Total Dissolved	0.0020	mg/L	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0033	0.0030	<0.0020	<0.0020
Phosphorus (P)-Total	0.0020	mg/L	0.0022	0.0076	0.0031	<0.0020	0.0026	0.0047	0.0032	<0.0020	
Sulfate (SO4)	0.050	mg/L	12.8	13.0	13.3	13.2	14.1	22.8	22.8	<0.050	<0.050
Organic / Inorganic Carbon (Water)											
Total Organic Carbon	0.50	mg/L	1.32	1.33	1.37	1.05	1.10	1.09	1.21	<0.50	
Total Metals (Water)											
Mercury (Hg)-Total	0.00050	ug/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00208	0.00197	<0.00050	
Total Metals (Undigested) (Water)											
Aluminum (Al)-Total	0.00050	mg/L	0.00827	0.00936	0.00844	0.00889	0.00892	0.00457	0.00435	<0.00050	<0.00050
Antimony (Sb)-Total	0.000020	mg/L	0.000039	0.000076	0.000130	0.000100	0.000230	0.00109	0.00109	<0.000020	<0.000020
Arsenic (As)-Total	0.000020	mg/L	0.000290	0.000561	0.000378	0.000358	0.000590	0.00210	0.00214	<0.000020	<0.000020
Barium (Ba)-Total	0.000020	mg/L	0.0249	0.0248	0.0252	0.0249	0.0251	0.0258	0.0245	<0.000020	<0.000020
Beryllium (Be)-Total	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Total	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Total	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Total	0.0000050	mg/L	0.0000148	0.0000420	0.0000340	0.0000375	0.000100	0.000655	0.000637	<0.0000050	<0.0000050
Calcium (Ca)-Total	0.030	mg/L	21.4	21.2	21.6	21.6	21.6	23.0	23.1	<0.030	<0.030
Chromium (Cr)-Total	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Total	0.0000050	mg/L	0.0000102	0.0000117	0.0000112	0.0000120	0.0000149	0.0000222	0.0000233	<0.0000050	<0.0000050
Copper (Cu)-Total	0.00010	mg/L	0.00034	0.00031	0.00036	0.00038	0.00044	0.00073	0.00072	<0.00010	<0.00010
Iron (Fe)-Total	0.0010	mg/L	0.0094	0.0107	0.0101	0.0100	0.0110	0.0033	0.0035	<0.0010	<0.0010
Lead (Pb)-Total	0.000010	mg/L	0.000080	0.000086	0.000117	0.000110	0.000239	0.000879	0.000879	<0.000010	<0.000010
Lithium (Li)-Total	0.00050	mg/L	0.00130	0.00125	0.00126	0.00117	0.00129	0.00139	0.00128	<0.00050	<0.00050
Magnesium (Mg)-Total	0.030	mg/L	5.16	5.09	5.15	5.18	5.18	5.16	5.19	<0.030	<0.030
Manganese (Mn)-Total	0.000050	mg/L	0.00151	0.00157	0.00185	0.00199	0.00230	0.00410	0.00424	<0.000050	<0.000050
Molybdenum (Mo)-Total	0.000050	mg/L	0.000552	0.000578	0.000604	0.000608	0.000643	0.00123	0.00121	<0.000050	<0.000050
Nickel (Ni)-Total	0.000050	mg/L	0.000203	0.000214	0.000229	0.000208	0.000224	0.000224	0.000240	<0.000050	<0.000050
Phosphorus (P)-Total	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Total	0.050	mg/L	0.641	0.641	0.643	0.638	0.670	0.699	0.708	<0.050	<0.050
Selenium (Se)-Total	0.000040	mg/L	0.000358	0.000375	0.000487	0.000487	0.000674	**0.00282**	**0.00287**	<0.000040	<0.000040
Silicon (Si)-Total	0.050	mg/L	2.28	2.41	2.36	2.33	2.39	2.33	2.34	<0.050	<0.050
Silver (Ag)-Total	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Total	0.010	mg/L	2.02	2.00	2.20	2.12	2.33	4.34	4.48	<0.010	<0.010
Strontium (Sr)-Total	0.000050	mg/L	0.104	0.106	0.109	0.107	0.109	0.108	0.106	<0.000050	<0.000050
Thallium (Tl)-Total	0.0000020	mg/L	0.0000027	0.0000028	0.0000169	0.0000209	0.0000649	**0.000489**	**0.000498**	<0.0000020	<0.0000020
Tin (Sn)-Total	0.000020	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Titanium (Ti)-Total	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Uranium (U)-Total	0.0000020	mg/L	0.000592	0.000600	0.000600	0.000604	0.000603	0.000618	0.000616	<0.0000020	0.0000022
Vanadium (V)-Total	0.000050	mg/L	0.000130	0.000155	0.000142	0.000151	0.000146	0.000119	0.000140	<0.000050	<0.000050
Zinc (Zn)-Total	0.00050	mg/L	0.00219	0.00245	0.00209	0.00266	0.00402	**0.00764**	**0.00795**	<0.00050	<0.00050
Zirconium (Zr)-Total	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Metals (Water)											
Dissolved Mercury Filtration Location		-	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD		
Dissolved Metals Filtration Location		-	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	LAB	
Dissolved Metals Filtration Location		-	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	LAB	
Aluminum (Al)-Dissolved	0.00050	mg/L	0.00381	0.00457	0.00394	0.00419	0.00437	0.00428	0.00444	<0.00050	
Antimony (Sb)-Dissolved	0.000020	mg/L	0.000046	0.000078	0.000124	0.000103	0.000233	0.000849	0.000854	<0.000020	
Arsenic (As)-Dissolved	0.000020	mg/L	0.000295	0.000550	0.000386	0.000362	0.000566	0.00146	0.00148	<0.000020	
Barium (Ba)-Dissolved	0.000020	mg/L	0.0249	0.0245	0.0260	0.0251	0.0243	0.0255	0.0255	<0.000020	
Beryllium (Be)-Dissolved	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Bismuth (Bi)-Dissolved	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
Boron (B)-Dissolved	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Cadmium (Cd)-Dissolved	0.0000050	mg/L	0.0000109	0.0000375	0.0000308	0.0000340	0.0000945	**0.000686**	**0.000678**	<0.0000050	
Calcium (Ca)-Dissolved	0.030	mg/L	21.6	21.3	21.5	21.6	21.4	23.2	23.3	<0.030	
Chromium (Cr)-Dissolved	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Cobalt (Co)-Dissolved	0.0000050	mg/L	0.0000082	0.0000084	0.0000080	0.0000077	0.0000107	0.0000266	0.0000251	<0.0000050	
Copper (Cu)-Dissolved	0.00010	mg/L	0.00030	0.00031	0.00036	0.00035	0.00041	0.00075	0.00072	<0.00010	
Iron (Fe)-Dissolved	0.0010	mg/L	0.0034	0.0038	0.0035	0.0036	0.0036	0.0036	0.0036	<0.0010	
Lead (Pb)-Dissolved	0.0000050	mg/L	0.0000246	0.0000324	0.0000384	0.0000643	0.000109	0.000771	0.000794	<0.0000050	
Lithium (Li)-Dissolved	0.00050	mg/L	0.00157	0.00124	0.00122	0.00127	0.00113	0.00140	0.00124	<0.00050	
Magnesium (Mg)-Dissolved	0.030	mg/L	5.23	5.11	5.13	5.23	5.11	5.20	5.19	<0.030	
Manganese (Mn)-Dissolved	0.000050	mg/L	0.000942	0.000998	0.00134	0.00136	0.00165	0.00414	0.00505	<0.000050	
Mercury (Hg)-Dissolved	0.00050	ug/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00067	0.00069		
Molybdenum (Mo)-Dissolved	0.000050	mg/L	0.000637	0.000585	0.000579	0.000593	0.000643	0.00108	0.00108	<0.000050	
Nickel (Ni)-Dissolved	0.000050	mg/L	0.000227	0.000236	0.000225	0.000219	0.000227	0.000237	0.000234	<0.000050	
Phosphorus (P)-Dissolved	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
Potassium (K)-Dissolved	0.050	mg/L	0.630	0.637	0.641	0.639	0.646	0.744	0.744	<0.050	
Selenium (Se)-Dissolved	0.000040	mg/L	0.000359	0.000344	0.000448	0.000444	0.000672	0.00222	0.00209	<0.000040	
Silicon (Si)-Dissolved	0.050	mg/L	2.31	2.39	2.33	2.35	2.35	2.32	2.31	<0.050	
Silver (Ag)-Dissolved	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
Sodium (Na)-Dissolved	0.010	mg/L	2.05	2.02	2.28	2.04	2.38	3.75	3.64	<0.010	
Strontium (Sr)-Dissolved	0.00010	mg/L	0.117	0.106	0.107	0.107	0.107	0.109	0.108	<0.00010	
Thallium (Tl)-Dissolved	0.0000020	mg/L	0.0000028	0.0000026	0.0000152	0.0000218	0.0000667	0.000458	0.000456	<0.0000020	
Tin (Sn)-Dissolved	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Titanium (Ti)-Dissolved	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	
Uranium (U)-Dissolved	0.0000020	mg/L	0.000674	0.000600	0.000602	0.000606	0.000605	0.000613	0.000610	<0.0000020	
Vanadium (V)-Dissolved	0.000050	mg/L	0.000141	0.000138	0.000169	0.000151	0.000141	0.000147	0.000133	<0.000050	
Zinc (Zn)-Dissolved	0.00050	mg/L	0.00198	0.00268	0.00232	0.00221	0.00427	0.00785	0.00854	<0.00050	
Zirconium (Zr)-Dissolved	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Aggregate Organics (Water)											
BOD	2.0	mg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
COD	20	mg/L	<20	<20	<20	<20	<20	<20	<20	<20	

Qualifier Legend

RRV	Reported Result Verified By Repeat Analysis

Client Sample ID			BIRCHBANK R-SH	STONEY CK R-SH	WANETA COMP	MAGLIOS R-SH	OLD BRIDGE R-SH	NEW BRIDGE R-SH	DUPLICATE 1 (New Bridge RSH)	FIELD BLANK	TRAVEL BLANK
Date Sampled			30-Mar-2016	30-Mar-2016	30-Mar-2016	30-Mar-2016	30-Mar-2016	30-Mar-2016	30-Mar-2016	30-Mar-2016	30-Mar-2016
Time Sampled			9:30	10:00	12:00	13:05	13:50	15:00	0:00	0:00	0:00
ALS Sample ID			L1750991-1	L1750991-2	L1750991-3	L1750991-4	L1750991-5	L1750991-6	L1750991-7	L1750991-8	L1750991-9
Parameter	Lowest Detection Limit	Units	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests (Water)											
Conductivity	2.0	uS/cm	162	161	162	165	164	180	180	<2.0	<2.0
Hardness (as CaCO3)	0.50	mg/L	73.9	73	74.2	73.7	75.6	78.1	75.5	<0.50	<0.50
pH	0.10	pH	8.05	8.06	8.06	8.06	8.08	8.07	8.07	5.46	5.47
Total Suspended Solids	3.0	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Total Dissolved Solids	10	mg/L	97	90	95	91	97	106	105	<10	<10
Turbidity	0.10	NTU	0.29	0.29	0.32	0.27	0.29	0.32	0.33	<0.10	<0.10
Anions and Nutrients (Water)											
Alkalinity, Total (as CaCO3)	1.0	mg/L	64.8	65.3	65.1	64.6	65.8	65.3	65.0	<1.0	<1.0
Ammonia, Total (as N)	0.0050	mg/L	<0.0050	0.0137	0.0087	0.0093	0.0157	0.0431	0.0432	<0.0050	0.0053
Bromide (Br)	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	0.50	mg/L	1.19	1.24	1.25	1.24	1.37	2.27	2.27	<0.50	<0.50
Fluoride (F)	0.020	mg/L	0.070	0.076	0.080	0.081	0.091	0.159	0.159	<0.020	<0.020
Nitrate (as N)	0.0050	mg/L	0.151	0.151	0.154	0.154	0.156	0.171	0.171	<0.0050	<0.0050
Nitrite (as N)	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	0.050	mg/L	0.078	0.105	0.094	0.094	0.091	0.114	0.116	<0.050	<0.050
Phosphorus (P)-Total Dissolved	0.0020	mg/L	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Phosphorus (P)-Total	0.0020	mg/L	<0.0020	0.0023	0.0024	<0.0020	0.0035	0.0037	0.0021	<0.0020	<0.0020
Sulfate (SO4)	0.30	mg/L	12.6	12.8	13.0	13.0	13.9	19.2	19.2	<0.30	<0.30
Organic / Inorganic Carbon (Water)											
Total Organic Carbon	0.50	mg/L	1.32	1.24	1.29	1.30	1.29	1.24	1.27	<0.50	<0.50
Total Metals (Water)											
Mercury (Hg)-Total	0.00050	ug/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00294	0.00289	<0.00050	<0.00050
Total Metals (Undigested) (Water)											
Aluminum (Al)-Total	0.00050	mg/L	0.00820	0.0103	0.00910	0.00788	0.00837	0.0109	0.0249	<0.00050	<0.00050
Antimony (Sb)-Total	0.000020	mg/L	0.000047	0.000099	0.000131	0.000139	0.000283	0.00142	0.00144	<0.000020	<0.000020
Arsenic (As)-Total	0.000020	mg/L	0.000258	0.000600	0.000350	0.000396	0.000609	0.00203	0.00205	<0.000020	<0.000020
Barium (Ba)-Total	0.000020	mg/L	0.0243	0.0250	0.0241	0.0241	0.0245	0.0245	0.0244	<0.000020	<0.000020
Beryllium (Be)-Total	0.000010	mg/L	<0.000010	0.000046	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Total	0.0000050	mg/L	<0.0000050	0.0000079	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Total	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Total	0.0000050	mg/L	0.0000126	0.0000465	0.0000343	0.0000328	0.0000892	0.000437	0.000436	<0.0000050	<0.0000050
Calcium (Ca)-Total	0.030	mg/L	21.3	20.8	21.6	21.4	21.7	23.3	23.3	<0.030	<0.030
Chromium (Cr)-Total	0.00010	mg/L	<0.00010	0.00013	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Total	0.0000050	mg/L	0.0000075	0.0000330	0.0000070	0.0000102	0.0000099	0.0000251	0.0000255	<0.0000050	<0.0000050
Copper (Cu)-Total	0.00010	mg/L	0.00030	0.00040	0.00035	0.00037	0.00043	0.00079	0.00079	<0.00010	<0.00010
Iron (Fe)-Total	0.0010	mg/L	0.0080	0.0126	0.0090	0.0085	0.0090	0.0095	0.0086	<0.0010	<0.0010
Lead (Pb)-Total	0.000010	mg/L	0.000043	0.000096	0.000122	0.000111	0.000321	0.00145	0.00128	<0.000010	<0.000010
Lithium (Li)-Total	0.00050	mg/L	0.00129	0.00121	0.00130	0.00132	0.00128	0.00135	0.00131	<0.00050	<0.00050
Magnesium (Mg)-Total	0.030	mg/L	5.12	4.99	5.11	5.11	5.14	5.18	5.18	<0.030	<0.030
Manganese (Mn)-Total	0.000050	mg/L	0.00162	0.00176	0.00198	0.00187	0.00220	0.00420	0.00403	<0.000050	<0.000050
Molybdenum (Mo)-Total	0.000050	mg/L	0.000546	0.000580	0.000560	0.000566	0.000642	0.00104	0.00102	<0.000050	<0.000050
Nickel (Ni)-Total	0.000050	mg/L	0.000199	0.000393	0.000235	0.000228	0.000230	0.000268	0.000227	<0.000050	<0.000050
Phosphorus (P)-Total	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Total	0.050	mg/L	0.643	0.647	0.668	0.654	0.662	0.742	0.733	<0.050	<0.050
Selenium (Se)-Total	0.000040	mg/L	0.000372	0.000424	0.000438	0.000457	0.000677	**0.00228**	**0.00232**	<0.000040	<0.000040
Silicon (Si)-Total	0.050	mg/L	2.25	2.35	2.34	2.31	2.36	2.35	2.32	<0.050	<0.050
Silver (Ag)-Total	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Total	0.010	mg/L	1.94	2.18	2.01	2.04	2.29	4.08	4.07	<0.010	<0.010
Strontium (Sr)-Total	0.000050	mg/L	0.103	0.104	0.104	0.102	0.105	0.106	0.104	<0.000050	<0.000050
Thallium (Tl)-Total	0.0000020	mg/L	0.0000039	0.0000064	0.0000164	0.0000293	0.000103	**0.000694**	**0.000675**	<0.0000020	<0.0000020
Tin (Sn)-Total	0.000020	mg/L	<0.000020	0.000026	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Titanium (Ti)-Total	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Uranium (U)-Total	0.0000020	mg/L	0.000602	0.000572	0.000597	0.000592	0.000606	0.000616	0.000597	<0.0000020	<0.0000020
Vanadium (V)-Total	0.000050	mg/L	0.000114	0.000285	0.000113	0.000105	0.000083	0.000119	0.000108	<0.000050	<0.000050
Zinc (Zn)-Total	0.00050	mg/L	0.00168	0.00286	0.00179	0.00183	0.00334	**0.00829**	**0.00730**	<0.00050	<0.00050
Zirconium (Zr)-Total	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Metals (Water)											
Dissolved Mercury Filtration Location		-	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD		
Dissolved Metals Filtration Location		-	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	LAB	
Dissolved Metals Filtration Location		-	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	LAB	
Aluminum (Al)-Dissolved	0.00050	mg/L	0.00353	0.00468	0.00413	0.00452	0.00430	0.00440	0.00447	<0.00050	
Antimony (Sb)-Dissolved	0.000020	mg/L	0.000043	0.000075	0.000118	0.000135	0.000294	0.00144	0.00139	<0.000020	
Arsenic (As)-Dissolved	0.000020	mg/L	0.000279	0.000546	0.000353	0.000382	0.000581	0.00191	0.00190	<0.000020	
Barium (Ba)-Dissolved	0.000020	mg/L	0.0240	0.0239	0.0241	0.0237	0.0242	0.0244	0.0241	<0.000020	
Beryllium (Be)-Dissolved	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000019	<0.000010	<0.000010	
Bismuth (Bi)-Dissolved	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
Boron (B)-Dissolved	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Cadmium (Cd)-Dissolved	0.0000050	mg/L	0.0000126	0.0000389	0.0000300	0.0000307	0.0000737	**0.000422**	**0.000392**	<0.0000050	
Calcium (Ca)-Dissolved	0.030	mg/L	21.2	20.9	21.4	21.2	21.8	22.9	22.2	<0.030	
Chromium (Cr)-Dissolved	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Cobalt (Co)-Dissolved	0.0000050	mg/L	<0.0000050	0.0000054	<0.0000050	0.0000075	0.0000077	0.0000216	0.0000228	<0.0000050	
Copper (Cu)-Dissolved	0.00010	mg/L	0.00028	0.00029	0.00034	0.00033	0.00038	0.00065	0.00066	<0.00010	
Iron (Fe)-Dissolved	0.0010	mg/L	0.0024	0.0025	0.0028	0.0025	0.0032	0.0029	0.0026	<0.0010	
Lead (Pb)-Dissolved	0.0000050	mg/L	0.0000101	0.0000194	0.0000424	0.0000516	0.000148	0.000871	0.000849	<0.0000050	
Lithium (Li)-Dissolved	0.00050	mg/L	0.00129	0.00133	0.00132	0.00134	0.00136	0.00143	0.00133	<0.00050	
Magnesium (Mg)-Dissolved	0.030	mg/L	5.08	5.03	5.05	5.06	5.13	5.09	4.90	<0.030	
Manganese (Mn)-Dissolved	0.000050	mg/L	0.000893	0.000964	0.00144	0.00124	0.00147	0.00342	0.00347	<0.000050	
Mercury (Hg)-Dissolved	0.00050	ug/L	<0.00050	<0.00050	<0.00050	<0.00050	0.00067	0.00053	0.00059		
Molybdenum (Mo)-Dissolved	0.000050	mg/L	0.000533	0.000525	0.000557	0.000560	0.000630	0.00104	0.00104	<0.000050	
Nickel (Ni)-Dissolved	0.000050	mg/L	0.000237	0.000225	0.000217	0.000232	0.000222	0.000240	0.000224	<0.000050	
Phosphorus (P)-Dissolved	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
Potassium (K)-Dissolved	0.050	mg/L	0.632	0.647	0.671	0.647	0.662	0.730	0.694	<0.050	
Selenium (Se)-Dissolved	0.000040	mg/L	0.000369	0.000343	0.000448	0.000494	0.000679	0.00225	0.00220	<0.000040	
Silicon (Si)-Dissolved	0.050	mg/L	2.25	2.36	2.31	2.27	2.35	2.27	2.21	<0.050	
Silver (Ag)-Dissolved	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
Sodium (Na)-Dissolved	0.010	mg/L	1.96	2.04	2.01	2.03	2.29	3.98	4.00	<0.010	
Strontium (Sr)-Dissolved	0.00010	mg/L	0.102	0.102	0.104	0.102	0.103	0.104	0.103	<0.00010	
Thallium (Tl)-Dissolved	0.0000020	mg/L	0.0000043	<0.0000020	0.0000171	0.0000285	0.000102	0.000705	0.000672	<0.0000020	
Tin (Sn)-Dissolved	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Titanium (Ti)-Dissolved	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	
Uranium (U)-Dissolved	0.0000020	mg/L	0.000592	0.000586	0.000596	0.000603	0.000592	0.000620	0.000604	<0.0000020	
Vanadium (V)-Dissolved	0.000050	mg/L	0.000093	0.000094	0.000103	0.000096	0.000099	0.000107	0.000091	<0.000050	
Zinc (Zn)-Dissolved	0.00050	mg/L	0.00178	0.00230	0.00213	0.00174	0.00299	0.00596	0.00672	0.00059	
Zirconium (Zr)-Dissolved	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Aggregate Organics (Water)											
BOD	2.0	mg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
COD	20	mg/L	<20	<20	<20	<20	<20	<20	<20	<20	<20

Qualifier Legend

RRV	Reported Result Verified By Repeat Analysis

Client Sample ID			BIRCHBANK R-SH	BIRCHBANK R-1MD	BIRCHBANK R-1MAB	BIRCHBANK L-1MAB	BIRCHBANK L-1MD	BIRCHBANK L-SH	STONEY CK R-SH	STONEY CK R-1MD	STONEY CK R-1MAB	STONEY CK L-1MAB	STONEY CK L-1MD	STONEY CK L-SH	MAGLIOS R-SH
Date Sampled			5-Apr-2016	5-Apr-2016	5-Apr-2016	5-Apr-2016	5-Apr-2016	5-Apr-2016	5-Apr-2016	5-Apr-2016	5-Apr-2016	5-Apr-2016	5-Apr-2016	5-Apr-2016	6-Apr-2016
Time Sampled			14:55	15:20	15:35	15:48	15:58	16:05	16:23	16:34	16:48	17:01	17:15	17:29	11:14
ALS Sample ID			L1753653-1	L1753653-2	L1753653-3	L1753653-4	L1753653-5	L1753653-6	L1753653-7	L1753653-8	L1753653-9	L1753653-10	L1753653-11	L1753653-12	L1753653-13
Parameter	Lowest Detection Limit	Units	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests (Water)															
Conductivity	2.0	uS/cm	152	151	151	149	150	149	147	150	149	149	149	150	152
Hardness (as CaCO3)	0.50	mg/L	69	69.1	69	68.6	68.8	68.8	67.1	68.3	69.2	69.4	69.3	69.1	68.4
pH	0.10	pH	8.06	8.06	8.05	8.05	8.06	8.06	8.05	8.04	8.06	8.05	8.07	8.07	8.05
Total Suspended Solids	3.0	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Total Dissolved Solids	10	mg/L	88	91	90	90	91	93	92	89	90	91	95	89	89
Turbidity	0.10	NTU	0.37	0.47	0.54	0.41	0.47	0.45	0.54	0.40	0.36	0.62	0.40	0.46	0.55
Anions and Nutrients (Water)															
Alkalinity, Total (as CaCO3)	1.0	mg/L	63.7	62.4	61.9	62.5	62.6	62.8	60.6	62.8	63.6	63.1	62.5	62.6	63.8
Ammonia, Total (as N)	0.0050	mg/L	<0.0050	<0.0050	0.0115	<0.0050	<0.0050	0.0082	<0.0050	<0.0050	<0.0050	0.0085	0.0057	<0.0050	0.0107
Bromide (Br)	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	0.50	mg/L	0.88	0.88	0.90	0.89	0.89	0.89	0.93	0.89	0.89	0.89	0.89	0.89	0.96
Fluoride (F)	0.020	mg/L	0.074	0.073	0.074	0.073	0.073	0.074	0.074	0.073	0.073	0.074	0.073	0.073	0.077
Nitrate (as N)	0.0050	mg/L	0.140	0.141	0.144	0.142	0.141	0.141	0.139	0.140	0.140	0.141	0.140	0.141	0.142
Nitrite (as N)	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	0.050	mg/L	0.057	0.061	0.060	0.073	0.052	0.066	0.257	0.068	0.082	0.068	0.054	0.052	0.065
Phosphorus (P)-Total Dissolved	0.0020	mg/L	<0.0020	0.0029	0.0023	0.0021	0.0028	0.0031	0.0031	0.0028	0.0032	0.0025	<0.0020	0.0031	<0.0020
Phosphorus (P)-Total	0.0020	mg/L	0.0040	<0.0020	0.0048	0.0035	0.0042	0.0065	0.0045	0.0045	0.0050	0.0056	0.0030	0.0027	0.0039
Sulfate (SO4)	0.30	mg/L	11.2	11.2	11.2	11.2	11.2	11.2	11.1	11.1	11.2	11.2	11.2	11.2	11.8
Organic / Inorganic Carbon (Water)															
Total Organic Carbon	0.50	mg/L	1.50	1.92	1.92	1.96	1.99	1.80	1.82	1.71	1.82	1.72	1.96	1.74	1.64
Total Metals (Water)															
Mercury (Hg)-Total	0.00050	ug/L	<0.00050	<0.00050	0.00060	<0.00050	<0.00050	<0.00050	0.00066	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Total Metals (Undigested) (Water)															
Aluminum (Al)-Total	0.00050	mg/L	0.0155	0.0151	0.0145	0.0145	0.0140	0.00724	0.0201	0.0153	0.0152	0.0154	0.0168	0.0157	0.0157
Antimony (Sb)-Total	0.000020	mg/L	0.000059	0.000059	0.000068	0.000067	0.000059	0.000057	0.000103	0.000061	0.000056	0.000053	0.000053	0.000060	0.000122
Arsenic (As)-Total	0.000020	mg/L	0.000265	0.000265	0.000252	0.000249	0.000247	0.000253	0.000469	0.000261	0.000259	0.000248	0.000263	0.000244	0.000379
Barium (Ba)-Total	0.000020	mg/L	0.0228	0.0225	0.0228	0.0226	0.0228	0.0222	0.0223	0.0228	0.0226	0.0223	0.0224	0.0222	0.0223
Beryllium (Be)-Total	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Total	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Total	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Total	0.0000050	mg/L	0.0000163	0.0000148	0.0000155	0.0000109	0.0000149	0.0000120	0.0000361	0.0000129	0.0000117	0.0000127	0.0000136	0.0000149	0.0000338
Calcium (Ca)-Total	0.030	mg/L	19.8	19.8	19.8	19.8	19.6	19.8	19.5	19.8	19.7	19.8	19.8	19.9	19.8
Chromium (Cr)-Total	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00010	<0.00010	<0.00010
Cobalt (Co)-Total	0.0000050	mg/L	0.0000145	0.0000144	0.0000172	0.0000118	0.0000120	0.0000072	0.0000172	0.0000116	0.0000166	0.0000121	0.0000135	0.0000128	0.0000159
Copper (Cu)-Total	0.00010	mg/L	0.00034	0.00034	0.00034	0.00034	0.00032	0.00032	0.00035	0.00033	0.00035	0.00032	0.00034	0.00033	0.00043
Iron (Fe)-Total	0.0010	mg/L	0.0182	0.0158	0.0164	0.0151	0.0155	0.0042	0.0198	0.0166	0.0172	0.0172	0.0177	0.0160	0.0170
Lead (Pb)-Total	0.000010	mg/L	0.000110	0.000067	0.000086	0.000065	0.000060	0.000020	0.000144	0.000059	0.000069	0.000061	0.000139	0.000059	0.000139
Lithium (Li)-Total	0.00050	mg/L	0.00089	0.00082	0.00087	0.00090	0.00094	0.00096	0.00096	0.00101	0.00089	0.00091	0.00093	0.00092	0.00093
Magnesium (Mg)-Total	0.030	mg/L	4.69	4.65	4.68	4.69	4.71	4.71	4.65	4.71	4.73	4.74	4.77	4.75	4.71
Manganese (Mn)-Total	0.000050	mg/L	0.00210	0.00194	0.00187	0.00186	0.00181	0.000891	0.00208	0.00186	0.00195	0.00200	0.00201	0.00182	0.00234
Molybdenum (Mo)-Total	0.000050	mg/L	0.000546	0.000501	0.000560	0.000563	0.000554	0.000558	0.000556	0.000541	0.000539	0.000545	0.000547	0.000560	0.000526
Nickel (Ni)-Total	0.000050	mg/L	0.000263	0.000247	0.000269	0.000273	0.000239	0.000218	0.000262	0.000261	0.000291	0.000252	0.000254	0.000254	0.000259
Phosphorus (P)-Total	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Total	0.050	mg/L	0.669	0.640	0.652	0.660	0.661	0.647	0.684	0.667	0.673	0.663	0.683	0.689	0.710
Selenium (Se)-Total	0.000040	mg/L	0.000321	0.000279	0.000309	0.000313	0.000297	0.000289	0.000312	0.000307	0.000291	0.000346	0.000259	0.000278	0.000399
Silicon (Si)-Total	0.050	mg/L	2.41	2.40	2.43	2.40	2.43	2.43	2.57	2.45	2.45	2.46	2.46	2.44	2.47
Silver (Ag)-Total	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Total	0.010	mg/L	1.53	1.52	1.51	1.52	1.51	1.52	1.55	1.54	1.52	1.53	1.54	1.53	1.69
Strontium (Sr)-Total	0.000050	mg/L	0.103	0.0966	0.107	0.105	0.108	0.108	0.105	0.107	0.107	0.107	0.106	0.108	0.101
Thallium (Tl)-Total	0.0000020	mg/L	0.0000052	0.0000022	0.0000070	0.0000032	0.0000029	0.0000022	0.0000026	0.0000025	0.0000044	0.0000024	0.0000027	0.0000060	0.0000174
Tin (Sn)-Total	0.000020	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Titanium (Ti)-Total	0.00050	mg/L	0.00065	<0.00050	0.00057	<0.00050	0.00052	<0.00050	0.00075	0.00053	0.00057	0.00055	0.00060	<0.00050	0.00062
Uranium (U)-Total	0.0000020	mg/L	0.000564	0.000525	0.000579	0.000576	0.000567	0.000573	0.000555	0.000575	0.000571	0.000562	0.000571	0.000568	0.000563
Vanadium (V)-Total	0.000050	mg/L	0.000158	0.000161	0.000161	0.000173	0.000153	0.000126	0.000176	0.000155	0.000161	0.000158	0.000180	0.000154	0.000171
Zinc (Zn)-Total	0.00050	mg/L	0.00241	0.00177	0.00143	0.00132	0.00135	0.00116	0.00228	0.00126	0.00274	0.00126	0.00144	0.00110	0.00205
Zirconium (Zr)-Total	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Metals (Water)															
Dissolved Mercury Filtration Location		-	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location		-	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location		-	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Aluminum (Al)-Dissolved	0.00050	mg/L	0.00709	0.00648	0.00764	0.00672	0.00675	0.0149	0.00863	0.00705	0.00782	0.00737	0.00640	0.00558	0.00534
Antimony (Sb)-Dissolved	0.000020	mg/L	0.000065	0.000063	0.000065	0.000062	0.000058	0.000060	0.000081	0.000056	0.000063	0.000048	0.000051	0.000059	0.000126
Arsenic (As)-Dissolved	0.000020	mg/L	0.000240	0.000231	0.000250	0.000251	0.000257	0.000258	0.000454	0.000246	0.000252	0.000288	0.000269	0.000253	0.000331
Barium (Ba)-Dissolved	0.000020	mg/L	0.0225	0.0225	0.0223	0.0224	0.0225	0.0227	0.0247	0.0221	0.0221	0.0251	0.0250	0.0223	0.0221
Beryllium (Be)-Dissolved	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Dissolved	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Dissolved	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Dissolved	0.0000050	mg/L	0.0000144	0.0000076	0.0000121	0.0000087	0.0000124	0.0000139	0.0000282	0.0000108	0.0000087	0.0000115	0.0000094	0.0000111	0.0000246
Calcium (Ca)-Dissolved	0.030	mg/L	19.8	19.9	19.9	19.7	19.8	19.8	19.3	19.6	19.9	19.9	19.9	19.9	19.7
Chromium (Cr)-Dissolved	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Dissolved	0.0000050	mg/L	0.0000064	0.0000079	0.0000082	0.0000057	0.0000050	0.0000134	0.0000096	0.0000077	0.0000071	0.0000098	0.0000091	0.0000064	0.0000073
Copper (Cu)-Dissolved	0.00010	mg/L	0.00030	0.00033	0.00032	0.00033	0.00029	0.00032	0.00035	0.00031	0.00031	0.00033	0.00033	0.00030	0.00036
Iron (Fe)-Dissolved	0.0010	mg/L	0.0043	0.0041	0.0041	0.0045	0.0046	0.0172	0.0054	0.0044	0.0050	0.0047	0.0036	0.0031	0.0031
Lead (Pb)-Dissolved	0.0000050	mg/L	0.0000294	0.0000237	0.0000235	0.0000272	0.0000186	0.0000648	0.0000340	0.0000154	0.0000232	0.0000120	0.0000119	0.0000128	0.0000347
Lithium (Li)-Dissolved	0.00050	mg/L	0.00092	0.00094	0.00084	0.00088	0.00088	0.00095	0.00163	0.00097	0.00091	0.00154	0.00154	0.00088	0.00092
Magnesium (Mg)-Dissolved	0.030	mg/L	4.73	4.69	4.71	4.69	4.72	4.71	4.59	4.71	4.75	4.76	4.77	4.74	4.69
Manganese (Mn)-Dissolved	0.000050	mg/L	0.000961	0.000870	0.000901	0.000896	0.000872	0.00191	0.00103	0.000874	0.000912	0.00101	0.000926	0.000921	0.00120
Mercury (Hg)-Dissolved	0.00050	ug/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Molybdenum (Mo)-Dissolved	0.000050	mg/L	0.000552	0.000549	0.000545	0.000562	0.000548	0.000541	0.000515	0.000544	0.000568	0.000530	0.000504	0.000559	0.000573
Nickel (Ni)-Dissolved	0.000050	mg/L	0.000244	0.000261	0.000248	0.000244	0.000265	0.000259	0.000235	0.000227	0.000242	0.000234	0.000259	0.000238	0.000268
Phosphorus (P)-Dissolved	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Dissolved	0.050	mg/L	0.684	0.659	0.658	0.659	0.644	0.655	0.667	0.657	0.669	0.670	0.680	0.698	0.685
Selenium (Se)-Dissolved	0.000040	mg/L	0.000295	0.000315	0.000326	0.000301	0.000291	0.000263	0.000281	0.000277	0.000289	0.000282	0.000299	0.000312	0.000435
Silicon (Si)-Dissolved	0.050	mg/L	2.41	2.39	2.39	2.42	2.40	2.40	2.55	2.43	2.45	2.44	2.43	2.43	2.46
Silver (Ag)-Dissolved	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Dissolved	0.010	mg/L	1.51	1.51	1.49	1.55	1.52	1.50	1.78	1.52	1.53	1.76	1.73	1.54	1.70
Strontium (Sr)-Dissolved	0.00010	mg/L	0.108	0.106	0.107	0.107	0.106	0.107	0.0955	0.105	0.108	0.101	0.0967	0.107	0.107
Thallium (Tl)-Dissolved	0.0000020	mg/L	0.0000050	0.0000030	0.0000038	0.0000027	0.0000029	0.0000023	0.0000024	0.0000025	0.0000026	0.0000022	0.0000023	0.0000032	0.0000184
Tin (Sn)-Dissolved	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000026
Titanium (Ti)-Dissolved	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	0.00051	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Uranium (U)-Dissolved	0.0000020	mg/L	0.000570	0.000576	0.000573	0.000575	0.000570	0.000564	0.000531	0.000558	0.000573	0.000549	0.000544	0.000575	0.000565
Vanadium (V)-Dissolved	0.000050	mg/L	0.000135	0.000138	0.000135	0.000132	0.000146	0.000153	0.000207	0.000132	0.000143	0.000168	0.000155	0.000128	0.000139
Zinc (Zn)-Dissolved	0.00050	mg/L	0.00200	0.00152	0.00140	0.00152	0.00111	0.00120	0.00253	0.00096	0.00123	0.00123	0.00167	0.00090	0.00175
Zirconium (Zr)-Dissolved	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Aggregate Organics (Water)															
BOD	2.0	mg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
COD	20	mg/L	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20

Qualifier Legend

DTC	Dissolved concentration exceeds total. Results were confirmed by re-analysis.

Client Sample ID		MAGLIOS R-1MD	MAGLIOS R-1MAB	MAGLIOS L-1MAB	MAGLIOS L-1MD	MAGLIOS L-SH	OLD BRIDGE R-SH	OLD BRIDGE R-1MD	OLD BRIDGE R-1MAB	OLD BRIDGE L-1MAB	OLD BRIDGE L-1MD	OLD BRIDGE L-SH	NEW BRIDGE R-SH	NEW BRIDGE R-1MD
Date Sampled		6-Apr-2016	6-Apr-2016	6-Apr-2016	6-Apr-2016	6-Apr-2016	6-Apr-2016	6-Apr-2016	6-Apr-2016	6-Apr-2016	6-Apr-2016	6-Apr-2016	6-Apr-2016	6-Apr-2016
Time Sampled		11:52	12:08	12:19	12:34	12:46	12:55	13:06	13:18	13:54	14:05	14:14	14:43	14:44
ALS Sample ID		L1753653-14	L1753653-15	L1753653-16	L1753653-17	L1753653-18	L1753653-19	L1753653-20	L1753653-21	L1753653-22	L1753653-23	L1753653-24	L1753653-25	L1753653-26
Parameter	Lowest Detection Limit	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests (Water)														
Conductivity	2.0	153	152	152	151	152	152	149	144	146	148	151	168	146
Hardness (as CaCO3)	0.50	68.6	68.4	68.4	68.8	68.9	69.2	69.2	68.6	68.8	69	68.9	74.9	69
pH	0.10	8.07	8.07	8.08	8.08	8.07	7.91	7.94	7.93	7.93	7.94	8.01	7.97	7.96
Total Suspended Solids	3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Total Dissolved Solids	10	93	93	89	91	90	93	88	96	90	92	89	102	95
Turbidity	0.10	0.36	0.47	0.48	0.50	0.33	0.52	0.54	0.56	0.45	0.38	0.43	0.47	0.37
Anions and Nutrients (Water)														
Alkalinity, Total (as CaCO3)	1.0	63.3	63.3	63.2	63.2	62.9	59.7	60.9	60.0	60.2	60.6	61.9	61.1	60.3
Ammonia, Total (as N)	0.0050	0.0065	0.0081	0.0140	0.0063	0.0064	0.0125	0.0050	0.0073	<0.0050	0.0075	0.0174	0.0382	<0.0050
Bromide (Br)	0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	0.50	0.96	0.96	0.95	0.94	0.94	1.04	0.94	0.96	0.92	0.91	0.95	1.58	0.92
Fluoride (F)	0.020	0.077	0.077	0.075	0.074	0.076	0.088	0.076	0.078	0.073	0.074	0.074	0.146	0.073
Nitrate (as N)	0.0050	0.142	0.142	0.141	0.141	0.142	0.143	0.140	0.141	0.178	0.140	0.146	0.155	0.139
Nitrite (as N)	0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	0.050	0.064	0.065	0.078	0.085	0.072	0.073	0.063	0.067	0.065	0.082	0.080	0.098	0.057
Phosphorus (P)-Total Dissolved	0.0020	0.0029	0.0028	0.0026	<0.0020	0.0029	<0.0020	0.0034	0.0029	0.0024	<0.0020	0.0024	<0.0020	0.0025
Phosphorus (P)-Total	0.0020	0.0036	0.0038	0.0043	0.0037	0.0053	0.0052	0.0051	0.0046	0.0041	0.0032	0.0032	0.0033	0.0023
Sulfate (SO4)	0.30	11.8	11.8	11.7	11.6	11.6	13.1	11.6	12.0	11.4	11.4	11.8	19.6	11.4
Organic / Inorganic Carbon (Water)														
Total Organic Carbon	0.50	1.75	1.81	1.61	2.28	1.60	1.80	1.70	1.71	1.58	1.52	1.56	1.42	1.71
Total Metals (Water)														
Mercury (Hg)-Total	0.00050	0.00056	0.00051	0.00053	<0.00050	<0.00050	0.00086	<0.00050	0.00057	<0.00050	<0.00050	<0.00050	0.00200	<0.00050
Total Metals (Undigested) (Water)														
Aluminum (Al)-Total	0.00050	0.0174	0.0164	0.0150	0.0162	0.0161	0.0162	0.0153	0.0167	0.0149	0.0153	0.0152	0.0171	0.0156
Antimony (Sb)-Total	0.000020	0.000126	0.000126	0.000110	0.000092	0.000090	0.000289	0.000088	0.000151	0.000050	0.000051	0.000057	0.00105	0.000052
Arsenic (As)-Total	0.000020	0.000341	0.000355	0.000338	0.000294	0.000344	0.000684	0.000338	0.000396	0.000269	0.000250	0.000259	0.000747	0.000275
Barium (Ba)-Total	0.000020	0.0225	0.0224	0.0225	0.0223	0.0249	0.0222	0.0226	0.0225	0.0223	0.0223	0.0225	0.0229	0.0227
Beryllium (Be)-Total	0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Total	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000173	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Total	0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0060	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Total	0.0000050	0.0000313	0.0000331	0.0000254	0.0000195	0.0000249	0.0000843	0.0000223	0.0000370	0.0000110	0.0000133	0.0000173	0.000524	0.0000194
Calcium (Ca)-Total	0.030	19.7	19.8	19.8	19.7	19.9	20.1	19.9	19.9	19.9	19.7	19.7	22.3	19.8
Chromium (Cr)-Total	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Total	0.0000050	0.0000162	0.0000170	0.0000130	0.0000145	0.0000154	0.0000214	0.0000150	0.0000171	0.0000127	0.0000106	0.0000137	0.0000244	0.0000129
Copper (Cu)-Total	0.00010	0.00039	0.00041	0.00039	0.00038	0.00039	0.00051	0.00037	0.00038	0.00033	0.00033	0.00035	0.00092	0.00032
Iron (Fe)-Total	0.0010	0.0161	0.0155	0.0173	0.0162	0.0189	0.0174	0.0157	0.0178	0.0149	0.0153	0.0147	0.0147	0.0154
Lead (Pb)-Total	0.000010	0.000116	0.000119	0.000111	0.000101	0.000091	0.00131	0.000150	0.000198	0.000061	0.000056	0.000193	0.000907	0.000067
Lithium (Li)-Total	0.00050	0.00097	0.00091	0.00086	0.00098	0.00148	0.00086	0.00088	0.00091	0.00079	0.00085	0.00086	0.00095	0.00092
Magnesium (Mg)-Total	0.030	4.65	4.69	4.67	4.68	4.68	4.67	4.70	4.67	4.72	4.68	4.71	4.70	4.69
Manganese (Mn)-Total	0.000050	0.00219	0.00224	0.00232	0.00229	0.00239	0.00254	0.00210	0.00240	0.00195	0.00216	0.00281	0.00419	0.00206
Molybdenum (Mo)-Total	0.000050	0.000575	0.000565	0.000556	0.000576	0.000525	0.000558	0.000528	0.000544	0.000540	0.000530	0.000537	0.000667	0.000542
Nickel (Ni)-Total	0.000050	0.000244	0.000281	0.000250	0.000267	0.000299	0.000274	0.000279	0.000274	0.000253	0.000258	0.000243	0.000279	0.000273
Phosphorus (P)-Total	0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Total	0.050	0.681	0.677	0.671	0.668	0.701	0.713	0.668	0.657	0.670	0.652	0.667	0.735	0.675
Selenium (Se)-Total	0.000040	0.000407	0.000449	0.000399	0.000362	0.000372	0.000856	0.000400	0.000544	0.000344	0.000281	0.000320	**0.00238**	0.000303
Silicon (Si)-Total	0.050	2.45	2.45	2.46	2.44	2.45	2.53	2.47	2.50	2.45	2.43	2.43	2.49	2.46
Silver (Ag)-Total	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000054	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Total	0.010	1.69	1.71	1.70	1.68	1.82	2.04	1.70	1.79	1.59	1.62	1.62	2.74	1.59
Strontium (Sr)-Total	0.000050	0.108	0.106	0.107	0.107	0.0977	0.102	0.100	0.105	0.104	0.104	0.105	0.106	0.105
Thallium (Tl)-Total	0.0000020	0.0000207	0.0000197	0.0000141	0.0000117	0.0000128	0.0000638	0.0000124	0.0000291	0.0000030	0.0000023	0.0000022	**0.000392**	0.0000040
Tin (Sn)-Total	0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Titanium (Ti)-Total	0.00050	0.00053	0.00059	0.00058	0.00056	0.00066	0.00062	0.00051	0.00054	<0.00050	0.00054	<0.00050	0.00059	<0.00050
Uranium (U)-Total	0.0000020	0.000566	0.000561	0.000562	0.000570	0.000548	0.000547	0.000545	0.000570	0.000561	0.000566	0.000558	0.000559	0.000556
Vanadium (V)-Total	0.000050	0.000171	0.000160	0.000150	0.000164	0.000186	0.000173	0.000159	0.000168	0.000146	0.000171	0.000163	0.000160	0.000178
Zinc (Zn)-Total	0.00050	0.00174	0.00221	0.00185	0.00282	0.00155	0.00294	0.00139	0.00179	0.00149	0.00175	0.00127	**0.00852**	0.00154
Zirconium (Zr)-Total	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Metals (Water)														
Dissolved Mercury Filtration Location		FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location		FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location		FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Aluminum (Al)-Dissolved	0.00050	0.00690	0.00583	0.00726	0.00542	0.00534	0.00570	0.00736	0.00598	0.00576	0.00792	0.00611	0.00594	0.00687
Antimony (Sb)-Dissolved	0.000020	0.000075	0.000127	0.000106	0.000095	0.000091	0.000281	0.000100	0.000138	0.000053	0.000048	0.000057	0.00102	0.000053
Arsenic (As)-Dissolved	0.000020	0.000258	0.000342	0.000317	0.000292	0.000296	0.000644	0.000329	0.000429	0.000267	0.000250	0.000268	0.000732	0.000272
Barium (Ba)-Dissolved	0.000020	0.0222	0.0218	0.0240	0.0221	0.0221	0.0219	0.0222	0.0218	0.0222	0.0220	0.0221	0.0239	0.0220
Beryllium (Be)-Dissolved	0.000010	<0.000010	<0.000010	0.000015	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Dissolved	0.0000050	0.0000052	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Dissolved	0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Dissolved	0.0000050	0.0000112	0.0000307	0.0000239	0.0000199	0.0000178	0.0000733	0.0000192	0.0000361	0.0000085	0.0000112	0.0000147	**0.000537**	0.0000191
Calcium (Ca)-Dissolved	0.030	19.8	19.7	19.7	19.8	19.9	20.0	19.9	19.9	19.8	19.9	19.9	22.2	19.9
Chromium (Cr)-Dissolved	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Dissolved	0.0000050	0.0000062	0.0000072	0.0000106	0.0000084	0.0000077	0.0000107	0.0000105	0.0000099	0.0000078	0.0000090	0.0000077	0.0000215	0.0000080
Copper (Cu)-Dissolved	0.00010	0.00033	0.00034	0.00036	0.00034	0.00033	0.00042	0.00033	0.00035	0.00031	0.00031	0.00031	0.00078	0.00031
Iron (Fe)-Dissolved	0.0010	0.0046	0.0031	0.0047	0.0031	0.0030	0.0032	0.0047	0.0041	0.0030	0.0042	0.0031	0.0035	0.0044
Lead (Pb)-Dissolved	0.0000050	0.0000187	0.0000350	0.0000358	0.0000222	0.0000159	0.000177	0.0000363	0.0000471	0.0000139	0.0000131	0.0000494	0.000435	0.0000238
Lithium (Li)-Dissolved	0.00050	0.00088	0.00088	0.00153	0.00084	0.00078	0.00090	0.00077	0.00080	0.00083	0.00092	0.00081	0.00153	0.00088
Magnesium (Mg)-Dissolved	0.030	4.67	4.66	4.66	4.69	4.69	4.70	4.70	4.61	4.71	4.72	4.70	4.72	4.71
Manganese (Mn)-Dissolved	0.000050	0.00126	0.00113	0.00129	0.00123	0.00129	0.00140	0.00115	0.00121	0.00118	0.00116	0.00189	0.00342	0.00109
Mercury (Hg)-Dissolved	0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00056	<0.00050
Molybdenum (Mo)-Dissolved	0.000050	0.000582	0.000569	0.000536	0.000535	0.000549	0.000594	0.000561	0.000547	0.000544	0.000533	0.000493	0.000641	0.000543
Nickel (Ni)-Dissolved	0.000050	0.000265	0.000245	0.000248	0.000242	0.000245	0.000236	0.000239	0.000229	0.000245	0.000261	0.000232	0.000264	0.000220
Phosphorus (P)-Dissolved	0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Dissolved	0.050	0.677	0.667	0.666	0.663	0.661	0.712	0.646	0.608	0.666	0.668	0.657	0.713	0.694
Selenium (Se)-Dissolved	0.000040	0.000310	0.000417	0.000427	0.000372	0.000362	0.000890	0.000417	0.000548	0.000338	0.000278	0.000290	0.00249	0.000320
Silicon (Si)-Dissolved	0.050	2.44	2.44	2.42	2.44	2.44	2.52	2.46	2.46	2.42	2.42	2.40	2.48	2.44
Silver (Ag)-Dissolved	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000070	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Dissolved	0.010	1.62	1.71	1.88	1.67	1.70	1.99	1.66	1.77	1.64	1.61	1.65	2.90	1.59
Strontium (Sr)-Dissolved	0.00010	0.107	0.107	0.0983	0.105	0.106	0.106	0.104	0.102	0.106	0.107	0.0953	0.0986	0.105
Thallium (Tl)-Dissolved	0.0000020	0.0000034	0.0000183	0.0000150	0.0000106	0.0000112	0.0000657	0.0000150	0.0000278	0.0000028	0.0000020	0.0000024	0.000403	0.0000032
Tin (Sn)-Dissolved	0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Titanium (Ti)-Dissolved	0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Uranium (U)-Dissolved	0.0000020	0.000563	0.000571	0.000570	0.000562	0.000576	0.000559	0.000554	0.000548	0.000560	0.000555	0.000518	0.000561	0.000554
Vanadium (V)-Dissolved	0.000050	0.000156	0.000140	0.000159	0.000143	0.000147	0.000153	0.000131	0.000141	0.000155	0.000147	0.000142	0.000165	0.000143
Zinc (Zn)-Dissolved	0.00050	0.00103	0.00168	0.00184	0.00126	0.00094	0.00230	0.00114	0.00155	0.00203	0.00092	0.00174	0.00854	0.00116
Zirconium (Zr)-Dissolved	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Aggregate Organics (Water)														
BOD	2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
COD	20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20

Qualifier Legend

DTC	Dissolved concentration exceec

Client Sample ID		NEW BRIDGE R-1MAB	NEW BRIDGE L-1MAB	NEW BRIDGE L-1MD	NEW BRIDGE L-SH	WANETA COMP	DUPLICATE 1 (New Bridge RSH)	DUPLICATE 2 (New Bridge R 1M	DUPLICATE 3 (New Bridge LSH)	TRAVEL BLANK	FIELD BLANK
Date Sampled		6-Apr-2016	6-Apr-2016	6-Apr-2016	6-Apr-2016	5-Apr-2016	6-Apr-2016	6-Apr-2016	6-Apr-2016	6-Apr-2016	6-Apr-2016
Time Sampled		15:10	15:23	15:35	15:51	18:15	0:00	0:00	0:00	0:00	0:00
ALS Sample ID		L1753653-27	L1753653-28	L1753653-29	L1753653-30	L1753653-31	L1753653-32	L1753653-33	L1753653-34	L1753653-35	L1753653-36
Parameter	Lowest Detection Limit	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests (Water)											
Conductivity	2.0	146	147	148	152	147	169	148	154	<2.0	<2.0
Hardness (as CaCO3)	0.50	69	69.5	69	71.3	68.7	74.7	68.8	71.1	<0.50	<0.50
pH	0.10	7.94	7.95	7.95	7.97	7.95	7.94	7.97	7.97	5.42	5.37
Total Suspended Solids	3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Total Dissolved Solids	10	94	102	86	97	92	108	90	97	<10	<10
Turbidity	0.10	0.44	0.44	0.52	0.50	0.59	0.64	0.42	0.53	<0.10	<0.10
Anions and Nutrients (Water)											
Alkalinity, Total (as CaCO3)	1.0	60.0	60.9	60.8	59.6	59.2	60.3	60.0	59.4	<1.0	<1.0
Ammonia, Total (as N)	0.0050	<0.0050	0.0056	0.0058	0.0289	0.0067	0.0386	0.0066	0.0299	<0.0050	<0.0050
Bromide (Br)	0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	0.50	0.92	0.92	0.92	2.40	0.95	1.58	0.92	2.43	<0.50	<0.50
Fluoride (F)	0.020	0.073	0.074	0.074	0.074	0.076	0.145	0.073	0.075	<0.020	<0.020
Nitrate (as N)	0.0050	0.139	0.140	0.140	0.144	0.138	0.155	0.139	0.145	<0.0050	<0.0050
Nitrite (as N)	0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	0.050	0.073	0.060	0.063	0.095	0.072	0.096	0.066	0.109	<0.050	<0.050
Phosphorus (P)-Total Dissolved	0.0020	0.0027	0.0023	0.0032	<0.0020	<0.0020	0.0022	<0.0020	<0.0020	<0.0020	<0.0020
Phosphorus (P)-Total	0.0020	0.0029	0.0042	0.0043	0.0038	0.0050	0.0036	0.0027	0.0038	<0.0020	<0.0020
Sulfate (SO4)	0.30	11.4	11.4	11.4	12.0	11.6	19.6	11.4	12.0	<0.30	<0.30
Organic / Inorganic Carbon (Water)											
Total Organic Carbon	0.50	1.68	1.67	1.61	1.52	1.76	1.55	1.40	1.81	<0.50	<0.50
Total Metals (Water)											
Mercury (Hg)-Total	0.00050	<0.00050	<0.00050	<0.00050	0.00066	0.00070	0.00185	<0.00050	0.00071	<0.00050	<0.00050
Total Metals (Undigested) (Water)											
Aluminum (Al)-Total	0.00050	0.0152	0.0157	0.0146	0.0275	0.0189	0.0147	0.0131	0.0207	<0.00070	<0.00070
Antimony (Sb)-Total	0.000020	0.000051	0.000049	0.000050	0.000139	0.000129	0.00108	0.000060	0.000140	<0.000020	<0.000020
Arsenic (As)-Total	0.000020	0.000265	0.000281	0.000252	0.000299	0.000372	0.000727	0.000284	0.000302	<0.000020	<0.000020
Barium (Ba)-Total	0.000020	0.0223	0.0225	0.0225	0.0238	0.0248	0.0228	0.0244	0.0236	<0.000020	<0.000020
Beryllium (Be)-Total	0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000018	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Total	0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000058	<0.0000050	<0.0000050	<0.0000050	0.0000053	<0.0000050	<0.0000050
Boron (B)-Total	0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Total	0.0000050	0.0000159	0.0000113	0.0000137	0.0000382	0.0000302	0.000504	0.0000222	0.0000403	<0.0000050	<0.0000050
Calcium (Ca)-Total	0.030	19.8	19.9	19.8	20.1	19.8	22.2	19.7	20.3	<0.030	<0.030
Chromium (Cr)-Total	0.00010	<0.00010	<0.00010	<0.00010	0.00012	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Total	0.0000050	0.0000120	0.0000144	0.0000153	0.0000287	0.0000178	0.0000272	0.0000140	0.0000226	<0.0000050	<0.0000050
Copper (Cu)-Total	0.00010	0.00035	0.00034	0.00034	0.00048	0.00044	0.00091	0.00033	0.00044	<0.00010	<0.00010
Iron (Fe)-Total	0.0010	0.0152	0.0165	0.0157	0.0345	0.0219	0.0134	0.0149	0.0276	<0.0010	<0.0010
Lead (Pb)-Total	0.000010	0.000065	0.000055	0.000050	0.00140	0.000150	0.000888	0.000056	0.000997	<0.000010	<0.000010
Lithium (Li)-Total	0.00050	0.00082	0.00084	0.00074	0.00096	0.00157	0.00079	0.00147	0.00084	<0.00050	<0.00050
Magnesium (Mg)-Total	0.030	4.72	4.72	4.72	4.81	4.68	4.71	4.67	4.77	<0.030	<0.030
Manganese (Mn)-Total	0.000050	0.00201	0.00227	0.00215	0.00472	0.00245	0.00406	0.00180	0.00406	<0.000050	<0.000050
Molybdenum (Mo)-Total	0.000050	0.000542	0.000560	0.000504	0.000559	0.000544	0.000698	0.000559	0.000570	<0.000050	<0.000050
Nickel (Ni)-Total	0.000050	0.000258	0.000276	0.000278	0.000321	0.000251	0.000267	0.000253	0.000299	<0.000050	<0.000050
Phosphorus (P)-Total	0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Total	0.050	0.676	0.677	0.658	0.729	0.682	0.700	0.668	0.722	<0.050	<0.050
Selenium (Se)-Total	0.000040	0.000315	0.000303	0.000301	0.000297	0.000400	**0.00228**	0.000317	0.000269	<0.000040	<0.000040
Silicon (Si)-Total	0.050	2.45	2.46	2.45	2.69	2.51	2.47	2.45	2.69	<0.050	<0.050
Silver (Ag)-Total	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Total	0.010	1.62	1.61	1.59	2.07	1.81	2.66	1.72	2.07	<0.010	<0.010
Strontium (Sr)-Total	0.000050	0.104	0.106	0.0970	0.111	0.101	0.107	0.101	0.111	<0.000050	<0.000050
Thallium (Tl)-Total	0.0000020	0.0000026	0.0000023	<0.0000020	0.0000051	0.0000182	**0.000396**	0.0000039	0.0000037	<0.0000020	<0.0000020
Tin (Sn)-Total	0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Titanium (Ti)-Total	0.00050	<0.00050	0.00056	<0.00050	0.00144	0.00069	<0.00050	<0.00050	0.00114	<0.00050	<0.00050
Uranium (U)-Total	0.0000020	0.000551	0.000565	0.000498	0.000565	0.000570	0.000569	0.000556	0.000579	<0.0000030	<0.0000030
Vanadium (V)-Total	0.000050	0.000167	0.000159	0.000152	0.000206	0.000228	0.000154	0.000183	0.000198	<0.000050	<0.000050
Zinc (Zn)-Total	0.00050	0.00145	0.00108	0.00137	0.00343	0.00213	**0.00773**	0.00154	0.00466	<0.00050	<0.00050
Zirconium (Zr)-Total	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Metals (Water)											
Dissolved Mercury Filtration Location		FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD		
Dissolved Metals Filtration Location		FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD		
Dissolved Metals Filtration Location		FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD		
Aluminum (Al)-Dissolved	0.00050	0.00563	0.00791	0.00668	0.00762	0.00564	0.00679	0.00684	0.00694		
Antimony (Sb)-Dissolved	0.000020	0.000049	0.000048	0.000055	0.000131	0.000121	0.00107	0.000060	0.000125		
Arsenic (As)-Dissolved	0.000020	0.000257	0.000230	0.000249	0.000316	0.000350	0.000727	0.000252	0.000281		
Barium (Ba)-Dissolved	0.000020	0.0224	0.0207	0.0226	0.0268	0.0222	0.0234	0.0221	0.0238		
Beryllium (Be)-Dissolved	0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010		
Bismuth (Bi)-Dissolved	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050		
Boron (B)-Dissolved	0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		
Cadmium (Cd)-Dissolved	0.0000050	0.0000147	0.0000107	0.0000115	0.0000279	0.0000179	0.000525	0.0000151	0.0000151		
Calcium (Ca)-Dissolved	0.030	19.8	20.0	19.8	20.5	19.8	22.1	19.8	20.4		
Chromium (Cr)-Dissolved	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		
Cobalt (Co)-Dissolved	0.0000050	0.0000061	0.0000085	0.0000071	0.0000138	0.0000093	0.0000203	0.0000082	0.0000108		
Copper (Cu)-Dissolved	0.00010	0.00031	0.00028	0.00031	0.00129	0.00037	0.00077	0.00031	0.00037		
Iron (Fe)-Dissolved	0.0010	0.0032	0.0043	0.0044	0.0046	0.0034	0.0033	0.0044	0.0042		
Lead (Pb)-Dissolved	0.0000050	0.0000156	0.0000142	0.0000185	0.000154	0.0000282	0.000460	0.0000184	0.000153		
Lithium (Li)-Dissolved	0.00050	0.00077	0.00085	0.00085	0.00149	0.00071	0.00161	0.00079	0.00076		
Magnesium (Mg)-Dissolved	0.030	4.73	4.75	4.76	4.89	4.68	4.72	4.70	4.87		
Manganese (Mn)-Dissolved	0.000050	0.00106	0.00102	0.00116	0.00281	0.00129	0.00339	0.00108	0.00266		
Mercury (Hg)-Dissolved	0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00058	<0.00050	<0.00050		
Molybdenum (Mo)-Dissolved	0.000050	0.000537	0.000530	0.000563	0.000533	0.000559	0.000638	0.000567	0.000544		
Nickel (Ni)-Dissolved	0.000050	0.000239	0.000235	0.000248	0.000279	0.000237	0.000252	0.000237	0.000267		
Phosphorus (P)-Dissolved	0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050		
Potassium (K)-Dissolved	0.050	0.692	0.669	0.680	0.746	0.676	0.709	0.696	0.727		
Selenium (Se)-Dissolved	0.000040	0.000303	0.000290	0.000306	0.000301	0.000387	0.00248	0.000323	0.000299		
Silicon (Si)-Dissolved	0.050	2.46	2.43	2.44	2.65	2.50	2.46	2.45	2.67		
Silver (Ag)-Dissolved	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050		
Sodium (Na)-Dissolved	0.010	1.58	1.47	1.59	3.10	1.67	2.90	1.57	2.67		
Strontium (Sr)-Dissolved	0.00010	0.104	0.101	0.106	0.105	0.104	0.0996	0.107	0.110		
Thallium (Tl)-Dissolved	0.0000020	0.0000027	0.0000025	0.0000059	0.0000031	0.0000171	0.000411	0.0000036	0.0000030		
Tin (Sn)-Dissolved	0.000010	<0.000010	0.000011	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010		
Titanium (Ti)-Dissolved	0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030		
Uranium (U)-Dissolved	0.0000020	0.000554	0.000545	0.000555	0.000561	0.000545	0.000579	0.000560	0.000553		
Vanadium (V)-Dissolved	0.000050	0.000147	0.000121	0.000143	0.000200	0.000149	0.000153	0.000133	0.000163		
Zinc (Zn)-Dissolved	0.00050	0.00100	0.00080	0.00158	0.00206	0.00124	0.00780	0.00104	0.00172		
Zirconium (Zr)-Dissolved	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		
Aggregate Organics (Water)											
BOD	2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
COD	20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20

Qualifier Legend

DTC	Dissolved concentration exceec

Client Sample ID			BIRCH-BANK R-SH	BIRCH-BANK R-1M D	BIRCH-BANK R- 1M AB	BIRCH-BANK L- 1M AB	BIRCH-BANK L-1M D	BIRCH-BANK L-SH	STONEY CK R-SH	STONEY CK R-1MD	STONEY CK R-1MAB	STONEY CK L-1MAB	STONEY CK L-1MD	STONEY CK L-SH
Date Sampled			26-Jul-2016	26-Jul-2016	26-Jul-2016	26-Jul-2016	26-Jul-2016	26-Jul-2016	26-Jul-2016	26-Jul-2016	26-Jul-2016	26-Jul-2016	26-Jul-2016	26-Jul-2016
Time Sampled			8:00	8:10	8:20	8:30	8:40	8:50	9:10	9:20	9:30	9:40	9:50	10:00
ALS Sample ID			L1805254-1	L1805254-2	L1805254-3	L1805254-4	L1805254-5	L1805254-6	L1805254-7	L1805254-8	L1805254-9	L1805254-10	L1805254-11	L1805254-12
Parameter	Lowest Detection Limit	Units	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests (Water)														
Conductivity	2.0	uS/cm	119	118	118	120	118	120	120	120	121	120	120	118
Hardness (as CaCO3)	0.50	mg/L	56.5	56.9	56.9	57.2	57.5	57.7	57.8	58.4	56.5	57.5	58	57.2
pH	0.10	pH	7.83	7.84	7.81	7.82	7.80	7.80	7.84	7.81	7.80	7.82	7.85	7.78
Total Suspended Solids	3.0	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Total Dissolved Solids	10	mg/L	72	64	63	68	63	68	60	63	65	64	69	72
Turbidity	0.10	NTU	0.60	0.67	0.62	0.59	0.56	0.65	0.58	0.60	0.65	0.63	0.63	0.63
Anions and Nutrients (Water)														
Alkalinity, Total (as CaCO3)	1.0	mg/L	52.5	51.8	51.8	52.9	51.8	52.0	51.7	52.0	52.0	52.1	51.9	51.6
Ammonia, Total (as N)	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	0.0052	<0.0050	<0.0050	<0.0050	0.0065	0.0059	0.0064	0.0061
Bromide (Br)	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	0.50	mg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Fluoride (F)	0.020	mg/L	0.060	0.058	0.058	0.058	0.059	0.058	0.060	0.059	0.059	0.060	0.059	0.058
Nitrate (as N)	0.0050	mg/L	0.0707	0.0711	0.0690	0.0728	0.0704	0.0723	0.0702	0.0687	0.0692	0.0672	0.0691	0.0684
Nitrite (as N)	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0035	<0.0010	<0.0010	<0.0010	0.0012	<0.0010	<0.0010
Total Kjeldahl Nitrogen	0.050	mg/L	0.085	0.079	0.080	0.088	0.101	0.155	0.077	0.115	0.078	0.084	0.093	0.111
Phosphorus (P)-Total Dissolved	0.0020	mg/L	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Phosphorus (P)-Total	0.0020	mg/L	0.0041	0.0034	0.0037	0.0051	0.0040	0.0042	0.0034	0.0045	0.0055	0.0039	0.0046	0.0042
Sulfate (SO4)	0.30	mg/L	9.25	9.23	9.22	9.22	9.22	9.23	9.31	9.29	9.30	9.29	9.29	9.30
Organic / Inorganic Carbon (Water)														
Total Organic Carbon	0.50	mg/L	1.33	1.26	1.22	1.68	1.41	1.29	1.25	1.30	1.28	1.28	1.24	1.31
Total Metals (Water)														
Mercury (Hg)-Total	0.00050	ug/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Total Metals (Undigested) (Water)														
Aluminum (Al)-Total	0.00070	mg/L	0.0201	0.0198	0.0213	0.0191	0.0194	0.0190	0.0174	0.0201	0.0177	0.0181	0.0191	0.0184
Antimony (Sb)-Total	0.000020	mg/L	0.000032	0.000033	0.000025	0.000028	0.000029	0.000027	0.000057	0.000025	0.000027	0.000025	0.000025	0.000028
Arsenic (As)-Total	0.000020	mg/L	0.000156	0.000148	0.000151	0.000130	0.000149	0.000132	0.000280	0.000142	0.000128	0.000137	0.000138	0.000145
Barium (Ba)-Total	0.000020	mg/L	0.0171	0.0168	0.0167	0.0158	0.0172	0.0174	0.0168	0.0173	0.0170	0.0167	0.0184	0.0172
Beryllium (Be)-Total	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Total	0.0000050	mg/L	0.0000268	0.0000203	0.0000125	0.0000107	0.0000089	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Total	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Total	0.0000050	mg/L	0.0000065	0.0000088	0.0000074	0.0000073	0.0000081	0.0000082	0.0000179	0.0000087	0.0000086	0.0000095	0.0000062	0.0000097
Calcium (Ca)-Total	0.030	mg/L	16.6	16.4	16.9	16.8	17.1	17.1	17.3	17.1	16.9	17.0	17.2	16.7
Chromium (Cr)-Total	0.00010	mg/L	<0.00010	<0.00010	**0.00283**	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Total	0.0000050	mg/L	0.0000107	0.0000086	0.0000164	0.0000120	0.0000104	0.0000086	0.0000106	0.0000114	0.0000118	0.0000071	0.0000099	0.0000067
Copper (Cu)-Total	0.00010	mg/L	0.00027	0.00029	0.00040	0.00026	0.00036	0.00028	0.00029	0.00029	0.00028	0.00027	0.00029	0.00029
Iron (Fe)-Total	0.0010	mg/L	0.0122	0.0097	0.0346	0.0113	0.0108	0.0109	0.0100	0.0122	0.0116	0.0117	0.0116	0.0115
Lead (Pb)-Total	0.000010	mg/L	0.000047	0.000041	0.000038	0.000038	0.000035	0.000041	0.000057	0.000043	0.000037	0.000042	0.000046	0.000047
Lithium (Li)-Total	0.00050	mg/L	0.00092	0.00092	0.00101	0.00101	0.00090	0.00095	0.00093	0.00092	0.00091	0.00103	0.00099	0.00100
Magnesium (Mg)-Total	0.030	mg/L	3.58	3.48	3.58	3.58	3.62	3.65	3.66	3.68	3.64	3.70	3.75	3.58
Manganese (Mn)-Total	0.000050	mg/L	0.00144	0.00134	0.00164	0.00144	0.00138	0.00140	0.00141	0.00145	0.00152	0.00139	0.00160	0.00146
Molybdenum (Mo)-Total	0.000050	mg/L	0.000482	0.000483	0.000519	0.000521	0.000508	0.000504	0.000487	0.000471	0.000489	0.000505	0.000500	0.000500
Nickel (Ni)-Total	0.000050	mg/L	0.000310	0.000296	0.000327	0.000272	0.000234	0.000277	0.000259	0.000252	0.000239	0.000239	0.000242	0.000231
Phosphorus (P)-Total	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Total	0.050	mg/L	0.578	0.543	0.574	0.586	0.565	0.595	0.581	0.575	0.581	0.601	0.602	0.561
Selenium (Se)-Total	0.000040	mg/L	0.000133	0.000119	0.000138	0.000134	0.000145	0.000128	0.000148	0.000170	0.000117	0.000138	0.000137	0.000112
Silicon (Si)-Total	0.050	mg/L	1.64	1.67	1.67	1.66	1.68	1.69	1.67	1.65	1.62	1.65	1.67	1.62
Silver (Ag)-Total	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Total	0.010	mg/L	1.02	1.03	1.03	0.964	1.02	1.03	1.06	1.07	1.07	1.04	1.13	1.05
Strontium (Sr)-Total	0.000050	mg/L	0.108	0.108	0.109	0.109	0.110	0.109	0.107	0.108	0.108	0.108	0.114	0.109
Thallium (Tl)-Total	0.0000020	mg/L	0.0000044	0.0000039	0.0000028	0.0000030	0.0000025	0.0000033	0.0000024	0.0000022	<0.0000020	<0.0000020	0.0000024	<0.0000020
Tin (Sn)-Total	0.000020	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Titanium (Ti)-Total	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Uranium (U)-Total	0.0000030	mg/L	0.000406	0.000405	0.000412	0.000408	0.000402	0.000405	0.000405	0.000411	0.000412	0.000402	0.000433	0.000408
Vanadium (V)-Total	0.000050	mg/L	0.000113	0.000120	0.000122	0.000111	0.000129	0.000108	0.000110	0.000130	0.000142	0.000130	0.000122	0.000125
Zinc (Zn)-Total	0.00050	mg/L	0.00189	0.00154	0.00140	0.00120	0.00099	0.00090	0.00206	0.00190	0.00107	0.00178	0.00085	0.00140
Zirconium (Zr)-Total	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Metals (Water)														
Dissolved Mercury Filtration Location		-	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location		-	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location		-	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Aluminum (Al)-Dissolved	0.00050	mg/L	0.0113	0.0118	0.0117	0.0125	0.0132	0.0116	0.0109	0.0126	0.0117	0.0119	0.0123	0.0108
Antimony (Sb)-Dissolved	0.000020	mg/L	0.000033	0.000031	0.000033	0.000030	0.000034	0.000026	0.000055	0.000025	0.000028	0.000030	0.000025	0.000025
Arsenic (As)-Dissolved	0.000020	mg/L	0.000126	0.000137	0.000139	0.000141	0.000156	0.000138	0.000292	0.000135	0.000111	0.000159	0.000123	0.000139
Barium (Ba)-Dissolved	0.000020	mg/L	0.0165	0.0167	0.0165	0.0168	0.0180	0.0168	0.0169	0.0171	0.0170	0.0172	0.0169	0.0168
Beryllium (Be)-Dissolved	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Dissolved	0.0000050	mg/L	0.0000223	0.0000142	0.0000108	0.0000084	0.0000065	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Dissolved	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Dissolved	0.0000050	mg/L	0.0000071	0.0000061	0.0000057	0.0000072	0.0000087	0.0000075	0.0000152	<0.0000050	<0.0000050	0.0000061	0.0000050	0.0000054
Calcium (Ca)-Dissolved	0.030	mg/L	16.6	16.9	16.9	17.0	17.1	17.1	17.1	17.2	16.7	17.0	17.1	16.9
Chromium (Cr)-Dissolved	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Dissolved	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	0.0000052	0.0000083	<0.0000050	<0.0000050	<0.0000050	0.0000057	0.0000068	0.0000051	0.0000063
Copper (Cu)-Dissolved	0.00010	mg/L	0.00026	0.00027	0.00026	0.00026	0.00027	0.00025	0.00028	0.00026	0.00026	0.00026	0.00027	0.00025
Iron (Fe)-Dissolved	0.0010	mg/L	0.0024	0.0022	0.0021	0.0023	0.0025	0.0019	0.0022	0.0025	0.0022	0.0023	0.0020	0.0021
Lead (Pb)-Dissolved	0.0000050	mg/L	0.0000191	0.0000139	0.0000091	0.0000096	0.0000096	0.0000091	0.0000197	0.0000087	0.0000058	0.0000077	<0.0000050	0.0000080
Lithium (Li)-Dissolved	0.00050	mg/L	0.00097	0.00105	0.00101	0.00096	0.00093	0.00092	0.00101	0.00098	0.00087	0.00097	0.00104	0.00095
Magnesium (Mg)-Dissolved	0.030	mg/L	3.64	3.56	3.56	3.58	3.59	3.62	3.66	3.72	3.61	3.68	3.69	3.65
Manganese (Mn)-Dissolved	0.000050	mg/L	0.000485	0.000450	0.000443	0.000446	0.000437	0.000421	0.000422	0.000375	0.000410	0.000368	0.000464	0.000375
Mercury (Hg)-Dissolved	0.00050	ug/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Molybdenum (Mo)-Dissolved	0.000050	mg/L	0.000487	0.000481	0.000508	0.000498	0.000490	0.000494	0.000491	0.000506	0.000501	0.000488	0.000505	0.000481
Nickel (Ni)-Dissolved	0.000050	mg/L	0.000263	0.000245	0.000232	0.000241	0.000278	0.000266	0.000234	0.000240	0.000229	0.000233	0.000229	0.000214
Phosphorus (P)-Dissolved	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Dissolved	0.050	mg/L	0.594	0.567	0.568	0.570	0.590	0.576	0.599	0.603	0.582	0.576	0.591	0.567
Selenium (Se)-Dissolved	0.000040	mg/L	0.000127	0.000142	0.000138	0.000141	0.000150	0.000123	0.000143	0.000138	0.000127	0.000138	0.000116	0.000155
Silicon (Si)-Dissolved	0.050	mg/L	1.63	1.63	1.63	1.64	1.64	1.66	1.64	1.65	1.59	1.61	1.62	1.59
Silver (Ag)-Dissolved	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Dissolved	0.010	mg/L	0.997	1.03	1.02	1.03	1.10	1.02	1.06	1.08	1.06	1.05	1.05	1.04
Strontium (Sr)-Dissolved	0.00010	mg/L	0.105	0.108	0.109	0.109	0.110	0.110	0.108	0.108	0.109	0.109	0.108	0.109
Thallium (Tl)-Dissolved	0.0000020	mg/L	0.0000058	0.0000035	0.0000027	0.0000024	0.0000031	0.0000027	0.0000027	<0.0000020	<0.0000020	0.0000023	0.0000024	0.0000021
Tin (Sn)-Dissolved	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Titanium (Ti)-Dissolved	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Uranium (U)-Dissolved	0.0000020	mg/L	0.000400	0.000402	0.000407	0.000407	0.000424	0.000410	0.000410	0.000415	0.000413	0.000417	0.000411	0.000420
Vanadium (V)-Dissolved	0.000050	mg/L	0.000107	0.000105	0.000115	0.000100	0.000152	0.000096	0.000112	0.000108	0.000102	0.000113	0.000125	0.000100
Zinc (Zn)-Dissolved	0.00050	mg/L	0.00139	0.00166	0.00122	0.00133	0.00115	0.00097	0.00218	0.00123	0.00122	0.00186	0.00108	0.00134
Zirconium (Zr)-Dissolved	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Aggregate Organics (Water)														
BOD	2.0	mg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
COD	20	mg/L	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20

Qualifier Legend

RRV	Reported Result Verified By Repeat Analysis
DTC	Dissolved concentration exceeds total. Results were confirmed by re-analysis.
HTD	Hold time exceeded for re-analysis or dilution, but initial testing was conducted within hold time.

Client Sample ID		WANETA COMP	MAGLIOS R-SH	MAGLIOS R-1MD	MAGLIOS R-1MAB	MAGLIOS L-1MD	MAGLIOS L-SH	MAGLIOS L-1MAB	OLD BRIDGE R-1MD	OLD BRIDGE R-1MAB	OLD BRIDGE L-1MAB	OLD BRIDGE L-1MD	OLD BRIDGE L-SH	OLD BRIDGE R-SH
Date Sampled		26-Jul-2016	26-Jul-2016	26-Jul-2016	26-Jul-2016	26-Jul-2016	26-Jul-2016	26-Jul-2016	26-Jul-2016	26-Jul-2016	26-Jul-2016	26-Jul-2016	26-Jul-2016	26-Jul-2016
Time Sampled		10:35	10:50	11:00	11:10	11:20	11:30	11:40	12:00	12:10	12:20	12:30	12:40	12:50
ALS Sample ID		L1805254-13	L1805254-14	L1805254-15	L1805254-16	L1805254-17	L1805254-18	L1805254-19	L1805254-20	L1805254-21	L1805254-22	L1805254-23	L1805254-24	L1805254-25
Parameter	Lowest Detection Limit	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests (Water)														
Conductivity	2.0	121	122	121	122	120	120	120	120	121	121	121	122	122
Hardness (as CaCO3)	0.50	56.6	56.4	57.5	57.2	56.7	58.1	57.3	56.7	57.4	57.6	57.5	57.1	57.4
pH	0.10	7.82	7.82	7.84	7.82	7.81	7.82	7.81	7.82	7.82	7.84	7.85	7.85	7.87
Total Suspended Solids	3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Total Dissolved Solids	10	64	67	59	64	64	63	68	69	74	70	61	69	72
Turbidity	0.10	0.82	0.66	0.67	0.72	0.66	0.53	0.62	0.58	0.56	0.58	0.59	0.53	0.55
Anions and Nutrients (Water)														
Alkalinity, Total (as CaCO3)	1.0	52.8	52.2	52.1	50.7	52.1	51.6	51.9	51.5	52.0	52.0	52.8	52.8	52.2
Ammonia, Total (as N)	0.0050	0.0077	0.0074	0.0068	0.0084	0.0168	0.0069	0.0065	0.0062	0.0070	0.0061	0.0057	0.0069	0.0078
Bromide (Br)	0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Fluoride (F)	0.020	0.061	0.062	0.060	0.061	0.059	0.060	0.059	0.061	0.061	0.059	0.058	0.058	0.066
Nitrate (as N)	0.0050	0.0700	0.0685	0.0679	0.0676	0.0672	0.0689	0.0680	0.0662	0.0665	0.0661	0.0672	0.0671	0.0693
Nitrite (as N)	0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0019	<0.0010	0.0016	<0.0010	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	0.050	0.105	0.091	0.083	0.089	0.103	0.100	0.110	0.108	0.131	0.119	0.124	0.113	0.116
Phosphorus (P)-Total Dissolved	0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Phosphorus (P)-Total	0.0020	0.0045	0.0041	0.0041	0.0049	0.0043	0.0035	0.0041	0.0030	0.0037	0.0034	0.0040	0.0037	0.0032
Sulfate (SO4)	0.30	9.46	9.49	9.52	9.48	9.39	9.40	9.40	9.46	9.60	9.31	9.27	9.30	10.0
Organic / Inorganic Carbon (Water)														
Total Organic Carbon	0.50	1.36	1.12	1.10	1.17	1.24	1.35	1.36	1.29	1.22	1.27	1.20	1.21	1.25
Total Metals (Water)														
Mercury (Hg)-Total	0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Total Metals (Undigested) (Water)														
Aluminum (Al)-Total	0.00070	0.0190	0.0171	0.0197	0.0196	0.0201	0.0190	0.0188	0.0176	0.0181	0.0192	0.0182	0.0207	0.0207
Antimony (Sb)-Total	0.000020	0.000077	0.000089	0.000083	0.000070	0.000052	0.000044	0.000050	0.000039	0.000090	0.000035	0.000022	0.000023	0.000165
Arsenic (As)-Total	0.000020	0.000142	0.000173	0.000167	0.000176	0.000160	0.000137	0.000155	0.000158	0.000170	0.000151	0.000121	0.000157	0.000212
Barium (Ba)-Total	0.000020	0.0169	0.0170	0.0168	0.0169	0.0172	0.0171	0.0169	0.0171	0.0173	0.0170	0.0170	0.0173	0.0172
Beryllium (Be)-Total	0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Total	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Total	0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Total	0.0000050	0.0000180	0.0000177	0.0000199	0.0000135	0.0000067	0.0000136	0.0000132	0.0000096	0.0000162	0.0000089	0.0000123	0.0000085	0.0000353
Calcium (Ca)-Total	0.030	16.8	16.8	16.9	17.0	16.9	16.9	17.1	17.1	16.9	17.2	16.9	17.0	17.3	16.9
Chromium (Cr)-Total	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Total	0.0000050	0.0000091	0.0000131	0.0000123	0.0000077	0.0000117	0.0000078	0.0000103	0.0000062	0.0000091	0.0000121	0.0000080	0.0000135	0.0000123
Copper (Cu)-Total	0.00010	0.00033	0.00032	0.00033	0.00030	0.00031	0.00029	0.00030	0.00029	0.00029	0.00028	0.00028	0.00029	0.00033
Iron (Fe)-Total	0.0010	0.0125	0.0113	0.0124	0.0113	0.0118	0.0111	0.0116	0.0117	0.0110	0.0120	0.0118	0.0120	0.0112
Lead (Pb)-Total	0.000010	0.000081	0.000104	0.000099	0.000081	0.000078	0.000062	0.000061	0.000065	0.000123	0.000048	0.000057	0.000107	0.000189
Lithium (Li)-Total	0.00050	0.00092	0.00093	0.00096	0.00090	0.00099	0.00092	0.00091	0.00086	0.00085	0.00086	0.00095	0.00092	0.00099
Magnesium (Mg)-Total	0.030	3.63	3.62	3.64	3.63	3.61	3.64	3.61	3.60	3.63	3.54	3.62	3.68	3.62
Manganese (Mn)-Total	0.000050	0.00156	0.00148	0.00164	0.00152	0.00150	0.00140	0.00152	0.00147	0.00151	0.00147	0.00152	0.00151	0.00154
Molybdenum (Mo)-Total	0.000050	0.000504	0.000521	0.000516	0.000506	0.000514	0.000512	0.000490	0.000525	0.000479	0.000492	0.000504	0.000522	0.000524
Nickel (Ni)-Total	0.000050	0.000211	0.000229	0.000246	0.000297	0.000285	0.000265	0.000254	0.000229	0.000235	0.000203	0.000217	0.000245	0.000233
Phosphorus (P)-Total	0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Total	0.050	0.586	0.568	0.582	0.574	0.567	0.603	0.568	0.574	0.569	0.551	0.582	0.595	0.587
Selenium (Se)-Total	0.000040	0.000167	0.000151	0.000199	0.000221	0.000190	0.000181	0.000160	0.000154	0.000210	0.000157	0.000123	0.000127	0.000308
Silicon (Si)-Total	0.050	1.65	1.61	1.64	1.63	1.63	1.67	1.64	1.60	1.63	1.61	1.64	1.66	1.63
Silver (Ag)-Total	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Total	0.010	1.09	1.08	1.10	1.09	1.09	1.06	1.09	1.08	1.15	1.05	1.02	1.06	1.28
Strontium (Sr)-Total	0.000050	0.109	0.109	0.110	0.110	0.108	0.109	0.110	0.109	0.108	0.109	0.109	0.109	0.109
Thallium (Tl)-Total	0.0000020	0.0000078	0.0000097	0.0000089	0.0000092	0.0000059	0.0000063	0.0000057	0.0000054	0.0000143	0.0000032	0.0000022	0.0000026	0.0000311
Tin (Sn)-Total	0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Titanium (Ti)-Total	0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Uranium (U)-Total	0.0000030	0.000416	0.000410	0.000412	0.000413	0.000416	0.000412	0.000420	0.000405	0.000412	0.000411	0.000420	0.000415	0.000416
Vanadium (V)-Total	0.000050	0.000113	0.000109	0.000129	0.000095	0.000113	0.000132	0.000124	0.000107	0.000138	0.000122	0.000123	0.000106	0.000114
Zinc (Zn)-Total	0.00050	0.00077	0.00102	0.00105	0.00150	0.00313	0.00100	0.00073	<0.00050	0.00191	0.00061	0.00196	0.00100	0.00163
Zirconium (Zr)-Total	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Metals (Water)														
Dissolved Mercury Filtration Location		FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location		FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location		FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Aluminum (Al)-Dissolved	0.00050	0.0112	0.0107	0.0123	0.0117	0.0109	0.0120	0.0149	0.0119	0.0112	0.0107	0.0112	0.0113	0.0119
Antimony (Sb)-Dissolved	0.000020	0.000084	0.000068	0.000067	0.000072	0.000054	0.000053	0.000051	0.000039	0.000082	0.000040	0.000034	0.000022	0.000160
Arsenic (As)-Dissolved	0.000020	0.000158	0.000154	0.000172	0.000137	0.000133	0.000141	0.000161	0.000149	0.000168	0.000186	0.000154	0.000142	0.000236
Barium (Ba)-Dissolved	0.000020	0.0168	0.0168	0.0165	0.0166	0.0167	0.0170	0.0166	0.0168	0.0174	0.0170	0.0171	0.0171	0.0174
Beryllium (Be)-Dissolved	0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Dissolved	0.0000050	0.0000060	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Dissolved	0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Dissolved	0.0000050	0.0000112	0.0000129	0.0000126	0.0000115	0.0000083	0.0000084	0.0000102	0.0000073	0.0000139	0.0000065	0.0000061	0.0000087	0.0000333
Calcium (Ca)-Dissolved	0.030	16.7	16.7	17.0	17.0	16.8	17.2	17.0	16.8	17.0	17.1	17.1	16.9	17.0
Chromium (Cr)-Dissolved	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Dissolved	0.0000050	0.0000070	<0.0000050	<0.0000050	0.0000064	0.0000064	0.0000052	<0.0000050	<0.0000050	<0.0000050	0.0000060	0.0000060	<0.0000050	0.0000061
Copper (Cu)-Dissolved	0.00010	0.00030	0.00027	0.00027	0.00028	0.00028	0.00027	0.00034	0.00026	0.00027	0.00027	0.00030	0.00026	0.00034
Iron (Fe)-Dissolved	0.0010	0.0024	0.0023	0.0021	0.0023	0.0020	0.0023	0.0025	0.0020	0.0019	0.0020	0.0029	0.0029	0.0022
Lead (Pb)-Dissolved	0.0000050	0.0000199	0.0000235	0.0000185	0.0000194	0.0000121	0.0000155	0.0000126	0.0000195	0.0000220	0.000122	0.0000614	0.0000515	0.0000491
Lithium (Li)-Dissolved	0.00050	0.00110	0.00088	0.00093	0.00093	0.00098	0.00095	0.00083	0.00097	0.00095	0.00087	0.00097	0.00088	0.00087
Magnesium (Mg)-Dissolved	0.030	3.60	3.59	3.64	3.60	3.61	3.66	3.62	3.58	3.61	3.63	3.59	3.61	3.62
Manganese (Mn)-Dissolved	0.000050	0.000444	0.000441	0.000462	0.000456	0.000488	0.000469	0.000598	0.000458	0.000570	0.000454	0.000497	0.000578	0.000558
Mercury (Hg)-Dissolved	0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Molybdenum (Mo)-Dissolved	0.000050	0.000556	0.000506	0.000541	0.000520	0.000503	0.000510	0.000494	0.000502	0.000517	0.000481	0.000511	0.000508	0.000525
Nickel (Ni)-Dissolved	0.000050	0.000248	0.000234	0.000198	0.000239	0.000328	0.000212	0.000309	0.000204	0.000205	0.000203	0.000265	0.000206	0.000243
Phosphorus (P)-Dissolved	0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Dissolved	0.050	0.571	0.570	0.586	0.562	0.585	0.578	0.572	0.569	0.575	0.575	0.571	0.572	0.581
Selenium (Se)-Dissolved	0.000040	0.000200	0.000172	0.000196	0.000190	0.000157	0.000182	0.000149	0.000152	0.000221	0.000145	0.000150	0.000128	0.000349
Silicon (Si)-Dissolved	0.050	1.60	1.58	1.61	1.60	1.59	1.66	1.61	1.59	1.60	1.61	1.60	1.60	1.59
Silver (Ag)-Dissolved	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Dissolved	0.010	1.10	1.08	1.07	1.09	1.06	1.08	1.30	1.06	1.15	1.07	1.05	1.06	1.29
Strontium (Sr)-Dissolved	0.00010	0.108	0.108	0.110	0.109	0.109	0.109	0.110	0.107	0.110	0.109	0.110	0.108	0.109
Thallium (Tl)-Dissolved	0.0000020	0.0000080	0.0000085	0.0000112	0.0000088	0.0000049	0.0000055	0.0000054	0.0000051	0.0000142	0.0000033	0.0000026	<0.0000020	0.0000310
Tin (Sn)-Dissolved	0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Titanium (Ti)-Dissolved	0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Uranium (U)-Dissolved	0.0000020	0.000408	0.000417	0.000410	0.000429	0.000412	0.000416	0.000419	0.000412	0.000424	0.000416	0.000425	0.000424	0.000416
Vanadium (V)-Dissolved	0.000050	0.000116	0.000115	0.000099	0.000101	0.000073	0.000097	0.000128	0.000120	0.000094	0.000105	0.000090	0.000095	0.000103
Zinc (Zn)-Dissolved	0.00050	0.00069	0.00078	0.00080	0.00123	0.00061	0.00083	0.00081	0.00059	0.00089	0.00050	0.00051	0.00112	0.00135
Zirconium (Zr)-Dissolved	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Aggregate Organics (Water)														
BOD	2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
COD	20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	20

Qualifier Legend

RRV	Reported Result Verified By Repea
DTC	Dissolved concentration exceeds t
HTD	Hold time exceeded for re-analysis

Client Sample ID		NEW BRIDGE R-1MD	NEW BRIDGE R-1MAB	NEW BRIDGE L-1MAB	NEW BRIDGE L-1MD	NEW BRIDGE L-SH	NEW BRIDGE R-SH	DUPLICATE 1 (New Bridge RSH)	DUPLICATE 2 (New Bridge R 1M Deep)	DUPLICATE 3 (New Bridge LSH)	TRAVEL BLANK	FIELD BLANK
Date Sampled		26-Jul-2016	26-Jul-2016	26-Jul-2016	26-Jul-2016	26-Jul-2016	26-Jul-2016	26-Jul-2016	26-Jul-2016	26-Jul-2016	26-Jul-2016	26-Jul-2016
Time Sampled		13:00	13:10	13:20	13:30	13:40	13:50	0:00	0:00	0:00	0:00	0:00
ALS Sample ID		L1805254-26	L1805254-27	L1805254-28	L1805254-29	L1805254-30	L1805254-31	L1805254-32	L1805254-33	L1805254-34	L1805254-35	L1805254-36
Parameter	Lowest Detection Limit	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests (Water)												
Conductivity	2.0	121	120	121	120	120	127	126	121	122	<2.0	<2.0
Hardness (as CaCO3)	0.50	57.2	57.4	57.2	57	56.5	59.3	58.3	56	56	<0.50	<0.50
pH	0.10	7.88	7.87	7.88	7.84	7.85	7.87	7.85	7.87	7.89	5.31	5.25
Total Suspended Solids	3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Total Dissolved Solids	10	71	68	71	67	74	66	76	71	75	<10	<10
Turbidity	0.10	0.62	0.58	0.55	0.55	0.51	0.56	0.62	0.62	0.53	<0.10	<0.10
Anions and Nutrients (Water)												
Alkalinity, Total (as CaCO3)	1.0	51.2	52.2	51.9	52.2	51.6	52.4	52.3	52.2	53.8	<1.0	<1.0
Ammonia, Total (as N)	0.0050	0.0057	0.0055	0.0061	0.0062	0.0062	0.0125	0.0128	0.0055	0.0065	<0.0050	<0.0050
Bromide (Br)	0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.53	0.54	<0.50	<0.50	<0.50	<0.50
Fluoride (F)	0.020	0.058	0.058	0.058	0.059	0.058	0.083	0.081	0.057	0.058	<0.020	<0.020
Nitrate (as N)	0.0050	0.0661	0.0646	0.0690	0.0660	0.0666	0.0728	0.0760	0.0667	0.0645	<0.0050	<0.0050
Nitrite (as N)	0.0010	0.0011	<0.0010	0.0018	0.0030	0.0013	<0.0010	0.0024	<0.0010	0.0011	<0.0010	<0.0010
Total Kjeldahl Nitrogen	0.050	0.104	0.113	0.109	0.114	0.124	0.130	0.124	0.087	0.070	<0.050	<0.050
Phosphorus (P)-Total Dissolved	0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Phosphorus (P)-Total	0.0020	0.0036	0.0033	0.0035	0.0040	0.0048	0.0039	0.0028	0.0043	0.0072	<0.0020	<0.0020
Sulfate (SO4)	0.30	9.27	9.26	9.28	9.27	9.30	11.7	11.7	9.28	9.31	<0.30	<0.30
Organic / Inorganic Carbon (Water)												
Total Organic Carbon	0.50	1.19	1.20	1.35	1.31	1.17	1.35	1.30	1.14	1.27	<0.50	<0.50
Total Metals (Water)												
Mercury (Hg)-Total	0.00050	0.00050	0.00059	<0.00050	<0.00050	0.00099	0.00084	0.00097	0.00142	0.00069	<0.00050	<0.00050
Total Metals (Undigested) (Water)												
Aluminum (Al)-Total	0.00070	0.0197	0.0200	0.0266	0.0171	0.0199	0.0182	0.0198	0.0181	0.0198	<0.00070	<0.00070
Antimony (Sb)-Total	0.000020	0.000023	0.000020	0.000021	0.000051	0.000038	0.000468	0.000531	0.000045	0.000054	<0.000020	<0.000020
Arsenic (As)-Total	0.000020	0.000126	0.000140	0.000174	0.000204	0.000170	0.000354	0.000334	0.000269	0.000198	<0.000020	<0.000020
Barium (Ba)-Total	0.000020	0.0173	0.0176	0.0186	0.0165	0.0181	0.0181	0.0180	0.0182	0.0166	<0.000020	<0.000020
Beryllium (Be)-Total	0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Total	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000148	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Total	0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Total	0.0000050	0.0000143	0.0000103	0.0000147	0.0000083	0.0000222	0.000221	0.000278	0.0000245	0.0000257	<0.0000050	<0.0000050
Calcium (Ca)-Total	0.030	17.0	17.3	17.0	17.1	17.1	17.5	17.4	16.7	16.6	<0.030	<0.030
Chromium (Cr)-Total	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Total	0.0000050	0.0000095	0.0000100	0.0000097	0.0000068	<0.0000050	0.0000131	0.0000138	0.0000099	0.0000153	<0.0000050	<0.0000050
Copper (Cu)-Total	0.00010	0.00029	0.00029	0.00037	0.00026	0.00032	0.00047	0.00060	0.00037	0.00033	<0.00010	<0.00010
Iron (Fe)-Total	0.0010	0.0103	0.0105	0.0134	0.0105	0.0128	0.0128	0.0112	0.0104	0.0132	<0.0010	<0.0010
Lead (Pb)-Total	0.000010	0.000135	0.000076	0.000165	0.000479	0.000535	0.000767	0.000963	0.00174	0.000565	<0.000010	<0.000010
Lithium (Li)-Total	0.00050	0.00087	0.00088	0.00092	0.00086	0.00091	0.00090	0.00091	0.00088	0.00106	<0.00050	<0.00050
Magnesium (Mg)-Total	0.030	3.64	3.68	3.60	3.62	3.65	3.60	3.57	3.54	3.53	<0.030	<0.030
Manganese (Mn)-Total	0.000050	0.00149	0.00145	0.00164	0.00131	0.00165	0.00198	0.00207	0.00162	0.00156	<0.000050	<0.000050
Molybdenum (Mo)-Total	0.000050	0.000507	0.000508	0.000464	0.000506	0.000501	0.000509	0.000500	0.000484	0.000525	<0.000050	<0.000050
Nickel (Ni)-Total	0.000050	0.000197	0.000239	0.000268	0.000224	0.000208	0.000263	0.000210	0.000200	0.000312	<0.000050	<0.000050
Phosphorus (P)-Total	0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Total	0.050	0.584	0.580	0.570	0.570	0.577	0.575	0.566	0.563	0.569	<0.050	<0.050
Selenium (Se)-Total	0.000040	0.000131	0.000139	0.000142	0.000125	0.000148	0.000769	0.000781	0.000168	0.000169	<0.000040	<0.000040
Silicon (Si)-Total	0.050	1.63	1.64	1.63	1.60	1.64	1.61	1.60	1.60	1.60	<0.050	<0.050
Silver (Ag)-Total	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Total	0.010	1.06	1.07	1.13	1.01	1.10	1.59	1.62	1.12	1.08	<0.010	<0.010
Strontium (Sr)-Total	0.000050	0.109	0.109	0.110	0.109	0.110	0.110	0.109	0.109	0.107	<0.000050	<0.000050
Thallium (Tl)-Total	0.0000020	0.0000024	<0.0000020	0.0000020	<0.0000020	0.0000020	0.000103	0.000109	0.0000028	0.0000064	<0.0000020	0.0000024
Tin (Sn)-Total	0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Titanium (Ti)-Total	0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Uranium (U)-Total	0.0000030	0.000413	0.000413	0.000415	0.000415	0.000416	0.000411	0.000417	0.000416	0.000406	<0.0000030	<0.0000030
Vanadium (V)-Total	0.000050	0.000109	0.000118	0.000128	0.000111	0.000114	0.000142	0.000131	0.000105	0.000151	<0.000050	<0.000050
Zinc (Zn)-Total	0.00050	0.00101	0.00081	0.00298	<0.00050	0.00138	0.00563	0.00550	0.00519	0.00163	<0.00050	<0.00050
Zirconium (Zr)-Total	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Metals (Water)												
Dissolved Mercury Filtration Location		FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD		FIELD
Dissolved Metals Filtration Location		FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD		FIELD
Dissolved Metals Filtration Location		FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD		FIELD
Aluminum (Al)-Dissolved	0.00050	0.0124	0.0116	0.0115	0.0127	0.0116	0.0120	0.0130	0.0129	0.0108		<0.00050
Antimony (Sb)-Dissolved	0.000020	0.000122	0.000024	0.000021	<0.000020	0.000038	0.000487	0.000496	0.000049	0.000025		<0.000020
Arsenic (As)-Dissolved	0.000020	0.000277	0.000139	0.000146	0.000132	0.000127	0.000335	0.000357	0.000195	0.000157		<0.000020
Barium (Ba)-Dissolved	0.000020	0.0170	0.0163	0.0163	0.0176	0.0169	0.0167	0.0182	0.0182	0.0171		<0.000020
Beryllium (Be)-Dissolved	0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010		<0.000010
Bismuth (Bi)-Dissolved	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050		<0.0000050
Boron (B)-Dissolved	0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		<0.010
Cadmium (Cd)-Dissolved	0.0000050	0.0000241	0.0000084	<0.0000050	0.0000106	0.0000134	**0.000209**	**0.000263**	0.0000334	0.0000189		<0.0000050
Calcium (Ca)-Dissolved	0.030	17.0	17.0	17.0	16.9	16.7	17.7	17.5	16.6	16.6		<0.030
Chromium (Cr)-Dissolved	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010
Cobalt (Co)-Dissolved	0.0000050	0.0000060	0.0000056	<0.0000050	<0.0000050	0.0000058	0.0000134	<0.0000050	0.0000096	0.0000086		<0.0000050
Copper (Cu)-Dissolved	0.00010	0.00030	0.00023	0.00025	0.00026	0.00027	0.00046	0.00057	0.00037	0.00027		<0.00010
Iron (Fe)-Dissolved	0.0010	0.0027	0.0022	0.0022	0.0020	0.0024	0.0089	0.0028	0.0035	0.0020		<0.0010
Lead (Pb)-Dissolved	0.0000050	0.00112	0.0000469	0.0000811	0.0000329	0.000172	0.00112	0.000969	0.000771	0.000170		<0.0000050
Lithium (Li)-Dissolved	0.00050	0.00100	0.00102	0.00091	0.00085	0.00086	0.00102	0.00096	0.00092	0.00074		<0.00050
Magnesium (Mg)-Dissolved	0.030	3.61	3.63	3.60	3.58	3.58	3.64	3.55	3.55	3.55		<0.030
Manganese (Mn)-Dissolved	0.000050	0.000567	0.000431	0.000473	0.000502	0.000626	0.00103	0.00104	0.000581	0.000639		<0.000050
Mercury (Hg)-Dissolved	0.00050	0.00064	<0.00050	0.00437	<0.00050	<0.00050	0.00216	0.00117	0.00098	<0.00050		<0.00050
Molybdenum (Mo)-Dissolved	0.000050	0.000492	0.000506	0.000486	0.000493	0.000505	0.000540	0.000499	0.000504	0.000504		<0.000050
Nickel (Ni)-Dissolved	0.000050	0.000219	0.000184	0.000187	0.000213	0.000177	0.000257	0.000214	0.000270	0.000269		<0.000050
Phosphorus (P)-Dissolved	0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050		<0.050
Potassium (K)-Dissolved	0.050	0.571	0.568	0.572	0.541	0.562	0.582	0.556	0.552	0.555		<0.050
Selenium (Se)-Dissolved	0.000040	0.000135	0.000134	0.000138	0.000152	0.000138	0.000806	0.000803	0.000174	0.000135		<0.000040
Silicon (Si)-Dissolved	0.050	1.59	1.59	1.59	1.58	1.58	1.60	1.58	1.57	1.56		<0.050
Silver (Ag)-Dissolved	0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050		<0.0000050
Sodium (Na)-Dissolved	0.010	1.07	1.03	1.01	1.08	1.04	1.35	1.67	1.11	1.02		<0.010
Strontium (Sr)-Dissolved	0.00010	0.109	0.109	0.109	0.108	0.111	0.115	0.110	0.109	0.109		<0.00010
Thallium (Tl)-Dissolved	0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.0000966	0.000109	0.0000032	<0.0000020		<0.0000020
Tin (Sn)-Dissolved	0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000015	<0.000010	<0.000010	<0.000010		<0.000010
Titanium (Ti)-Dissolved	0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030		<0.00030
Uranium (U)-Dissolved	0.0000020	0.000418	0.000414	0.000419	0.000421	0.000419	0.000430	0.000423	0.000425	0.000402		<0.0000020
Vanadium (V)-Dissolved	0.000050	0.000116	0.000092	0.000102	0.000094	0.000119	0.000118	0.000092	0.000106	0.000121		<0.000050
Zinc (Zn)-Dissolved	0.00050	0.00168	0.00155	0.00093	0.00141	0.00073	0.00534	0.00502	0.00375	0.00161		<0.00050
Zirconium (Zr)-Dissolved	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010
Aggregate Organics (Water)												
BOD	2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
COD	20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20

Qualifier Legend

RRV	Reported Result Verified By Repea
DTC	Dissolved concentration exceeds t
HTD	Hold time exceeded for re-analysis

Client Sample ID			BIRCH BANK R-SH	BIRCH BANK R-1M D	BIRCH BANK R- 1M AB	BIRCH BANK L- 1M AB	BIRCH BANK L-1M D	CRADT-R-SH	STONEY CK R-SH	STONEY CK-R-1MD	STONEY CK R-1MAB	STONEY CK L-1MAB	STONEY CK L-1MD
Date Sampled			4-Oct-2016	4-Oct-2016	4-Oct-2016	4-Oct-2016	4-Oct-2016	4-Oct-2016	4-Oct-2016	4-Oct-2016	4-Oct-2016	4-Oct-2016	4-Oct-2016
Time Sampled			9:05	9:57	9:59	10:01	10:03	14:29	11:26	11:28	11:30	11:33	11:34
ALS Sample ID			L1839891-1	L1839891-2	L1839891-3	L1839891-4	L1839891-5	L1839891-6	L1839891-7	L1839891-8	L1839891-9	L1839891-10	L1839891-11
Parameter	Lowest Detection Limit	Units	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests (Water)													
Hardness (as CaCO3)	0.50	mg/L	60.5	59.5	59.6	59.4	59.3	61.2	60.5	58.6	58.9	58.6	59.5
Turbidity	0.10	NTU	0.44	0.36	0.35	0.43	0.33	0.39	0.35	0.39	0.35	0.38	0.38
Anions and Nutrients (Water)													
Ammonia, Total (as N)	0.0050	mg/L	0.0059	0.0052	0.0054	0.0063	0.0052	0.0295	0.0190	0.0053	0.0087	0.0060	0.0062
Bromide (Br)	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	0.50	mg/L	0.54	0.53	0.53	0.54	0.53	0.92	0.57	0.53	0.53	0.53	0.53
Fluoride (F)	0.020	mg/L	0.059	0.061	0.061	0.063	0.060	0.084	0.062	0.059	0.062	0.060	0.062
Nitrate (as N)	0.0050	mg/L	0.0728	0.0713	0.0725	0.0717	0.0720	0.0908	0.0762	0.0728	0.0726	0.0715	0.0732
Nitrite (as N)	0.0010	mg/L	<0.0010	0.0011	<0.0010	<0.0010	<0.0010	0.0014	0.0014	<0.0010	<0.0010	0.0012	0.0011
Total Kjeldahl Nitrogen	0.050	mg/L	0.104	0.093	0.087	0.092	0.097	0.116	0.112	0.093	0.114	0.118	0.107
Phosphorus (P)-Total Dissolved	0.0020	mg/L	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Phosphorus (P)-Total	0.0020	mg/L	0.0036	0.0044	0.0047	0.0042	0.0044	0.0040	0.0056	0.0088	0.0054	0.0047	0.0043
Sulfate (SO4)	0.30	mg/L	10.6	10.4	10.4	10.4	10.4	12.4	10.7	10.4	10.4	10.4	10.4
Organic / Inorganic Carbon (Water)													
Total Organic Carbon	0.50	mg/L	0.97	1.04	1.21	0.98	1.00	0.98	1.03	0.98	1.02	1.10	1.04
Total Metals (Water)													
Mercury (Hg)-Total	0.00050	ug/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00076	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Total Metals (Undigested) (Water)													
Aluminum (Al)-Total	0.00070	mg/L	0.0102	0.00975	0.0114	0.0115	0.0101	0.0117	0.0117	0.0107	0.0108	0.0121	0.00983
Antimony (Sb)-Total	0.000020	mg/L	<0.000020	<0.000020	0.000024	0.000021	0.000024	0.000575	0.000040	0.000021	<0.000020	0.000026	0.000022
Arsenic (As)-Total	0.000020	mg/L	0.000170	0.000152	0.000155	0.000329	0.000157	0.000287	0.000214	0.000163	0.000179	0.000157	0.000150
Barium (Ba)-Total	0.000020	mg/L	0.0195	0.0175	0.0191	0.0192	0.0187	0.0181	0.0185	0.0185	0.0187	0.0184	0.0183
Beryllium (Be)-Total	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Total	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Total	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Total	0.0000050	mg/L	<0.0000050	0.0000094	<0.0000050	0.0000080	0.0000067	0.000157	0.0000099	0.0000075	0.0000091	0.0000071	0.0000065
Calcium (Ca)-Total	0.030	mg/L	18.2	17.7	18.3	18.1	18.0	18.7	18.0	17.9	18.5	18.2	18.0
Chromium (Cr)-Total	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Total	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	0.0000123	<0.0000050	0.0000134	0.0000056	<0.0000050	0.0000065	0.0000171	0.0000053
Copper (Cu)-Total	0.00010	mg/L	0.00021	0.00020	0.00022	0.00030	0.00020	0.00043	0.00025	0.00023	0.00023	0.00031	0.00023
Iron (Fe)-Total	0.0010	mg/L	0.0082	0.0080	0.0086	0.0085	0.0084	0.0103	0.0082	0.0077	0.0082	0.0092	0.0078
Lead (Pb)-Total	0.000010	mg/L	0.000041	0.000042	0.000035	0.000057	0.000037	0.000805	0.000064	0.000045	0.000041	0.000061	0.000047
Lithium (Li)-Total	0.00050	mg/L	0.00062	0.00068	0.00081	0.00075	0.00077	0.00068	0.00072	0.00068	0.00075	0.00085	0.00081
Magnesium (Mg)-Total	0.030	mg/L	3.82	3.77	3.86	3.85	3.81	3.87	3.82	3.79	3.92	3.91	3.83
Manganese (Mn)-Total	0.000050	mg/L	0.00168	0.00148	0.00171	0.00170	0.00156	0.00334	0.00176	0.00170	0.00161	0.00174	0.00154
Molybdenum (Mo)-Total	0.000050	mg/L	0.000536	0.000542	0.000563	0.000533	0.000575	0.000581	0.000567	0.000574	0.000548	0.000598	0.000561
Nickel (Ni)-Total	0.000050	mg/L	0.000303	0.000297	0.000324	0.000480	0.000327	0.000369	0.000335	0.000329	0.000330	0.000460	0.000320
Phosphorus (P)-Total	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Total	0.050	mg/L	0.697	0.704	0.691	0.697	0.699	0.739	0.691	0.686	0.707	0.717	0.709
Selenium (Se)-Total	0.000040	mg/L	0.000158	0.000145	0.000186	0.000155	0.000167	0.000324	0.000170	0.000163	0.000144	0.000171	0.000159
Silicon (Si)-Total	0.050	mg/L	1.48	1.45	1.50	1.49	1.48	1.51	1.48	1.47	1.51	1.50	1.48
Silver (Ag)-Total	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Total	0.010	mg/L	1.18	1.14	1.23	1.32	1.19	1.69	1.28	1.23	1.24	1.31	1.26
Strontium (Sr)-Total	0.000050	mg/L	0.103	0.102	0.109	0.106	0.108	0.103	0.108	0.106	0.106	0.109	0.107
Thallium (Tl)-Total	0.0000020	mg/L	<0.0000020	0.0000021	<0.0000020	0.0000027	0.0000024	0.000120	0.0000032	0.0000027	0.0000023	0.0000026	0.0000026
Tin (Sn)-Total	0.000020	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Titanium (Ti)-Total	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Uranium (U)-Total	0.0000030	mg/L	0.000436	0.000421	0.000468	0.000449	0.000459	0.000436	0.000447	0.000457	0.000452	0.000446	0.000455
Vanadium (V)-Total	0.000050	mg/L	0.000124	0.000105	0.000140	0.000143	0.000131	0.000131	0.000117	0.000118	0.000123	0.000158	0.000118
Zinc (Zn)-Total	0.00050	mg/L	0.00196	0.00280	0.00066	0.00297	0.00060	0.00413	0.00109	0.00312	0.00237	0.00196	0.00093
Zirconium (Zr)-Total	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Metals (Water)													
Dissolved Mercury Filtration Location		-	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location		-	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location		-	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Aluminum (Al)-Dissolved	0.00050	mg/L	0.00591	0.00557	0.00704	0.00657	0.00631	0.00728	0.00677	0.00653	0.00650	0.00679	0.00557
Antimony (Sb)-Dissolved	0.000020	mg/L	0.000024	0.000026	0.000023	0.000022	<0.000020	0.000606	0.000039	0.000021	0.000022	<0.000020	<0.000020
Arsenic (As)-Dissolved	0.000020	mg/L	0.000147	0.000155	0.000161	0.000164	0.000158	0.000247	0.000219	0.000184	0.000162	0.000170	0.000151
Barium (Ba)-Dissolved	0.000020	mg/L	0.0183	0.0185	0.0189	0.0191	0.0180	0.0188	0.0182	0.0185	0.0187	0.0189	0.0179
Beryllium (Be)-Dissolved	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Dissolved	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Dissolved	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Dissolved	0.0000050	mg/L	0.0000052	0.0000055	<0.0000050	<0.0000050	<0.0000050	0.000153	0.0000073	0.0000061	0.0000061	<0.0000050	0.0000052
Calcium (Ca)-Dissolved	0.030	mg/L	18.0	17.5	17.6	17.5	17.5	18.2	17.9	17.4	17.4	17.4	17.6
Chromium (Cr)-Dissolved	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Dissolved	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000071	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Copper (Cu)-Dissolved	0.00010	mg/L	0.00021	0.00019	0.00022	0.00023	0.00020	0.00037	0.00019	0.00018	0.00021	0.00022	0.00021
Iron (Fe)-Dissolved	0.0010	mg/L	0.0013	0.0011	0.0013	0.0010	<0.0010	0.0010	<0.0010	<0.0010	0.0016	0.0015	0.0010
Lead (Pb)-Dissolved	0.0000050	mg/L	0.0000120	0.0000122	0.0000084	0.0000096	0.0000060	0.000145	0.0000212	0.0000114	0.0000156	0.0000130	0.0000143
Lithium (Li)-Dissolved	0.00050	mg/L	0.00059	0.00074	0.00085	0.00088	0.00064	0.00081	0.00072	0.00077	0.00075	0.00075	0.00074
Magnesium (Mg)-Dissolved	0.030	mg/L	3.81	3.80	3.78	3.79	3.77	3.82	3.82	3.70	3.72	3.72	3.79
Manganese (Mn)-Dissolved	0.000050	mg/L	0.000520	0.000417	0.000403	0.000362	0.000343	0.00191	0.000341	0.000402	0.000394	0.000412	0.000352
Mercury (Hg)-Dissolved	0.00050	ug/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Molybdenum (Mo)-Dissolved	0.000050	mg/L	0.000555	0.000585	0.000573	0.000561	0.000532	0.000609	0.000566	0.000562	0.000556	0.000546	0.000522
Nickel (Ni)-Dissolved	0.000050	mg/L	0.000298	0.000326	0.000322	0.000330	0.000306	0.000289	0.000262	0.000321	0.000317	0.000306	0.000306
Phosphorus (P)-Dissolved	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Dissolved	0.050	mg/L	0.645	0.632	0.633	0.607	0.633	0.687	0.634	0.629	0.625	0.613	0.628
Selenium (Se)-Dissolved	0.000040	mg/L	0.000166	0.000179	0.000141	0.000165	0.000138	0.000356	0.000159	0.000184	0.000178	0.000170	0.000149
Silicon (Si)-Dissolved	0.050	mg/L	1.47	1.43	1.44	1.44	1.44	1.47	1.48	1.44	1.42	1.44	1.44
Silver (Ag)-Dissolved	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Dissolved	0.010	mg/L	1.19	1.20	1.28	1.25	1.22	1.74	1.25	1.25	1.27	1.29	1.18
Strontium (Sr)-Dissolved	0.00010	mg/L	0.105	0.108	0.109	0.108	0.101	0.108	0.107	0.108	0.107	0.104	0.102
Thallium (Tl)-Dissolved	0.0000020	mg/L	0.0000025	0.0000025	0.0000021	0.0000025	<0.0000020	0.000130	0.0000026	0.0000028	<0.0000020	<0.0000020	<0.0000020
Tin (Sn)-Dissolved	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Titanium (Ti)-Dissolved	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Uranium (U)-Dissolved	0.0000020	mg/L	0.000456	0.000459	0.000465	0.000469	0.000417	0.000469	0.000468	0.000469	0.000461	0.000446	0.000434
Vanadium (V)-Dissolved	0.000050	mg/L	0.000107	0.000122	0.000088	0.000116	0.000111	0.000145	0.000131	0.000108	0.000131	0.000130	0.000112
Zinc (Zn)-Dissolved	0.00050	mg/L	0.00167	0.00086	0.00125	0.00076	0.00061	0.00310	0.00083	0.00090	0.00068	0.00067	0.00090
Zirconium (Zr)-Dissolved	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Aggregate Organics (Water)													
BOD	2.0	mg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
COD	20	mg/L	<20	<20	<20	<20	<20	<20	<20	33	<20	<20	<20

Qualifier Legend

HTC	Hardness was calculated from Total Ca and/or Mg concentrations and may be biased high (dissolved Ca/Mg results unavailable).
RRV	Reported Result Verified By Repeat Analysis

Client Sample ID	STONEY CK L-SH	WANETA COMP	MAGLIOS R-SH	MAGLIOS R-1MD	MAGLIOS R-1MAB	MAGLIOS L-1MD	MAGLIOS L-SH	MAGLIOS L-1MAB	OLD BRIDGE R-1MD	OLD BRIDGE R-1MAB	OLD BRIDGE L-1MAB	OLD BRIDGE L-1MD	OLD BRIDGE L-SH	OLD BRIDGE R-SH
Date Sampled	4-Oct-2016	4-Oct-2016	4-Oct-2016	4-Oct-2016	4-Oct-2016	4-Oct-2016	4-Oct-2016	4-Oct-2016	4-Oct-2016	4-Oct-2016	4-Oct-2016	4-Oct-2016	4-Oct-2016	4-Oct-2016
Time Sampled	11:35	8:00	12:57	13:00	13:01	13:03	13:04	13:02	14:21	14:22	14:24	14:25	14:26	14:20
ALS Sample ID	L1839891-12	L1839891-13	L1839891-14	L1839891-15	L1839891-16	L1839891-17	L1839891-18	L1839891-19	L1839891-20	L1839891-21	L1839891-22	L1839891-23	L1839891-24	L1839891-25
Parameter	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests (Water)														
Hardness (as CaCO3)	59.4	60.4	59.6	60	59	61	58.8	58.2	59.5	59.9	60.6	60.4	60.7	60.9
Turbidity	0.33	0.33	0.38	0.41	0.32	0.44	0.38	0.39	0.45	0.39	0.42	0.37	0.43	0.39
Anions and Nutrients (Water)														
Ammonia, Total (as N)	0.0055	0.0149	0.0135	0.0156	0.0139	0.0135	0.0137	0.0138	0.0135	0.0131	0.0099	0.0124	0.0354	0.0219
Bromide (Br)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	0.54	0.57	0.57	0.57	0.58	0.57	0.56	0.57	0.55	0.56	0.53	0.53	0.88	0.65
Fluoride (F)	0.058	0.060	0.065	0.065	0.064	0.063	0.062	0.063	0.061	0.065	0.060	0.059	0.062	0.073
Nitrate (as N)	0.0741	0.0778	0.0767	0.0770	0.0772	0.0757	0.0748	0.0782	0.0738	0.0753	0.0726	0.0735	0.106	0.0805
Nitrite (as N)	<0.0010	0.0012	0.0014	<0.0010	<0.0010	0.0012	<0.0010	<0.0010	<0.0010	0.0015	<0.0010	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	0.104	0.121	0.122	0.106	0.106	0.120	0.120	0.111	0.116	0.124	0.108	0.101	0.130	0.112
Phosphorus (P)-Total Dissolved	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Phosphorus (P)-Total	0.0038	0.0039	0.0033	0.0036	0.0039	0.0036	0.0037	0.0036	0.0046	0.0047	0.0036	0.0033	0.0034	0.0033
Sulfate (SO4)	10.3	10.9	10.8	10.8	10.8	10.7	10.6	10.7	10.5	10.8	10.5	10.5	11.6	11.4
Organic / Inorganic Carbon (Water)														
Total Organic Carbon	1.02	1.02	1.03	1.01	1.13	1.14	1.19	0.98	1.00	1.30	2.27	0.93	1.16	1.07
Total Metals (Water)														
Mercury (Hg)-Total	<0.00050	<0.00050	0.00383	<0.00050	0.00102	<0.00050	<0.00050	0.00065	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Total Metals (Undigested) (Water)														
Aluminum (Al)-Total	0.0109	0.0107	0.0105	0.0108	0.0108	0.0107	0.00925	0.0108	0.00933	0.00982	0.0107	0.0109	0.0104	0.0117
Antimony (Sb)-Total	0.000022	0.000122	0.000149	0.000129	0.000138	0.000088	0.000081	0.000092	0.000130	0.000108	0.000022	0.000030	0.000033	0.000343
Arsenic (As)-Total	0.000149	0.000181	0.000189	0.000183	0.000157	0.000159	0.000155	0.000179	0.000182	0.000170	0.000143	0.000157	0.000161	0.000240
Barium (Ba)-Total	0.0176	0.0178	0.0181	0.0182	0.0181	0.0181	0.0173	0.0188	0.0184	0.0185	0.0178	0.0183	0.0186	0.0184
Beryllium (Be)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000010	0.000015
Bismuth (Bi)-Total	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Total	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cadmium (Cd)-Total	<0.0000050	0.0000305	0.0000304	0.0000338	0.0000346	0.0000234	0.0000200	0.0000169	0.0000368	0.0000319	0.0000090	0.0000060	0.0000126	0.0000924
Calcium (Ca)-Total	18.3	18.7	19.4	18.5	18.3	18.7	18.3	18.2	17.9	18.3	18.0	17.4	18.0	18.3
Chromium (Cr)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Total	<0.0000050	0.0000073	<0.0000050	0.0000063	0.0000059	0.0000053	0.0000055	0.0000066	0.0000056	0.0000052	0.0000061	0.0000193	0.0000175	0.000182
Copper (Cu)-Total	0.00022	0.00030	0.00029	0.00027	0.00025	0.00027	0.00020	0.00027	0.00026	0.00023	0.00023	0.00021	0.00021	0.00030
Iron (Fe)-Total	0.0078	0.0075	0.0068	0.0080	0.0084	0.0087	0.0072	0.0081	0.0084	0.0082	0.0077	0.0092	0.0077	0.0132
Lead (Pb)-Total	0.000039	0.000089	0.000088	0.000087	0.000103	0.000072	0.000062	0.000091	0.000084	0.000079	0.000039	0.000041	0.000062	0.000244
Lithium (Li)-Total	0.00071	0.00075	0.00083	0.00075	0.00073	0.00070	0.00065	0.00069	0.00067	0.00084	0.00079	0.00093	0.00074	0.00064
Magnesium (Mg)-Total	3.91	3.96	4.05	3.87	3.83	3.98	3.80	3.80	3.79	3.84	3.89	3.72	3.91	3.84
Manganese (Mn)-Total	0.00146	0.00184	0.00203	0.00204	0.00191	0.00199	0.00175	0.00213	0.00209	0.00178	0.00182	0.00203	0.00248	0.00344
Molybdenum (Mo)-Total	0.000524	0.000529	0.000542	0.000542	0.000550	0.000554	0.000524	0.000545	0.000555	0.000576	0.000567	0.000598	0.000541	0.000583
Nickel (Ni)-Total	0.000334	0.000328	0.000339	0.000311	0.000316	0.000328	0.000289	0.000356	0.000308	0.000318	0.000322	0.000344	0.000401	0.000656
Phosphorus (P)-Total	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Total	0.723	0.713	0.737	0.706	0.694	0.730	0.687	0.701	0.692	0.696	0.709	0.682	0.737	0.696
Selenium (Se)-Total	0.000158	0.000183	0.000191	0.000192	0.000210	0.000184	0.000163	0.000172	0.000183	0.000176	0.000136	0.000154	0.000177	0.000229
Silicon (Si)-Total	1.53	1.51	1.59	1.50	1.48	1.53	1.48	1.48	1.45	1.47	1.49	1.44	1.47	1.49
Silver (Ag)-Total	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Total	1.18	1.33	1.35	1.26	1.27	1.25	1.15	1.33	1.30	1.33	1.22	1.22	1.34	1.44
Strontium (Sr)-Total	0.100	0.103	0.110	0.103	0.106	0.104	0.101	0.105	0.107	0.107	0.106	0.109	0.107	0.105
Thallium (Tl)-Total	0.0000023	0.0000177	0.0000159	0.0000175	0.0000179	0.0000090	0.0000092	0.0000096	0.0000194	0.0000226	0.0000021	0.0000038	0.0000026	0.0000667
Tin (Sn)-Total	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Titanium (Ti)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Uranium (U)-Total	0.000436	0.000445	0.000389	0.000432	0.000451	0.000446	0.000425	0.000448	0.000462	0.000467	0.000460	0.000469	0.000476	0.000463
Vanadium (V)-Total	0.000121	0.000120	0.000114	0.000121	0.000119	0.000118	0.000098	0.000113	0.000110	0.000119	0.000135	0.000137	0.000115	0.000130
Zinc (Zn)-Total	0.00099	0.00283	0.00165	0.00150	0.00157	0.00077	0.00247	0.00162	0.00157	0.00094	0.00058	0.00069	0.00098	0.00195
Zirconium (Zr)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Metals (Water)														
Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Aluminum (Al)-Dissolved	0.00651	0.00659	0.00625	0.00584	0.00627	0.00622	0.00584	0.00715	0.00665	0.00640	0.00688	0.00619	0.00635	0.00686
Antimony (Sb)-Dissolved	0.000023	0.000119	0.000136	0.000116	0.000137	0.000091	0.000094	0.000089	0.000119	0.000107	0.000026	0.000026	0.000030	0.000329
Arsenic (As)-Dissolved	0.000145	0.000177	0.000173	0.000164	0.000174	0.000170	0.000167	0.000174	0.000186	0.000179	0.000148	0.000157	0.000161	0.000186
Barium (Ba)-Dissolved	0.0178	0.0184	0.0177	0.0178	0.0179	0.0178	0.0179	0.0185	0.0185	0.0182	0.0185	0.0177	0.0185	0.0181
Beryllium (Be)-Dissolved	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000012	<0.000010	<0.000010
Bismuth (Bi)-Dissolved	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Dissolved	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Dissolved	<0.0000050	0.0000218	0.0000247	0.0000267	0.0000286	0.0000142	0.0000111	0.0000140	0.0000275	0.0000266	<0.0000050	0.0000058	0.0000082	0.0000803
Calcium (Ca)-Dissolved	17.6	17.9	17.7	17.8	17.5	18.1	17.5	17.3	17.7	17.8	18.0	17.9	18.0	18.1
Chromium (Cr)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00010	<0.00010	0.00014	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Dissolved	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000225	0.0000229	0.0000836
Copper (Cu)-Dissolved	0.00020	0.00024	0.00025	0.00022	0.00026	0.00024	0.00025	0.00025	0.00022	0.00023	0.00020	0.00018	0.00021	0.00026
Iron (Fe)-Dissolved	0.0011	<0.0010	<0.0010	<0.0010	0.0011	<0.0010	<0.0010	<0.0010	0.0013	0.0014	0.0012	0.0021	0.0020	0.0047
Lead (Pb)-Dissolved	0.0000147	0.0000560	0.0000306	0.0000357	0.0000259	0.0000194	0.0000174	0.0000182	0.0000272	0.0000226	0.0000115	0.0000099	0.0000202	0.0000663
Lithium (Li)-Dissolved	0.00081	0.00078	0.00080	0.00068	0.00068	0.00064	0.00077	0.00069	0.00075	0.00079	0.00071	0.00081	0.00074	0.00072
Magnesium (Mg)-Dissolved	3.76	3.81	3.75	3.76	3.71	3.84	3.68	3.65	3.72	3.75	3.81	3.81	3.79	3.80
Manganese (Mn)-Dissolved	0.000458	0.000719	0.000733	0.000794	0.000771	0.000709	0.000754	0.000769	0.000783	0.000814	0.000677	0.000930	0.00166	0.00207
Mercury (Hg)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Molybdenum (Mo)-Dissolved	0.000566	0.000553	0.000531	0.000525	0.000564	0.000540	0.000559	0.000539	0.000554	0.000571	0.000547	0.000547	0.000550	0.000599
Nickel (Ni)-Dissolved	0.000312	0.000270	0.000303	0.000301	0.000322	0.000296	0.000290	0.000289	0.000297	0.000324	0.000274	0.000430	0.000396	0.000445
Phosphorus (P)-Dissolved	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Dissolved	0.654	0.646	0.635	0.631	0.617	0.651	0.626	0.621	0.653	0.633	0.661	0.629	0.648	0.661
Selenium (Se)-Dissolved	0.000161	0.000183	0.000185	0.000204	0.000163	0.000167	0.000177	0.000190	0.000205	0.000194	0.000153	0.000158	0.000186	0.000248
Silicon (Si)-Dissolved	1.45	1.46	1.45	1.46	1.44	1.47	1.43	1.43	1.45	1.45	1.49	1.46	1.46	1.46
Silver (Ag)-Dissolved	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Dissolved	1.26	1.29	1.24	1.25	1.31	1.21	1.27	1.31	1.33	1.33	1.25	1.20	1.36	1.38
Strontium (Sr)-Dissolved	0.105	0.103	0.103	0.101	0.106	0.102	0.106	0.107	0.107	0.107	0.105	0.106	0.107	0.105
Thallium (Tl)-Dissolved	<0.0000020	0.0000167	0.0000166	0.0000163	0.0000167	0.0000090	0.0000092	0.0000100	0.0000217	0.0000228	0.0000028	0.0000031	0.0000023	0.0000616
Tin (Sn)-Dissolved	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Titanium (Ti)-Dissolved	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Uranium (U)-Dissolved	0.000457	0.000442	0.000433	0.000428	0.000462	0.000435	0.000458	0.000464	0.000466	0.000470	0.000462	0.000458	0.000479	0.000471
Vanadium (V)-Dissolved	0.000119	0.000118	0.000104	0.000099	0.000098	0.000115	0.000128	0.000120	0.000125	0.000114	0.000109	0.000120	0.000115	0.000111
Zinc (Zn)-Dissolved	0.00080	0.00148	0.00110	0.00106	0.00084	0.00137	0.00093	0.00107	0.00183	0.00152	0.00069	0.00070	0.00150	0.00167
Zirconium (Zr)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Aggregate Organics (Water)														
BOD	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
COD	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20

Qualifier Legend
HTC
RRV

Client Sample ID	NEW BRIDGE R-1MD	NEW BRIDGE R-1MAB	NEW BRIDGE L-1MAB	NEW BRIDGE L-1MD	NEW BRIDGE L-SH	NEW BRIDGE R-SH	DUPLICATE 1 (New Bridge RSH)	DUPLICATE 2 (New Bridge R 1M Deep)	DUPLICATE 3 (New Bridge LSH)	TRAVEL BLANK	FIELD BLANK
Date Sampled	4-Oct-2016	4-Oct-2016	4-Oct-2016	4-Oct-2016	4-Oct-2016	4-Oct-2016	4-Oct-2016	4-Oct-2016	4-Oct-2016	4-Oct-2016	4-Oct-2016
Time Sampled	16:18	16:20	16:22	16:23	16:24	16:17	0:00	0:00	0:00	0:00	16:30
ALS Sample ID	L1839891-26	L1839891-27	L1839891-28	L1839891-29	L1839891-30	L1839891-31	L1839891-32	L1839891-33	L1839891-34	L1839891-35	L1839891-36
Parameter	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests (Water)											
Hardness (as CaCO3)	59.8	61	61.5	59	62.3	64.2	65.4	62.4	63.1	<0.50	<0.50
Turbidity	0.39	0.50	0.46	0.36	0.37	0.39	0.37	0.33	0.39	<0.10	<0.10
Anions and Nutrients (Water)											
Ammonia, Total (as N)	0.0118	0.0160	0.0126	0.0114	0.0715	0.0654	0.0668	0.0107	0.0725	0.0437	<0.0050
Bromide (Br)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	0.53	0.53	0.53	0.53	0.60	1.37	1.38	0.53	0.62	<0.50	<0.50
Fluoride (F)	0.060	0.060	0.062	0.062	0.061	0.146	0.147	0.061	0.061	<0.020	<0.020
Nitrate (as N)	0.0760	0.0721	0.0730	0.0737	0.100	0.0977	0.0998	0.0728	0.101	<0.0050	<0.0050
Nitrite (as N)	0.0010	0.0010	<0.0010	0.0015	<0.0010	0.0020	0.0022	<0.0010	0.0016	<0.0010	<0.0010
Total Kjeldahl Nitrogen	0.100	0.100	0.103	0.117	0.178	0.173	0.185	0.111	0.171	0.099	<0.050
Phosphorus (P)-Total Dissolved	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
Phosphorus (P)-Total	0.0038	0.0038	0.0039	0.0030	0.0044	0.0033	0.0042	0.0034	0.0030	<0.0020	<0.0020
Sulfate (SO4)	10.5	10.5	10.5	10.6	12.0	16.8	17.0	10.6	12.2	<0.30	<0.30
Organic / Inorganic Carbon (Water)											
Total Organic Carbon	0.95	1.05	0.98	1.02	1.05	0.91	1.05	0.94	1.14	<0.50	<0.50
Total Metals (Water)											
Mercury (Hg)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00155	0.00166	<0.00050	<0.00050	<0.00050	<0.00050
Total Metals (Undigested) (Water)											
Aluminum (Al)-Total	0.0108	0.0108	0.0117	0.0104	0.0111	0.0120	0.0121	0.0112	0.0102	<0.00070	<0.00070
Antimony (Sb)-Total	0.000025	0.000025	0.000022	0.000025	0.000035	0.00220	0.00206	0.000025	0.000035	<0.000020	<0.000020
Arsenic (As)-Total	0.000172	0.000153	0.000148	0.000153	0.000186	0.000505	0.000484	0.000177	0.000175	<0.000020	<0.000020
Barium (Ba)-Total	0.0191	0.0188	0.0189	0.0186	0.0200	0.0189	0.0183	0.0192	0.0196	<0.000020	<0.000020
Beryllium (Be)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Bismuth (Bi)-Total	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Boron (B)-Total	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0100	<0.0050
Cadmium (Cd)-Total	0.0000133	0.0000141	0.0000079	0.0000090	0.0000115	0.000841	0.000808	0.0000112	0.0000093	<0.0000050	<0.0000050
Calcium (Ca)-Total	17.6	18.1	18.2	18.2	18.9	20.3	20.4	18.4	19.0	<0.030	<0.030
Chromium (Cr)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Cobalt (Co)-Total	0.0000418	0.0000277	0.0000181	0.0000075	0.0000124	0.0000223	0.0000230	<0.0000050	0.0000118	<0.0000050	<0.0000050
Copper (Cu)-Total	0.00022	0.00023	0.00022	0.00022	0.00026	0.00091	0.00091	0.00023	0.00020	<0.00010	<0.00010
Iron (Fe)-Total	0.0105	0.0100	0.0088	0.0087	0.0087	0.0085	0.0093	0.0081	0.0084	<0.0010	<0.0010
Lead (Pb)-Total	0.000048	0.000053	0.000042	0.000042	0.000073	0.00167	0.00146	0.000058	0.000104	<0.000010	<0.000010
Lithium (Li)-Total	0.00077	0.00078	0.00073	0.00075	0.00079	0.00085	0.00078	0.00082	0.00074	<0.00050	<0.00050
Magnesium (Mg)-Total	3.76	3.86	3.80	3.82	3.94	3.85	3.99	3.87	4.06	<0.030	<0.030
Manganese (Mn)-Total	0.00211	0.00217	0.00201	0.00175	0.00411	0.00561	0.00566	0.00181	0.00410	<0.000050	<0.000050
Molybdenum (Mo)-Total	0.000573	0.000553	0.000544	0.000585	0.000567	0.000796	0.000759	0.000548	0.000550	<0.000050	<0.000050
Nickel (Ni)-Total	0.000394	0.000378	0.000341	0.000337	0.000395	0.000360	0.000359	0.000364	0.000350	<0.000050	<0.000050
Phosphorus (P)-Total	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Total	0.725	0.697	0.695	0.676	0.695	0.777	0.832	0.703	0.745	<0.050	<0.050
Selenium (Se)-Total	0.000156	0.000179	0.000154	0.000167	0.000202	0.000832	0.000852	0.000181	0.000200	<0.000040	<0.000040
Silicon (Si)-Total	1.42	1.49	1.47	1.47	1.49	1.49	1.52	1.48	1.52	<0.050	<0.050
Silver (Ag)-Total	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Sodium (Na)-Total	1.23	1.23	1.24	1.24	1.42	2.65	2.59	1.26	1.35	<0.010	<0.010
Strontium (Sr)-Total	0.106	0.107	0.105	0.109	0.110	0.108	0.103	0.107	0.110	<0.000050	<0.000050
Thallium (Tl)-Total	0.0000030	0.0000028	0.0000027	0.0000027	0.0000021	**0.000520**	**0.000479**	0.0000037	0.0000032	<0.0000020	<0.0000020
Tin (Sn)-Total	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Titanium (Ti)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Uranium (U)-Total	0.000460	0.000467	0.000462	0.000481	0.000513	0.000491	0.000453	0.000469	0.000504	<0.0000030	<0.0000030
Vanadium (V)-Total	0.000133	0.000123	0.000125	0.000138	0.000127	0.000132	0.000131	0.000139	0.000134	<0.000050	<0.000050
Zinc (Zn)-Total	0.00082	0.00080	0.00111	0.00054	0.00091	**0.0113**	**0.0116**	0.00051	0.00069	<0.00050	<0.00050
Zirconium (Zr)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Metals (Water)											
Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD		
Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD		FIELD
Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD		FIELD
Aluminum (Al)-Dissolved	0.00704	0.00717	0.00643	0.00655	0.00595	0.00748	0.00779	0.00669	0.00611		<0.00050
Antimony (Sb)-Dissolved	0.000022	0.000024	<0.000020	0.000023	0.000041	0.00211	0.00221	0.000025	0.000031		<0.000020
Arsenic (As)-Dissolved	0.000161	0.000188	0.000159	0.000152	0.000151	0.000429	0.000437	0.000174	0.000165		<0.000020
Barium (Ba)-Dissolved	0.0187	0.0196	0.0185	0.0186	0.0183	0.0175	0.0201	0.0193	0.0196		<0.000020
Beryllium (Be)-Dissolved	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010		<0.000010
Bismuth (Bi)-Dissolved	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050		<0.0000050
Boron (B)-Dissolved	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		<0.010
Cadmium (Cd)-Dissolved	0.0000088	0.0000123	0.0000066	0.0000069	0.0000082	**0.000771**	**0.000862**	0.0000111	0.0000117		<0.0000050
Calcium (Ca)-Dissolved	17.7	18.0	18.1	17.5	18.4	19.5	19.8	18.4	18.6		<0.030
Chromium (Cr)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00012	<0.00010	<0.00010	<0.00010		<0.00010
Cobalt (Co)-Dissolved	0.0000333	0.0000148	0.0000089	<0.0000050	0.0000072	0.0000200	0.0000217	<0.0000050	0.0000062		<0.0000050
Copper (Cu)-Dissolved	0.00019	0.00022	0.00021	0.00019	0.00017	0.00076	0.00080	0.00021	0.00022		<0.00010
Iron (Fe)-Dissolved	0.0028	0.0024	0.0018	0.0016	0.0012	0.0014	0.0012	0.0011	0.0011		<0.0010
Lead (Pb)-Dissolved	0.0000101	0.0000427	0.0000111	0.0000129	0.0000193	0.000662	0.000716	0.0000167	0.0000227		<0.0000050
Lithium (Li)-Dissolved	0.00076	0.00077	0.00073	0.00077	0.00080	0.00083	0.00083	0.00081	0.00081		<0.00050
Magnesium (Mg)-Dissolved	3.79	3.87	3.94	3.72	3.97	3.80	3.90	4.00	4.05		<0.030
Manganese (Mn)-Dissolved	0.00101	0.000898	0.000852	0.000896	0.00279	0.00438	0.00493	0.000694	0.00297		<0.000050
Mercury (Hg)-Dissolved	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		
Molybdenum (Mo)-Dissolved	0.000544	0.000561	0.000553	0.000542	0.000559	0.000779	0.000811	0.000568	0.000570		<0.000050
Nickel (Ni)-Dissolved	0.000350	0.000387	0.000303	0.000334	0.000298	0.000347	0.000374	0.000325	0.000363		<0.000050
Phosphorus (P)-Dissolved	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050		<0.050
Potassium (K)-Dissolved	0.636	0.652	0.656	0.631	0.680	0.728	0.739	0.679	0.686		<0.050
Selenium (Se)-Dissolved	0.000180	0.000173	0.000135	0.000160	0.000173	0.000798	0.000807	0.000165	0.000193		<0.000040
Silicon (Si)-Dissolved	1.46	1.47	1.51	1.42	1.48	1.45	1.48	1.52	1.50		<0.050
Silver (Ag)-Dissolved	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050		<0.0000050
Sodium (Na)-Dissolved	1.25	1.36	1.23	1.22	1.33	2.51	2.76	1.25	1.36		<0.010
Strontium (Sr)-Dissolved	0.108	0.106	0.104	0.105	0.103	0.105	0.109	0.107	0.111		<0.00010
Thallium (Tl)-Dissolved	0.0000032	0.0000025	0.0000028	0.0000026	0.0000034	0.000492	0.000535	0.0000033	0.0000039		<0.0000020
Tin (Sn)-Dissolved	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010		<0.000010
Titanium (Ti)-Dissolved	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030		<0.00030
Uranium (U)-Dissolved	0.000480	0.000472	0.000464	0.000467	0.000477	0.000453	0.000507	0.000470	0.000514		<0.0000020
Vanadium (V)-Dissolved	0.000116	0.000128	0.000124	0.000120	0.000119	0.000118	0.000123	0.000118	0.000111		<0.000050
Zinc (Zn)-Dissolved	0.00051	0.00143	0.00051	0.00145	0.00061	0.0104	0.0117	0.00081	0.00146		<0.00050
Zirconium (Zr)-Dissolved	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010
Aggregate Organics (Water)											
BOD	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
COD	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20

Qualifier Legend
HTC
RRV

APPENDIX C - 2

WATER QUALITY QA/QC

Project 12-976
Report To Kyle Hawes, ECOSCAPE ENVIRONMENTAL CONSULTANTS LTD.
ALS File No. L1594691
Date Received 02-Apr-15 11:30
Date 15-Apr-15

REPLICATE RESULTS

Sample ID	Matrix	ALS ID	Analyte	Replicate 1	Replicate 2	Units	RPD	RPD Limit	Diff	Diff Limit	Qualifier
Physical Tests											
L1594691-7	Water	WG2065004-34	Conductivity	145	147	uS/cm	0.9	10	-	-	-
L1594691-7	Water	WG2065004-34	pH	8.14	8.12	pH	-	-	0.02	0.3	J
L1594691-7	Water	WG2064391-15	Turbidity	0.45	0.46	NTU	1.3	15	-	-	-
Anions and Nutrients											
L1594691-1	Water	WG2064721-3	Phosphorus (P)-Total Dissolved	<0.0020	<0.0020	mg/L	N/A	20	-	-	RPD-NA
L1594691-7	Water	WG2064454-11	Phosphorus (P)-Total	<0.0020	<0.0020	mg/L	N/A	20	-	-	RPD-NA
Dissolved Metals											
L1594691-2	Water	WG2064770-3	Mercury (Hg)-Dissolved	<0.00050	<0.00050	ug/L	N/A	20	-	-	RPD-NA
Aggregate Organics											
L1594691-1	Water	WG2064664-7	COD	<20	<20	mg/L	N/A	20	-	-	RPD-NA
L1594691-9	Water	WG2064378-7	BOD	<2.0	<2.0	mg/L	N/A	20	-	-	RPD-NA

Project 12-976
Report To Kyle Hawes, ECOSCAPE ENVIRONMENTAL CONSULTANTS LTD.
ALS File No. L1594691
Date Received 02-Apr-15 11:30
Date 15-Apr-15

QUALITY CONTROL RESULTS

Matrix	QC Type	Analyte	QC Spl. No.	Reference	Result	Target	Units	%	Limits	Qualifier
Physical Tests										
Water	CRM	Turbidity	WG2064391-2	VA-FORM-40	40.2	40.0	NTU	100.5	85-115	
Water	CRM	Turbidity	WG2064391-5	VA-FORM-40	39.8	40.0	NTU	99.5	85-115	
Water	CRM	Turbidity	WG2064391-8	VA-FORM-40	40.3	40.0	NTU	100.8	85-115	
Water	CRM	Turbidity	WG2064391-11	VA-FORM-40	40.0	40.0	NTU	100.0	85-115	
Water	CRM	Turbidity	WG2064391-14	VA-FORM-40	40.2	40.0	NTU	100.5	85-115	
Water	CRM	Conductivity	WG2065004-17	VA-EC-PCT-CONTROL	148	147	uS/cm	100.4	90-110	
Water	CRM	Conductivity	WG2065004-18	VA-EC-PCT-CONTROL	147	147	uS/cm	100.2	90-110	
Water	CRM	Conductivity	WG2065004-19	VA-EC-PCT-CONTROL	148	147	uS/cm	100.7	90-110	
Water	CRM	Conductivity	WG2065004-20	VA-EC-PCT-CONTROL	149	147	uS/cm	101.4	90-110	
Water	CRM	Conductivity	WG2065004-21	VA-EC-PCT-CONTROL	148	147	uS/cm	100.5	90-110	
Water	CRM	Conductivity	WG2065004-22	VA-EC-PCT-CONTROL	148	147	uS/cm	100.6	90-110	
Water	CRM	Conductivity	WG2065004-23	VA-EC-PCT-CONTROL	149	147	uS/cm	101.1	90-110	
Water	CRM	Conductivity	WG2065004-24	VA-EC-PCT-CONTROL	149	147	uS/cm	101.4	90-110	
Water	CRM	pH	WG2065004-25	VA-PH7-BUF	7.05	7.00	pH	7.05	6.9-7.1	
Water	CRM	pH	WG2065004-26	VA-PH7-BUF	7.04	7.00	pH	7.04	6.9-7.1	
Water	CRM	pH	WG2065004-27	VA-PH7-BUF	7.06	7.00	pH	7.06	6.9-7.1	
Water	CRM	pH	WG2065004-28	VA-PH7-BUF	7.03	7.00	pH	7.03	6.9-7.1	
Water	CRM	pH	WG2065004-29	VA-PH7-BUF	7.03	7.00	pH	7.03	6.9-7.1	
Water	CRM	pH	WG2065004-30	VA-PH7-BUF	7.05	7.00	pH	7.05	6.9-7.1	
Water	CRM	pH	WG2065004-31	VA-PH7-BUF	7.03	7.00	pH	7.03	6.9-7.1	
Water	CRM	pH	WG2065004-32	VA-PH7-BUF	7.04	7.00	pH	7.04	6.9-7.1	
Water	LCS	Total Dissolved Solids	WG2064438-2		430	425	mg/L	101.1	85-115	
Water	LCS	Total Dissolved Solids	WG2064438-5		425	425	mg/L	100.1	85-115	
Water	LCS	Total Suspended Solids	WG2064439-2		71.5	75.0	mg/L	95.3	85-115	
Water	LCS	Total Suspended Solids	WG2064439-5		72.4	75.0	mg/L	96.5	85-115	
Water	LCS	Total Suspended Solids	WG2064439-8		67.1	75.0	mg/L	89.5	85-115	
Water	MB	Turbidity	WG2064391-1		<0.10	<0.1	NTU	-	0.1	
Water	MB	Turbidity	WG2064391-4		<0.10	<0.1	NTU	-	0.1	
Water	MB	Turbidity	WG2064391-7		<0.10	<0.1	NTU	-	0.1	
Water	MB	Total Dissolved Solids	WG2064438-1		<10	<10	mg/L	-	10	
Water	MB	Total Dissolved Solids	WG2064438-4		<10	<10	mg/L	-	10	
Water	MB	Total Suspended Solids	WG2064439-1		<3.0	<3	mg/L	-	3	
Water	MB	Total Suspended Solids	WG2064439-4		<3.0	<3	mg/L	-	3	
Water	MB	Total Suspended Solids	WG2064439-7		<3.0	<3	mg/L	-	3	
Water	MB	Conductivity	WG2065004-1		<2.0	<2	uS/cm	-	2	
Water	MB	Conductivity	WG2065004-2		<2.0	<2	uS/cm	-	2	
Water	MB	Conductivity	WG2065004-3		<2.0	<2	uS/cm	-	2	
Water	MB	Conductivity	WG2065004-4		<2.0	<2	uS/cm	-	2	
Water	MB	Conductivity	WG2065004-5		<2.0	<2	uS/cm	-	2	
Water	MB	Conductivity	WG2065004-6		<2.0	<2	uS/cm	-	2	
Water	MB	Conductivity	WG2065004-7		<2.0	<2	uS/cm	-	2	
Water	MB	Conductivity	WG2065004-8		<2.0	<2	uS/cm	-	2	
Water	MB	Turbidity	WG2064391-10		<0.10	<0.1	NTU	-	0.1	
Water	MB	Turbidity	WG2064391-13		<0.10	<0.1	NTU	-	0.1	
Anions and Nutrients										
Water	CRM	Phosphorus (P)-Total	WG2064454-2	VA-ERA-PO4	7.33	7.17	mg/L	102.2	80-120	
Water	CRM	Phosphorus (P)-Total	WG2064454-6	VA-ERA-PO4	7.20	7.17	mg/L	100.4	80-120	
Water	CRM	Phosphorus (P)-Total	WG2064712-2	VA-ERA-PO4	7.38	7.17	mg/L	102.9	80-120	
Water	CRM	Phosphorus (P)-Total	WG2064712-6	VA-ERA-PO4	7.35	7.17	mg/L	102.5	80-120	
Water	CRM	Phosphorus (P)-Total Dissolved	WG2064721-2	VA-ERA-PO4	7.52	7.17	mg/L	104.9	80-120	
Water	CRM	Alkalinity, Total (as CaCO3)	WG2066046-2	VA-ALKL-CONTROL	15.3	15.0	mg/L	101.8	85-115	
Water	CRM	Alkalinity, Total (as CaCO3)	WG2066046-5	VA-ALKM-CONTROL	83.4	75.0	mg/L	111.3	85-115	
Water	CRM	Alkalinity, Total (as CaCO3)	WG2066046-8	VA-ALKH-CONTROL	257	250	mg/L	102.8	85-115	
Water	CRM	Ammonia, Total (as N)	WG2067636-2	VA-NH3-F	0.118	0.120	mg/L	98.5	85-115	
Water	CRM	Ammonia, Total (as N)	WG2067636-4	VA-NH3-F	0.118	0.120	mg/L	98.7	85-115	
Water	CRM	Ammonia, Total (as N)	WG2067636-6	VA-NH3-F	0.113	0.120	mg/L	94.5	85-115	
Water	CRM	Phosphorus (P)-Total	WG2064454-10	VA-ERA-PO4	7.32	7.17	mg/L	102.1	80-120	
Water	LCS	Bromide (Br)	WG2063867-2		0.520	0.500	mg/L	104.1	85-115	
Water	LCS	Chloride (Cl)	WG2063867-2		102	100	mg/L	102.4	90-110	
Water	LCS	Fluoride (F)	WG2063867-2		1.01	1.00	mg/L	101.2	90-110	
Water	LCS	Nitrate (as N)	WG2063867-2		2.55	2.50	mg/L	102.0	90-110	
Water	LCS	Nitrite (as N)	WG2063867-2		0.500	0.500	mg/L	100.0	90-110	
Water	LCS	Sulfate (SO4)	WG2063867-2		103	100	mg/L	102.6	90-110	
Water	LCS	Total Kjeldahl Nitrogen	WG2065467-2		1.01	1.00	mg/L	101.0	75-125	
Water	LCS	Total Kjeldahl Nitrogen	WG2065467-6		1.05	1.00	mg/L	104.8	75-125	
Water	LCS	Total Nitrogen	WG2066094-2		0.511	0.500	mg/L	102.2	75-125	
Water	LCS	Total Nitrogen	WG2066094-6		0.509	0.500	mg/L	101.8	75-125	
Water	LCS	Total Nitrogen	WG2066094-8		0.505	0.500	mg/L	101.0	75-125	
Water	LCS	Bromide (Br)	WG2063867-18		0.523	0.500	mg/L	104.6	85-115	
Water	LCS	Chloride (Cl)	WG2063867-18		103	100	mg/L	102.6	90-110	
Water	LCS	Fluoride (F)	WG2063867-18		1.01	1.00	mg/L	101.2	90-110	

Water	LCS	Nitrate (as N)	WG2063867-18		2.56	2.50	mg/L	102.4	90-110
Water	LCS	Nitrite (as N)	WG2063867-18		0.501	0.500	mg/L	100.2	90-110
Water	LCS	Sulfate (SO4)	WG2063867-18		103	100	mg/L	102.8	90-110
Water	LCS	Total Nitrogen	WG2066094-10		0.500	0.500	mg/L	100.1	75-125
Water	LCS	Total Nitrogen	WG2066094-12		0.489	0.500	mg/L	97.7	75-125
Water	MB	Bromide (Br)	WG2063867-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Chloride (Cl)	WG2063867-1		<0.50	<0.5	mg/L	-	0.5
Water	MB	Fluoride (F)	WG2063867-1		<0.020	<0.02	mg/L	-	0.02
Water	MB	Nitrate (as N)	WG2063867-1		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Nitrite (as N)	WG2063867-1		<0.0010	<0.001	mg/L	-	0.001
Water	MB	Sulfate (SO4)	WG2063867-1		<0.30	<0.3	mg/L	-	0.3
Water	MB	Bromide (Br)	WG2063867-4		<0.050	<0.05	mg/L	-	0.05
Water	MB	Chloride (Cl)	WG2063867-4		<0.50	<0.5	mg/L	-	0.5
Water	MB	Fluoride (F)	WG2063867-4		<0.020	<0.02	mg/L	-	0.02
Water	MB	Nitrate (as N)	WG2063867-4		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Nitrite (as N)	WG2063867-4		<0.0010	<0.001	mg/L	-	0.001
Water	MB	Sulfate (SO4)	WG2063867-4		<0.30	<0.3	mg/L	-	0.3
Water	MB	Bromide (Br)	WG2063867-7		<0.050	<0.05	mg/L	-	0.05
Water	MB	Chloride (Cl)	WG2063867-7		<0.50	<0.5	mg/L	-	0.5
Water	MB	Fluoride (F)	WG2063867-7		<0.020	<0.02	mg/L	-	0.02
Water	MB	Nitrate (as N)	WG2063867-7		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Nitrite (as N)	WG2063867-7		<0.0010	<0.001	mg/L	-	0.001
Water	MB	Sulfate (SO4)	WG2063867-7		<0.30	<0.3	mg/L	-	0.3
Water	MB	Phosphorus (P)-Total	WG2064454-1		<0.0020	<0.002	mg/L	-	0.002
Water	MB	Phosphorus (P)-Total	WG2064454-5		<0.0020	<0.002	mg/L	-	0.002
Water	MB	Phosphorus (P)-Total	WG2064454-9		<0.0020	<0.002	mg/L	-	0.002
Water	MB	Phosphorus (P)-Total	WG2064712-1		<0.0020	<0.002	mg/L	-	0.002
Water	MB	Phosphorus (P)-Total	WG2064712-5		<0.0020	<0.002	mg/L	-	0.002
Water	MB	Phosphorus (P)-Total Dissolved	WG2064721-1		<0.0020	<0.002	mg/L	-	0.002
Water	MB	Total Kjeldahl Nitrogen	WG2065467-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Total Kjeldahl Nitrogen	WG2065467-5		<0.050	<0.05	mg/L	-	0.05
Water	MB	Alkalinity, Total (as CaCO3)	WG2066046-1		<2.0	<2	mg/L	-	2
Water	MB	Alkalinity, Total (as CaCO3)	WG2066046-4		<2.0	<2	mg/L	-	2
Water	MB	Alkalinity, Total (as CaCO3)	WG2066046-7		<2.0	<2	mg/L	-	2
Water	MB	Total Nitrogen	WG2066094-1		<0.050	<0.0499998	mg/L	-	0.0499998
Water	MB	Total Nitrogen	WG2066094-5		<0.050	<0.0499998	mg/L	-	0.0499998
Water	MB	Total Nitrogen	WG2066094-7		<0.050	<0.0499998	mg/L	-	0.0499998
Water	MB	Total Nitrogen	WG2066094-9		<0.050	<0.0499998	mg/L	-	0.0499998
Water	MB	Ammonia, Total (as N)	WG2067636-1		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Ammonia, Total (as N)	WG2067636-3		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Ammonia, Total (as N)	WG2067636-5		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Bromide (Br)	WG2063867-10		<0.050	<0.05	mg/L	-	0.05
Water	MB	Chloride (Cl)	WG2063867-10		<0.50	<0.5	mg/L	-	0.5
Water	MB	Fluoride (F)	WG2063867-10		<0.020	<0.02	mg/L	-	0.02
Water	MB	Nitrate (as N)	WG2063867-10		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Nitrite (as N)	WG2063867-10		<0.0010	<0.001	mg/L	-	0.001
Water	MB	Sulfate (SO4)	WG2063867-10		<0.30	<0.3	mg/L	-	0.3
Water	MB	Bromide (Br)	WG2063867-13		<0.050	<0.05	mg/L	-	0.05
Water	MB	Chloride (Cl)	WG2063867-13		<0.50	<0.5	mg/L	-	0.5
Water	MB	Fluoride (F)	WG2063867-13		<0.020	<0.02	mg/L	-	0.02
Water	MB	Nitrate (as N)	WG2063867-13		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Nitrite (as N)	WG2063867-13		<0.0010	<0.001	mg/L	-	0.001
Water	MB	Sulfate (SO4)	WG2063867-13		<0.30	<0.3	mg/L	-	0.3
Water	MB	Bromide (Br)	WG2063867-16		<0.050	<0.05	mg/L	-	0.05
Water	MB	Chloride (Cl)	WG2063867-16		<0.50	<0.5	mg/L	-	0.5
Water	MB	Fluoride (F)	WG2063867-16		<0.020	<0.02	mg/L	-	0.02
Water	MB	Nitrate (as N)	WG2063867-16		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Nitrite (as N)	WG2063867-16		<0.0010	<0.001	mg/L	-	0.001
Water	MB	Sulfate (SO4)	WG2063867-16		<0.30	<0.3	mg/L	-	0.3
Water	MB	Alkalinity, Total (as CaCO3)	WG2066046-10		<2.0	<2	mg/L	-	2
Water	MB	Alkalinity, Total (as CaCO3)	WG2066046-12		<2.0	<2	mg/L	-	2
Water	MB	Alkalinity, Total (as CaCO3)	WG2066046-16		<2.0	<2	mg/L	-	2
Water	MB	Total Nitrogen	WG2066094-11		<0.050	<0.0499998	mg/L	-	0.0499998
Water	MS	Bromide (Br)	WG2063867-5	Anonymous	0.501	0.500	mg/L	100.2	75-125
Water	MS	Chloride (Cl)	WG2063867-5	Anonymous	98.7	100	mg/L	98.7	75-125
Water	MS	Fluoride (F)	WG2063867-5	Anonymous	0.972	1.00	mg/L	97.2	75-125
Water	MS	Nitrate (as N)	WG2063867-5	Anonymous	2.46	2.50	mg/L	98.3	75-125
Water	MS	Nitrite (as N)	WG2063867-5	Anonymous	0.482	0.500	mg/L	96.3	75-125
Water	MS	Sulfate (SO4)	WG2063867-5	Anonymous	98.8	100	mg/L	98.8	75-125
Water	MS	Bromide (Br)	WG2063867-8	Anonymous	0.510	0.500	mg/L	102.1	75-125
Water	MS	Fluoride (F)	WG2063867-8	Anonymous	1.13	1.17	mg/L	96.3	75-125
Water	MS	Nitrate (as N)	WG2063867-8	Anonymous	2.61	2.65	mg/L	98.4	75-125
Water	MS	Nitrite (as N)	WG2063867-8	Anonymous	0.481	0.500	mg/L	96.1	75-125
Water	MS	Sulfate (SO4)	WG2063867-8	Anonymous	120	123	mg/L	96.4	75-125
Water	MS	Phosphorus (P)-Total	WG2064454-4	Anonymous	0.0492	0.0526	mg/L	93.3	70-130
Water	MS	Phosphorus (P)-Total	WG2064454-8	Anonymous	0.0515	0.0549	mg/L	93.1	70-130
Water	MS	Phosphorus (P)-Total	WG2064712-4	Anonymous	0.124	0.119	mg/L	N/A	- MS-B
Water	MS	Phosphorus (P)-Total	WG2064712-8	Anonymous	0.0521	0.0500	mg/L	104.1	70-130
Water	MS	Phosphorus (P)-Total Dissolved	WG2064721-4	L1594691-2	0.0511	0.0500	mg/L	102.2	70-130
Water	MS	Total Kjeldahl Nitrogen	WG2065467-4	Anonymous	1.09	1.10	mg/L	99.1	70-130
Water	MS	Total Kjeldahl Nitrogen	WG2065467-8	Anonymous	1.55	1.52	mg/L	103.4	70-130
Water	MS	Total Nitrogen	WG2066094-4	Anonymous	1.21	1.27	mg/L	N/A	- MS-B
Water	MS	Ammonia, Total (as N)	WG2067636-8	Anonymous	0.197	0.200	mg/L	98.4	75-125
Water	MS	Bromide (Br)	WG2063867-11	Anonymous	0.526	0.500	mg/L	105.2	75-125

Water	MS	Fluoride (F)	WG2063867-11	Anonymous	1.01	1.00	mg/L	101.0	75-125	
Water	MS	Nitrate (as N)	WG2063867-11	Anonymous	2.55	2.50	mg/L	102.0	75-125	
Water	MS	Nitrite (as N)	WG2063867-11	Anonymous	0.498	0.500	mg/L	99.7	75-125	
Water	MS	Sulfate (SO4)	WG2063867-11	Anonymous	102	100	mg/L	102.4	75-125	
Water	MS	Bromide (Br)	WG2063867-14	Anonymous	0.541	0.500	mg/L	108.3	75-125	
Water	MS	Fluoride (F)	WG2063867-14	Anonymous	1.04	1.00	mg/L	104.2	75-125	
Water	MS	Nitrate (as N)	WG2063867-14	Anonymous	2.63	2.50	mg/L	105.1	75-125	
Water	MS	Nitrite (as N)	WG2063867-14	Anonymous	0.515	0.500	mg/L	103.0	75-125	
Water	MS	Sulfate (SO4)	WG2063867-14	Anonymous	106	100	mg/L	105.8	75-125	
Water	MS	Bromide (Br)	WG2063867-17	L1594691-9	0.510	0.500	mg/L	102.1	75-125	
Water	MS	Chloride (Cl)	WG2063867-17	L1594691-9	99.4	100	mg/L	99.4	75-125	
Water	MS	Fluoride (F)	WG2063867-17	L1594691-9	0.982	1.00	mg/L	98.2	75-125	
Water	MS	Nitrate (as N)	WG2063867-17	L1594691-9	2.48	2.50	mg/L	99.2	75-125	
Water	MS	Nitrite (as N)	WG2063867-17	L1594691-9	0.486	0.500	mg/L	97.3	75-125	
Water	MS	Sulfate (SO4)	WG2063867-17	L1594691-9	99.7	100	mg/L	99.7	75-125	
Water	MS	Total Nitrogen	WG2066094-16	Anonymous	0.964	0.982	mg/L	N/A	-	MS-B
Water	MS	Total Nitrogen	WG2066094-18	Anonymous	0.637	0.647	mg/L	97.6	70-130	
Water	MS	Total Nitrogen	WG2066094-22	Anonymous	0.987	1.08	mg/L	N/A	-	MS-B
Water	MS	Ammonia, Total (as N)	WG2067636-10	Anonymous	0.196	0.205	mg/L	95.5	75-125	
Water	MS	Ammonia, Total (as N)	WG2067636-12	Anonymous	0.179	0.200	mg/L	89.4	75-125	
Organic / Inorganic Carbon										
Water	LCS	Total Organic Carbon	WG2065896-1		8.61	8.57	mg/L	100.5	80-120	
Water	LCS	Total Organic Carbon	WG2065896-5		8.19	8.57	mg/L	95.6	80-120	
Water	LCS	Total Organic Carbon	WG2065896-9		8.10	8.57	mg/L	94.6	80-120	
Water	LCS	Total Organic Carbon	WG2065896-13		8.24	8.57	mg/L	96.2	80-120	
Water	MB	Total Organic Carbon	WG2065896-4		<0.50	<0.5	mg/L	-	0.5	
Water	MB	Total Organic Carbon	WG2065896-8		<0.50	<0.5	mg/L	-	0.5	
Water	MB	Total Organic Carbon	WG2065896-12		<0.50	<0.5	mg/L	-	0.5	
Water	MS	Total Organic Carbon	WG2065896-7	Anonymous	15.5	15.8	mg/L	N/A	-	MS-B
Water	MS	Total Organic Carbon	WG2065896-11	Anonymous	6.47	6.47	mg/L	100.0	70-130	
Total Metals										
Water	LCS	Mercury (Hg)-Total	WG2064770-2		0.00487	0.00500	ug/L	97.4	80-120	
Water	MB	Mercury (Hg)-Total	WG2064770-1		<0.00050	<0.0005	ug/L	-	0.0005	
Water	MS	Mercury (Hg)-Total	WG2064770-4	L1594691-1	0.00485	0.00500	ug/L	97.0	70-130	
Total Metals (Undigested)										
Water	CRM	Aluminum (Al)-Total	WG2064404-2	VA-HIGH-WATRM	1.96	2.00	mg/L	98.0	80-120	
Water	CRM	Antimony (Sb)-Total	WG2064404-2	VA-HIGH-WATRM	0.978	1.00	mg/L	97.8	80-120	
Water	CRM	Arsenic (As)-Total	WG2064404-2	VA-HIGH-WATRM	0.985	1.00	mg/L	98.5	80-120	
Water	CRM	Barium (Ba)-Total	WG2064404-2	VA-HIGH-WATRM	0.251	0.250	mg/L	100.5	80-120	
Water	CRM	Beryllium (Be)-Total	WG2064404-2	VA-HIGH-WATRM	0.0983	0.100	mg/L	98.3	80-120	
Water	CRM	Bismuth (Bi)-Total	WG2064404-2	VA-HIGH-WATRM	0.978	1.00	mg/L	97.8	80-120	
Water	CRM	Boron (B)-Total	WG2064404-2	VA-HIGH-WATRM	0.93	1.00	mg/L	92.9	80-120	
Water	CRM	Cadmium (Cd)-Total	WG2064404-2	VA-HIGH-WATRM	0.0966	0.100	mg/L	96.6	80-120	
Water	CRM	Calcium (Ca)-Total	WG2064404-2	VA-HIGH-WATRM	51.1	50.0	mg/L	102.2	80-120	
Water	CRM	Chromium (Cr)-Total	WG2064404-2	VA-HIGH-WATRM	0.244	0.250	mg/L	97.7	80-120	
Water	CRM	Cobalt (Co)-Total	WG2064404-2	VA-HIGH-WATRM	0.246	0.250	mg/L	98.3	80-120	
Water	CRM	Copper (Cu)-Total	WG2064404-2	VA-HIGH-WATRM	0.244	0.250	mg/L	97.6	80-120	
Water	CRM	Iron (Fe)-Total	WG2064404-2	VA-HIGH-WATRM	0.988	1.00	mg/L	98.8	80-120	
Water	CRM	Lead (Pb)-Total	WG2064404-2	VA-HIGH-WATRM	0.494	0.500	mg/L	98.8	80-120	
Water	CRM	Lithium (Li)-Total	WG2064404-2	VA-HIGH-WATRM	0.253	0.250	mg/L	101.2	80-120	
Water	CRM	Magnesium (Mg)-Total	WG2064404-2	VA-HIGH-WATRM	48.9	50.0	mg/L	97.8	80-120	
Water	CRM	Manganese (Mn)-Total	WG2064404-2	VA-HIGH-WATRM	0.248	0.250	mg/L	99.1	80-120	
Water	CRM	Molybdenum (Mo)-Total	WG2064404-2	VA-HIGH-WATRM	0.243	0.250	mg/L	97.2	80-120	
Water	CRM	Nickel (Ni)-Total	WG2064404-2	VA-HIGH-WATRM	0.487	0.500	mg/L	97.4	80-120	
Water	CRM	Phosphorus (P)-Total	WG2064404-2	VA-HIGH-WATRM	2.49	2.50	mg/L	99.8	80-120	
Water	CRM	Potassium (K)-Total	WG2064404-2	VA-HIGH-WATRM	48.5	50.0	mg/L	97.0	80-120	
Water	CRM	Selenium (Se)-Total	WG2064404-2	VA-HIGH-WATRM	1.00	1.00	mg/L	100.0	80-120	
Water	CRM	Silicon (Si)-Total	WG2064404-2	VA-HIGH-WATRM	1.02	1.00	mg/L	101.6	80-120	
Water	CRM	Silver (Ag)-Total	WG2064404-2	VA-HIGH-WATRM	0.0981	0.100	mg/L	98.1	80-120	
Water	CRM	Sodium (Na)-Total	WG2064404-2	VA-HIGH-WATRM	50.4	50.0	mg/L	100.8	80-120	
Water	CRM	Strontium (Sr)-Total	WG2064404-2	VA-HIGH-WATRM	0.251	0.250	mg/L	100.5	80-120	
Water	CRM	Thallium (Tl)-Total	WG2064404-2	VA-HIGH-WATRM	0.988	1.00	mg/L	98.8	80-120	
Water	CRM	Tin (Sn)-Total	WG2064404-2	VA-HIGH-WATRM	0.499	0.500	mg/L	99.8	80-120	
Water	CRM	Titanium (Ti)-Total	WG2064404-2	VA-HIGH-WATRM	0.249	0.250	mg/L	99.8	80-120	
Water	CRM	Uranium (U)-Total	WG2064404-2	VA-HIGH-WATRM	0.00510	0.00500	mg/L	102.0	80-120	
Water	CRM	Vanadium (V)-Total	WG2064404-2	VA-HIGH-WATRM	0.494	0.500	mg/L	98.7	80-120	
Water	CRM	Zinc (Zn)-Total	WG2064404-2	VA-HIGH-WATRM	0.468	0.500	mg/L	93.5	80-120	
Water	CRM	Zirconium (Zr)-Total	WG2064404-2	VA-HIGH-WATRM	0.0951	0.100	mg/L	95.1	80-120	
Water	MB	Aluminum (Al)-Total	WG2064404-1		<0.00050	<0.0005	mg/L	-	0.0005	
Water	MB	Antimony (Sb)-Total	WG2064404-1		<0.000020	<0.00002	mg/L	-	0.00002	
Water	MB	Arsenic (As)-Total	WG2064404-1		<0.000020	<0.00002	mg/L	-	0.00002	
Water	MB	Barium (Ba)-Total	WG2064404-1		<0.000020	<0.00002	mg/L	-	0.00002	
Water	MB	Beryllium (Be)-Total	WG2064404-1		<0.000010	<0.00001	mg/L	-	0.00001	
Water	MB	Bismuth (Bi)-Total	WG2064404-1		<0.0000050	<0.000005	mg/L	-	0.000005	
Water	MB	Boron (B)-Total	WG2064404-1		<0.0050	<0.005	mg/L	-	0.005	
Water	MB	Cadmium (Cd)-Total	WG2064404-1		<0.0000050	<0.000005	mg/L	-	0.000005	
Water	MB	Calcium (Ca)-Total	WG2064404-1		<0.030	<0.03	mg/L	-	0.03	
Water	MB	Chromium (Cr)-Total	WG2064404-1		<0.00010	<0.0001	mg/L	-	0.0001	

Water	MB	Cobalt (Co)-Total	WG2064404-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Copper (Cu)-Total	WG2064404-1		<0.00010	<0.0001	mg/L	-	0.0001
Water	MB	Iron (Fe)-Total	WG2064404-1		<0.0010	<0.001	mg/L	-	0.001
Water	MB	Lead (Pb)-Total	WG2064404-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Lithium (Li)-Total	WG2064404-1		<0.00050	<0.0005	mg/L	-	0.0005
Water	MB	Magnesium (Mg)-Total	WG2064404-1		<0.030	<0.03	mg/L	-	0.03
Water	MB	Manganese (Mn)-Total	WG2064404-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Molybdenum (Mo)-Total	WG2064404-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Nickel (Ni)-Total	WG2064404-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Phosphorus (P)-Total	WG2064404-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Potassium (K)-Total	WG2064404-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Selenium (Se)-Total	WG2064404-1		<0.000040	<0.00004	mg/L	-	0.00004
Water	MB	Silicon (Si)-Total	WG2064404-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Silver (Ag)-Total	WG2064404-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Sodium (Na)-Total	WG2064404-1		<0.010	<0.01	mg/L	-	0.01
Water	MB	Strontium (Sr)-Total	WG2064404-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Thallium (Tl)-Total	WG2064404-1		<0.0000020	<0.000002	mg/L	-	0.000002
Water	MB	Tin (Sn)-Total	WG2064404-1		<0.000010	<0.00001	mg/L	-	0.00001
Water	MB	Titanium (Ti)-Total	WG2064404-1		<0.00050	<0.0005	mg/L	-	0.0005
Water	MB	Uranium (U)-Total	WG2064404-1		<0.0000020	<0.000002	mg/L	-	0.000002
Water	MB	Vanadium (V)-Total	WG2064404-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Zinc (Zn)-Total	WG2064404-1		<0.00050	<0.0005	mg/L	-	0.0005
Water	MB	Zirconium (Zr)-Total	WG2064404-1		<0.00010	<0.0001	mg/L	-	0.0001
Dissolved Metals									
Water	CRM	Aluminum (Al)-Dissolved	WG2063781-2	VA-HIGH-WATRM	1.93	2.00	mg/L	96.6	80-120
Water	CRM	Antimony (Sb)-Dissolved	WG2063781-2	VA-HIGH-WATRM	0.981	1.00	mg/L	98.1	80-120
Water	CRM	Arsenic (As)-Dissolved	WG2063781-2	VA-HIGH-WATRM	0.984	1.00	mg/L	98.4	80-120
Water	CRM	Barium (Ba)-Dissolved	WG2063781-2	VA-HIGH-WATRM	0.249	0.250	mg/L	99.6	80-120
Water	CRM	Beryllium (Be)-Dissolved	WG2063781-2	VA-HIGH-WATRM	0.0991	0.100	mg/L	99.1	80-120
Water	CRM	Bismuth (Bi)-Dissolved	WG2063781-2	VA-HIGH-WATRM	0.986	1.00	mg/L	98.6	80-120
Water	CRM	Boron (B)-Dissolved	WG2063781-2	VA-HIGH-WATRM	0.93	1.00	mg/L	93.1	80-120
Water	CRM	Cadmium (Cd)-Dissolved	WG2063781-2	VA-HIGH-WATRM	0.0978	0.100	mg/L	97.8	80-120
Water	CRM	Calcium (Ca)-Dissolved	WG2063781-2	VA-HIGH-WATRM	49.3	50.0	mg/L	98.6	80-120
Water	CRM	Chromium (Cr)-Dissolved	WG2063781-2	VA-HIGH-WATRM	0.250	0.250	mg/L	99.8	80-120
Water	CRM	Cobalt (Co)-Dissolved	WG2063781-2	VA-HIGH-WATRM	0.246	0.250	mg/L	98.5	80-120
Water	CRM	Copper (Cu)-Dissolved	WG2063781-2	VA-HIGH-WATRM	0.244	0.250	mg/L	97.8	80-120
Water	CRM	Iron (Fe)-Dissolved	WG2063781-2	VA-HIGH-WATRM	0.994	1.00	mg/L	99.4	80-120
Water	CRM	Lead (Pb)-Dissolved	WG2063781-2	VA-HIGH-WATRM	0.493	0.500	mg/L	98.6	80-120
Water	CRM	Lithium (Li)-Dissolved	WG2063781-2	VA-HIGH-WATRM	0.254	0.250	mg/L	101.7	80-120
Water	CRM	Magnesium (Mg)-Dissolved	WG2063781-2	VA-HIGH-WATRM	48.7	50.0	mg/L	97.5	80-120
Water	CRM	Manganese (Mn)-Dissolved	WG2063781-2	VA-HIGH-WATRM	0.251	0.250	mg/L	100.2	80-120
Water	CRM	Molybdenum (Mo)-Dissolved	WG2063781-2	VA-HIGH-WATRM	0.242	0.250	mg/L	97.0	80-120
Water	CRM	Nickel (Ni)-Dissolved	WG2063781-2	VA-HIGH-WATRM	0.488	0.500	mg/L	97.6	80-120
Water	CRM	Phosphorus (P)-Dissolved	WG2063781-2	VA-HIGH-WATRM	2.49	2.50	mg/L	99.6	80-120
Water	CRM	Potassium (K)-Dissolved	WG2063781-2	VA-HIGH-WATRM	46.4	50.0	mg/L	92.8	80-120
Water	CRM	Selenium (Se)-Dissolved	WG2063781-2	VA-HIGH-WATRM	1.01	1.00	mg/L	101.2	80-120
Water	CRM	Silicon (Si)-Dissolved	WG2063781-2	VA-HIGH-WATRM	0.984	1.00	mg/L	98.4	80-120
Water	CRM	Silver (Ag)-Dissolved	WG2063781-2	VA-HIGH-WATRM	0.0975	0.100	mg/L	97.5	80-120
Water	CRM	Sodium (Na)-Dissolved	WG2063781-2	VA-HIGH-WATRM	50.1	50.0	mg/L	100.2	80-120
Water	CRM	Strontium (Sr)-Dissolved	WG2063781-2	VA-HIGH-WATRM	0.250	0.250	mg/L	99.8	80-120
Water	CRM	Thallium (Tl)-Dissolved	WG2063781-2	VA-HIGH-WATRM	0.987	1.00	mg/L	98.7	80-120
Water	CRM	Tin (Sn)-Dissolved	WG2063781-2	VA-HIGH-WATRM	0.497	0.500	mg/L	99.5	80-120
Water	CRM	Titanium (Ti)-Dissolved	WG2063781-2	VA-HIGH-WATRM	0.252	0.250	mg/L	101.0	80-120
Water	CRM	Uranium (U)-Dissolved	WG2063781-2	VA-HIGH-WATRM	0.00505	0.00500	mg/L	101.0	80-120
Water	CRM	Vanadium (V)-Dissolved	WG2063781-2	VA-HIGH-WATRM	0.497	0.500	mg/L	99.4	80-120
Water	CRM	Zinc (Zn)-Dissolved	WG2063781-2	VA-HIGH-WATRM	0.458	0.500	mg/L	91.5	80-120
Water	CRM	Zirconium (Zr)-Dissolved	WG2063781-2	VA-HIGH-WATRM	0.0959	0.100	mg/L	95.9	80-120
Water	CRM	Aluminum (Al)-Dissolved	WG2069835-2	VA-HIGH-WATRM	2.01	2.00	mg/L	100.7	80-120
Water	CRM	Antimony (Sb)-Dissolved	WG2069835-2	VA-HIGH-WATRM	0.983	1.00	mg/L	98.3	80-120
Water	CRM	Arsenic (As)-Dissolved	WG2069835-2	VA-HIGH-WATRM	1.04	1.00	mg/L	103.9	80-120
Water	CRM	Barium (Ba)-Dissolved	WG2069835-2	VA-HIGH-WATRM	0.252	0.250	mg/L	100.9	80-120
Water	CRM	Beryllium (Be)-Dissolved	WG2069835-2	VA-HIGH-WATRM	0.0957	0.100	mg/L	95.7	80-120
Water	CRM	Bismuth (Bi)-Dissolved	WG2069835-2	VA-HIGH-WATRM	0.948	1.00	mg/L	94.8	80-120
Water	CRM	Boron (B)-Dissolved	WG2069835-2	VA-HIGH-WATRM	0.88	1.00	mg/L	87.9	80-120
Water	CRM	Cadmium (Cd)-Dissolved	WG2069835-2	VA-HIGH-WATRM	0.0967	0.100	mg/L	96.7	80-120
Water	CRM	Calcium (Ca)-Dissolved	WG2069835-2	VA-HIGH-WATRM	50.0	50.0	mg/L	99.9	80-120
Water	CRM	Chromium (Cr)-Dissolved	WG2069835-2	VA-HIGH-WATRM	0.247	0.250	mg/L	99.0	80-120
Water	CRM	Cobalt (Co)-Dissolved	WG2069835-2	VA-HIGH-WATRM	0.251	0.250	mg/L	100.5	80-120
Water	CRM	Copper (Cu)-Dissolved	WG2069835-2	VA-HIGH-WATRM	0.249	0.250	mg/L	99.5	80-120
Water	CRM	Iron (Fe)-Dissolved	WG2069835-2	VA-HIGH-WATRM	0.920	1.00	mg/L	92.0	80-120
Water	CRM	Lead (Pb)-Dissolved	WG2069835-2	VA-HIGH-WATRM	0.484	0.500	mg/L	96.8	80-120
Water	CRM	Lithium (Li)-Dissolved	WG2069835-2	VA-HIGH-WATRM	0.244	0.250	mg/L	97.4	80-120
Water	CRM	Magnesium (Mg)-Dissolved	WG2069835-2	VA-HIGH-WATRM	48.3	50.0	mg/L	96.5	80-120
Water	CRM	Manganese (Mn)-Dissolved	WG2069835-2	VA-HIGH-WATRM	0.242	0.250	mg/L	96.6	80-120
Water	CRM	Molybdenum (Mo)-Dissolved	WG2069835-2	VA-HIGH-WATRM	0.241	0.250	mg/L	96.5	80-120
Water	CRM	Nickel (Ni)-Dissolved	WG2069835-2	VA-HIGH-WATRM	0.500	0.500	mg/L	100.1	80-120
Water	CRM	Phosphorus (P)-Dissolved	WG2069835-2	VA-HIGH-WATRM	2.46	2.50	mg/L	98.2	80-120
Water	CRM	Potassium (K)-Dissolved	WG2069835-2	VA-HIGH-WATRM	46.3	50.0	mg/L	92.5	80-120
Water	CRM	Selenium (Se)-Dissolved	WG2069835-2	VA-HIGH-WATRM	1.01	1.00	mg/L	100.7	80-120
Water	CRM	Silicon (Si)-Dissolved	WG2069835-2	VA-HIGH-WATRM	0.974	1.00	mg/L	97.4	80-120
Water	CRM	Silver (Ag)-Dissolved	WG2069835-2	VA-HIGH-WATRM	0.0943	0.100	mg/L	94.3	80-120
Water	CRM	Sodium (Na)-Dissolved	WG2069835-2	VA-HIGH-WATRM	50.9	50.0	mg/L	101.9	80-120
Water	CRM	Strontium (Sr)-Dissolved	WG2069835-2	VA-HIGH-WATRM	0.248	0.250	mg/L	99.2	80-120
Water	CRM	Thallium (Tl)-Dissolved	WG2069835-2	VA-HIGH-WATRM	0.969	1.00	mg/L	96.9	80-120
Water	CRM	Tin (Sn)-Dissolved	WG2069835-2	VA-HIGH-WATRM	0.488	0.500	mg/L	97.6	80-120

Water	CRM	Titanium (Ti)-Dissolved	WG2069835-2	VA-HIGH-WATRM	0.243	0.250	mg/L	97.3	80-120
Water	CRM	Uranium (U)-Dissolved	WG2069835-2	VA-HIGH-WATRM	0.00477	0.00500	mg/L	95.5	80-120
Water	CRM	Vanadium (V)-Dissolved	WG2069835-2	VA-HIGH-WATRM	0.504	0.500	mg/L	100.8	80-120
Water	CRM	Zinc (Zn)-Dissolved	WG2069835-2	VA-HIGH-WATRM	0.488	0.500	mg/L	97.6	80-120
Water	CRM	Zirconium (Zr)-Dissolved	WG2069835-2	VA-HIGH-WATRM	0.0925	0.100	mg/L	92.5	80-120
Water	LCS	Mercury (Hg)-Dissolved	WG2064770-2		0.00487	0.00500	ug/L	97.4	80-120
Water	MB	Aluminum (Al)-Dissolved	WG2063781-1		<0.00050	<0.0005	mg/L	-	0.0005
Water	MB	Antimony (Sb)-Dissolved	WG2063781-1		<0.000020	<0.00002	mg/L	-	0.00002
Water	MB	Arsenic (As)-Dissolved	WG2063781-1		<0.000020	<0.00002	mg/L	-	0.00002
Water	MB	Barium (Ba)-Dissolved	WG2063781-1		<0.000020	<0.00002	mg/L	-	0.00002
Water	MB	Beryllium (Be)-Dissolved	WG2063781-1		<0.000010	<0.00001	mg/L	-	0.00001
Water	MB	Bismuth (Bi)-Dissolved	WG2063781-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Boron (B)-Dissolved	WG2063781-1		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Cadmium (Cd)-Dissolved	WG2063781-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Calcium (Ca)-Dissolved	WG2063781-1		<0.030	<0.03	mg/L	-	0.03
Water	MB	Chromium (Cr)-Dissolved	WG2063781-1		<0.00010	<0.0001	mg/L	-	0.0001
Water	MB	Cobalt (Co)-Dissolved	WG2063781-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Copper (Cu)-Dissolved	WG2063781-1		<0.00010	<0.0001	mg/L	-	0.0001
Water	MB	Iron (Fe)-Dissolved	WG2063781-1		<0.0010	<0.001	mg/L	-	0.001
Water	MB	Lead (Pb)-Dissolved	WG2063781-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Lithium (Li)-Dissolved	WG2063781-1		<0.00050	<0.0005	mg/L	-	0.0005
Water	MB	Magnesium (Mg)-Dissolved	WG2063781-1		<0.030	<0.03	mg/L	-	0.03
Water	MB	Manganese (Mn)-Dissolved	WG2063781-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Molybdenum (Mo)-Dissolved	WG2063781-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Nickel (Ni)-Dissolved	WG2063781-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Phosphorus (P)-Dissolved	WG2063781-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Potassium (K)-Dissolved	WG2063781-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Selenium (Se)-Dissolved	WG2063781-1		<0.000040	<0.00004	mg/L	-	0.00004
Water	MB	Silicon (Si)-Dissolved	WG2063781-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Silver (Ag)-Dissolved	WG2063781-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Sodium (Na)-Dissolved	WG2063781-1		<0.010	<0.01	mg/L	-	0.01
Water	MB	Strontium (Sr)-Dissolved	WG2063781-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Thallium (Tl)-Dissolved	WG2063781-1		<0.0000020	<0.000002	mg/L	-	0.000002
Water	MB	Tin (Sn)-Dissolved	WG2063781-1		<0.000010	<0.00001	mg/L	-	0.00001
Water	MB	Titanium (Ti)-Dissolved	WG2063781-1		<0.00050	<0.0005	mg/L	-	0.0005
Water	MB	Uranium (U)-Dissolved	WG2063781-1		<0.0000020	<0.000002	mg/L	-	0.000002
Water	MB	Vanadium (V)-Dissolved	WG2063781-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Zinc (Zn)-Dissolved	WG2063781-1		<0.00050	<0.0005	mg/L	-	0.0005
Water	MB	Zirconium (Zr)-Dissolved	WG2063781-1		<0.00010	<0.0001	mg/L	-	0.0001
Water	MB	Mercury (Hg)-Dissolved	WG2064770-1		<0.00050	<0.0005	ug/L	-	0.0005
Water	MB	Aluminum (Al)-Dissolved	WG2069835-1		<0.00050	<0.0005	mg/L	-	0.0005
Water	MB	Antimony (Sb)-Dissolved	WG2069835-1		<0.000020	<0.00002	mg/L	-	0.00002
Water	MB	Arsenic (As)-Dissolved	WG2069835-1		<0.000020	<0.00002	mg/L	-	0.00002
Water	MB	Barium (Ba)-Dissolved	WG2069835-1		<0.000020	<0.00002	mg/L	-	0.00002
Water	MB	Beryllium (Be)-Dissolved	WG2069835-1		<0.000010	<0.00001	mg/L	-	0.00001
Water	MB	Bismuth (Bi)-Dissolved	WG2069835-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Boron (B)-Dissolved	WG2069835-1		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Cadmium (Cd)-Dissolved	WG2069835-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Calcium (Ca)-Dissolved	WG2069835-1		<0.030	<0.03	mg/L	-	0.03
Water	MB	Chromium (Cr)-Dissolved	WG2069835-1		<0.00010	<0.0001	mg/L	-	0.0001
Water	MB	Cobalt (Co)-Dissolved	WG2069835-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Copper (Cu)-Dissolved	WG2069835-1		<0.00010	<0.0001	mg/L	-	0.0001
Water	MB	Iron (Fe)-Dissolved	WG2069835-1		<0.0010	<0.001	mg/L	-	0.001
Water	MB	Lead (Pb)-Dissolved	WG2069835-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Lithium (Li)-Dissolved	WG2069835-1		<0.00050	<0.0005	mg/L	-	0.0005
Water	MB	Magnesium (Mg)-Dissolved	WG2069835-1		<0.030	<0.03	mg/L	-	0.03
Water	MB	Manganese (Mn)-Dissolved	WG2069835-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Molybdenum (Mo)-Dissolved	WG2069835-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Nickel (Ni)-Dissolved	WG2069835-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Phosphorus (P)-Dissolved	WG2069835-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Potassium (K)-Dissolved	WG2069835-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Selenium (Se)-Dissolved	WG2069835-1		<0.000040	<0.00004	mg/L	-	0.00004
Water	MB	Silicon (Si)-Dissolved	WG2069835-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Silver (Ag)-Dissolved	WG2069835-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Sodium (Na)-Dissolved	WG2069835-1		<0.010	<0.01	mg/L	-	0.01
Water	MB	Strontium (Sr)-Dissolved	WG2069835-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Thallium (Tl)-Dissolved	WG2069835-1		<0.0000020	<0.000002	mg/L	-	0.000002
Water	MB	Tin (Sn)-Dissolved	WG2069835-1		<0.000010	<0.00001	mg/L	-	0.00001
Water	MB	Titanium (Ti)-Dissolved	WG2069835-1		<0.00050	<0.0005	mg/L	-	0.0005
Water	MB	Uranium (U)-Dissolved	WG2069835-1		<0.0000020	<0.000002	mg/L	-	0.000002
Water	MB	Vanadium (V)-Dissolved	WG2069835-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Zirconium (Zr)-Dissolved	WG2069835-1		<0.00010	<0.0001	mg/L	-	0.0001
Aggregate Organics									
Water	LCS	BOD	WG2064378-2		206	198	mg/L	104.1	85-115
Water	LCS	BOD	WG2064378-6		199	198	mg/L	100.6	85-115
Water	LCS	COD	WG2064664-8		770	750	mg/L	102.6	85-115
Water	LCS	COD	WG2064664-10		765	750	mg/L	102.0	85-115
Water	MB	BOD	WG2064378-1		<2.0	<2	mg/L	-	2
Water	MB	BOD	WG2064378-5		<2.0	<2	mg/L	-	2
Water	MB	COD	WG2064664-6		<20	<20	mg/L	-	20
Water	MB	COD	WG2064664-9		<20	<20	mg/L	-	20

Project 15-1438
Report To Kyle Hawes, ECOSCAPE ENVIRONMENTAL CONSULTANTS LTD.
ALS File No. L1597478
Date Received 10-Apr-15 10:50
Date 11-May-15

REPLICATE RESULTS

Sample ID	Matrix	ALS ID	Analyte	Replicate 1	Replicate 2	Units	RPD	RPD Limit	Diff	Diff Limit	Qualifier
Physical Tests											
L1597478-3	Water	WG2069149-38	Conductivity	144	143	uS/cm	0.3	10	-	-	-
L1597478-31	Water	WG2069149-34	Conductivity	144	145	uS/cm	0.6	10	-	-	-
L1597478-3	Water	WG2069149-38	pH	8.14	8.14	pH	-	-	0.00	0.3	J
L1597478-31	Water	WG2069149-34	pH	8.03	8.04	pH	-	-	0.01	0.3	J
L1597478-1	Water	WG2068341-3	Total Suspended Solids	<3.0	<3.0	mg/L	N/A	20	-	-	RPD-NA
L1597478-20	Water	WG2068341-6	Total Suspended Solids	<3.0	<3.0	mg/L	N/A	20	-	-	RPD-NA
L1597478-1	Water	WG2068343-3	Total Dissolved Solids	105	90	mg/L	15	20	-	-	-
L1597478-20	Water	WG2068343-6	Total Dissolved Solids	88	90	mg/L	1.5	20	-	-	-
L1597478-6	Water	WG2068443-12	Turbidity	0.39	0.37	NTU	5.0	15	-	-	-
L1597478-26	Water	WG2068443-15	Turbidity	0.42	0.39	NTU	6.9	15	-	-	-
Anions and Nutrients											
L1597478-2	Water	WG2071670-9	Alkalinity, Total (as CaCO3)	65.4	67.0	mg/L	2.6	20	-	-	-
L1597478-22	Water	WG2071670-10	Alkalinity, Total (as CaCO3)	64.4	65.3	mg/L	1.4	20	-	-	-
L1597478-20	Water	WG2071658-13	Ammonia, Total (as N)	0.0153	0.0157	mg/L	2.6	20	-	-	-
L1597478-10	Water	WG2068009-9	Bromide (Br)	<0.050	<0.050	mg/L	N/A	20	-	-	RPD-NA
L1597478-30	Water	WG2068009-12	Bromide (Br)	<0.050	<0.050	mg/L	N/A	20	-	-	RPD-NA
L1597478-10	Water	WG2068009-9	Chloride (Cl)	0.95	0.95	mg/L	0.2	20	-	-	-
L1597478-30	Water	WG2068009-12	Chloride (Cl)	0.91	0.92	mg/L	0.2	20	-	-	-
L1597478-10	Water	WG2068009-9	Fluoride (F)	0.073	0.072	mg/L	0.6	20	-	-	-
L1597478-30	Water	WG2068009-12	Fluoride (F)	0.070	0.071	mg/L	1.4	20	-	-	-
L1597478-10	Water	WG2068009-9	Nitrate (as N)	0.145	0.145	mg/L	0.3	20	-	-	-
L1597478-30	Water	WG2068009-12	Nitrate (as N)	0.148	0.148	mg/L	0.0	20	-	-	-
L1597478-10	Water	WG2068009-9	Nitrite (as N)	<0.0010	<0.0010	mg/L	N/A	20	-	-	RPD-NA
L1597478-30	Water	WG2068009-12	Nitrite (as N)	<0.0010	<0.0010	mg/L	N/A	20	-	-	RPD-NA
L1597478-5	Water	WG2070196-7	Total Kjeldahl Nitrogen	0.061	0.053	mg/L	15	20	-	-	-
L1597478-11	Water	WG2070951-3	Total Kjeldahl Nitrogen	0.068	0.067	mg/L	2.5	20	-	-	-
L1597478-7	Water	WG2068516-7	Phosphorus (P)-Total Dissolved	<0.0020	<0.0020	mg/L	N/A	20	-	-	RPD-NA
L1597478-27	Water	WG2068516-11	Phosphorus (P)-Total Dissolved	<0.0020	<0.0020	mg/L	N/A	20	-	-	RPD-NA
L1597478-16	Water	WG2068365-11	Phosphorus (P)-Total	<0.0020	<0.0020	mg/L	N/A	20	-	-	RPD-NA
L1597478-26	Water	WG2068353-15	Phosphorus (P)-Total	<0.0020	<0.0020	mg/L	N/A	20	-	-	RPD-NA
L1597478-10	Water	WG2068009-9	Sulfate (SO4)	11.4	11.4	mg/L	0.0	20	-	-	-
L1597478-30	Water	WG2068009-12	Sulfate (SO4)	11.4	11.4	mg/L	0.2	20	-	-	-
Organic / Inorganic Carbon											
L1597478-1	Water	WG2070505-2	Total Organic Carbon	1.17	1.10	mg/L	5.9	20	-	-	-
L1597478-19	Water	WG2070505-6	Total Organic Carbon	1.27	1.04	mg/L	-	-	0.24	1	J
Total Metals											
L1597478-8	Water	WG2070883-6	Mercury (Hg)-Total	<0.00050	<0.00050	ug/L	N/A	20	-	-	RPD-NA
L1597478-24	Water	WG2070883-7	Mercury (Hg)-Total	<0.00050	<0.00050	ug/L	N/A	20	-	-	RPD-NA
Dissolved Metals											
L1597478-6	Water	WG2067647-10	Aluminum (Al)-Dissolved	0.00472	0.00481	mg/L	1.9	20	-	-	-
L1597478-30	Water	WG2067647-12	Aluminum (Al)-Dissolved	0.00493	0.00505	mg/L	2.3	20	-	-	-
L1597478-6	Water	WG2067647-10	Antimony (Sb)-Dissolved	0.000042	0.000039	mg/L	7.4	20	-	-	-
L1597478-30	Water	WG2067647-12	Antimony (Sb)-Dissolved	0.000043	0.000042	mg/L	3.0	20	-	-	-
L1597478-6	Water	WG2067647-10	Arsenic (As)-Dissolved	0.000248	0.000259	mg/L	4.5	20	-	-	-
L1597478-30	Water	WG2067647-12	Arsenic (As)-Dissolved	0.000253	0.000245	mg/L	3.1	20	-	-	-
L1597478-6	Water	WG2067647-10	Barium (Ba)-Dissolved	0.0219	0.0219	mg/L	0.3	20	-	-	-
L1597478-30	Water	WG2067647-12	Barium (Ba)-Dissolved	0.0215	0.0218	mg/L	1.3	20	-	-	-
L1597478-6	Water	WG2067647-10	Beryllium (Be)-Dissolved	<0.000010	<0.000010	mg/L	N/A	20	-	-	RPD-NA
L1597478-30	Water	WG2067647-12	Beryllium (Be)-Dissolved	<0.000010	<0.000010	mg/L	N/A	20	-	-	RPD-NA
L1597478-6	Water	WG2067647-10	Bismuth (Bi)-Dissolved	<0.0000050	<0.0000050	mg/L	N/A	20	-	-	RPD-NA
L1597478-30	Water	WG2067647-12	Bismuth (Bi)-Dissolved	<0.0000050	<0.0000050	mg/L	N/A	20	-	-	RPD-NA
L1597478-6	Water	WG2067647-10	Boron (B)-Dissolved	<0.0050	<0.0050	mg/L	N/A	20	-	-	RPD-NA
L1597478-30	Water	WG2067647-12	Boron (B)-Dissolved	<0.0050	<0.0050	mg/L	N/A	20	-	-	RPD-NA
L1597478-6	Water	WG2067647-10	Cadmium (Cd)-Dissolved	0.0000132	0.0000120	mg/L	9.6	20	-	-	-
L1597478-30	Water	WG2067647-12	Cadmium (Cd)-Dissolved	0.0000121	0.0000133	mg/L	9.0	20	-	-	-
L1597478-6	Water	WG2067647-10	Calcium (Ca)-Dissolved	19.7	19.7	mg/L	0.3	20	-	-	-
L1597478-30	Water	WG2067647-12	Calcium (Ca)-Dissolved	19.9	19.6	mg/L	1.5	20	-	-	-
L1597478-6	Water	WG2067647-10	Chromium (Cr)-Dissolved	<0.00010	<0.00010	mg/L	N/A	20	-	-	RPD-NA
L1597478-30	Water	WG2067647-12	Chromium (Cr)-Dissolved	<0.00010	<0.00010	mg/L	N/A	20	-	-	RPD-NA
L1597478-6	Water	WG2067647-10	Cobalt (Co)-Dissolved	0.0000080	0.0000068	mg/L	17	20	-	-	-
L1597478-30	Water	WG2067647-12	Cobalt (Co)-Dissolved	0.0000094	0.0000080	mg/L	16	20	-	-	-
L1597478-6	Water	WG2067647-10	Copper (Cu)-Dissolved	0.00033	0.00032	mg/L	1.0	20	-	-	-
L1597478-30	Water	WG2067647-12	Copper (Cu)-Dissolved	0.00022	0.00023	mg/L	5.8	20	-	-	-
L1597478-6	Water	WG2067647-10	Iron (Fe)-Dissolved	0.0026	0.0027	mg/L	2.9	20	-	-	-
L1597478-30	Water	WG2067647-12	Iron (Fe)-Dissolved	0.0026	0.0026	mg/L	0.1	20	-	-	-

L1597478-6	Water	WG2067647-10	Lead (Pb)-Dissolved	0.0000081	0.0000080	mg/L	1.1	20	-	-	-
L1597478-30	Water	WG2067647-12	Lead (Pb)-Dissolved	0.0000223	0.0000185	mg/L	19	20	-	-	-
L1597478-6	Water	WG2067647-10	Lithium (Li)-Dissolved	0.00133	0.00130	mg/L	2.3	20	-	-	-
L1597478-30	Water	WG2067647-12	Lithium (Li)-Dissolved	0.00134	0.00129	mg/L	3.6	20	-	-	-
L1597478-6	Water	WG2067647-10	Magnesium (Mg)-Dissolved	4.41	4.38	mg/L	0.5	20	-	-	-
L1597478-30	Water	WG2067647-12	Magnesium (Mg)-Dissolved	4.52	4.44	mg/L	1.6	20	-	-	-
L1597478-6	Water	WG2067647-10	Manganese (Mn)-Dissolved	0.00105	0.000995	mg/L	5.8	20	-	-	-
L1597478-30	Water	WG2067647-12	Manganese (Mn)-Dissolved	0.00146	0.00149	mg/L	2.0	20	-	-	-
L1597478-12	Water	WG2070894-4	Mercury (Hg)-Dissolved	<0.00050	<0.00050	ug/L	N/A	20	-	-	RPD-NA
L1597478-6	Water	WG2067647-10	Molybdenum (Mo)-Dissolved	0.000542	0.000538	mg/L	0.7	20	-	-	-
L1597478-30	Water	WG2067647-12	Molybdenum (Mo)-Dissolved	0.000552	0.000544	mg/L	1.5	20	-	-	-
L1597478-6	Water	WG2067647-10	Nickel (Ni)-Dissolved	0.000257	0.000271	mg/L	5.4	20	-	-	-
L1597478-30	Water	WG2067647-12	Nickel (Ni)-Dissolved	0.000240	0.000237	mg/L	1.5	20	-	-	-
L1597478-6	Water	WG2067647-10	Phosphorus (P)-Dissolved	<0.050	<0.050	mg/L	N/A	20	-	-	RPD-NA
L1597478-30	Water	WG2067647-12	Phosphorus (P)-Dissolved	<0.050	<0.050	mg/L	N/A	20	-	-	RPD-NA
L1597478-6	Water	WG2067647-10	Potassium (K)-Dissolved	0.603	0.606	mg/L	0.6	20	-	-	-
L1597478-30	Water	WG2067647-12	Potassium (K)-Dissolved	0.638	0.600	mg/L	6.0	20	-	-	-
L1597478-6	Water	WG2067647-10	Selenium (Se)-Dissolved	0.000341	0.000316	mg/L	7.8	20	-	-	-
L1597478-30	Water	WG2067647-12	Selenium (Se)-Dissolved	0.000307	0.000298	mg/L	2.9	20	-	-	-
L1597478-6	Water	WG2067647-10	Silicon (Si)-Dissolved	2.28	2.27	mg/L	0.7	20	-	-	-
L1597478-30	Water	WG2067647-12	Silicon (Si)-Dissolved	2.31	2.27	mg/L	1.8	20	-	-	-
L1597478-6	Water	WG2067647-10	Silver (Ag)-Dissolved	<0.0000050	<0.0000050	mg/L	N/A	20	-	-	RPD-NA
L1597478-30	Water	WG2067647-12	Silver (Ag)-Dissolved	<0.0000050	<0.0000050	mg/L	N/A	20	-	-	RPD-NA
L1597478-6	Water	WG2067647-10	Sodium (Na)-Dissolved	1.70	1.71	mg/L	0.5	20	-	-	-
L1597478-30	Water	WG2067647-12	Sodium (Na)-Dissolved	1.62	1.61	mg/L	0.4	20	-	-	-
L1597478-6	Water	WG2067647-10	Strontium (Sr)-Dissolved	0.107	0.109	mg/L	1.8	20	-	-	-
L1597478-30	Water	WG2067647-12	Strontium (Sr)-Dissolved	0.107	0.107	mg/L	0.6	20	-	-	-
L1597478-6	Water	WG2067647-10	Thallium (Tl)-Dissolved	<0.0000020	<0.0000020	mg/L	N/A	20	-	-	RPD-NA
L1597478-30	Water	WG2067647-12	Thallium (Tl)-Dissolved	<0.0000020	<0.0000020	mg/L	N/A	20	-	-	RPD-NA
L1597478-6	Water	WG2067647-10	Tin (Sn)-Dissolved	<0.000010	<0.000010	mg/L	N/A	20	-	-	RPD-NA
L1597478-30	Water	WG2067647-12	Tin (Sn)-Dissolved	<0.000010	<0.000010	mg/L	N/A	20	-	-	RPD-NA
L1597478-6	Water	WG2067647-10	Titanium (Ti)-Dissolved	<0.00050	<0.00050	mg/L	N/A	20	-	-	RPD-NA
L1597478-30	Water	WG2067647-12	Titanium (Ti)-Dissolved	<0.00050	<0.00050	mg/L	N/A	20	-	-	RPD-NA
L1597478-6	Water	WG2067647-10	Uranium (U)-Dissolved	0.000549	0.000549	mg/L	0.1	20	-	-	-
L1597478-30	Water	WG2067647-12	Uranium (U)-Dissolved	0.000522	0.000533	mg/L	2.1	20	-	-	-
L1597478-6	Water	WG2067647-10	Vanadium (V)-Dissolved	0.000125	0.000120	mg/L	4.0	20	-	-	-
L1597478-30	Water	WG2067647-12	Vanadium (V)-Dissolved	0.000094	0.000108	mg/L	14	20	-	-	-
L1597478-6	Water	WG2067647-10	Zinc (Zn)-Dissolved	0.00112	0.00128	mg/L	13	20	-	-	-
L1597478-30	Water	WG2067647-12	Zinc (Zn)-Dissolved	0.00104	0.00103	mg/L	0.1	20	-	-	-
L1597478-6	Water	WG2067647-10	Zirconium (Zr)-Dissolved	<0.00010	<0.00010	mg/L	N/A	20	-	-	RPD-NA
L1597478-30	Water	WG2067647-12	Zirconium (Zr)-Dissolved	<0.00010	<0.00010	mg/L	N/A	20	-	-	RPD-NA
Aggregate Organics											
L1597478-9	Water	WG2068253-7	BOD	<2.0	<2.0	mg/L	N/A	20	-	-	RPD-NA
L1597478-27	Water	WG2071652-12	COD	<20	<20	mg/L	N/A	20	-	-	RPD-NA
Dissolved Metals											
L1597478-34	Water	WG2070894-5	Mercury (Hg)-Dissolved	<0.00050	<0.00050	ug/L	N/A	20	-	-	RPD-NA

Project 15-1438
Report To Kyle Hawes, ECOSCAPE ENVIRONMENTAL CONSULTANTS LTD.
ALS File No. L1597478
Date Received 10-Apr-15 10:50
Date 11-May-15

QUALITY CONTROL RESULTS

Matrix	QC Type	Analyte	QC Spl. No.	Reference	Result	Target	Units	%	Limits	Qualifier
Physical Tests										
Water	CRM	Turbidity	WG2068443-2	VA-FORM-40	40.2	40.0	NTU	100.5	85-115	
Water	CRM	Turbidity	WG2068443-5	VA-FORM-40	40.4	40.0	NTU	101.0	85-115	
Water	CRM	Turbidity	WG2068443-8	VA-FORM-40	39.2	40.0	NTU	98.0	85-115	
Water	CRM	Turbidity	WG2068443-11	VA-FORM-40	40.3	40.0	NTU	100.8	85-115	
Water	CRM	Turbidity	WG2068443-14	VA-FORM-40	40.3	40.0	NTU	100.8	85-115	
Water	CRM	Turbidity	WG2068443-17	VA-FORM-40	39.9	40.0	NTU	99.8	85-115	
Water	CRM	Turbidity	WG2068443-20	VA-FORM-40	40.8	40.0	NTU	102.0	85-115	
Water	CRM	Conductivity	WG2069149-17	VA-EC-PCT-CONTROL	145	147	uS/cm	98.8	90-110	
Water	CRM	Conductivity	WG2069149-18	VA-EC-PCT-CONTROL	143	147	uS/cm	97.3	90-110	
Water	CRM	Conductivity	WG2069149-19	VA-EC-PCT-CONTROL	145	147	uS/cm	98.6	90-110	
Water	CRM	Conductivity	WG2069149-20	VA-EC-PCT-CONTROL	146	147	uS/cm	99.2	90-110	
Water	CRM	Conductivity	WG2069149-21	VA-EC-PCT-CONTROL	148	147	uS/cm	100.7	90-110	
Water	CRM	Conductivity	WG2069149-22	VA-EC-PCT-CONTROL	148	147	uS/cm	100.4	90-110	
Water	CRM	pH	WG2069149-25	VA-PH7-BUF	7.01	7.00	pH	7.01	6.9-7.1	
Water	CRM	pH	WG2069149-26	VA-PH7-BUF	7.02	7.00	pH	7.02	6.9-7.1	
Water	CRM	pH	WG2069149-27	VA-PH7-BUF	7.02	7.00	pH	7.02	6.9-7.1	
Water	CRM	pH	WG2069149-28	VA-PH7-BUF	7.01	7.00	pH	7.01	6.9-7.1	
Water	CRM	pH	WG2069149-29	VA-PH7-BUF	7.01	7.00	pH	7.01	6.9-7.1	
Water	CRM	pH	WG2069149-30	VA-PH7-BUF	7.01	7.00	pH	7.01	6.9-7.1	
Water	LCS	Total Suspended Solids	WG2068341-2		71.6	75.0	mg/L	95.4	85-115	
Water	LCS	Total Suspended Solids	WG2068341-5		71.6	75.0	mg/L	95.4	85-115	
Water	LCS	Total Dissolved Solids	WG2068343-2		444	425	mg/L	104.4	85-115	
Water	LCS	Total Dissolved Solids	WG2068343-5		428	425	mg/L	100.6	85-115	
Water	MB	Total Suspended Solids	WG2068341-1		<3.0	<3	mg/L	-	3	
Water	MB	Total Suspended Solids	WG2068341-4		<3.0	<3	mg/L	-	3	
Water	MB	Total Dissolved Solids	WG2068343-1		<10	<10	mg/L	-	10	
Water	MB	Total Dissolved Solids	WG2068343-4		<10	<10	mg/L	-	10	
Water	MB	Turbidity	WG2068443-1		<0.10	<0.1	NTU	-	0.1	
Water	MB	Turbidity	WG2068443-4		<0.10	<0.1	NTU	-	0.1	
Water	MB	Turbidity	WG2068443-7		<0.10	<0.1	NTU	-	0.1	
Water	MB	Conductivity	WG2069149-1		<2.0	<2	uS/cm	-	2	
Water	MB	Conductivity	WG2069149-2		<2.0	<2	uS/cm	-	2	
Water	MB	Conductivity	WG2069149-3		<2.0	<2	uS/cm	-	2	
Water	MB	Conductivity	WG2069149-4		<2.0	<2	uS/cm	-	2	
Water	MB	Conductivity	WG2069149-5		<2.0	<2	uS/cm	-	2	
Water	MB	Turbidity	WG2068443-10		<0.10	<0.1	NTU	-	0.1	
Water	MB	Turbidity	WG2068443-13		<0.10	<0.1	NTU	-	0.1	
Water	MB	Turbidity	WG2068443-16		<0.10	<0.1	NTU	-	0.1	
Water	MB	Turbidity	WG2068443-19		<0.10	<0.1	NTU	-	0.1	
Anions and Nutrients										
Water	CRM	Phosphorus (P)-Total	WG2068353-2	VA-ERA-PO4	7.58	7.17	mg/L	105.8	80-120	
Water	CRM	Phosphorus (P)-Total	WG2068353-6	VA-ERA-PO4	7.32	7.17	mg/L	102.1	80-120	
Water	CRM	Phosphorus (P)-Total	WG2068365-2	VA-ERA-PO4	7.82	7.17	mg/L	109.0	80-120	
Water	CRM	Phosphorus (P)-Total	WG2068365-6	VA-ERA-PO4	7.81	7.17	mg/L	108.9	80-120	
Water	CRM	Phosphorus (P)-Total Dissolved	WG2068516-2	VA-ERA-PO4	7.33	7.17	mg/L	102.2	80-120	
Water	CRM	Phosphorus (P)-Total Dissolved	WG2068516-6	VA-ERA-PO4	7.28	7.17	mg/L	101.5	80-120	
Water	CRM	Phosphorus (P)-Total	WG2069537-2	VA-ERA-PO4	7.37	7.17	mg/L	102.7	80-120	
Water	CRM	Phosphorus (P)-Total	WG2069537-6	VA-ERA-PO4	7.02	7.17	mg/L	97.9	80-120	
Water	CRM	Ammonia, Total (as N)	WG2071658-2	VA-NH3-F	0.112	0.120	mg/L	93.3	85-115	
Water	CRM	Ammonia, Total (as N)	WG2071658-4	VA-NH3-F	0.116	0.120	mg/L	96.8	85-115	
Water	CRM	Ammonia, Total (as N)	WG2071658-6	VA-NH3-F	0.114	0.120	mg/L	94.8	85-115	
Water	CRM	Ammonia, Total (as N)	WG2071658-8	VA-NH3-F	0.117	0.120	mg/L	97.3	85-115	
Water	CRM	Alkalinity, Total (as CaCO3)	WG2071670-2	VA-ALKL-CONTROL	14.8	15.0	mg/L	98.6	85-115	
Water	CRM	Alkalinity, Total (as CaCO3)	WG2071670-5	VA-ALKM-CONTROL	79.5	75.0	mg/L	106.0	85-115	
Water	CRM	Alkalinity, Total (as CaCO3)	WG2071670-8	VA-ALKH-CONTROL	257	250	mg/L	102.9	85-115	
Water	CRM	Ammonia, Total (as N)	WG2071673-2	VA-NH3-F	0.119	0.120	mg/L	99.1	85-115	
Water	CRM	Ammonia, Total (as N)	WG2071673-4	VA-NH3-F	0.121	0.120	mg/L	100.8	85-115	
Water	CRM	Ammonia, Total (as N)	WG2071673-6	VA-NH3-F	0.113	0.120	mg/L	94.4	85-115	
Water	CRM	Ammonia, Total (as N)	WG2071673-8	VA-NH3-F	0.117	0.120	mg/L	97.3	85-115	
Water	CRM	Phosphorus (P)-Total	WG2068353-10	VA-ERA-PO4	7.42	7.17	mg/L	103.5	80-120	
Water	CRM	Phosphorus (P)-Total	WG2068353-14	VA-ERA-PO4	7.29	7.17	mg/L	101.7	80-120	
Water	CRM	Phosphorus (P)-Total	WG2068353-18	VA-ERA-PO4	7.28	7.17	mg/L	101.6	80-120	
Water	CRM	Phosphorus (P)-Total	WG2068365-10	VA-ERA-PO4	7.40	7.17	mg/L	103.2	80-120	
Water	CRM	Phosphorus (P)-Total Dissolved	WG2068516-10	VA-ERA-PO4	7.86	7.17	mg/L	109.6	80-120	
Water	CRM	Phosphorus (P)-Total	WG2069537-10	VA-ERA-PO4	7.45	7.17	mg/L	103.9	80-120	
Water	LCS	Bromide (Br)	WG2068009-2		0.521	0.500	mg/L	104.1	85-115	
Water	LCS	Chloride (Cl)	WG2068009-2		102	100	mg/L	102.0	90-110	
Water	LCS	Fluoride (F)	WG2068009-2		1.01	1.00	mg/L	101.4	90-110	
Water	LCS	Nitrate (as N)	WG2068009-2		2.55	2.50	mg/L	101.9	90-110	
Water	LCS	Nitrite (as N)	WG2068009-2		0.503	0.500	mg/L	100.6	90-110	
Water	LCS	Sulfate (SO4)	WG2068009-2		102	100	mg/L	102.3	90-110	
Water	LCS	Total Kjeldahl Nitrogen	WG2070196-2		0.999	1.00	mg/L	99.9	75-125	
Water	LCS	Total Kjeldahl Nitrogen	WG2070196-6		0.977	1.00	mg/L	97.7	75-125	
Water	LCS	Total Kjeldahl Nitrogen	WG2070944-2		1.06	1.00	mg/L	106.3	75-125	
Water	LCS	Total Kjeldahl Nitrogen	WG2070944-6		0.953	1.00	mg/L	95.3	75-125	
Water	LCS	Total Kjeldahl Nitrogen	WG2070951-2		1.01	1.00	mg/L	101.3	75-125	
Water	LCS	Total Kjeldahl Nitrogen	WG2072323-2		1.07	1.00	mg/L	106.8	75-125	
Water	LCS	Total Kjeldahl Nitrogen	WG2072323-6		1.06	1.00	mg/L	105.8	75-125	
Water	LCS	Bromide (Br)	WG2068009-18		0.490	0.500	mg/L	98.0	85-115	
Water	LCS	Chloride (Cl)	WG2068009-18		96.4	100	mg/L	96.4	90-110	
Water	LCS	Fluoride (F)	WG2068009-18		0.953	1.00	mg/L	95.3	90-110	
Water	LCS	Nitrate (as N)	WG2068009-18		2.41	2.50	mg/L	96.4	90-110	
Water	LCS	Nitrite (as N)	WG2068009-18		0.474	0.500	mg/L	94.9	90-110	
Water	LCS	Sulfate (SO4)	WG2068009-18		95.0	100	mg/L	95.0	90-110	
Water	MB	Bromide (Br)	WG2068009-1		<0.050	<0.05	mg/L	-	0.05	

Water	MB	Chloride (Cl)	WG2068009-1		<0.50	<0.5	mg/L	-	0.5
Water	MB	Fluoride (F)	WG2068009-1		<0.020	<0.02	mg/L	-	0.02
Water	MB	Nitrate (as N)	WG2068009-1		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Nitrite (as N)	WG2068009-1		<0.0010	<0.001	mg/L	-	0.001
Water	MB	Sulfate (SO4)	WG2068009-1		<0.30	<0.3	mg/L	-	0.3
Water	MB	Bromide (Br)	WG2068009-4		<0.050	<0.05	mg/L	-	0.05
Water	MB	Chloride (Cl)	WG2068009-4		<0.50	<0.5	mg/L	-	0.5
Water	MB	Fluoride (F)	WG2068009-4		<0.020	<0.02	mg/L	-	0.02
Water	MB	Nitrate (as N)	WG2068009-4		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Nitrite (as N)	WG2068009-4		<0.0010	<0.001	mg/L	-	0.001
Water	MB	Sulfate (SO4)	WG2068009-4		<0.30	<0.3	mg/L	-	0.3
Water	MB	Bromide (Br)	WG2068009-7		<0.050	<0.05	mg/L	-	0.05
Water	MB	Chloride (Cl)	WG2068009-7		<0.50	<0.5	mg/L	-	0.5
Water	MB	Fluoride (F)	WG2068009-7		<0.020	<0.02	mg/L	-	0.02
Water	MB	Nitrate (as N)	WG2068009-7		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Nitrite (as N)	WG2068009-7		<0.0010	<0.001	mg/L	-	0.001
Water	MB	Sulfate (SO4)	WG2068009-7		<0.30	<0.3	mg/L	-	0.3
Water	MB	Phosphorus (P)-Total	WG2068353-1		<0.0020	<0.002	mg/L	-	0.002
Water	MB	Phosphorus (P)-Total	WG2068353-5		<0.0020	<0.002	mg/L	-	0.002
Water	MB	Phosphorus (P)-Total	WG2068353-9		<0.0020	<0.002	mg/L	-	0.002
Water	MB	Phosphorus (P)-Total	WG2068365-1		<0.0020	<0.002	mg/L	-	0.002
Water	MB	Phosphorus (P)-Total	WG2068365-5		<0.0020	<0.002	mg/L	-	0.002
Water	MB	Phosphorus (P)-Total	WG2068365-9		<0.0020	<0.002	mg/L	-	0.002
Water	MB	Phosphorus (P)-Total Dissolved	WG2068516-1		<0.0020	<0.002	mg/L	-	0.002
Water	MB	Phosphorus (P)-Total Dissolved	WG2068516-5		<0.0020	<0.002	mg/L	-	0.002
Water	MB	Phosphorus (P)-Total Dissolved	WG2068516-9		<0.0020	<0.002	mg/L	-	0.002
Water	MB	Phosphorus (P)-Total	WG2069537-1		<0.0020	<0.002	mg/L	-	0.002
Water	MB	Phosphorus (P)-Total	WG2069537-5		<0.0020	<0.002	mg/L	-	0.002
Water	MB	Phosphorus (P)-Total	WG2069537-9		<0.0020	<0.002	mg/L	-	0.002
Water	MB	Total Kjeldahl Nitrogen	WG2070196-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Total Kjeldahl Nitrogen	WG2070196-5		<0.050	<0.05	mg/L	-	0.05
Water	MB	Total Kjeldahl Nitrogen	WG2070944-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Total Kjeldahl Nitrogen	WG2070944-5		<0.050	<0.05	mg/L	-	0.05
Water	MB	Total Kjeldahl Nitrogen	WG2070951-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Ammonia, Total (as N)	WG2071658-1		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Ammonia, Total (as N)	WG2071658-3		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Ammonia, Total (as N)	WG2071658-5		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Ammonia, Total (as N)	WG2071658-7		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Alkalinity, Total (as CaCO3)	WG2071670-1		<2.0	<2	mg/L	-	2
Water	MB	Alkalinity, Total (as CaCO3)	WG2071670-4		<2.0	<2	mg/L	-	2
Water	MB	Alkalinity, Total (as CaCO3)	WG2071670-7		<2.0	<2	mg/L	-	2
Water	MB	Ammonia, Total (as N)	WG2071673-1		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Ammonia, Total (as N)	WG2071673-3		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Ammonia, Total (as N)	WG2071673-5		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Ammonia, Total (as N)	WG2071673-7		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Total Kjeldahl Nitrogen	WG2072323-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Total Kjeldahl Nitrogen	WG2072323-5		<0.050	<0.05	mg/L	-	0.05
Water	MB	Bromide (Br)	WG2068009-10		<0.050	<0.05	mg/L	-	0.05
Water	MB	Chloride (Cl)	WG2068009-10		<0.50	<0.5	mg/L	-	0.5
Water	MB	Fluoride (F)	WG2068009-10		<0.020	<0.02	mg/L	-	0.02
Water	MB	Nitrate (as N)	WG2068009-10		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Nitrite (as N)	WG2068009-10		<0.0010	<0.001	mg/L	-	0.001
Water	MB	Sulfate (SO4)	WG2068009-10		<0.30	<0.3	mg/L	-	0.3
Water	MB	Bromide (Br)	WG2068009-13		<0.050	<0.05	mg/L	-	0.05
Water	MB	Chloride (Cl)	WG2068009-13		<0.50	<0.5	mg/L	-	0.5
Water	MB	Fluoride (F)	WG2068009-13		<0.020	<0.02	mg/L	-	0.02
Water	MB	Nitrate (as N)	WG2068009-13		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Nitrite (as N)	WG2068009-13		<0.0010	<0.001	mg/L	-	0.001
Water	MB	Sulfate (SO4)	WG2068009-13		<0.30	<0.3	mg/L	-	0.3
Water	MB	Bromide (Br)	WG2068009-16		<0.050	<0.05	mg/L	-	0.05
Water	MB	Chloride (Cl)	WG2068009-16		<0.50	<0.5	mg/L	-	0.5
Water	MB	Fluoride (F)	WG2068009-16		<0.020	<0.02	mg/L	-	0.02
Water	MB	Nitrate (as N)	WG2068009-16		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Nitrite (as N)	WG2068009-16		<0.0010	<0.001	mg/L	-	0.001
Water	MB	Sulfate (SO4)	WG2068009-16		<0.30	<0.3	mg/L	-	0.3
Water	MB	Phosphorus (P)-Total	WG2068353-13		<0.0020	<0.002	mg/L	-	0.002
Water	MB	Phosphorus (P)-Total	WG2068353-17		<0.0020	<0.002	mg/L	-	0.002
Water	MB	Alkalinity, Total (as CaCO3)	WG2071670-11		<2.0	<2	mg/L	-	2
Water	MB	Alkalinity, Total (as CaCO3)	WG2071670-13		<2.0	<2	mg/L	-	2
Water	MB	Alkalinity, Total (as CaCO3)	WG2071670-15		<2.0	<2	mg/L	-	2
Water	MB	Alkalinity, Total (as CaCO3)	WG2071670-17		<2.0	<2	mg/L	-	2
Water	MS	Bromide (Br)	WG2068009-5	Anonymous	0.485	0.500	mg/L	97.0	75-125
Water	MS	Chloride (Cl)	WG2068009-5	Anonymous	96.6	100	mg/L	96.6	75-125
Water	MS	Fluoride (F)	WG2068009-5	Anonymous	0.960	1.00	mg/L	96.0	75-125
Water	MS	Nitrate (as N)	WG2068009-5	Anonymous	2.42	2.50	mg/L	96.6	75-125
Water	MS	Nitrite (as N)	WG2068009-5	Anonymous	0.478	0.500	mg/L	95.7	75-125
Water	MS	Sulfate (SO4)	WG2068009-5	Anonymous	97.1	100	mg/L	97.1	75-125
Water	MS	Chloride (Cl)	WG2068009-8	Anonymous	97.0	100	mg/L	97.0	75-125
Water	MS	Fluoride (F)	WG2068009-8	Anonymous	1.00	1.04	mg/L	96.5	75-125
Water	MS	Nitrate (as N)	WG2068009-8	Anonymous	2.55	2.64	mg/L	96.3	75-125
Water	MS	Nitrite (as N)	WG2068009-8	Anonymous	0.476	0.500	mg/L	95.2	75-125
Water	MS	Sulfate (SO4)	WG2068009-8	Anonymous	103	107	mg/L	96.1	75-125
Water	MS	Phosphorus (P)-Total	WG2068353-4	Anonymous	0.0448	0.0500	mg/L	89.7	70-130
Water	MS	Phosphorus (P)-Total	WG2068353-8	Anonymous	0.0455	0.0500	mg/L	91.0	70-130
Water	MS	Phosphorus (P)-Total	WG2068365-4	Anonymous	0.0438	0.0500	mg/L	87.5	70-130
Water	MS	Phosphorus (P)-Total	WG2068365-8	Anonymous	0.0551	0.0600	mg/L	90.3	70-130
Water	MS	Phosphorus (P)-Total Dissolved	WG2068516-4	Anonymous	0.0590	0.0644	mg/L	89.3	70-130
Water	MS	Phosphorus (P)-Total Dissolved	WG2068516-8	L1597478-8	0.0489	0.0500	mg/L	97.8	70-130
Water	MS	Phosphorus (P)-Total	WG2069537-4	Anonymous	0.0483	0.0556	mg/L	85.3	70-130
Water	MS	Total Kjeldahl Nitrogen	WG2070196-4	Anonymous	0.00121	1.00	mg/L	0.12	70-130 MSTN
Water	MS	Total Kjeldahl Nitrogen	WG2070196-8	L1597478-7	1.08	1.08	mg/L	100.1	70-130
Water	MS	Total Kjeldahl Nitrogen	WG2070944-4	Anonymous	0.979	1.08	mg/L	90.1	70-130
Water	MS	Total Kjeldahl Nitrogen	WG2070944-8	Anonymous	4.46	4.46	mg/L	N/A	- MS-B
Water	MS	Total Kjeldahl Nitrogen	WG2070951-4	L1597478-12	1.07	1.06	mg/L	100.2	70-130
Water	MS	Total Kjeldahl Nitrogen	WG2072323-4	Anonymous	1.13	1.11	mg/L	101.8	70-130
Water	MS	Bromide (Br)	WG2068009-11	L1597478-7	0.505	0.500	mg/L	101.0	75-125
Water	MS	Chloride (Cl)	WG2068009-11	L1597478-7	100	101	mg/L	99.2	75-125
Water	MS	Fluoride (F)	WG2068009-11	L1597478-7	1.06	1.07	mg/L	98.2	75-125
Water	MS	Nitrate (as N)	WG2068009-11	L1597478-7	2.61	2.65	mg/L	98.6	75-125
Water	MS	Nitrite (as N)	WG2068009-11	L1597478-7	0.486	0.500	mg/L	97.3	75-125

Water	MS	Sulfate (SO4)	WG2068009-11	L1597478-7	109	111	mg/L	97.8	75-125
Water	MS	Bromide (Br)	WG2068009-14	L1597478-25	0.524	0.500	mg/L	104.9	75-125
Water	MS	Chloride (Cl)	WG2068009-14	L1597478-25	104	101	mg/L	102.7	75-125
Water	MS	Fluoride (F)	WG2068009-14	L1597478-25	1.09	1.07	mg/L	102.0	75-125
Water	MS	Nitrate (as N)	WG2068009-14	L1597478-25	2.71	2.67	mg/L	101.9	75-125
Water	MS	Nitrite (as N)	WG2068009-14	L1597478-25	0.501	0.500	mg/L	100.2	75-125
Water	MS	Sulfate (SO4)	WG2068009-14	L1597478-25	114	112	mg/L	101.1	75-125
Water	MS	Bromide (Br)	WG2068009-17	L1597478-36	0.486	0.500	mg/L	97.3	75-125
Water	MS	Chloride (Cl)	WG2068009-17	L1597478-36	96.3	100	mg/L	96.3	75-125
Water	MS	Fluoride (F)	WG2068009-17	L1597478-36	0.950	1.00	mg/L	95.0	75-125
Water	MS	Nitrate (as N)	WG2068009-17	L1597478-36	2.40	2.50	mg/L	95.9	75-125
Water	MS	Nitrite (as N)	WG2068009-17	L1597478-36	0.475	0.500	mg/L	94.9	75-125
Water	MS	Sulfate (SO4)	WG2068009-17	L1597478-36	94.8	100	mg/L	94.8	75-125
Water	MS	Phosphorus (P)-Total	WG2068353-12	Anonymous	0.0690	0.0775	mg/L	83.1	70-130
Water	MS	Phosphorus (P)-Total	WG2068353-20	Anonymous	0.0448	0.0500	mg/L	89.6	70-130
Water	MS	Phosphorus (P)-Total Dissolved	WG2068516-12	L1597478-28	0.0498	0.0500	mg/L	99.5	70-130
Water	MS	Phosphorus (P)-Total	WG2069537-12	Anonymous	0.0487	0.0531	mg/L	91.1	70-130
Water	MS	Ammonia, Total (as N)	WG2071658-10	Anonymous	0.205	0.206	mg/L	99.5	75-125
Water	MS	Ammonia, Total (as N)	WG2071658-12	Anonymous	0.201	0.200	mg/L	100.7	75-125
Water	MS	Ammonia, Total (as N)	WG2071658-14	L1597478-20	0.217	0.215	mg/L	100.6	75-125
Water	MS	Ammonia, Total (as N)	WG2071673-12	Anonymous	0.205	0.200	mg/L	102.4	75-125
Water	MS	Ammonia, Total (as N)	WG2071673-14	Anonymous	0.216	0.213	mg/L	101.4	75-125
Organic / Inorganic Carbon									
Water	LCS	Total Organic Carbon	WG2070505-1		8.47	8.57	mg/L	98.9	80-120
Water	LCS	Total Organic Carbon	WG2070505-5		8.58	8.57	mg/L	100.2	80-120
Water	LCS	Total Organic Carbon	WG2070505-9		8.58	8.57	mg/L	100.1	80-120
Water	LCS	Total Organic Carbon	WG2071979-1		8.88	8.57	mg/L	103.7	80-120
Water	LCS	Total Organic Carbon	WG2071979-5		7.97	8.57	mg/L	93.0	80-120
Water	LCS	Total Organic Carbon	WG2070505-13		8.35	8.57	mg/L	97.5	80-120
Water	LCS	Total Organic Carbon	WG2070505-17		8.51	8.57	mg/L	99.3	80-120
Water	LCS	Total Organic Carbon	WG2071979-10		8.61	8.57	mg/L	100.5	80-120
Water	LCS	Total Organic Carbon	WG2071979-12		8.93	8.57	mg/L	104.2	80-120
Water	MB	Total Organic Carbon	WG2070505-4		<0.50	<0.5	mg/L	-	0.5
Water	MB	Total Organic Carbon	WG2070505-8		<0.50	<0.5	mg/L	-	0.5
Water	MB	Total Organic Carbon	WG2071979-4		<0.50	<0.5	mg/L	-	0.5
Water	MB	Total Organic Carbon	WG2071979-9		<0.50	<0.5	mg/L	-	0.5
Water	MB	Total Organic Carbon	WG2070505-12		<0.50	<0.5	mg/L	-	0.5
Water	MB	Total Organic Carbon	WG2070505-16		<0.50	<0.5	mg/L	-	0.5
Water	MB	Total Organic Carbon	WG2071979-11		<0.50	<0.5	mg/L	-	0.5
Water	MS	Total Organic Carbon	WG2070505-3	L1597478-2	6.43	6.10	mg/L	106.6	70-130
Water	MS	Total Organic Carbon	WG2070505-7	L1597478-20	6.42	6.09	mg/L	106.6	70-130
Water	MS	Total Organic Carbon	WG2071979-3	L1597478-32	6.88	6.45	mg/L	108.6	70-130
Water	MS	Total Organic Carbon	WG2071979-8	Anonymous	8.00	7.50	mg/L	109.9	70-130
Water	MS	Total Organic Carbon	WG2070505-11	Anonymous	6.22	5.93	mg/L	105.8	70-130
Water	MS	Total Organic Carbon	WG2070505-15	Anonymous	6.54	6.60	mg/L	98.7	70-130
Total Metals									
Water	LCS	Mercury (Hg)-Total	WG2070883-4		0.00471	0.00500	ug/L	94.1	80-120
Water	LCS	Mercury (Hg)-Total	WG2070883-5		0.00466	0.00500	ug/L	93.1	80-120
Water	MB	Mercury (Hg)-Total	WG2070883-1		<0.00050	<0.0005	ug/L	-	0.0005
Water	MB	Mercury (Hg)-Total	WG2070883-2		<0.00050	<0.0005	ug/L	-	0.0005
Water	MB	Mercury (Hg)-Total	WG2070883-3		<0.00050	<0.0005	ug/L	-	0.0005
Water	MS	Mercury (Hg)-Total	WG2070883-8	L1597478-3	0.00475	0.00500	ug/L	95.0	70-130
Water	MS	Mercury (Hg)-Total	WG2070883-9	L1597478-17	0.00482	0.00500	ug/L	96.4	70-130
Total Metals (Undigested)									
Water	CRM	Aluminum (Al)-Total	WG2067646-2	VA-HIGH-WATRM	2.07	2.00	mg/L	103.7	80-120
Water	CRM	Antimony (Sb)-Total	WG2067646-2	VA-HIGH-WATRM	1.04	1.00	mg/L	103.6	80-120
Water	CRM	Arsenic (As)-Total	WG2067646-2	VA-HIGH-WATRM	1.02	1.00	mg/L	102.1	80-120
Water	CRM	Barium (Ba)-Total	WG2067646-2	VA-HIGH-WATRM	0.248	0.250	mg/L	99.2	80-120
Water	CRM	Beryllium (Be)-Total	WG2067646-2	VA-HIGH-WATRM	0.100	0.100	mg/L	100.3	80-120
Water	CRM	Bismuth (Bi)-Total	WG2067646-2	VA-HIGH-WATRM	1.00	1.00	mg/L	100.2	80-120
Water	CRM	Boron (B)-Total	WG2067646-2	VA-HIGH-WATRM	0.94	1.00	mg/L	94.1	80-120
Water	CRM	Cadmium (Cd)-Total	WG2067646-2	VA-HIGH-WATRM	0.0994	0.100	mg/L	99.4	80-120
Water	CRM	Calcium (Ca)-Total	WG2067646-2	VA-HIGH-WATRM	50.7	50.0	mg/L	101.4	80-120
Water	CRM	Chromium (Cr)-Total	WG2067646-2	VA-HIGH-WATRM	0.251	0.250	mg/L	100.6	80-120
Water	CRM	Cobalt (Co)-Total	WG2067646-2	VA-HIGH-WATRM	0.250	0.250	mg/L	99.9	80-120
Water	CRM	Copper (Cu)-Total	WG2067646-2	VA-HIGH-WATRM	0.241	0.250	mg/L	96.3	80-120
Water	CRM	Iron (Fe)-Total	WG2067646-2	VA-HIGH-WATRM	1.01	1.00	mg/L	101.0	80-120
Water	CRM	Lead (Pb)-Total	WG2067646-2	VA-HIGH-WATRM	0.506	0.500	mg/L	101.1	80-120
Water	CRM	Lithium (Li)-Total	WG2067646-2	VA-HIGH-WATRM	0.253	0.250	mg/L	101.1	80-120
Water	CRM	Magnesium (Mg)-Total	WG2067646-2	VA-HIGH-WATRM	49.1	50.0	mg/L	98.2	80-120
Water	CRM	Manganese (Mn)-Total	WG2067646-2	VA-HIGH-WATRM	0.253	0.250	mg/L	101.2	80-120
Water	CRM	Molybdenum (Mo)-Total	WG2067646-2	VA-HIGH-WATRM	0.243	0.250	mg/L	97.4	80-120
Water	CRM	Nickel (Ni)-Total	WG2067646-2	VA-HIGH-WATRM	0.506	0.500	mg/L	101.3	80-120
Water	CRM	Phosphorus (P)-Total	WG2067646-2	VA-HIGH-WATRM	2.53	2.50	mg/L	101.3	80-120
Water	CRM	Potassium (K)-Total	WG2067646-2	VA-HIGH-WATRM	49.1	50.0	mg/L	98.1	80-120
Water	CRM	Selenium (Se)-Total	WG2067646-2	VA-HIGH-WATRM	1.03	1.00	mg/L	103.2	80-120
Water	CRM	Silicon (Si)-Total	WG2067646-2	VA-HIGH-WATRM	1.02	1.00	mg/L	102.0	80-120
Water	CRM	Silver (Ag)-Total	WG2067646-2	VA-HIGH-WATRM	0.0977	0.100	mg/L	97.7	80-120
Water	CRM	Sodium (Na)-Total	WG2067646-2	VA-HIGH-WATRM	50.1	50.0	mg/L	100.1	80-120
Water	CRM	Strontium (Sr)-Total	WG2067646-2	VA-HIGH-WATRM	0.243	0.250	mg/L	97.3	80-120
Water	CRM	Thallium (Tl)-Total	WG2067646-2	VA-HIGH-WATRM	0.995	1.00	mg/L	99.5	80-120
Water	CRM	Tin (Sn)-Total	WG2067646-2	VA-HIGH-WATRM	0.501	0.500	mg/L	100.2	80-120
Water	CRM	Titanium (Ti)-Total	WG2067646-2	VA-HIGH-WATRM	0.245	0.250	mg/L	97.9	80-120
Water	CRM	Uranium (U)-Total	WG2067646-2	VA-HIGH-WATRM	0.00496	0.00500	mg/L	99.2	80-120
Water	CRM	Vanadium (V)-Total	WG2067646-2	VA-HIGH-WATRM	0.510	0.500	mg/L	102.1	80-120
Water	CRM	Zinc (Zn)-Total	WG2067646-2	VA-HIGH-WATRM	0.483	0.500	mg/L	96.6	80-120
Water	CRM	Zirconium (Zr)-Total	WG2067646-2	VA-HIGH-WATRM	0.0955	0.100	mg/L	95.5	80-120
Water	MB	Aluminum (Al)-Total	WG2067646-1		<0.00050	<0.0005	mg/L	-	0.0005
Water	MB	Antimony (Sb)-Total	WG2067646-1		<0.000020	<0.00002	mg/L	-	0.00002
Water	MB	Arsenic (As)-Total	WG2067646-1		<0.000020	<0.00002	mg/L	-	0.00002
Water	MB	Barium (Ba)-Total	WG2067646-1		<0.000020	<0.00002	mg/L	-	0.00002
Water	MB	Beryllium (Be)-Total	WG2067646-1		<0.000010	<0.00001	mg/L	-	0.00001
Water	MB	Bismuth (Bi)-Total	WG2067646-1		<0.0000050	<0.000005	mg/L	-	0.000005

Water	MB	Boron (B)-Total	WG2067646-1		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Cadmium (Cd)-Total	WG2067646-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Calcium (Ca)-Total	WG2067646-1		<0.030	<0.03	mg/L	-	0.03
Water	MB	Chromium (Cr)-Total	WG2067646-1		<0.00010	<0.0001	mg/L	-	0.0001
Water	MB	Cobalt (Co)-Total	WG2067646-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Copper (Cu)-Total	WG2067646-1		<0.00010	<0.0001	mg/L	-	0.0001
Water	MB	Iron (Fe)-Total	WG2067646-1		<0.0010	<0.001	mg/L	-	0.001
Water	MB	Lead (Pb)-Total	WG2067646-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Lithium (Li)-Total	WG2067646-1		<0.00050	<0.0005	mg/L	-	0.0005
Water	MB	Magnesium (Mg)-Total	WG2067646-1		<0.030	<0.03	mg/L	-	0.03
Water	MB	Manganese (Mn)-Total	WG2067646-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Molybdenum (Mo)-Total	WG2067646-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Nickel (Ni)-Total	WG2067646-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Phosphorus (P)-Total	WG2067646-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Potassium (K)-Total	WG2067646-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Selenium (Se)-Total	WG2067646-1		<0.000040	<0.00004	mg/L	-	0.00004
Water	MB	Silicon (Si)-Total	WG2067646-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Silver (Ag)-Total	WG2067646-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Sodium (Na)-Total	WG2067646-1		<0.010	<0.01	mg/L	-	0.01
Water	MB	Strontium (Sr)-Total	WG2067646-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Thallium (Tl)-Total	WG2067646-1		<0.0000020	<0.000002	mg/L	-	0.000002
Water	MB	Tin (Sn)-Total	WG2067646-1		<0.000010	<0.00001	mg/L	-	0.00001
Water	MB	Titanium (Ti)-Total	WG2067646-1		<0.00050	<0.0005	mg/L	-	0.0005
Water	MB	Uranium (U)-Total	WG2067646-1		<0.0000020	<0.000002	mg/L	-	0.000002
Water	MB	Vanadium (V)-Total	WG2067646-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Zinc (Zn)-Total	WG2067646-1		<0.00050	<0.0005	mg/L	-	0.0005
Water	MB	Zirconium (Zr)-Total	WG2067646-1		<0.00010	<0.0001	mg/L	-	0.0001
Water	MS	Aluminum (Al)-Total	WG2067646-5	L1597478-11	0.210	0.211	mg/L	99.7	70-130
Water	MS	Antimony (Sb)-Total	WG2067646-5	L1597478-11	0.0191	0.0200	mg/L	95.1	70-130
Water	MS	Arsenic (As)-Total	WG2067646-5	L1597478-11	0.0204	0.0203	mg/L	100.5	70-130
Water	MS	Barium (Ba)-Total	WG2067646-5	L1597478-11	0.0415	0.0419	mg/L	N/A	- MS-B
Water	MS	Beryllium (Be)-Total	WG2067646-5	L1597478-11	0.0391	0.0400	mg/L	97.8	70-130
Water	MS	Bismuth (Bi)-Total	WG2067646-5	L1597478-11	0.00861	0.0100	mg/L	86.1	70-130
Water	MS	Boron (B)-Total	WG2067646-5	L1597478-11	0.0954	0.100	mg/L	95.4	70-130
Water	MS	Cadmium (Cd)-Total	WG2067646-5	L1597478-11	0.00371	0.00401	mg/L	92.4	70-130
Water	MS	Calcium (Ca)-Total	WG2067646-5	L1597478-11	73.4	69.5	mg/L	107.9	70-130
Water	MS	Chromium (Cr)-Total	WG2067646-5	L1597478-11	0.0396	0.0400	mg/L	99.1	70-130
Water	MS	Cobalt (Co)-Total	WG2067646-5	L1597478-11	0.0198	0.0200	mg/L	99.0	70-130
Water	MS	Copper (Cu)-Total	WG2067646-5	L1597478-11	0.0199	0.0203	mg/L	98.1	70-130
Water	MS	Iron (Fe)-Total	WG2067646-5	L1597478-11	1.98	2.01	mg/L	98.6	70-130
Water	MS	Lead (Pb)-Total	WG2067646-5	L1597478-11	0.0189	0.0200	mg/L	94.5	70-130
Water	MS	Lithium (Li)-Total	WG2067646-5	L1597478-11	0.0995	0.101	mg/L	98.1	70-130
Water	MS	Magnesium (Mg)-Total	WG2067646-5	L1597478-11	52.7	54.3	mg/L	96.7	70-130
Water	MS	Manganese (Mn)-Total	WG2067646-5	L1597478-11	0.0206	0.0217	mg/L	94.3	70-130
Water	MS	Molybdenum (Mo)-Total	WG2067646-5	L1597478-11	0.0198	0.0206	mg/L	96.1	70-130
Water	MS	Nickel (Ni)-Total	WG2067646-5	L1597478-11	0.0406	0.0403	mg/L	100.8	70-130
Water	MS	Phosphorus (P)-Total	WG2067646-5	L1597478-11	2.47	2.50	mg/L	98.9	70-130
Water	MS	Potassium (K)-Total	WG2067646-5	L1597478-11	48.7	50.6	mg/L	96.2	70-130
Water	MS	Selenium (Se)-Total	WG2067646-5	L1597478-11	0.0458	0.0403	mg/L	113.6	70-130
Water	MS	Silicon (Si)-Total	WG2067646-5	L1597478-11	3.18	3.25	mg/L	N/A	- MS-B
Water	MS	Silver (Ag)-Total	WG2067646-5	L1597478-11	0.00378	0.00400	mg/L	94.4	70-130
Water	MS	Sodium (Na)-Total	WG2067646-5	L1597478-11	3.69	3.70	mg/L	99.5	70-130
Water	MS	Strontium (Sr)-Total	WG2067646-5	L1597478-11	0.131	0.130	mg/L	N/A	- MS-B
Water	MS	Thallium (Tl)-Total	WG2067646-5	L1597478-11	0.00365	0.00400	mg/L	91.1	70-130
Water	MS	Tin (Sn)-Total	WG2067646-5	L1597478-11	0.0192	0.0200	mg/L	96.1	70-130
Water	MS	Titanium (Ti)-Total	WG2067646-5	L1597478-11	0.0386	0.0400	mg/L	96.6	70-130
Water	MS	Uranium (U)-Total	WG2067646-5	L1597478-11	0.00427	0.00454	mg/L	93.3	70-130
Water	MS	Vanadium (V)-Total	WG2067646-5	L1597478-11	0.100	0.100	mg/L	100.2	70-130
Water	MS	Zinc (Zn)-Total	WG2067646-5	L1597478-11	0.395	0.401	mg/L	98.5	70-130
Water	MS	Zirconium (Zr)-Total	WG2067646-5	L1597478-11	0.0392	0.0400	mg/L	98.1	70-130
Water	MS	Aluminum (Al)-Total	WG2067646-7	L1597478-15	0.207	0.210	mg/L	98.1	70-130
Water	MS	Antimony (Sb)-Total	WG2067646-7	L1597478-15	0.0188	0.0201	mg/L	93.5	70-130
Water	MS	Arsenic (As)-Total	WG2067646-7	L1597478-15	0.0203	0.0203	mg/L	100.2	70-130
Water	MS	Barium (Ba)-Total	WG2067646-7	L1597478-15	0.0412	0.0419	mg/L	N/A	- MS-B
Water	MS	Beryllium (Be)-Total	WG2067646-7	L1597478-15	0.0386	0.0400	mg/L	96.5	70-130
Water	MS	Bismuth (Bi)-Total	WG2067646-7	L1597478-15	0.00887	0.0100	mg/L	88.7	70-130
Water	MS	Boron (B)-Total	WG2067646-7	L1597478-15	0.0940	0.100	mg/L	94.0	70-130
Water	MS	Cadmium (Cd)-Total	WG2067646-7	L1597478-15	0.00368	0.00403	mg/L	91.3	70-130
Water	MS	Calcium (Ca)-Total	WG2067646-7	L1597478-15	70.3	69.2	mg/L	102.1	70-130
Water	MS	Chromium (Cr)-Total	WG2067646-7	L1597478-15	0.0382	0.0400	mg/L	95.6	70-130
Water	MS	Cobalt (Co)-Total	WG2067646-7	L1597478-15	0.0194	0.0200	mg/L	96.8	70-130
Water	MS	Copper (Cu)-Total	WG2067646-7	L1597478-15	0.0199	0.0203	mg/L	97.6	70-130
Water	MS	Iron (Fe)-Total	WG2067646-7	L1597478-15	1.90	2.01	mg/L	94.7	70-130
Water	MS	Lead (Pb)-Total	WG2067646-7	L1597478-15	0.0195	0.0201	mg/L	97.1	70-130
Water	MS	Lithium (Li)-Total	WG2067646-7	L1597478-15	0.0975	0.101	mg/L	96.1	70-130
Water	MS	Magnesium (Mg)-Total	WG2067646-7	L1597478-15	54.3	54.3	mg/L	99.9	70-130
Water	MS	Manganese (Mn)-Total	WG2067646-7	L1597478-15	0.0207	0.0221	mg/L	93.0	70-130
Water	MS	Molybdenum (Mo)-Total	WG2067646-7	L1597478-15	0.0196	0.0206	mg/L	95.1	70-130
Water	MS	Nickel (Ni)-Total	WG2067646-7	L1597478-15	0.0396	0.0403	mg/L	98.3	70-130
Water	MS	Phosphorus (P)-Total	WG2067646-7	L1597478-15	2.50	2.50	mg/L	99.8	70-130
Water	MS	Potassium (K)-Total	WG2067646-7	L1597478-15	47.1	50.6	mg/L	93.1	70-130
Water	MS	Selenium (Se)-Total	WG2067646-7	L1597478-15	0.0437	0.0404	mg/L	108.4	70-130
Water	MS	Silicon (Si)-Total	WG2067646-7	L1597478-15	3.11	3.23	mg/L	N/A	- MS-B
Water	MS	Silver (Ag)-Total	WG2067646-7	L1597478-15	0.00372	0.00400	mg/L	92.9	70-130
Water	MS	Sodium (Na)-Total	WG2067646-7	L1597478-15	3.60	3.78	mg/L	91.0	70-130
Water	MS	Strontium (Sr)-Total	WG2067646-7	L1597478-15	0.128	0.127	mg/L	N/A	- MS-B
Water	MS	Thallium (Tl)-Total	WG2067646-7	L1597478-15	0.00380	0.00402	mg/L	94.6	70-130
Water	MS	Tin (Sn)-Total	WG2067646-7	L1597478-15	0.0190	0.0200	mg/L	94.9	70-130
Water	MS	Titanium (Ti)-Total	WG2067646-7	L1597478-15	0.0381	0.0400	mg/L	95.3	70-130
Water	MS	Uranium (U)-Total	WG2067646-7	L1597478-15	0.00444	0.00454	mg/L	97.4	70-130
Water	MS	Vanadium (V)-Total	WG2067646-7	L1597478-15	0.0974	0.100	mg/L	97.3	70-130
Water	MS	Zinc (Zn)-Total	WG2067646-7	L1597478-15	0.382	0.402	mg/L	95.1	70-130
Water	MS	Zirconium (Zr)-Total	WG2067646-7	L1597478-15	0.0388	0.0400	mg/L	97.1	70-130
Water	MS	Aluminum (Al)-Total	WG2067646-8	L1597478-27	0.212	0.211	mg/L	100.5	70-130
Water	MS	Antimony (Sb)-Total	WG2067646-8	L1597478-27	0.0191	0.0200	mg/L	95.2	70-130
Water	MS	Arsenic (As)-Total	WG2067646-8	L1597478-27	0.0200	0.0203	mg/L	98.8	70-130
Water	MS	Barium (Ba)-Total	WG2067646-8	L1597478-27	0.0415	0.0421	mg/L	N/A	- MS-B
Water	MS	Beryllium (Be)-Total	WG2067646-8	L1597478-27	0.0375	0.0400	mg/L	93.8	70-130
Water	MS	Bismuth (Bi)-Total	WG2067646-8	L1597478-27	0.00855	0.0100	mg/L	85.5	70-130
Water	MS	Boron (B)-Total	WG2067646-8	L1597478-27	0.0927	0.100	mg/L	92.7	70-130

Water	MS	Cadmium (Cd)-Total	WG2067646-8	L1597478-27	0.00384	0.00401	mg/L	95.6	70-130	
Water	MS	Calcium (Ca)-Total	WG2067646-8	L1597478-27	76.8	69.6	mg/L	114.5	70-130	
Water	MS	Chromium (Cr)-Total	WG2067646-8	L1597478-27	0.0387	0.0400	mg/L	96.7	70-130	
Water	MS	Cobalt (Co)-Total	WG2067646-8	L1597478-27	0.0194	0.0200	mg/L	97.1	70-130	
Water	MS	Copper (Cu)-Total	WG2067646-8	L1597478-27	0.0196	0.0203	mg/L	96.7	70-130	
Water	MS	Iron (Fe)-Total	WG2067646-8	L1597478-27	1.97	2.01	mg/L	97.9	70-130	
Water	MS	Lead (Pb)-Total	WG2067646-8	L1597478-27	0.0187	0.0201	mg/L	93.1	70-130	
Water	MS	Lithium (Li)-Total	WG2067646-8	L1597478-27	0.0952	0.101	mg/L	93.9	70-130	
Water	MS	Magnesium (Mg)-Total	WG2067646-8	L1597478-27	49.7	54.4	mg/L	90.7	70-130	
Water	MS	Manganese (Mn)-Total	WG2067646-8	L1597478-27	0.0209	0.0220	mg/L	94.6	70-130	
Water	MS	Molybdenum (Mo)-Total	WG2067646-8	L1597478-27	0.0195	0.0205	mg/L	94.8	70-130	
Water	MS	Nickel (Ni)-Total	WG2067646-8	L1597478-27	0.0395	0.0403	mg/L	98.1	70-130	
Water	MS	Phosphorus (P)-Total	WG2067646-8	L1597478-27	2.47	2.50	mg/L	98.9	70-130	
Water	MS	Potassium (K)-Total	WG2067646-8	L1597478-27	47.7	50.6	mg/L	94.2	70-130	
Water	MS	Selenium (Se)-Total	WG2067646-8	L1597478-27	0.0441	0.0403	mg/L	109.6	70-130	
Water	MS	Silicon (Si)-Total	WG2067646-8	L1597478-27	3.09	3.24	mg/L	N/A	-	MS-B
Water	MS	Silver (Ag)-Total	WG2067646-8	L1597478-27	0.00384	0.00400	mg/L	96.0	70-130	
Water	MS	Sodium (Na)-Total	WG2067646-8	L1597478-27	3.64	3.62	mg/L	100.9	70-130	
Water	MS	Strontium (Sr)-Total	WG2067646-8	L1597478-27	0.124	0.124	mg/L	N/A	-	MS-B
Water	MS	Thallium (Tl)-Total	WG2067646-8	L1597478-27	0.00368	0.00400	mg/L	92.0	70-130	
Water	MS	Tin (Sn)-Total	WG2067646-8	L1597478-27	0.0192	0.0200	mg/L	95.9	70-130	
Water	MS	Titanium (Ti)-Total	WG2067646-8	L1597478-27	0.0375	0.0400	mg/L	93.8	70-130	
Water	MS	Uranium (U)-Total	WG2067646-8	L1597478-27	0.00419	0.00451	mg/L	92.0	70-130	
Water	MS	Vanadium (V)-Total	WG2067646-8	L1597478-27	0.0973	0.100	mg/L	97.2	70-130	
Water	MS	Zinc (Zn)-Total	WG2067646-8	L1597478-27	0.385	0.401	mg/L	96.0	70-130	
Water	MS	Zirconium (Zr)-Total	WG2067646-8	L1597478-27	0.0382	0.0400	mg/L	95.6	70-130	
Dissolved Metals										
Water	CRM	Aluminum (Al)-Dissolved	WG2067647-2	VA-HIGH-WATRM	2.01	2.00	mg/L	100.3	80-120	
Water	CRM	Antimony (Sb)-Dissolved	WG2067647-2	VA-HIGH-WATRM	1.03	1.00	mg/L	103.4	80-120	
Water	CRM	Arsenic (As)-Dissolved	WG2067647-2	VA-HIGH-WATRM	1.02	1.00	mg/L	102.1	80-120	
Water	CRM	Barium (Ba)-Dissolved	WG2067647-2	VA-HIGH-WATRM	0.255	0.250	mg/L	102.0	80-120	
Water	CRM	Beryllium (Be)-Dissolved	WG2067647-2	VA-HIGH-WATRM	0.101	0.100	mg/L	101.1	80-120	
Water	CRM	Bismuth (Bi)-Dissolved	WG2067647-2	VA-HIGH-WATRM	1.02	1.00	mg/L	101.5	80-120	
Water	CRM	Boron (B)-Dissolved	WG2067647-2	VA-HIGH-WATRM	0.95	1.00	mg/L	94.8	80-120	
Water	CRM	Cadmium (Cd)-Dissolved	WG2067647-2	VA-HIGH-WATRM	0.0960	0.100	mg/L	96.0	80-120	
Water	CRM	Calcium (Ca)-Dissolved	WG2067647-2	VA-HIGH-WATRM	51.0	50.0	mg/L	102.0	80-120	
Water	CRM	Chromium (Cr)-Dissolved	WG2067647-2	VA-HIGH-WATRM	0.251	0.250	mg/L	100.2	80-120	
Water	CRM	Cobalt (Co)-Dissolved	WG2067647-2	VA-HIGH-WATRM	0.249	0.250	mg/L	99.8	80-120	
Water	CRM	Copper (Cu)-Dissolved	WG2067647-2	VA-HIGH-WATRM	0.243	0.250	mg/L	97.1	80-120	
Water	CRM	Iron (Fe)-Dissolved	WG2067647-2	VA-HIGH-WATRM	1.00	1.00	mg/L	100.1	80-120	
Water	CRM	Lead (Pb)-Dissolved	WG2067647-2	VA-HIGH-WATRM	0.513	0.500	mg/L	102.5	80-120	
Water	CRM	Lithium (Li)-Dissolved	WG2067647-2	VA-HIGH-WATRM	0.256	0.250	mg/L	102.4	80-120	
Water	CRM	Magnesium (Mg)-Dissolved	WG2067647-2	VA-HIGH-WATRM	49.5	50.0	mg/L	99.0	80-120	
Water	CRM	Manganese (Mn)-Dissolved	WG2067647-2	VA-HIGH-WATRM	0.255	0.250	mg/L	102.2	80-120	
Water	CRM	Molybdenum (Mo)-Dissolved	WG2067647-2	VA-HIGH-WATRM	0.245	0.250	mg/L	97.9	80-120	
Water	CRM	Nickel (Ni)-Dissolved	WG2067647-2	VA-HIGH-WATRM	0.509	0.500	mg/L	101.8	80-120	
Water	CRM	Phosphorus (P)-Dissolved	WG2067647-2	VA-HIGH-WATRM	2.55	2.50	mg/L	102.1	80-120	
Water	CRM	Potassium (K)-Dissolved	WG2067647-2	VA-HIGH-WATRM	48.2	50.0	mg/L	96.4	80-120	
Water	CRM	Selenium (Se)-Dissolved	WG2067647-2	VA-HIGH-WATRM	1.02	1.00	mg/L	101.7	80-120	
Water	CRM	Silicon (Si)-Dissolved	WG2067647-2	VA-HIGH-WATRM	1.02	1.00	mg/L	102.3	80-120	
Water	CRM	Silver (Ag)-Dissolved	WG2067647-2	VA-HIGH-WATRM	0.0981	0.100	mg/L	98.1	80-120	
Water	CRM	Sodium (Na)-Dissolved	WG2067647-2	VA-HIGH-WATRM	50.3	50.0	mg/L	100.7	80-120	
Water	CRM	Strontium (Sr)-Dissolved	WG2067647-2	VA-HIGH-WATRM	0.250	0.250	mg/L	100.2	80-120	
Water	CRM	Thallium (Tl)-Dissolved	WG2067647-2	VA-HIGH-WATRM	1.02	1.00	mg/L	102.1	80-120	
Water	CRM	Tin (Sn)-Dissolved	WG2067647-2	VA-HIGH-WATRM	0.496	0.500	mg/L	99.2	80-120	
Water	CRM	Titanium (Ti)-Dissolved	WG2067647-2	VA-HIGH-WATRM	0.243	0.250	mg/L	97.1	80-120	
Water	CRM	Uranium (U)-Dissolved	WG2067647-2	VA-HIGH-WATRM	0.00508	0.00500	mg/L	101.5	80-120	
Water	CRM	Vanadium (V)-Dissolved	WG2067647-2	VA-HIGH-WATRM	0.508	0.500	mg/L	101.6	80-120	
Water	CRM	Zinc (Zn)-Dissolved	WG2067647-2	VA-HIGH-WATRM	0.487	0.500	mg/L	97.4	80-120	
Water	CRM	Zirconium (Zr)-Dissolved	WG2067647-2	VA-HIGH-WATRM	0.0973	0.100	mg/L	97.3	80-120	
Water	CRM	Aluminum (Al)-Dissolved	WG2074005-2	VA-HIGH-WATRM	1.90	2.00	mg/L	94.9	80-120	
Water	CRM	Antimony (Sb)-Dissolved	WG2074005-2	VA-HIGH-WATRM	0.928	1.00	mg/L	92.8	80-120	
Water	CRM	Arsenic (As)-Dissolved	WG2074005-2	VA-HIGH-WATRM	0.948	1.00	mg/L	94.8	80-120	
Water	CRM	Barium (Ba)-Dissolved	WG2074005-2	VA-HIGH-WATRM	0.237	0.250	mg/L	94.8	80-120	
Water	CRM	Beryllium (Be)-Dissolved	WG2074005-2	VA-HIGH-WATRM	0.0875	0.100	mg/L	87.5	80-120	
Water	CRM	Bismuth (Bi)-Dissolved	WG2074005-2	VA-HIGH-WATRM	0.885	1.00	mg/L	88.5	80-120	
Water	CRM	Boron (B)-Dissolved	WG2074005-2	VA-HIGH-WATRM	0.86	1.00	mg/L	85.7	80-120	
Water	CRM	Cadmium (Cd)-Dissolved	WG2074005-2	VA-HIGH-WATRM	0.0902	0.100	mg/L	90.2	80-120	
Water	CRM	Calcium (Ca)-Dissolved	WG2074005-2	VA-HIGH-WATRM	52.0	50.0	mg/L	103.9	80-120	
Water	CRM	Chromium (Cr)-Dissolved	WG2074005-2	VA-HIGH-WATRM	0.234	0.250	mg/L	93.8	80-120	
Water	CRM	Cobalt (Co)-Dissolved	WG2074005-2	VA-HIGH-WATRM	0.235	0.250	mg/L	93.9	80-120	
Water	CRM	Copper (Cu)-Dissolved	WG2074005-2	VA-HIGH-WATRM	0.228	0.250	mg/L	91.3	80-120	
Water	CRM	Iron (Fe)-Dissolved	WG2074005-2	VA-HIGH-WATRM	0.900	1.00	mg/L	90.0	80-120	
Water	CRM	Lead (Pb)-Dissolved	WG2074005-2	VA-HIGH-WATRM	0.453	0.500	mg/L	90.6	80-120	
Water	CRM	Lithium (Li)-Dissolved	WG2074005-2	VA-HIGH-WATRM	0.216	0.250	mg/L	86.6	80-120	
Water	CRM	Magnesium (Mg)-Dissolved	WG2074005-2	VA-HIGH-WATRM	49.7	50.0	mg/L	99.3	80-120	
Water	CRM	Manganese (Mn)-Dissolved	WG2074005-2	VA-HIGH-WATRM	0.226	0.250	mg/L	90.5	80-120	
Water	CRM	Molybdenum (Mo)-Dissolved	WG2074005-2	VA-HIGH-WATRM	0.222	0.250	mg/L	89.0	80-120	
Water	CRM	Nickel (Ni)-Dissolved	WG2074005-2	VA-HIGH-WATRM	0.463	0.500	mg/L	92.6	80-120	
Water	CRM	Phosphorus (P)-Dissolved	WG2074005-2	VA-HIGH-WATRM	2.51	2.50	mg/L	100.4	80-120	
Water	CRM	Potassium (K)-Dissolved	WG2074005-2	VA-HIGH-WATRM	50.7	50.0	mg/L	101.4	80-120	
Water	CRM	Selenium (Se)-Dissolved	WG2074005-2	VA-HIGH-WATRM	1.00	1.00	mg/L	100.3	80-120	
Water	CRM	Silicon (Si)-Dissolved	WG2074005-2	VA-HIGH-WATRM	1.04	1.00	mg/L	103.7	80-120	
Water	CRM	Silver (Ag)-Dissolved	WG2074005-2	VA-HIGH-WATRM	0.0918	0.100	mg/L	91.8	80-120	
Water	CRM	Sodium (Na)-Dissolved	WG2074005-2	VA-HIGH-WATRM	48.5	50.0	mg/L	97.0	80-120	
Water	CRM	Strontium (Sr)-Dissolved	WG2074005-2	VA-HIGH-WATRM	0.227	0.250	mg/L	91.0	80-120	
Water	CRM	Thallium (Tl)-Dissolved	WG2074005-2	VA-HIGH-WATRM	0.906	1.00	mg/L	90.6	80-120	
Water	CRM	Tin (Sn)-Dissolved	WG2074005-2	VA-HIGH-WATRM	0.453	0.500	mg/L	90.7	80-120	
Water	CRM	Titanium (Ti)-Dissolved	WG2074005-2	VA-HIGH-WATRM	0.222	0.250	mg/L	88.9	80-120	
Water	CRM	Uranium (U)-Dissolved	WG2074005-2	VA-HIGH-WATRM	0.00450	0.00500	mg/L	90.1	80-120	
Water	CRM	Vanadium (V)-Dissolved	WG2074005-2	VA-HIGH-WATRM	0.459	0.500	mg/L	91.8	80-120	
Water	CRM	Zinc (Zn)-Dissolved	WG2074005-2	VA-HIGH-WATRM	0.433	0.500	mg/L	86.5	80-120	
Water	CRM	Zirconium (Zr)-Dissolved	WG2074005-2	VA-HIGH-WATRM	0.0865	0.100	mg/L	86.5	80-120	
Water	LCS	Mercury (Hg)-Dissolved	WG2070894-3		0.00501	0.00500	ug/L	100.2	80-120	
Water	LCS	Aluminum (Al)-Dissolved	WG2074005-3		1.90	2.00	mg/L	94.9	80-120	
Water	LCS	Antimony (Sb)-Dissolved	WG2074005-3		0.928	1.00	mg/L	92.8	80-120	
Water	LCS	Arsenic (As)-Dissolved	WG2074005-3		0.948	1.00	mg/L	94.8	80-120	
Water	LCS	Barium (Ba)-Dissolved	WG2074005-3		0.237	0.250	mg/L	94.8	80-120	
Water	LCS	Beryllium (Be)-Dissolved	WG2074005-3		0.0875	0.100	mg/L	87.5	80-120	

Water	LCS	Bismuth (Bi)-Dissolved	WG2074005-3		0.885	1.00	mg/L	88.5	80-120
Water	LCS	Boron (B)-Dissolved	WG2074005-3		0.857	1.00	mg/L	85.7	80-120
Water	LCS	Cadmium (Cd)-Dissolved	WG2074005-3		0.0902	0.100	mg/L	90.2	80-120
Water	LCS	Calcium (Ca)-Dissolved	WG2074005-3		52.0	50.0	mg/L	103.9	80-120
Water	LCS	Chromium (Cr)-Dissolved	WG2074005-3		0.234	0.250	mg/L	93.8	80-120
Water	LCS	Cobalt (Co)-Dissolved	WG2074005-3		0.235	0.250	mg/L	93.9	80-120
Water	LCS	Copper (Cu)-Dissolved	WG2074005-3		0.228	0.250	mg/L	91.3	80-120
Water	LCS	Iron (Fe)-Dissolved	WG2074005-3		0.900	1.00	mg/L	90.0	80-120
Water	LCS	Lead (Pb)-Dissolved	WG2074005-3		0.453	0.500	mg/L	90.6	80-120
Water	LCS	Lithium (Li)-Dissolved	WG2074005-3		0.216	0.250	mg/L	86.6	80-120
Water	LCS	Magnesium (Mg)-Dissolved	WG2074005-3		49.7	50.0	mg/L	99.3	80-120
Water	LCS	Manganese (Mn)-Dissolved	WG2074005-3		0.226	0.250	mg/L	90.5	80-120
Water	LCS	Molybdenum (Mo)-Dissolved	WG2074005-3		0.222	0.250	mg/L	89.0	80-120
Water	LCS	Nickel (Ni)-Dissolved	WG2074005-3		0.463	0.500	mg/L	92.6	80-120
Water	LCS	Phosphorus (P)-Dissolved	WG2074005-3		2.51	2.50	mg/L	100.4	80-120
Water	LCS	Potassium (K)-Dissolved	WG2074005-3		50.7	50.0	mg/L	101.4	80-120
Water	LCS	Selenium (Se)-Dissolved	WG2074005-3		1.00	1.00	mg/L	100.3	80-120
Water	LCS	Silicon (Si)-Dissolved	WG2074005-3		1.04	1.00	mg/L	103.7	80-120
Water	LCS	Silver (Ag)-Dissolved	WG2074005-3		0.0918	0.100	mg/L	91.8	80-120
Water	LCS	Sodium (Na)-Dissolved	WG2074005-3		48.5	50.0	mg/L	97.0	80-120
Water	LCS	Strontium (Sr)-Dissolved	WG2074005-3		0.227	0.250	mg/L	91.0	80-120
Water	LCS	Thallium (Tl)-Dissolved	WG2074005-3		0.906	1.00	mg/L	90.6	80-120
Water	LCS	Tin (Sn)-Dissolved	WG2074005-3		0.453	0.500	mg/L	90.7	80-120
Water	LCS	Titanium (Ti)-Dissolved	WG2074005-3		0.222	0.250	mg/L	88.9	80-120
Water	LCS	Uranium (U)-Dissolved	WG2074005-3		0.00450	0.00500	mg/L	90.1	80-120
Water	LCS	Vanadium (V)-Dissolved	WG2074005-3		0.459	0.500	mg/L	91.8	80-120
Water	LCS	Zinc (Zn)-Dissolved	WG2074005-3		0.433	0.500	mg/L	86.5	80-120
Water	LCS	Zirconium (Zr)-Dissolved	WG2074005-3		0.0865	0.100	mg/L	86.5	80-120
Water	MB	Aluminum (Al)-Dissolved	WG2067647-1		<0.00050	<0.0005	mg/L	-	0.0005
Water	MB	Antimony (Sb)-Dissolved	WG2067647-1		<0.000020	<0.00002	mg/L	-	0.00002
Water	MB	Arsenic (As)-Dissolved	WG2067647-1		<0.000020	<0.00002	mg/L	-	0.00002
Water	MB	Barium (Ba)-Dissolved	WG2067647-1		<0.000020	<0.00002	mg/L	-	0.00002
Water	MB	Beryllium (Be)-Dissolved	WG2067647-1		<0.000010	<0.00001	mg/L	-	0.00001
Water	MB	Bismuth (Bi)-Dissolved	WG2067647-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Boron (B)-Dissolved	WG2067647-1		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Cadmium (Cd)-Dissolved	WG2067647-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Calcium (Ca)-Dissolved	WG2067647-1		<0.030	<0.03	mg/L	-	0.03
Water	MB	Chromium (Cr)-Dissolved	WG2067647-1		<0.00010	<0.0001	mg/L	-	0.0001
Water	MB	Cobalt (Co)-Dissolved	WG2067647-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Copper (Cu)-Dissolved	WG2067647-1		<0.00010	<0.0001	mg/L	-	0.0001
Water	MB	Iron (Fe)-Dissolved	WG2067647-1		<0.0010	<0.001	mg/L	-	0.001
Water	MB	Lead (Pb)-Dissolved	WG2067647-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Lithium (Li)-Dissolved	WG2067647-1		<0.00050	<0.0005	mg/L	-	0.0005
Water	MB	Magnesium (Mg)-Dissolved	WG2067647-1		<0.030	<0.03	mg/L	-	0.03
Water	MB	Manganese (Mn)-Dissolved	WG2067647-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Molybdenum (Mo)-Dissolved	WG2067647-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Nickel (Ni)-Dissolved	WG2067647-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Phosphorus (P)-Dissolved	WG2067647-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Potassium (K)-Dissolved	WG2067647-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Selenium (Se)-Dissolved	WG2067647-1		<0.000040	<0.00004	mg/L	-	0.00004
Water	MB	Silicon (Si)-Dissolved	WG2067647-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Silver (Ag)-Dissolved	WG2067647-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Sodium (Na)-Dissolved	WG2067647-1		<0.010	<0.01	mg/L	-	0.01
Water	MB	Strontium (Sr)-Dissolved	WG2067647-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Thallium (Tl)-Dissolved	WG2067647-1		<0.0000020	<0.000002	mg/L	-	0.000002
Water	MB	Tin (Sn)-Dissolved	WG2067647-1		<0.000010	<0.00001	mg/L	-	0.00001
Water	MB	Titanium (Ti)-Dissolved	WG2067647-1		<0.00050	<0.0005	mg/L	-	0.0005
Water	MB	Uranium (U)-Dissolved	WG2067647-1		<0.0000020	<0.000002	mg/L	-	0.000002
Water	MB	Vanadium (V)-Dissolved	WG2067647-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Zinc (Zn)-Dissolved	WG2067647-1		<0.00050	<0.0005	mg/L	-	0.0005
Water	MB	Zirconium (Zr)-Dissolved	WG2067647-1		<0.00010	<0.0001	mg/L	-	0.0001
Water	MB	Mercury (Hg)-Dissolved	WG2070894-1		<0.00050	<0.0005	ug/L	-	0.0005
Water	MB	Mercury (Hg)-Dissolved	WG2070894-2		<0.00050	<0.0005	ug/L	-	0.0005
Water	MB	Aluminum (Al)-Dissolved	WG2074005-1		<0.00050	<0.0005	mg/L	-	0.0005
Water	MB	Antimony (Sb)-Dissolved	WG2074005-1		<0.000020	<0.00002	mg/L	-	0.00002
Water	MB	Arsenic (As)-Dissolved	WG2074005-1		<0.000020	<0.00002	mg/L	-	0.00002
Water	MB	Barium (Ba)-Dissolved	WG2074005-1		0.000035	<0.00002	mg/L	-	0.00002	MB-LOR
Water	MB	Beryllium (Be)-Dissolved	WG2074005-1		<0.000010	<0.00001	mg/L	-	0.00001
Water	MB	Bismuth (Bi)-Dissolved	WG2074005-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Boron (B)-Dissolved	WG2074005-1		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Cadmium (Cd)-Dissolved	WG2074005-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Calcium (Ca)-Dissolved	WG2074005-1		<0.030	<0.03	mg/L	-	0.03
Water	MB	Chromium (Cr)-Dissolved	WG2074005-1		<0.00010	<0.0001	mg/L	-	0.0001
Water	MB	Cobalt (Co)-Dissolved	WG2074005-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Copper (Cu)-Dissolved	WG2074005-1		<0.00010	<0.0001	mg/L	-	0.0001
Water	MB	Iron (Fe)-Dissolved	WG2074005-1		<0.0010	<0.001	mg/L	-	0.001
Water	MB	Lead (Pb)-Dissolved	WG2074005-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Lithium (Li)-Dissolved	WG2074005-1		<0.00050	<0.0005	mg/L	-	0.0005
Water	MB	Magnesium (Mg)-Dissolved	WG2074005-1		<0.030	<0.03	mg/L	-	0.03
Water	MB	Manganese (Mn)-Dissolved	WG2074005-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Molybdenum (Mo)-Dissolved	WG2074005-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Nickel (Ni)-Dissolved	WG2074005-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Phosphorus (P)-Dissolved	WG2074005-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Potassium (K)-Dissolved	WG2074005-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Selenium (Se)-Dissolved	WG2074005-1		<0.000040	<0.00004	mg/L	-	0.00004
Water	MB	Silicon (Si)-Dissolved	WG2074005-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Silver (Ag)-Dissolved	WG2074005-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Sodium (Na)-Dissolved	WG2074005-1		<0.010	<0.01	mg/L	-	0.01
Water	MB	Strontium (Sr)-Dissolved	WG2074005-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Thallium (Tl)-Dissolved	WG2074005-1		<0.0000020	<0.000002	mg/L	-	0.000002
Water	MB	Tin (Sn)-Dissolved	WG2074005-1		<0.000010	<0.00001	mg/L	-	0.00001
Water	MB	Titanium (Ti)-Dissolved	WG2074005-1		<0.00050	<0.0005	mg/L	-	0.0005
Water	MB	Uranium (U)-Dissolved	WG2074005-1		<0.0000020	<0.000002	mg/L	-	0.000002
Water	MB	Vanadium (V)-Dissolved	WG2074005-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Zinc (Zn)-Dissolved	WG2074005-1		0.00068	<0.0005	mg/L	-	0.0005	MB-LOR
Water	MB	Zirconium (Zr)-Dissolved	WG2074005-1		<0.00010	<0.0001	mg/L	-	0.0001
Water	MB	Mercury (Hg)-Dissolved	WG2070894-10		<0.00050	<0.0005	ug/L	-	0.0005
Water	MS	Mercury (Hg)-Dissolved	WG2070894-7	L1597478-20	0.00513	0.00500	ug/L	102.5	70-130
Water	MS	Aluminum (Al)-Dissolved	WG2067647-11	L1597478-20	0.197	0.206	mg/L	95.8	70-130

Water	MS	Antimony (Sb)-Dissolved	WG2067647-11	L1597478-20	0.0192	0.0201	mg/L	95.3	70-130	
Water	MS	Arsenic (As)-Dissolved	WG2067647-11	L1597478-20	0.0199	0.0203	mg/L	98.1	70-130	
Water	MS	Barium (Ba)-Dissolved	WG2067647-11	L1597478-20	0.0406	0.0418	mg/L	N/A	-	MS-B
Water	MS	Beryllium (Be)-Dissolved	WG2067647-11	L1597478-20	0.0380	0.0400	mg/L	95.0	70-130	
Water	MS	Bismuth (Bi)-Dissolved	WG2067647-11	L1597478-20	0.00832	0.0100	mg/L	83.2	70-130	
Water	MS	Boron (B)-Dissolved	WG2067647-11	L1597478-20	0.0929	0.100	mg/L	92.9	70-130	
Water	MS	Cadmium (Cd)-Dissolved	WG2067647-11	L1597478-20	0.00387	0.00406	mg/L	95.4	70-130	
Water	MS	Calcium (Ca)-Dissolved	WG2067647-11	L1597478-20	73.9	69.4	mg/L	108.9	70-130	
Water	MS	Chromium (Cr)-Dissolved	WG2067647-11	L1597478-20	0.0386	0.0400	mg/L	96.5	70-130	
Water	MS	Cobalt (Co)-Dissolved	WG2067647-11	L1597478-20	0.0191	0.0200	mg/L	95.5	70-130	
Water	MS	Copper (Cu)-Dissolved	WG2067647-11	L1597478-20	0.0195	0.0203	mg/L	95.7	70-130	
Water	MS	Iron (Fe)-Dissolved	WG2067647-11	L1597478-20	1.85	2.00	mg/L	92.5	70-130	
Water	MS	Lead (Pb)-Dissolved	WG2067647-11	L1597478-20	0.0184	0.0201	mg/L	91.3	70-130	
Water	MS	Lithium (Li)-Dissolved	WG2067647-11	L1597478-20	0.0950	0.101	mg/L	93.7	70-130	
Water	MS	Magnesium (Mg)-Dissolved	WG2067647-11	L1597478-20	52.4	54.3	mg/L	96.3	70-130	
Water	MS	Manganese (Mn)-Dissolved	WG2067647-11	L1597478-20	0.0201	0.0216	mg/L	92.2	70-130	
Water	MS	Molybdenum (Mo)-Dissolved	WG2067647-11	L1597478-20	0.0194	0.0206	mg/L	94.3	70-130	
Water	MS	Nickel (Ni)-Dissolved	WG2067647-11	L1597478-20	0.0390	0.0403	mg/L	96.8	70-130	
Water	MS	Phosphorus (P)-Dissolved	WG2067647-11	L1597478-20	2.49	2.50	mg/L	99.7	70-130	
Water	MS	Potassium (K)-Dissolved	WG2067647-11	L1597478-20	48.3	50.6	mg/L	95.4	70-130	
Water	MS	Selenium (Se)-Dissolved	WG2067647-11	L1597478-20	0.0399	0.0405	mg/L	98.3	70-130	
Water	MS	Silicon (Si)-Dissolved	WG2067647-11	L1597478-20	3.16	3.23	mg/L	N/A	-	MS-B
Water	MS	Silver (Ag)-Dissolved	WG2067647-11	L1597478-20	0.00385	0.00400	mg/L	96.3	70-130	
Water	MS	Sodium (Na)-Dissolved	WG2067647-11	L1597478-20	3.83	3.94	mg/L	94.5	70-130	
Water	MS	Strontium (Sr)-Dissolved	WG2067647-11	L1597478-20	0.127	0.133	mg/L	N/A	-	MS-B
Water	MS	Thallium (Tl)-Dissolved	WG2067647-11	L1597478-20	0.00365	0.00406	mg/L	89.9	70-130	
Water	MS	Tin (Sn)-Dissolved	WG2067647-11	L1597478-20	0.0193	0.0200	mg/L	96.3	70-130	
Water	MS	Titanium (Ti)-Dissolved	WG2067647-11	L1597478-20	0.0374	0.0400	mg/L	93.6	70-130	
Water	MS	Uranium (U)-Dissolved	WG2067647-11	L1597478-20	0.00414	0.00452	mg/L	90.6	70-130	
Water	MS	Vanadium (V)-Dissolved	WG2067647-11	L1597478-20	0.0974	0.100	mg/L	97.2	70-130	
Water	MS	Zinc (Zn)-Dissolved	WG2067647-11	L1597478-20	0.377	0.403	mg/L	93.6	70-130	
Water	MS	Zirconium (Zr)-Dissolved	WG2067647-11	L1597478-20	0.0387	0.0400	mg/L	96.7	70-130	
Water	MS	Aluminum (Al)-Dissolved	WG2067647-13	L1597478-34	0.200	0.205	mg/L	97.8	70-130	
Water	MS	Antimony (Sb)-Dissolved	WG2067647-13	L1597478-34	0.0191	0.0201	mg/L	94.9	70-130	
Water	MS	Arsenic (As)-Dissolved	WG2067647-13	L1597478-34	0.0202	0.0203	mg/L	99.8	70-130	
Water	MS	Barium (Ba)-Dissolved	WG2067647-13	L1597478-34	0.0408	0.0417	mg/L	N/A	-	MS-B
Water	MS	Beryllium (Be)-Dissolved	WG2067647-13	L1597478-34	0.0379	0.0400	mg/L	94.8	70-130	
Water	MS	Bismuth (Bi)-Dissolved	WG2067647-13	L1597478-34	0.00879	0.0100	mg/L	87.9	70-130	
Water	MS	Boron (B)-Dissolved	WG2067647-13	L1597478-34	0.0929	0.100	mg/L	92.9	70-130	
Water	MS	Cadmium (Cd)-Dissolved	WG2067647-13	L1597478-34	0.00368	0.00402	mg/L	91.7	70-130	
Water	MS	Calcium (Ca)-Dissolved	WG2067647-13	L1597478-34	69.2	68.8	mg/L	100.8	70-130	
Water	MS	Chromium (Cr)-Dissolved	WG2067647-13	L1597478-34	0.0382	0.0400	mg/L	95.4	70-130	
Water	MS	Cobalt (Co)-Dissolved	WG2067647-13	L1597478-34	0.0194	0.0200	mg/L	96.8	70-130	
Water	MS	Copper (Cu)-Dissolved	WG2067647-13	L1597478-34	0.0195	0.0203	mg/L	96.4	70-130	
Water	MS	Iron (Fe)-Dissolved	WG2067647-13	L1597478-34	1.88	2.00	mg/L	93.9	70-130	
Water	MS	Lead (Pb)-Dissolved	WG2067647-13	L1597478-34	0.0194	0.0201	mg/L	96.4	70-130	
Water	MS	Lithium (Li)-Dissolved	WG2067647-13	L1597478-34	0.0950	0.101	mg/L	93.6	70-130	
Water	MS	Magnesium (Mg)-Dissolved	WG2067647-13	L1597478-34	51.7	54.2	mg/L	95.0	70-130	
Water	MS	Manganese (Mn)-Dissolved	WG2067647-13	L1597478-34	0.0216	0.0228	mg/L	93.6	70-130	
Water	MS	Molybdenum (Mo)-Dissolved	WG2067647-13	L1597478-34	0.0193	0.0205	mg/L	93.8	70-130	
Water	MS	Nickel (Ni)-Dissolved	WG2067647-13	L1597478-34	0.0395	0.0402	mg/L	98.2	70-130	
Water	MS	Phosphorus (P)-Dissolved	WG2067647-13	L1597478-34	2.39	2.50	mg/L	95.5	70-130	
Water	MS	Potassium (K)-Dissolved	WG2067647-13	L1597478-34	45.4	50.6	mg/L	89.6	70-130	
Water	MS	Selenium (Se)-Dissolved	WG2067647-13	L1597478-34	0.0441	0.0403	mg/L	109.6	70-130	
Water	MS	Silicon (Si)-Dissolved	WG2067647-13	L1597478-34	3.17	3.32	mg/L	N/A	-	MS-B
Water	MS	Silver (Ag)-Dissolved	WG2067647-13	L1597478-34	0.00388	0.00400	mg/L	96.9	70-130	
Water	MS	Sodium (Na)-Dissolved	WG2067647-13	L1597478-34	3.62	3.75	mg/L	93.4	70-130	
Water	MS	Strontium (Sr)-Dissolved	WG2067647-13	L1597478-34	0.133	0.131	mg/L	N/A	-	MS-B
Water	MS	Thallium (Tl)-Dissolved	WG2067647-13	L1597478-34	0.00379	0.00400	mg/L	94.5	70-130	
Water	MS	Tin (Sn)-Dissolved	WG2067647-13	L1597478-34	0.0194	0.0200	mg/L	96.9	70-130	
Water	MS	Titanium (Ti)-Dissolved	WG2067647-13	L1597478-34	0.0372	0.0400	mg/L	93.0	70-130	
Water	MS	Uranium (U)-Dissolved	WG2067647-13	L1597478-34	0.00438	0.00455	mg/L	95.9	70-130	
Water	MS	Vanadium (V)-Dissolved	WG2067647-13	L1597478-34	0.0965	0.100	mg/L	96.4	70-130	
Water	MS	Zinc (Zn)-Dissolved	WG2067647-13	L1597478-34	0.382	0.401	mg/L	95.3	70-130	
Water	MS	Zirconium (Zr)-Dissolved	WG2067647-13	L1597478-34	0.0384	0.0400	mg/L	95.9	70-130	
Aggregate Organics										
Water	LCS	BOD	WG2068253-2		195	198	mg/L	98.2	85-115	
Water	LCS	BOD	WG2068253-6		194	198	mg/L	97.8	85-115	
Water	LCS	BOD	WG2068494-2		171	198	mg/L	86.3	85-115	
Water	LCS	BOD	WG2068494-6		195	198	mg/L	98.4	85-115	
Water	LCS	COD	WG2071652-3		743	750	mg/L	99.1	85-115	
Water	LCS	COD	WG2071652-6		738	750	mg/L	98.5	85-115	
Water	LCS	COD	WG2071652-8		739	750	mg/L	98.5	85-115	
Water	MB	BOD	WG2068253-1		<2.0	<2	mg/L	-	2	
Water	MB	BOD	WG2068253-5		<2.0	<2	mg/L	-	2	
Water	MB	BOD	WG2068494-1		<2.0	<2	mg/L	-	2	
Water	MB	BOD	WG2068494-5		<2.0	<2	mg/L	-	2	
Water	MB	COD	WG2071652-1		<20	<20	mg/L	-	20	
Water	MB	COD	WG2071652-5		<20	<20	mg/L	-	20	
Water	MB	COD	WG2071652-7		<20	<20	mg/L	-	20	
Water	MS	COD	WG2071652-4	L1597478-1	518	500	mg/L	103.7	75-125	
Water	MS	COD	WG2071652-9	Anonymous	498	500	mg/L	99.5	75-125	
Water	MS	COD	WG2071652-10	L1597478-28	505	500	mg/L	101.0	75-125	

Project 15-1438
Report To Kyle Hawes, ECOSCAPE ENVIRONMENTAL CONSULTANTS LTD.
ALS File No. L1600493
Date Received 17-Apr-15 13:05
Date 11-May-15

REPLICATE RESULTS

Sample ID	Matrix	ALS ID	Analyte	Replicate 1	Replicate 2	Units	RPD	RPD Limit	Diff	Diff Limit	Qualifier
Physical Tests											
L1600493-1	Water	WG2074688-6	Total Dissolved Solids	90	84	mg/L	7.3	20	-	-	-
Anions and Nutrients											
L1600493-6	Water	WG2075105-7	Total Kjeldahl Nitrogen	0.141	0.135	mg/L	4.9	20	-	-	-
L1600493-1	Water	WG2072609-7	Phosphorus (P)-Total Dissolved	<0.0020	<0.0020	mg/L	N/A	20	-	-	RPD-NA
L1600493-2	Water	WG2072500-15	Phosphorus (P)-Total	<0.0020	<0.0020	mg/L	N/A	20	-	-	RPD-NA
Organic / Inorganic Carbon											
L1600493-6	Water	WG2075268-6	Total Organic Carbon	1.04	1.20	mg/L	14	20	-	-	-
Total Metals											
L1600493-6	Water	WG2074230-3	Mercury (Hg)-Total	0.00110	0.00110	ug/L	0.5	20	-	-	-

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QUALITY CONTROL RESULTS

Matrix	QC Type	Analyte	QC Spl. No.	Reference	Result	Target	Units	%	Limits	Qualifier
Physical Tests										
Water	CRM	Turbidity	WG2072780-2	VA-FORM-40	40.1	40.0	NTU	100.3	85-115	
Water	CRM	Turbidity	WG2072780-5	VA-FORM-40	40.1	40.0	NTU	100.3	85-115	
Water	CRM	Turbidity	WG2072780-8	VA-FORM-40	39.9	40.0	NTU	99.8	85-115	
Water	CRM	Conductivity	WG2072293-17	VA-EC-PCT-CONTROL	146	147	uS/cm	99.6	90-110	
Water	CRM	Conductivity	WG2072293-18	VA-EC-PCT-CONTROL	146	147	uS/cm	99.1	90-110	
Water	CRM	Conductivity	WG2072293-19	VA-EC-PCT-CONTROL	146	147	uS/cm	99.3	90-110	
Water	CRM	Conductivity	WG2072293-20	VA-EC-PCT-CONTROL	147	147	uS/cm	100.3	90-110	
Water	CRM	Conductivity	WG2072293-21	VA-EC-PCT-CONTROL	148	147	uS/cm	100.4	90-110	
Water	CRM	Conductivity	WG2072293-22	VA-EC-PCT-CONTROL	149	147	uS/cm	101.4	90-110	
Water	CRM	Conductivity	WG2072293-23	VA-EC-PCT-CONTROL	148	147	uS/cm	100.4	90-110	
Water	CRM	Conductivity	WG2072293-24	VA-EC-PCT-CONTROL	150	147	uS/cm	101.9	90-110	
Water	CRM	pH	WG2072293-25	VA-PH7-BUF	7.03	7.00	pH	7.03	6.9-7.1	
Water	CRM	pH	WG2072293-26	VA-PH7-BUF	7.04	7.00	pH	7.04	6.9-7.1	
Water	CRM	pH	WG2072293-27	VA-PH7-BUF	7.04	7.00	pH	7.04	6.9-7.1	
Water	CRM	pH	WG2072293-28	VA-PH7-BUF	7.02	7.00	pH	7.02	6.9-7.1	
Water	CRM	pH	WG2072293-29	VA-PH7-BUF	7.03	7.00	pH	7.03	6.9-7.1	
Water	CRM	pH	WG2072293-30	VA-PH7-BUF	7.02	7.00	pH	7.02	6.9-7.1	
Water	CRM	pH	WG2072293-31	VA-PH7-BUF	7.01	7.00	pH	7.01	6.9-7.1	
Water	CRM	pH	WG2072293-32	VA-PH7-BUF	7.02	7.00	pH	7.02	6.9-7.1	
Water	CRM	Conductivity	WG2072718-17	VA-EC-PCT-CONTROL	144	147	uS/cm	98.0	90-110	
Water	CRM	Conductivity	WG2072718-18	VA-EC-PCT-CONTROL	143	147	uS/cm	97.2	90-110	
Water	CRM	Conductivity	WG2072718-19	VA-EC-PCT-CONTROL	145	147	uS/cm	98.6	90-110	
Water	CRM	Conductivity	WG2072718-20	VA-EC-PCT-CONTROL	146	147	uS/cm	99.4	90-110	
Water	CRM	pH	WG2072718-25	VA-PH7-BUF	7.00	7.00	pH	7.00	6.9-7.1	
Water	CRM	pH	WG2072718-26	VA-PH7-BUF	7.01	7.00	pH	7.01	6.9-7.1	
Water	CRM	pH	WG2072718-27	VA-PH7-BUF	7.01	7.00	pH	7.01	6.9-7.1	
Water	CRM	pH	WG2072718-28	VA-PH7-BUF	7.01	7.00	pH	7.01	6.9-7.1	
Water	CRM	Turbidity	WG2072780-11	VA-FORM-40	40.0	40.0	NTU	100.0	85-115	
Water	LCS	Total Suspended Solids	WG2073876-2		79.1	75.0	mg/L	105.5	85-115	
Water	LCS	Total Suspended Solids	WG2073876-4		77.2	75.0	mg/L	102.9	85-115	
Water	LCS	Total Suspended Solids	WG2073876-6		80.6	75.0	mg/L	107.5	85-115	
Water	LCS	Total Suspended Solids	WG2073876-8		79.7	75.0	mg/L	106.3	85-115	
Water	LCS	Total Dissolved Solids	WG2074688-2		412	425	mg/L	97.0	85-115	
Water	LCS	Total Dissolved Solids	WG2074688-5		425	425	mg/L	100.1	85-115	
Water	MB	Conductivity	WG2072293-1		<2.0	<2	uS/cm	-	2	
Water	MB	Conductivity	WG2072293-2		<2.0	<2	uS/cm	-	2	
Water	MB	Conductivity	WG2072293-3		<2.0	<2	uS/cm	-	2	
Water	MB	Conductivity	WG2072293-4		<2.0	<2	uS/cm	-	2	
Water	MB	Conductivity	WG2072293-5		<2.0	<2	uS/cm	-	2	
Water	MB	Conductivity	WG2072293-6		<2.0	<2	uS/cm	-	2	
Water	MB	Conductivity	WG2072293-7		<2.0	<2	uS/cm	-	2	
Water	MB	Conductivity	WG2072293-8		<2.0	<2	uS/cm	-	2	
Water	MB	Conductivity	WG2072718-1		<2.0	<2	uS/cm	-	2	
Water	MB	Conductivity	WG2072718-2		<2.0	<2	uS/cm	-	2	
Water	MB	Conductivity	WG2072718-3		<2.0	<2	uS/cm	-	2	
Water	MB	Conductivity	WG2072718-4		<2.0	<2	uS/cm	-	2	
Water	MB	Turbidity	WG2072780-1		<0.10	<0.1	NTU	-	0.1	
Water	MB	Turbidity	WG2072780-4		<0.10	<0.1	NTU	-	0.1	
Water	MB	Turbidity	WG2072780-7		<0.10	<0.1	NTU	-	0.1	
Water	MB	Total Suspended Solids	WG2073876-1		<3.0	<3	mg/L	-	3	
Water	MB	Total Suspended Solids	WG2073876-3		<3.0	<3	mg/L	-	3	
Water	MB	Total Suspended Solids	WG2073876-5		<3.0	<3	mg/L	-	3	
Water	MB	Total Suspended Solids	WG2073876-7		<3.0	<3	mg/L	-	3	
Water	MB	Total Dissolved Solids	WG2074688-1		<10	<10	mg/L	-	10	
Water	MB	Total Dissolved Solids	WG2074688-4		<10	<10	mg/L	-	10	
Water	MB	Turbidity	WG2072780-10		<0.10	<0.1	NTU	-	0.1	
Anions and Nutrients										
Water	CRM	Phosphorus (P)-Total	WG2072500-2	VA-ERA-PO4	7.35	7.17	mg/L	102.6	80-120	
Water	CRM	Phosphorus (P)-Total	WG2072500-6	VA-ERA-PO4	7.16	7.17	mg/L	99.8	80-120	
Water	CRM	Phosphorus (P)-Total Disso	WG2072609-2	VA-ERA-PO4	6.94	7.17	mg/L	96.8	80-120	
Water	CRM	Phosphorus (P)-Total Disso	WG2072609-6	VA-ERA-PO4	7.00	7.17	mg/L	97.6	80-120	
Water	CRM	Alkalinity, Total (as CaCO3)	WG2075827-2	VA-ALKL-CONTROL	14.6	15.0	mg/L	97.5	85-115	
Water	CRM	Alkalinity, Total (as CaCO3)	WG2075827-5	VA-ALKM-CONTROL	78.0	75.0	mg/L	104.0	85-115	
Water	CRM	Alkalinity, Total (as CaCO3)	WG2075827-8	VA-ALKH-CONTROL	252	250	mg/L	101.0	85-115	
Water	CRM	Ammonia, Total (as N)	WG2076557-2	VA-NH3-F	0.126	0.120	mg/L	105.3	85-115	
Water	CRM	Ammonia, Total (as N)	WG2076557-4	VA-NH3-F	0.127	0.120	mg/L	105.9	85-115	
Water	CRM	Ammonia, Total (as N)	WG2076557-6	VA-NH3-F	0.126	0.120	mg/L	104.9	85-115	
Water	CRM	Ammonia, Total (as N)	WG2076557-8	VA-NH3-F	0.121	0.120	mg/L	100.6	85-115	
Water	CRM	Phosphorus (P)-Total	WG2072500-10	VA-ERA-PO4	7.05	7.17	mg/L	98.4	80-120	
Water	CRM	Phosphorus (P)-Total	WG2072500-14	VA-ERA-PO4	6.92	7.17	mg/L	96.6	80-120	
Water	CRM	Ammonia, Total (as N)	WG2076557-10	VA-NH3-F	0.128	0.120	mg/L	106.8	85-115	
Water	LCS	Bromide (Br)	WG2072778-2		0.516	0.500	mg/L	103.1	85-115	
Water	LCS	Chloride (Cl)	WG2072778-2		102	100	mg/L	102.0	90-110	

Water	LCS	Fluoride (F)	WG2072778-2		1.03	1.00	mg/L	103.0	90-110
Water	LCS	Nitrate (as N)	WG2072778-2		2.64	2.50	mg/L	105.5	90-110
Water	LCS	Nitrite (as N)	WG2072778-2		0.508	0.500	mg/L	101.6	90-110
Water	LCS	Sulfate (SO4)	WG2072778-2		102	100	mg/L	102.3	90-110
Water	LCS	Total Kjeldahl Nitrogen	WG2075105-2		1.04	1.00	mg/L	104.0	75-125
Water	LCS	Total Kjeldahl Nitrogen	WG2075105-6		1.04	1.00	mg/L	103.5	75-125
Water	LCS	Total Kjeldahl Nitrogen	WG2075896-2		1.03	1.00	mg/L	103.1	75-125
Water	LCS	Total Kjeldahl Nitrogen	WG2075896-6		0.957	1.00	mg/L	95.7	75-125
Water	LCS	Bromide (Br)	WG2072778-18		0.516	0.500	mg/L	103.2	85-115
Water	LCS	Chloride (Cl)	WG2072778-18		102	100	mg/L	101.8	90-110
Water	LCS	Fluoride (F)	WG2072778-18		1.03	1.00	mg/L	102.8	90-110
Water	LCS	Nitrate (as N)	WG2072778-18		2.63	2.50	mg/L	105.4	90-110
Water	LCS	Nitrite (as N)	WG2072778-18		0.507	0.500	mg/L	101.5	90-110
Water	LCS	Sulfate (SO4)	WG2072778-18		102	100	mg/L	102.3	90-110
Water	MB	Phosphorus (P)-Total	WG2072500-1		<0.0020	<0.002	mg/L	-	0.002
Water	MB	Phosphorus (P)-Total	WG2072500-5		<0.0020	<0.002	mg/L	-	0.002
Water	MB	Phosphorus (P)-Total	WG2072500-9		<0.0020	<0.002	mg/L	-	0.002
Water	MB	Phosphorus (P)-Total Disso	WG2072609-1		<0.0020	<0.002	mg/L	-	0.002
Water	MB	Phosphorus (P)-Total Disso	WG2072609-5		<0.0020	<0.002	mg/L	-	0.002
Water	MB	Bromide (Br)	WG2072778-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Chloride (Cl)	WG2072778-1		<0.50	<0.5	mg/L	-	0.5
Water	MB	Fluoride (F)	WG2072778-1		<0.020	<0.02	mg/L	-	0.02
Water	MB	Nitrate (as N)	WG2072778-1		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Nitrite (as N)	WG2072778-1		<0.0010	<0.001	mg/L	-	0.001
Water	MB	Sulfate (SO4)	WG2072778-1		<0.30	<0.3	mg/L	-	0.3
Water	MB	Bromide (Br)	WG2072778-4		<0.050	<0.05	mg/L	-	0.05
Water	MB	Chloride (Cl)	WG2072778-4		<0.50	<0.5	mg/L	-	0.5
Water	MB	Fluoride (F)	WG2072778-4		<0.020	<0.02	mg/L	-	0.02
Water	MB	Nitrate (as N)	WG2072778-4		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Nitrite (as N)	WG2072778-4		<0.0010	<0.001	mg/L	-	0.001
Water	MB	Sulfate (SO4)	WG2072778-4		<0.30	<0.3	mg/L	-	0.3
Water	MB	Bromide (Br)	WG2072778-7		<0.050	<0.05	mg/L	-	0.05
Water	MB	Chloride (Cl)	WG2072778-7		<0.50	<0.5	mg/L	-	0.5
Water	MB	Fluoride (F)	WG2072778-7		<0.020	<0.02	mg/L	-	0.02
Water	MB	Nitrate (as N)	WG2072778-7		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Nitrite (as N)	WG2072778-7		<0.0010	<0.001	mg/L	-	0.001
Water	MB	Sulfate (SO4)	WG2072778-7		<0.30	<0.3	mg/L	-	0.3
Water	MB	Total Kjeldahl Nitrogen	WG2075105-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Total Kjeldahl Nitrogen	WG2075105-5		<0.050	<0.05	mg/L	-	0.05
Water	MB	Alkalinity, Total (as CaCO3)	WG2075827-1		<2.0	<2	mg/L	-	2
Water	MB	Alkalinity, Total (as CaCO3)	WG2075827-4		<2.0	<2	mg/L	-	2
Water	MB	Alkalinity, Total (as CaCO3)	WG2075827-7		<2.0	<2	mg/L	-	2
Water	MB	Total Kjeldahl Nitrogen	WG2075896-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Total Kjeldahl Nitrogen	WG2075896-5		<0.050	<0.05	mg/L	-	0.05
Water	MB	Ammonia, Total (as N)	WG2076557-1		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Ammonia, Total (as N)	WG2076557-3		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Ammonia, Total (as N)	WG2076557-5		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Ammonia, Total (as N)	WG2076557-7		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Ammonia, Total (as N)	WG2076557-9		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Phosphorus (P)-Total	WG2072500-13		<0.0020	<0.002	mg/L	-	0.002
Water	MB	Bromide (Br)	WG2072778-10		<0.050	<0.05	mg/L	-	0.05
Water	MB	Chloride (Cl)	WG2072778-10		<0.50	<0.5	mg/L	-	0.5
Water	MB	Fluoride (F)	WG2072778-10		<0.020	<0.02	mg/L	-	0.02
Water	MB	Nitrate (as N)	WG2072778-10		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Nitrite (as N)	WG2072778-10		<0.0010	<0.001	mg/L	-	0.001
Water	MB	Sulfate (SO4)	WG2072778-10		<0.30	<0.3	mg/L	-	0.3
Water	MB	Bromide (Br)	WG2072778-13		<0.050	<0.05	mg/L	-	0.05
Water	MB	Chloride (Cl)	WG2072778-13		<0.50	<0.5	mg/L	-	0.5
Water	MB	Fluoride (F)	WG2072778-13		<0.020	<0.02	mg/L	-	0.02
Water	MB	Nitrate (as N)	WG2072778-13		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Nitrite (as N)	WG2072778-13		<0.0010	<0.001	mg/L	-	0.001
Water	MB	Sulfate (SO4)	WG2072778-13		<0.30	<0.3	mg/L	-	0.3
Water	MB	Bromide (Br)	WG2072778-16		<0.050	<0.05	mg/L	-	0.05
Water	MB	Chloride (Cl)	WG2072778-16		<0.50	<0.5	mg/L	-	0.5
Water	MB	Fluoride (F)	WG2072778-16		<0.020	<0.02	mg/L	-	0.02
Water	MB	Nitrate (as N)	WG2072778-16		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Nitrite (as N)	WG2072778-16		<0.0010	<0.001	mg/L	-	0.001
Water	MB	Sulfate (SO4)	WG2072778-16		<0.30	<0.3	mg/L	-	0.3
Water	MB	Alkalinity, Total (as CaCO3)	WG2075827-10		<2.0	<2	mg/L	-	2
Water	MB	Alkalinity, Total (as CaCO3)	WG2075827-12		<2.0	<2	mg/L	-	2
Water	MB	Alkalinity, Total (as CaCO3)	WG2075827-14		<2.0	<2	mg/L	-	2
Water	MB	Alkalinity, Total (as CaCO3)	WG2075827-16		<2.0	<2	mg/L	-	2
Water	MB	Alkalinity, Total (as CaCO3)	WG2075827-18		<2.0	<2	mg/L	-	2
Water	MS	Phosphorus (P)-Total	WG2072500-8	Anonymous	0.0438	0.0500	mg/L	87.7	70-130
Water	MS	Phosphorus (P)-Total Disso	WG2072609-4	Anonymous	0.0598	0.0616	mg/L	96.5	70-130
Water	MS	Phosphorus (P)-Total Disso	WG2072609-8	L1600493-2	0.0504	0.0500	mg/L	100.9	70-130
Water	MS	Bromide (Br)	WG2072778-5	Anonymous	0.520	0.500	mg/L	104.0	75-125
Water	MS	Chloride (Cl)	WG2072778-5	Anonymous	102	100	mg/L	102.0	75-125
Water	MS	Fluoride (F)	WG2072778-5	Anonymous	1.03	1.00	mg/L	102.8	75-125
Water	MS	Nitrate (as N)	WG2072778-5	Anonymous	2.54	2.50	mg/L	101.5	75-125
Water	MS	Nitrite (as N)	WG2072778-5	Anonymous	0.510	0.500	mg/L	102.0	75-125
Water	MS	Sulfate (SO4)	WG2072778-5	Anonymous	103	100	mg/L	102.5	75-125
Water	MS	Bromide (Br)	WG2072778-8	Anonymous	0.524	0.500	mg/L	104.8	75-125
Water	MS	Chloride (Cl)	WG2072778-8	Anonymous	103	100	mg/L	103.0	75-125
Water	MS	Fluoride (F)	WG2072778-8	Anonymous	1.04	1.00	mg/L	103.8	75-125
Water	MS	Nitrate (as N)	WG2072778-8	Anonymous	2.56	2.50	mg/L	102.4	75-125

Water	MS	Nitrite (as N)	WG2072778-8	Anonymous	0.514	0.500	mg/L	102.8	75-125	
Water	MS	Sulfate (SO4)	WG2072778-8	Anonymous	104	100	mg/L	103.6	75-125	
Water	MS	Total Kjeldahl Nitrogen	WG2075105-4	Anonymous	2.18	2.19	mg/L	N/A	-	MS-B
Water	MS	Total Kjeldahl Nitrogen	WG2075105-8	L1600493-7	1.12	1.12	mg/L	100.7	70-130	
Water	MS	Total Kjeldahl Nitrogen	WG2075896-4	Anonymous	1.13	1.15	mg/L	98.7	70-130	
Water	MS	Total Kjeldahl Nitrogen	WG2075896-8	Anonymous	1.13	1.13	mg/L	99.6	70-130	
Water	MS	Phosphorus (P)-Total	WG2072500-12	Anonymous	0.0448	0.0500	mg/L	89.7	70-130	
Water	MS	Bromide (Br)	WG2072778-11	Anonymous	0.521	0.500	mg/L	104.1	75-125	
Water	MS	Chloride (Cl)	WG2072778-11	Anonymous	106	104	mg/L	101.9	75-125	
Water	MS	Fluoride (F)	WG2072778-11	Anonymous	1.06	1.03	mg/L	103.5	75-125	
Water	MS	Nitrate (as N)	WG2072778-11	Anonymous	2.66	2.62	mg/L	101.3	75-125	
Water	MS	Nitrite (as N)	WG2072778-11	Anonymous	0.505	0.500	mg/L	101.1	75-125	
Water	MS	Sulfate (SO4)	WG2072778-11	Anonymous	104	102	mg/L	102.4	75-125	
Water	MS	Chloride (Cl)	WG2072778-14	Anonymous	524	564	mg/L	N/A	-	MS-B
Water	MS	Bromide (Br)	WG2072778-17	Anonymous	0.537	0.500	mg/L	107.4	75-125	
Water	MS	Chloride (Cl)	WG2072778-17	Anonymous	106	100	mg/L	106.0	75-125	
Water	MS	Fluoride (F)	WG2072778-17	Anonymous	1.07	1.00	mg/L	107.1	75-125	
Water	MS	Nitrate (as N)	WG2072778-17	Anonymous	2.64	2.50	mg/L	105.5	75-125	
Water	MS	Nitrite (as N)	WG2072778-17	Anonymous	0.527	0.500	mg/L	105.4	75-125	
Water	MS	Sulfate (SO4)	WG2072778-17	Anonymous	107	100	mg/L	106.5	75-125	
Water	MS	Ammonia, Total (as N)	WG2076557-12	Anonymous	0.216	0.200	mg/L	108.0	75-125	
Water	MS	Ammonia, Total (as N)	WG2076557-14	Anonymous	0.215	0.206	mg/L	104.6	75-125	
Water	MS	Ammonia, Total (as N)	WG2076557-16	Anonymous	0.240	0.226	mg/L	107.2	75-125	
Water	MS	Ammonia, Total (as N)	WG2076557-18	Anonymous	3.85	2.29	mg/L	N/A	-	MS-B
Organic / Inorganic Carbon										
Water	LCS	Total Organic Carbon	WG2075268-1		8.95	8.57	mg/L	104.4	80-120	
Water	LCS	Total Organic Carbon	WG2075268-5		8.44	8.57	mg/L	98.5	80-120	
Water	LCS	Total Organic Carbon	WG2075268-9		8.38	8.57	mg/L	97.8	80-120	
Water	MB	Total Organic Carbon	WG2075268-4		<0.50	<0.5	mg/L	-	0.5	
Water	MB	Total Organic Carbon	WG2075268-8		<0.50	<0.5	mg/L	-	0.5	
Water	MS	Total Organic Carbon	WG2075268-3	Anonymous	8.80	9.03	mg/L	95.5	70-130	
Water	MS	Total Organic Carbon	WG2075268-7	L1600493-7	6.32	6.17	mg/L	103.1	70-130	
Total Metals										
Water	LCS	Mercury (Hg)-Total	WG2074230-2		0.00474	0.00500	ug/L	94.9	80-120	
Water	MB	Mercury (Hg)-Total	WG2074230-1		<0.00050	<0.0005	ug/L	-	0.0005	
Total Metals (Undigested)										
Water	CRM	Aluminum (Al)-Total	WG2072457-2	VA-HIGH-WATRM	2.03	2.00	mg/L	101.5	80-120	
Water	CRM	Antimony (Sb)-Total	WG2072457-2	VA-HIGH-WATRM	0.970	1.00	mg/L	97.0	80-120	
Water	CRM	Arsenic (As)-Total	WG2072457-2	VA-HIGH-WATRM	1.01	1.00	mg/L	101.5	80-120	
Water	CRM	Barium (Ba)-Total	WG2072457-2	VA-HIGH-WATRM	0.240	0.250	mg/L	95.9	80-120	
Water	CRM	Beryllium (Be)-Total	WG2072457-2	VA-HIGH-WATRM	0.102	0.100	mg/L	101.6	80-120	
Water	CRM	Bismuth (Bi)-Total	WG2072457-2	VA-HIGH-WATRM	0.924	1.00	mg/L	92.4	80-120	
Water	CRM	Boron (B)-Total	WG2072457-2	VA-HIGH-WATRM	0.97	1.00	mg/L	96.8	80-120	
Water	CRM	Cadmium (Cd)-Total	WG2072457-2	VA-HIGH-WATRM	0.0978	0.100	mg/L	97.8	80-120	
Water	CRM	Calcium (Ca)-Total	WG2072457-2	VA-HIGH-WATRM	51.4	50.0	mg/L	102.8	80-120	
Water	CRM	Chromium (Cr)-Total	WG2072457-2	VA-HIGH-WATRM	0.253	0.250	mg/L	101.3	80-120	
Water	CRM	Cobalt (Co)-Total	WG2072457-2	VA-HIGH-WATRM	0.243	0.250	mg/L	97.2	80-120	
Water	CRM	Copper (Cu)-Total	WG2072457-2	VA-HIGH-WATRM	0.241	0.250	mg/L	96.6	80-120	
Water	CRM	Iron (Fe)-Total	WG2072457-2	VA-HIGH-WATRM	1.11	1.00	mg/L	110.8	80-120	
Water	CRM	Lead (Pb)-Total	WG2072457-2	VA-HIGH-WATRM	0.472	0.500	mg/L	94.3	80-120	
Water	CRM	Lithium (Li)-Total	WG2072457-2	VA-HIGH-WATRM	0.256	0.250	mg/L	102.5	80-120	
Water	CRM	Magnesium (Mg)-Total	WG2072457-2	VA-HIGH-WATRM	51.0	50.0	mg/L	102.0	80-120	
Water	CRM	Manganese (Mn)-Total	WG2072457-2	VA-HIGH-WATRM	0.254	0.250	mg/L	101.5	80-120	
Water	CRM	Molybdenum (Mo)-Total	WG2072457-2	VA-HIGH-WATRM	0.243	0.250	mg/L	97.3	80-120	
Water	CRM	Nickel (Ni)-Total	WG2072457-2	VA-HIGH-WATRM	0.493	0.500	mg/L	98.5	80-120	
Water	CRM	Phosphorus (P)-Total	WG2072457-2	VA-HIGH-WATRM	2.47	2.50	mg/L	98.7	80-120	
Water	CRM	Potassium (K)-Total	WG2072457-2	VA-HIGH-WATRM	49.1	50.0	mg/L	98.2	80-120	
Water	CRM	Selenium (Se)-Total	WG2072457-2	VA-HIGH-WATRM	1.04	1.00	mg/L	104.2	80-120	
Water	CRM	Silicon (Si)-Total	WG2072457-2	VA-HIGH-WATRM	1.03	1.00	mg/L	102.7	80-120	
Water	CRM	Silver (Ag)-Total	WG2072457-2	VA-HIGH-WATRM	0.0940	0.100	mg/L	94.0	80-120	
Water	CRM	Sodium (Na)-Total	WG2072457-2	VA-HIGH-WATRM	49.3	50.0	mg/L	98.5	80-120	
Water	CRM	Strontium (Sr)-Total	WG2072457-2	VA-HIGH-WATRM	0.240	0.250	mg/L	96.2	80-120	
Water	CRM	Thallium (Tl)-Total	WG2072457-2	VA-HIGH-WATRM	0.936	1.00	mg/L	93.6	80-120	
Water	CRM	Tin (Sn)-Total	WG2072457-2	VA-HIGH-WATRM	0.489	0.500	mg/L	97.7	80-120	
Water	CRM	Titanium (Ti)-Total	WG2072457-2	VA-HIGH-WATRM	0.233	0.250	mg/L	93.3	80-120	
Water	CRM	Uranium (U)-Total	WG2072457-2	VA-HIGH-WATRM	0.00473	0.00500	mg/L	94.6	80-120	
Water	CRM	Vanadium (V)-Total	WG2072457-2	VA-HIGH-WATRM	0.499	0.500	mg/L	99.7	80-120	
Water	CRM	Zinc (Zn)-Total	WG2072457-2	VA-HIGH-WATRM	0.468	0.500	mg/L	93.6	80-120	
Water	CRM	Zirconium (Zr)-Total	WG2072457-2	VA-HIGH-WATRM	0.0935	0.100	mg/L	93.5	80-120	
Water	MB	Aluminum (Al)-Total	WG2072457-1		<0.00050	<0.0005	mg/L	-	0.0005	
Water	MB	Antimony (Sb)-Total	WG2072457-1		<0.000020	<0.00002	mg/L	-	0.00002	
Water	MB	Arsenic (As)-Total	WG2072457-1		<0.000020	<0.00002	mg/L	-	0.00002	
Water	MB	Barium (Ba)-Total	WG2072457-1		<0.000020	<0.00002	mg/L	-	0.00002	
Water	MB	Beryllium (Be)-Total	WG2072457-1		<0.000010	<0.00001	mg/L	-	0.00001	
Water	MB	Bismuth (Bi)-Total	WG2072457-1		<0.0000050	<0.000005	mg/L	-	0.000005	
Water	MB	Boron (B)-Total	WG2072457-1		<0.0050	<0.005	mg/L	-	0.005	
Water	MB	Cadmium (Cd)-Total	WG2072457-1		<0.0000050	<0.000005	mg/L	-	0.000005	
Water	MB	Calcium (Ca)-Total	WG2072457-1		<0.030	<0.03	mg/L	-	0.03	
Water	MB	Chromium (Cr)-Total	WG2072457-1		<0.00010	<0.0001	mg/L	-	0.0001	
Water	MB	Cobalt (Co)-Total	WG2072457-1		<0.0000050	<0.000005	mg/L	-	0.000005	
Water	MB	Copper (Cu)-Total	WG2072457-1		<0.00010	<0.0001	mg/L	-	0.0001	

Water	MB	Iron (Fe)-Total	WG2072457-1		<0.0010	<0.001	mg/L	-	0.001	
Water	MB	Lead (Pb)-Total	WG2072457-1		<0.0000050	<0.000005	mg/L	-	0.000005	
Water	MB	Lithium (Li)-Total	WG2072457-1		<0.00050	<0.0005	mg/L	-	0.0005	
Water	MB	Magnesium (Mg)-Total	WG2072457-1		<0.030	<0.03	mg/L	-	0.03	
Water	MB	Manganese (Mn)-Total	WG2072457-1		<0.000050	<0.00005	mg/L	-	0.00005	
Water	MB	Molybdenum (Mo)-Total	WG2072457-1		<0.000050	<0.00005	mg/L	-	0.00005	
Water	MB	Nickel (Ni)-Total	WG2072457-1		<0.000050	<0.00005	mg/L	-	0.00005	
Water	MB	Phosphorus (P)-Total	WG2072457-1		<0.050	<0.05	mg/L	-	0.05	
Water	MB	Potassium (K)-Total	WG2072457-1		<0.050	<0.05	mg/L	-	0.05	
Water	MB	Selenium (Se)-Total	WG2072457-1		<0.000040	<0.00004	mg/L	-	0.00004	
Water	MB	Silicon (Si)-Total	WG2072457-1		<0.050	<0.05	mg/L	-	0.05	
Water	MB	Silver (Ag)-Total	WG2072457-1		<0.0000050	<0.000005	mg/L	-	0.000005	
Water	MB	Sodium (Na)-Total	WG2072457-1		<0.010	<0.01	mg/L	-	0.01	
Water	MB	Strontium (Sr)-Total	WG2072457-1		<0.000050	<0.00005	mg/L	-	0.00005	
Water	MB	Thallium (Tl)-Total	WG2072457-1		<0.0000020	<0.000002	mg/L	-	0.000002	
Water	MB	Tin (Sn)-Total	WG2072457-1		<0.000010	<0.00001	mg/L	-	0.00001	
Water	MB	Titanium (Ti)-Total	WG2072457-1		<0.00050	<0.0005	mg/L	-	0.0005	
Water	MB	Uranium (U)-Total	WG2072457-1		<0.0000020	<0.000002	mg/L	-	0.000002	
Water	MB	Vanadium (V)-Total	WG2072457-1		<0.000050	<0.00005	mg/L	-	0.00005	
Water	MB	Zinc (Zn)-Total	WG2072457-1		<0.00050	<0.0005	mg/L	-	0.0005	
Water	MB	Zirconium (Zr)-Total	WG2072457-1		<0.00010	<0.0001	mg/L	-	0.0001	
Water	MS	Aluminum (Al)-Total	WG2072457-4	L1600493-7	0.202	0.209	mg/L	96.7	70-130	
Water	MS	Antimony (Sb)-Total	WG2072457-4	L1600493-7	0.0200	0.0208	mg/L	96.0	70-130	
Water	MS	Arsenic (As)-Total	WG2072457-4	L1600493-7	0.0202	0.0204	mg/L	98.9	70-130	
Water	MS	Barium (Ba)-Total	WG2072457-4	L1600493-7	0.0399	0.0407	mg/L	N/A	-	MS-B
Water	MS	Beryllium (Be)-Total	WG2072457-4	L1600493-7	0.0387	0.0400	mg/L	96.8	70-130	
Water	MS	Bismuth (Bi)-Total	WG2072457-4	L1600493-7	0.00872	0.0100	mg/L	87.2	70-130	
Water	MS	Boron (B)-Total	WG2072457-4	L1600493-7	0.0969	0.100	mg/L	96.9	70-130	
Water	MS	Cadmium (Cd)-Total	WG2072457-4	L1600493-7	0.00469	0.00481	mg/L	96.9	70-130	
Water	MS	Calcium (Ca)-Total	WG2072457-4	L1600493-7	65.6	70.7	mg/L	89.7	70-130	
Water	MS	Chromium (Cr)-Total	WG2072457-4	L1600493-7	0.0383	0.0400	mg/L	95.7	70-130	
Water	MS	Cobalt (Co)-Total	WG2072457-4	L1600493-7	0.0188	0.0200	mg/L	94.0	70-130	
Water	MS	Copper (Cu)-Total	WG2072457-4	L1600493-7	0.0197	0.0209	mg/L	94.0	70-130	
Water	MS	Iron (Fe)-Total	WG2072457-4	L1600493-7	1.91	2.01	mg/L	95.2	70-130	
Water	MS	Lead (Pb)-Total	WG2072457-4	L1600493-7	0.0195	0.0209	mg/L	93.2	70-130	
Water	MS	Lithium (Li)-Total	WG2072457-4	L1600493-7	0.0971	0.101	mg/L	96.1	70-130	
Water	MS	Magnesium (Mg)-Total	WG2072457-4	L1600493-7	53.0	54.2	mg/L	97.7	70-130	
Water	MS	Manganese (Mn)-Total	WG2072457-4	L1600493-7	0.0239	0.0249	mg/L	95.3	70-130	
Water	MS	Molybdenum (Mo)-Total	WG2072457-4	L1600493-7	0.0197	0.0209	mg/L	94.2	70-130	
Water	MS	Nickel (Ni)-Total	WG2072457-4	L1600493-7	0.0383	0.0403	mg/L	95.2	70-130	
Water	MS	Phosphorus (P)-Total	WG2072457-4	L1600493-7	2.59	2.50	mg/L	103.8	70-130	
Water	MS	Potassium (K)-Total	WG2072457-4	L1600493-7	49.9	50.8	mg/L	98.3	70-130	
Water	MS	Selenium (Se)-Total	WG2072457-4	L1600493-7	0.0425	0.0417	mg/L	102.2	70-130	
Water	MS	Silicon (Si)-Total	WG2072457-4	L1600493-7	3.12	3.19	mg/L	N/A	-	MS-B
Water	MS	Silver (Ag)-Total	WG2072457-4	L1600493-7	0.00383	0.00401	mg/L	95.6	70-130	
Water	MS	Sodium (Na)-Total	WG2072457-4	L1600493-7	5.50	5.76	mg/L	N/A	-	MS-B
Water	MS	Strontium (Sr)-Total	WG2072457-4	L1600493-7	0.130	0.133	mg/L	N/A	-	MS-B
Water	MS	Thallium (Tl)-Total	WG2072457-4	L1600493-7	0.00432	0.00467	mg/L	91.2	70-130	
Water	MS	Tin (Sn)-Total	WG2072457-4	L1600493-7	0.0197	0.0200	mg/L	98.4	70-130	
Water	MS	Titanium (Ti)-Total	WG2072457-4	L1600493-7	0.0380	0.0400	mg/L	95.0	70-130	
Water	MS	Uranium (U)-Total	WG2072457-4	L1600493-7	0.00419	0.00454	mg/L	91.3	70-130	
Water	MS	Vanadium (V)-Total	WG2072457-4	L1600493-7	0.0960	0.100	mg/L	95.9	70-130	
Water	MS	Zinc (Zn)-Total	WG2072457-4	L1600493-7	0.383	0.412	mg/L	92.7	70-130	
Water	MS	Zirconium (Zr)-Total	WG2072457-4	L1600493-7	0.0384	0.0400	mg/L	95.9	70-130	
Dissolved Metals										
Water	CRM	Aluminum (Al)-Dissolved	WG2072251-2	VA-HIGH-WATRM	2.03	2.00	mg/L	101.7	80-120	
Water	CRM	Antimony (Sb)-Dissolved	WG2072251-2	VA-HIGH-WATRM	0.971	1.00	mg/L	97.1	80-120	
Water	CRM	Arsenic (As)-Dissolved	WG2072251-2	VA-HIGH-WATRM	1.04	1.00	mg/L	103.6	80-120	
Water	CRM	Barium (Ba)-Dissolved	WG2072251-2	VA-HIGH-WATRM	0.244	0.250	mg/L	97.5	80-120	
Water	CRM	Beryllium (Be)-Dissolved	WG2072251-2	VA-HIGH-WATRM	0.102	0.100	mg/L	101.8	80-120	
Water	CRM	Bismuth (Bi)-Dissolved	WG2072251-2	VA-HIGH-WATRM	0.953	1.00	mg/L	95.3	80-120	
Water	CRM	Boron (B)-Dissolved	WG2072251-2	VA-HIGH-WATRM	0.97	1.00	mg/L	97.0	80-120	
Water	CRM	Cadmium (Cd)-Dissolved	WG2072251-2	VA-HIGH-WATRM	0.0977	0.100	mg/L	97.7	80-120	
Water	CRM	Calcium (Ca)-Dissolved	WG2072251-2	VA-HIGH-WATRM	54.4	50.0	mg/L	108.7	80-120	
Water	CRM	Chromium (Cr)-Dissolved	WG2072251-2	VA-HIGH-WATRM	0.257	0.250	mg/L	102.8	80-120	
Water	CRM	Cobalt (Co)-Dissolved	WG2072251-2	VA-HIGH-WATRM	0.252	0.250	mg/L	100.7	80-120	
Water	CRM	Copper (Cu)-Dissolved	WG2072251-2	VA-HIGH-WATRM	0.252	0.250	mg/L	100.7	80-120	
Water	CRM	Iron (Fe)-Dissolved	WG2072251-2	VA-HIGH-WATRM	0.952	1.00	mg/L	95.2	80-120	
Water	CRM	Lead (Pb)-Dissolved	WG2072251-2	VA-HIGH-WATRM	0.488	0.500	mg/L	97.6	80-120	
Water	CRM	Lithium (Li)-Dissolved	WG2072251-2	VA-HIGH-WATRM	0.249	0.250	mg/L	99.5	80-120	
Water	CRM	Magnesium (Mg)-Dissolved	WG2072251-2	VA-HIGH-WATRM	53.4	50.0	mg/L	106.7	80-120	
Water	CRM	Manganese (Mn)-Dissolved	WG2072251-2	VA-HIGH-WATRM	0.257	0.250	mg/L	103.0	80-120	
Water	CRM	Molybdenum (Mo)-Dissolvec	WG2072251-2	VA-HIGH-WATRM	0.241	0.250	mg/L	96.4	80-120	
Water	CRM	Nickel (Ni)-Dissolved	WG2072251-2	VA-HIGH-WATRM	0.509	0.500	mg/L	101.8	80-120	
Water	CRM	Phosphorus (P)-Dissolved	WG2072251-2	VA-HIGH-WATRM	2.66	2.50	mg/L	106.3	80-120	
Water	CRM	Potassium (K)-Dissolved	WG2072251-2	VA-HIGH-WATRM	52.9	50.0	mg/L	105.7	80-120	
Water	CRM	Selenium (Se)-Dissolved	WG2072251-2	VA-HIGH-WATRM	1.01	1.00	mg/L	101.2	80-120	
Water	CRM	Silicon (Si)-Dissolved	WG2072251-2	VA-HIGH-WATRM	1.07	1.00	mg/L	107.5	80-120	
Water	CRM	Silver (Ag)-Dissolved	WG2072251-2	VA-HIGH-WATRM	0.0972	0.100	mg/L	97.2	80-120	
Water	CRM	Sodium (Na)-Dissolved	WG2072251-2	VA-HIGH-WATRM	51.0	50.0	mg/L	102.1	80-120	
Water	CRM	Strontium (Sr)-Dissolved	WG2072251-2	VA-HIGH-WATRM	0.249	0.250	mg/L	99.7	80-120	
Water	CRM	Thallium (Tl)-Dissolved	WG2072251-2	VA-HIGH-WATRM	0.965	1.00	mg/L	96.5	80-120	
Water	CRM	Tin (Sn)-Dissolved	WG2072251-2	VA-HIGH-WATRM	0.474	0.500	mg/L	94.8	80-120	
Water	CRM	Titanium (Ti)-Dissolved	WG2072251-2	VA-HIGH-WATRM	0.239	0.250	mg/L	95.6	80-120	
Water	CRM	Uranium (U)-Dissolved	WG2072251-2	VA-HIGH-WATRM	0.00490	0.00500	mg/L	97.9	80-120	
Water	CRM	Vanadium (V)-Dissolved	WG2072251-2	VA-HIGH-WATRM	0.515	0.500	mg/L	103.1	80-120	

Water	CRM	Zinc (Zn)-Dissolved	WG2072251-2	VA-HIGH-WATRM	0.491	0.500	mg/L	98.2	80-120
Water	CRM	Zirconium (Zr)-Dissolved	WG2072251-2	VA-HIGH-WATRM	0.0912	0.100	mg/L	91.2	80-120
Water	LCS	Aluminum (Al)-Dissolved	WG2072251-3		2.03	2.00	mg/L	101.7	80-120
Water	LCS	Antimony (Sb)-Dissolved	WG2072251-3		0.971	1.00	mg/L	97.1	80-120
Water	LCS	Arsenic (As)-Dissolved	WG2072251-3		1.04	1.00	mg/L	103.6	80-120
Water	LCS	Barium (Ba)-Dissolved	WG2072251-3		0.244	0.250	mg/L	97.5	80-120
Water	LCS	Beryllium (Be)-Dissolved	WG2072251-3		0.102	0.100	mg/L	101.8	80-120
Water	LCS	Bismuth (Bi)-Dissolved	WG2072251-3		0.953	1.00	mg/L	95.3	80-120
Water	LCS	Boron (B)-Dissolved	WG2072251-3		0.970	1.00	mg/L	97.0	80-120
Water	LCS	Cadmium (Cd)-Dissolved	WG2072251-3		0.0977	0.100	mg/L	97.7	80-120
Water	LCS	Calcium (Ca)-Dissolved	WG2072251-3		54.4	50.0	mg/L	108.7	80-120
Water	LCS	Chromium (Cr)-Dissolved	WG2072251-3		0.257	0.250	mg/L	102.8	80-120
Water	LCS	Cobalt (Co)-Dissolved	WG2072251-3		0.252	0.250	mg/L	100.7	80-120
Water	LCS	Copper (Cu)-Dissolved	WG2072251-3		0.252	0.250	mg/L	100.7	80-120
Water	LCS	Iron (Fe)-Dissolved	WG2072251-3		0.952	1.00	mg/L	95.2	80-120
Water	LCS	Lead (Pb)-Dissolved	WG2072251-3		0.488	0.500	mg/L	97.6	80-120
Water	LCS	Lithium (Li)-Dissolved	WG2072251-3		0.249	0.250	mg/L	99.5	80-120
Water	LCS	Magnesium (Mg)-Dissolved	WG2072251-3		53.4	50.0	mg/L	106.7	80-120
Water	LCS	Manganese (Mn)-Dissolved	WG2072251-3		0.257	0.250	mg/L	103.0	80-120
Water	LCS	Molybdenum (Mo)-Dissolvec	WG2072251-3		0.241	0.250	mg/L	96.4	80-120
Water	LCS	Nickel (Ni)-Dissolved	WG2072251-3		0.509	0.500	mg/L	101.8	80-120
Water	LCS	Phosphorus (P)-Dissolved	WG2072251-3		2.66	2.50	mg/L	106.3	80-120
Water	LCS	Potassium (K)-Dissolved	WG2072251-3		52.9	50.0	mg/L	105.7	80-120
Water	LCS	Selenium (Se)-Dissolved	WG2072251-3		1.01	1.00	mg/L	101.2	80-120
Water	LCS	Silicon (Si)-Dissolved	WG2072251-3		1.07	1.00	mg/L	107.5	80-120
Water	LCS	Silver (Ag)-Dissolved	WG2072251-3		0.0972	0.100	mg/L	97.2	80-120
Water	LCS	Sodium (Na)-Dissolved	WG2072251-3		51.0	50.0	mg/L	102.1	80-120
Water	LCS	Strontium (Sr)-Dissolved	WG2072251-3		0.249	0.250	mg/L	99.7	80-120
Water	LCS	Thallium (Tl)-Dissolved	WG2072251-3		0.965	1.00	mg/L	96.5	80-120
Water	LCS	Tin (Sn)-Dissolved	WG2072251-3		0.474	0.500	mg/L	94.8	80-120
Water	LCS	Titanium (Ti)-Dissolved	WG2072251-3		0.239	0.250	mg/L	95.6	80-120
Water	LCS	Uranium (U)-Dissolved	WG2072251-3		0.00490	0.00500	mg/L	97.9	80-120
Water	LCS	Vanadium (V)-Dissolved	WG2072251-3		0.515	0.500	mg/L	103.1	80-120
Water	LCS	Zinc (Zn)-Dissolved	WG2072251-3		0.491	0.500	mg/L	98.2	80-120
Water	LCS	Zirconium (Zr)-Dissolved	WG2072251-3		0.0912	0.100	mg/L	91.2	80-120
Water	LCS	Mercury (Hg)-Dissolved	WG2074214-2		0.00469	0.00500	ug/L	93.7	80-120
Water	MB	Aluminum (Al)-Dissolved	WG2072251-1		<0.00050	<0.0005	mg/L	-	0.0005
Water	MB	Antimony (Sb)-Dissolved	WG2072251-1		<0.000020	<0.00002	mg/L	-	0.00002
Water	MB	Arsenic (As)-Dissolved	WG2072251-1		<0.000020	<0.00002	mg/L	-	0.00002
Water	MB	Barium (Ba)-Dissolved	WG2072251-1		<0.000020	<0.00002	mg/L	-	0.00002
Water	MB	Beryllium (Be)-Dissolved	WG2072251-1		<0.000010	<0.00001	mg/L	-	0.00001
Water	MB	Bismuth (Bi)-Dissolved	WG2072251-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Boron (B)-Dissolved	WG2072251-1		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Cadmium (Cd)-Dissolved	WG2072251-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Calcium (Ca)-Dissolved	WG2072251-1		<0.030	<0.03	mg/L	-	0.03
Water	MB	Chromium (Cr)-Dissolved	WG2072251-1		<0.00010	<0.0001	mg/L	-	0.0001
Water	MB	Cobalt (Co)-Dissolved	WG2072251-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Copper (Cu)-Dissolved	WG2072251-1		<0.00010	<0.0001	mg/L	-	0.0001
Water	MB	Iron (Fe)-Dissolved	WG2072251-1		<0.0010	<0.001	mg/L	-	0.001
Water	MB	Lead (Pb)-Dissolved	WG2072251-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Lithium (Li)-Dissolved	WG2072251-1		<0.00050	<0.0005	mg/L	-	0.0005
Water	MB	Magnesium (Mg)-Dissolved	WG2072251-1		<0.030	<0.03	mg/L	-	0.03
Water	MB	Manganese (Mn)-Dissolved	WG2072251-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Molybdenum (Mo)-Dissolvec	WG2072251-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Nickel (Ni)-Dissolved	WG2072251-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Phosphorus (P)-Dissolved	WG2072251-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Potassium (K)-Dissolved	WG2072251-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Selenium (Se)-Dissolved	WG2072251-1		<0.000040	<0.00004	mg/L	-	0.00004
Water	MB	Silicon (Si)-Dissolved	WG2072251-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Silver (Ag)-Dissolved	WG2072251-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Sodium (Na)-Dissolved	WG2072251-1		<0.010	<0.01	mg/L	-	0.01
Water	MB	Strontium (Sr)-Dissolved	WG2072251-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Thallium (Tl)-Dissolved	WG2072251-1		<0.0000020	<0.000002	mg/L	-	0.000002
Water	MB	Tin (Sn)-Dissolved	WG2072251-1		<0.000010	<0.00001	mg/L	-	0.00001
Water	MB	Titanium (Ti)-Dissolved	WG2072251-1		<0.00050	<0.0005	mg/L	-	0.0005
Water	MB	Uranium (U)-Dissolved	WG2072251-1		<0.0000020	<0.000002	mg/L	-	0.000002
Water	MB	Vanadium (V)-Dissolved	WG2072251-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Zinc (Zn)-Dissolved	WG2072251-1		<0.00050	<0.0005	mg/L	-	0.0005
Water	MB	Zirconium (Zr)-Dissolved	WG2072251-1		<0.00010	<0.0001	mg/L	-	0.0001
Water	MB	Mercury (Hg)-Dissolved	WG2074214-1		<0.00050	<0.0005	ug/L	-	0.0005
Water	MS	Mercury (Hg)-Dissolved	WG2074214-3	L1600493-2	0.00498	0.00559	ug/L	87.9	70-130
Aggregate Organics									
Water	LCS	BOD	WG2072416-2		191	198	mg/L	96.4	85-115
Water	LCS	COD	WG2077274-3		760	750	mg/L	101.3	85-115
Water	LCS	COD	WG2077274-6		761	750	mg/L	101.5	85-115
Water	LCS	COD	WG2077274-10		760	750	mg/L	101.3	85-115
Water	MB	BOD	WG2072416-1		<2.0	<2	mg/L	-	2
Water	MB	COD	WG2077274-1		<20	<20	mg/L	-	20
Water	MB	COD	WG2077274-5		<20	<20	mg/L	-	20
Water	MB	COD	WG2077274-9		<20	<20	mg/L	-	20
Water	MS	COD	WG2077274-4	Anonymous	604	720	mg/L	76.7	75-125
Water	MS	COD	WG2077274-8	Anonymous	523	500	mg/L	104.5	75-125

Project 15-1438
Report To Kyle Hawes, ECOSCAPE ENVIRONMENTAL CONSULTANTS LTD.
ALS File No. L1604267
Date Received 28-Apr-15 10:10
Date 12-May-15

REPLICATE RESULTS

Sample ID	Matrix	ALS ID	Analyte	Replicate 1	Replicate 2	Units	RPD	RPD Limit	Diff	Diff Limit	Qualifier
Anions and Nutrients											
L1604267-1	Water	WG2081748-11	Ammonia, Total (as N)	<0.0050	<0.0050	mg/L	N/A	20	-	-	RPD-NA
L1604267-5	Water	WG2078339-3	Bromide (Br)	<0.050	<0.050	mg/L	N/A	20	-	-	RPD-NA
L1604267-5	Water	WG2078339-3	Chloride (Cl)	1.02	1.02	mg/L	0.1	20	-	-	-
L1604267-5	Water	WG2078339-3	Fluoride (F)	0.078	0.078	mg/L	0.5	20	-	-	-
L1604267-5	Water	WG2078339-3	Nitrate (as N)	0.139	0.138	mg/L	0.3	20	-	-	-
L1604267-5	Water	WG2078339-3	Nitrite (as N)	<0.0010	<0.0010	mg/L	N/A	20	-	-	RPD-NA
L1604267-1	Water	WG2078655-3	Phosphorus (P)-Total Dissolved	<0.0020	<0.0020	mg/L	N/A	20	-	-	RPD-NA
L1604267-5	Water	WG2078339-3	Sulfate (SO4)	12.0	12.0	mg/L	0.1	20	-	-	-
Total Metals											
L1604267-4	Water	WG2079303-3	Mercury (Hg)-Total	0.00073	0.00071	ug/L	N/A	20	-	-	RPD-NA
Aggregate Organics											
L1604267-7	Water	WG2078257-7	BOD	<2.0	<2.0	mg/L	N/A	20	-	-	RPD-NA

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QUALITY CONTROL RESULTS

Matrix	QC Type	Analyte	QC Spl. No.	Reference	Result	Target	Units	%	Limits	Qualifier
Physical Tests										
Water	CRM	Turbidity	WG2078541-2	VA-FORM-40	39.1	40.0	NTU	97.8	85-115	
Water	CRM	Turbidity	WG2078541-5	VA-FORM-40	39.9	40.0	NTU	99.8	85-115	
Water	CRM	Turbidity	WG2078541-8	VA-FORM-40	40.1	40.0	NTU	100.3	85-115	
Water	CRM	Conductivity	WG2079058-17	VA-EC-PCT-CONTROL	147	147	uS/cm	99.9	90-110	
Water	CRM	Conductivity	WG2079058-18	VA-EC-PCT-CONTROL	147	147	uS/cm	100.2	90-110	
Water	CRM	Conductivity	WG2079058-19	VA-EC-PCT-CONTROL	148	147	uS/cm	100.5	90-110	
Water	CRM	Conductivity	WG2079058-20	VA-EC-PCT-CONTROL	149	147	uS/cm	101.4	90-110	
Water	CRM	Conductivity	WG2079058-21	VA-EC-PCT-CONTROL	148	147	uS/cm	100.5	90-110	
Water	CRM	Conductivity	WG2079058-22	VA-EC-PCT-CONTROL	149	147	uS/cm	101.3	90-110	
Water	CRM	Conductivity	WG2079058-23	VA-EC-PCT-CONTROL	149	147	uS/cm	101.4	90-110	
Water	CRM	Conductivity	WG2079058-24	VA-EC-PCT-CONTROL	149	147	uS/cm	101.2	90-110	
Water	CRM	pH	WG2079058-25	VA-PH7-BUF	7.05	7.00	pH	7.05	6.9-7.1	
Water	CRM	pH	WG2079058-26	VA-PH7-BUF	7.06	7.00	pH	7.06	6.9-7.1	
Water	CRM	pH	WG2079058-27	VA-PH7-BUF	7.05	7.00	pH	7.05	6.9-7.1	
Water	CRM	pH	WG2079058-28	VA-PH7-BUF	7.05	7.00	pH	7.05	6.9-7.1	
Water	CRM	pH	WG2079058-29	VA-PH7-BUF	7.05	7.00	pH	7.05	6.9-7.1	
Water	CRM	pH	WG2079058-30	VA-PH7-BUF	7.06	7.00	pH	7.06	6.9-7.1	
Water	CRM	pH	WG2079058-31	VA-PH7-BUF	7.05	7.00	pH	7.05	6.9-7.1	
Water	CRM	pH	WG2079058-32	VA-PH7-BUF	7.04	7.00	pH	7.04	6.9-7.1	
Water	LCS	Total Suspended Solids	WG2079166-2		76.4	75.0	mg/L	101.9	85-115	
Water	LCS	Total Suspended Solids	WG2079166-5		79.0	75.0	mg/L	105.4	85-115	
Water	LCS	Total Suspended Solids	WG2079166-8		77.7	75.0	mg/L	103.6	85-115	
Water	LCS	Total Dissolved Solids	WG2079311-2		425	425	mg/L	99.9	85-115	
Water	LCS	Total Dissolved Solids	WG2079311-5		439	425	mg/L	103.4	85-115	
Water	MB	Turbidity	WG2078541-1		<0.10	<0.1	NTU	-	0.1	
Water	MB	Turbidity	WG2078541-4		<0.10	<0.1	NTU	-	0.1	
Water	MB	Turbidity	WG2078541-7		<0.10	<0.1	NTU	-	0.1	
Water	MB	Conductivity	WG2079058-1		<2.0	<2	uS/cm	-	2	
Water	MB	Conductivity	WG2079058-2		<2.0	<2	uS/cm	-	2	
Water	MB	Conductivity	WG2079058-3		<2.0	<2	uS/cm	-	2	
Water	MB	Conductivity	WG2079058-4		<2.0	<2	uS/cm	-	2	
Water	MB	Conductivity	WG2079058-5		<2.0	<2	uS/cm	-	2	
Water	MB	Conductivity	WG2079058-6		<2.0	<2	uS/cm	-	2	
Water	MB	Conductivity	WG2079058-7		<2.0	<2	uS/cm	-	2	
Water	MB	Conductivity	WG2079058-8		<2.0	<2	uS/cm	-	2	
Water	MB	Total Suspended Solids	WG2079166-1		<3.0	<3	mg/L	-	3	
Water	MB	Total Suspended Solids	WG2079166-4		<3.0	<3	mg/L	-	3	
Water	MB	Total Suspended Solids	WG2079166-7		<3.0	<3	mg/L	-	3	
Water	MB	Total Dissolved Solids	WG2079311-1		<10	<10	mg/L	-	10	
Water	MB	Total Dissolved Solids	WG2079311-4		<10	<10	mg/L	-	10	
Anions and Nutrients										
Water	CRM	Phosphorus (P)-Total	WG2078614-2	VA-ERA-PO4	7.41	7.17	mg/L	103.3	80-120	
Water	CRM	Phosphorus (P)-Total	WG2078614-6	VA-ERA-PO4	7.18	7.17	mg/L	100.2	80-120	
Water	CRM	Phosphorus (P)-Total Dissol	WG2078655-2	VA-ERA-PO4	7.46	7.17	mg/L	104.1	80-120	
Water	CRM	Alkalinity, Total (as CaCO3)	WG2079352-2	VA-ALKL-CONTROL	15.2	15.0	mg/L	101.1	85-115	
Water	CRM	Alkalinity, Total (as CaCO3)	WG2079352-5	VA-ALKM-CONTROL	75.8	75.0	mg/L	101.1	85-115	
Water	CRM	Alkalinity, Total (as CaCO3)	WG2079352-8	VA-ALKH-CONTROL	259	250	mg/L	103.7	85-115	
Water	CRM	Ammonia, Total (as N)	WG2081748-2	VA-NH3-F	0.110	0.120	mg/L	91.3	85-115	
Water	CRM	Ammonia, Total (as N)	WG2081748-4	VA-NH3-F	0.107	0.120	mg/L	88.8	85-115	
Water	CRM	Ammonia, Total (as N)	WG2081748-6	VA-NH3-F	0.110	0.120	mg/L	91.6	85-115	
Water	CRM	Ammonia, Total (as N)	WG2081748-8	VA-NH3-F	0.111	0.120	mg/L	92.2	85-115	
Water	CRM	Phosphorus (P)-Total	WG2078614-10	VA-ERA-PO4	7.40	7.17	mg/L	103.2	80-120	
Water	CRM	Phosphorus (P)-Total	WG2078614-14	VA-ERA-PO4	7.18	7.17	mg/L	100.1	80-120	
Water	CRM	Ammonia, Total (as N)	WG2081748-10	VA-NH3-F	0.112	0.120	mg/L	93.5	85-115	
Water	LCS	Bromide (Br)	WG2078339-2		0.511	0.500	mg/L	102.2	85-115	
Water	LCS	Chloride (Cl)	WG2078339-2		101	100	mg/L	101.0	90-110	
Water	LCS	Fluoride (F)	WG2078339-2		1.02	1.00	mg/L	102.1	90-110	
Water	LCS	Nitrate (as N)	WG2078339-2		2.51	2.50	mg/L	100.4	90-110	
Water	LCS	Nitrite (as N)	WG2078339-2		0.504	0.500	mg/L	100.8	90-110	
Water	LCS	Sulfate (SO4)	WG2078339-2		101	100	mg/L	101.4	90-110	
Water	LCS	Total Kjeldahl Nitrogen	WG2081685-2		1.06	1.00	mg/L	106.2	75-125	
Water	LCS	Total Kjeldahl Nitrogen	WG2081685-6		1.01	1.00	mg/L	100.9	75-125	
Water	LCS	Total Kjeldahl Nitrogen	WG2082346-2		1.04	1.00	mg/L	103.9	75-125	
Water	LCS	Bromide (Br)	WG2078339-12		0.515	0.500	mg/L	102.9	85-115	
Water	LCS	Chloride (Cl)	WG2078339-12		101	100	mg/L	101.5	90-110	
Water	LCS	Fluoride (F)	WG2078339-12		1.02	1.00	mg/L	102.2	90-110	

Water	LCS	Nitrate (as N)	WG2078339-12		2.52	2.50	mg/L	100.8	90-110
Water	LCS	Nitrite (as N)	WG2078339-12		0.502	0.500	mg/L	100.3	90-110
Water	LCS	Sulfate (SO4)	WG2078339-12		102	100	mg/L	102.0	90-110
Water	MB	Bromide (Br)	WG2078339-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Chloride (Cl)	WG2078339-1		<0.50	<0.5	mg/L	-	0.5
Water	MB	Fluoride (F)	WG2078339-1		<0.020	<0.02	mg/L	-	0.02
Water	MB	Nitrate (as N)	WG2078339-1		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Nitrite (as N)	WG2078339-1		<0.0010	<0.001	mg/L	-	0.001
Water	MB	Sulfate (SO4)	WG2078339-1		<0.30	<0.3	mg/L	-	0.3
Water	MB	Bromide (Br)	WG2078339-4		<0.050	<0.05	mg/L	-	0.05
Water	MB	Chloride (Cl)	WG2078339-4		<0.50	<0.5	mg/L	-	0.5
Water	MB	Fluoride (F)	WG2078339-4		<0.020	<0.02	mg/L	-	0.02
Water	MB	Nitrate (as N)	WG2078339-4		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Nitrite (as N)	WG2078339-4		<0.0010	<0.001	mg/L	-	0.001
Water	MB	Sulfate (SO4)	WG2078339-4		<0.30	<0.3	mg/L	-	0.3
Water	MB	Bromide (Br)	WG2078339-7		<0.050	<0.05	mg/L	-	0.05
Water	MB	Chloride (Cl)	WG2078339-7		<0.50	<0.5	mg/L	-	0.5
Water	MB	Fluoride (F)	WG2078339-7		<0.020	<0.02	mg/L	-	0.02
Water	MB	Nitrate (as N)	WG2078339-7		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Nitrite (as N)	WG2078339-7		<0.0010	<0.001	mg/L	-	0.001
Water	MB	Sulfate (SO4)	WG2078339-7		<0.30	<0.3	mg/L	-	0.3
Water	MB	Phosphorus (P)-Total	WG2078614-1		<0.0020	<0.002	mg/L	-	0.002
Water	MB	Phosphorus (P)-Total	WG2078614-5		<0.0020	<0.002	mg/L	-	0.002
Water	MB	Phosphorus (P)-Total	WG2078614-9		<0.0020	<0.002	mg/L	-	0.002
Water	MB	Phosphorus (P)-Total Dissol	WG2078655-1		<0.0020	<0.002	mg/L	-	0.002
Water	MB	Alkalinity, Total (as CaCO3)	WG2079352-1		<2.0	<2	mg/L	-	2
Water	MB	Alkalinity, Total (as CaCO3)	WG2079352-4		<2.0	<2	mg/L	-	2
Water	MB	Alkalinity, Total (as CaCO3)	WG2079352-7		<2.0	<2	mg/L	-	2
Water	MB	Total Kjeldahl Nitrogen	WG2081685-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Total Kjeldahl Nitrogen	WG2081685-5		<0.050	<0.05	mg/L	-	0.05
Water	MB	Ammonia, Total (as N)	WG2081748-1		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Ammonia, Total (as N)	WG2081748-3		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Ammonia, Total (as N)	WG2081748-5		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Ammonia, Total (as N)	WG2081748-7		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Ammonia, Total (as N)	WG2081748-9		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Total Kjeldahl Nitrogen	WG2082346-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Bromide (Br)	WG2078339-10		<0.050	<0.05	mg/L	-	0.05
Water	MB	Chloride (Cl)	WG2078339-10		<0.50	<0.5	mg/L	-	0.5
Water	MB	Fluoride (F)	WG2078339-10		<0.020	<0.02	mg/L	-	0.02
Water	MB	Nitrate (as N)	WG2078339-10		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Nitrite (as N)	WG2078339-10		<0.0010	<0.001	mg/L	-	0.001
Water	MB	Sulfate (SO4)	WG2078339-10		<0.30	<0.3	mg/L	-	0.3
Water	MB	Phosphorus (P)-Total	WG2078614-13		<0.0020	<0.002	mg/L	-	0.002
Water	MB	Alkalinity, Total (as CaCO3)	WG2079352-10		<2.0	<2	mg/L	-	2
Water	MB	Alkalinity, Total (as CaCO3)	WG2079352-12		<2.0	<2	mg/L	-	2
Water	MS	Bromide (Br)	WG2078339-5	L1604267-4	0.518	0.500	mg/L	103.6	75-125
Water	MS	Chloride (Cl)	WG2078339-5	L1604267-4	103	101	mg/L	101.9	75-125
Water	MS	Fluoride (F)	WG2078339-5	L1604267-4	1.10	1.07	mg/L	102.2	75-125
Water	MS	Nitrate (as N)	WG2078339-5	L1604267-4	2.66	2.64	mg/L	100.9	75-125
Water	MS	Nitrite (as N)	WG2078339-5	L1604267-4	0.501	0.500	mg/L	100.2	75-125
Water	MS	Sulfate (SO4)	WG2078339-5	L1604267-4	112	111	mg/L	100.6	75-125
Water	MS	Bromide (Br)	WG2078339-8	L1604267-9	0.518	0.500	mg/L	103.5	75-125
Water	MS	Chloride (Cl)	WG2078339-8	L1604267-9	102	100	mg/L	102.0	75-125
Water	MS	Fluoride (F)	WG2078339-8	L1604267-9	1.03	1.00	mg/L	102.8	75-125
Water	MS	Nitrate (as N)	WG2078339-8	L1604267-9	2.53	2.50	mg/L	101.4	75-125
Water	MS	Nitrite (as N)	WG2078339-8	L1604267-9	0.504	0.500	mg/L	100.8	75-125
Water	MS	Sulfate (SO4)	WG2078339-8	L1604267-9	103	100	mg/L	102.6	75-125
Water	MS	Phosphorus (P)-Total	WG2078614-4	Anonymous	0.0542	0.0563	mg/L	95.9	70-130
Water	MS	Phosphorus (P)-Total	WG2078614-8	Anonymous	0.0530	0.0569	mg/L	92.3	70-130
Water	MS	Phosphorus (P)-Total Dissol	WG2078655-4	L1604267-2	0.0495	0.0500	mg/L	98.9	70-130
Water	MS	Total Kjeldahl Nitrogen	WG2081685-4	Anonymous	1.10	1.08	mg/L	101.7	70-130
Water	MS	Total Kjeldahl Nitrogen	WG2081685-8	Anonymous	1.13	1.13	mg/L	100.2	70-130
Water	MS	Total Kjeldahl Nitrogen	WG2082346-4	Anonymous	0.00549	1.00	mg/L	0.55	70-130 MSTN
Water	MS	Bromide (Br)	WG2078339-11	Anonymous	0.524	0.500	mg/L	104.7	75-125
Water	MS	Fluoride (F)	WG2078339-11	Anonymous	1.04	1.00	mg/L	103.9	75-125
Water	MS	Nitrate (as N)	WG2078339-11	Anonymous	2.56	2.50	mg/L	102.5	75-125
Water	MS	Nitrite (as N)	WG2078339-11	Anonymous	0.509	0.500	mg/L	101.7	75-125
Water	MS	Sulfate (SO4)	WG2078339-11	Anonymous	104	100	mg/L	103.5	75-125
Water	MS	Phosphorus (P)-Total	WG2078614-12	Anonymous	0.0515	0.0558	mg/L	91.3	70-130
Water	MS	Phosphorus (P)-Total	WG2078614-16	Anonymous	0.0561	0.0575	mg/L	97.1	70-130
Water	MS	Ammonia, Total (as N)	WG2081748-12	L1604267-1	0.173	0.200	mg/L	86.3	75-125
Water	MS	Ammonia, Total (as N)	WG2081748-14	Anonymous	0.208	0.237	mg/L	85.6	75-125
Water	MS	Ammonia, Total (as N)	WG2081748-16	Anonymous	0.236	0.263	mg/L	86.4	75-125
Organic / Inorganic Carbon									
Water	LCS	Total Organic Carbon	WG2081611-1		8.30	8.57	mg/L	96.9	80-120
Water	LCS	Total Organic Carbon	WG2081611-5		8.43	8.57	mg/L	98.4	80-120
Water	LCS	Total Organic Carbon	WG2081611-9		8.63	8.57	mg/L	100.7	80-120

Water	MB	Total Organic Carbon	WG2081611-4		<0.50	<0.5	mg/L	-	0.5
Water	MB	Total Organic Carbon	WG2081611-8		<0.50	<0.5	mg/L	-	0.5
Water	MS	Total Organic Carbon	WG2081611-3	Anonymous	6.98	6.92	mg/L	101.2	70-130
Water	MS	Total Organic Carbon	WG2081611-7	Anonymous	5.46	5.00	mg/L	109.2	70-130
Total Metals									
Water	LCS	Mercury (Hg)-Total	WG2079303-2		0.00470	0.00500	ug/L	93.9	80-120
Water	MB	Mercury (Hg)-Total	WG2079303-1		<0.00050	<0.0005	ug/L	-	0.0005
Total Metals (Undigested)									
Water	CRM	Aluminum (Al)-Total	WG2078597-2	VA-HIGH-WATRM	2.07	2.00	mg/L	103.3	80-120
Water	CRM	Antimony (Sb)-Total	WG2078597-2	VA-HIGH-WATRM	1.00	1.00	mg/L	100.2	80-120
Water	CRM	Arsenic (As)-Total	WG2078597-2	VA-HIGH-WATRM	1.04	1.00	mg/L	104.5	80-120
Water	CRM	Barium (Ba)-Total	WG2078597-2	VA-HIGH-WATRM	0.253	0.250	mg/L	101.0	80-120
Water	CRM	Beryllium (Be)-Total	WG2078597-2	VA-HIGH-WATRM	0.0953	0.100	mg/L	95.3	80-120
Water	CRM	Bismuth (Bi)-Total	WG2078597-2	VA-HIGH-WATRM	1.04	1.00	mg/L	104.2	80-120
Water	CRM	Boron (B)-Total	WG2078597-2	VA-HIGH-WATRM	0.88	1.00	mg/L	87.9	80-120
Water	CRM	Cadmium (Cd)-Total	WG2078597-2	VA-HIGH-WATRM	0.0932	0.100	mg/L	93.2	80-120
Water	CRM	Calcium (Ca)-Total	WG2078597-2	VA-HIGH-WATRM	51.9	50.0	mg/L	103.7	80-120
Water	CRM	Chromium (Cr)-Total	WG2078597-2	VA-HIGH-WATRM	0.261	0.250	mg/L	104.4	80-120
Water	CRM	Cobalt (Co)-Total	WG2078597-2	VA-HIGH-WATRM	0.255	0.250	mg/L	102.0	80-120
Water	CRM	Copper (Cu)-Total	WG2078597-2	VA-HIGH-WATRM	0.249	0.250	mg/L	99.4	80-120
Water	CRM	Iron (Fe)-Total	WG2078597-2	VA-HIGH-WATRM	0.951	1.00	mg/L	95.1	80-120
Water	CRM	Lead (Pb)-Total	WG2078597-2	VA-HIGH-WATRM	0.533	0.500	mg/L	106.6	80-120
Water	CRM	Lithium (Li)-Total	WG2078597-2	VA-HIGH-WATRM	0.241	0.250	mg/L	96.2	80-120
Water	CRM	Magnesium (Mg)-Total	WG2078597-2	VA-HIGH-WATRM	49.9	50.0	mg/L	99.8	80-120
Water	CRM	Manganese (Mn)-Total	WG2078597-2	VA-HIGH-WATRM	0.259	0.250	mg/L	103.6	80-120
Water	CRM	Molybdenum (Mo)-Total	WG2078597-2	VA-HIGH-WATRM	0.252	0.250	mg/L	100.9	80-120
Water	CRM	Nickel (Ni)-Total	WG2078597-2	VA-HIGH-WATRM	0.510	0.500	mg/L	102.0	80-120
Water	CRM	Phosphorus (P)-Total	WG2078597-2	VA-HIGH-WATRM	2.49	2.50	mg/L	99.6	80-120
Water	CRM	Potassium (K)-Total	WG2078597-2	VA-HIGH-WATRM	48.8	50.0	mg/L	97.7	80-120
Water	CRM	Selenium (Se)-Total	WG2078597-2	VA-HIGH-WATRM	0.983	1.00	mg/L	98.3	80-120
Water	CRM	Silicon (Si)-Total	WG2078597-2	VA-HIGH-WATRM	1.03	1.00	mg/L	103.0	80-120
Water	CRM	Silver (Ag)-Total	WG2078597-2	VA-HIGH-WATRM	0.0967	0.100	mg/L	96.7	80-120
Water	CRM	Sodium (Na)-Total	WG2078597-2	VA-HIGH-WATRM	52.1	50.0	mg/L	104.1	80-120
Water	CRM	Strontium (Sr)-Total	WG2078597-2	VA-HIGH-WATRM	0.250	0.250	mg/L	100.2	80-120
Water	CRM	Thallium (Tl)-Total	WG2078597-2	VA-HIGH-WATRM	1.08	1.00	mg/L	107.8	80-120
Water	CRM	Tin (Sn)-Total	WG2078597-2	VA-HIGH-WATRM	0.498	0.500	mg/L	99.7	80-120
Water	CRM	Titanium (Ti)-Total	WG2078597-2	VA-HIGH-WATRM	0.256	0.250	mg/L	102.6	80-120
Water	CRM	Uranium (U)-Total	WG2078597-2	VA-HIGH-WATRM	0.00522	0.00500	mg/L	104.4	80-120
Water	CRM	Vanadium (V)-Total	WG2078597-2	VA-HIGH-WATRM	0.519	0.500	mg/L	103.9	80-120
Water	CRM	Zinc (Zn)-Total	WG2078597-2	VA-HIGH-WATRM	0.485	0.500	mg/L	96.9	80-120
Water	CRM	Zirconium (Zr)-Total	WG2078597-2	VA-HIGH-WATRM	0.0962	0.100	mg/L	96.2	80-120
Water	LCS	Aluminum (Al)-Total	WG2078597-5		2.07	2.00	mg/L	103.3	80-120
Water	LCS	Antimony (Sb)-Total	WG2078597-5		1.00	1.00	mg/L	100.2	80-120
Water	LCS	Arsenic (As)-Total	WG2078597-5		1.04	1.00	mg/L	104.5	80-120
Water	LCS	Barium (Ba)-Total	WG2078597-5		0.253	0.250	mg/L	101.0	80-120
Water	LCS	Beryllium (Be)-Total	WG2078597-5		0.0953	0.100	mg/L	95.3	80-120
Water	LCS	Bismuth (Bi)-Total	WG2078597-5		1.04	1.00	mg/L	104.2	80-120
Water	LCS	Boron (B)-Total	WG2078597-5		0.879	1.00	mg/L	87.9	80-120
Water	LCS	Cadmium (Cd)-Total	WG2078597-5		0.0932	0.100	mg/L	93.2	80-120
Water	LCS	Calcium (Ca)-Total	WG2078597-5		51.9	50.0	mg/L	103.7	80-120
Water	LCS	Chromium (Cr)-Total	WG2078597-5		0.261	0.250	mg/L	104.4	80-120
Water	LCS	Cobalt (Co)-Total	WG2078597-5		0.255	0.250	mg/L	102.0	80-120
Water	LCS	Copper (Cu)-Total	WG2078597-5		0.249	0.250	mg/L	99.4	80-120
Water	LCS	Iron (Fe)-Total	WG2078597-5		0.951	1.00	mg/L	95.1	80-120
Water	LCS	Lead (Pb)-Total	WG2078597-5		0.533	0.500	mg/L	106.6	80-120
Water	LCS	Lithium (Li)-Total	WG2078597-5		0.241	0.250	mg/L	96.2	80-120
Water	LCS	Magnesium (Mg)-Total	WG2078597-5		49.9	50.0	mg/L	99.8	80-120
Water	LCS	Manganese (Mn)-Total	WG2078597-5		0.259	0.250	mg/L	103.6	80-120
Water	LCS	Molybdenum (Mo)-Total	WG2078597-5		0.252	0.250	mg/L	100.9	80-120
Water	LCS	Nickel (Ni)-Total	WG2078597-5		0.510	0.500	mg/L	102.0	80-120
Water	LCS	Phosphorus (P)-Total	WG2078597-5		2.49	2.50	mg/L	99.6	80-120
Water	LCS	Potassium (K)-Total	WG2078597-5		48.8	50.0	mg/L	97.7	80-120
Water	LCS	Selenium (Se)-Total	WG2078597-5		0.983	1.00	mg/L	98.3	80-120
Water	LCS	Silicon (Si)-Total	WG2078597-5		1.03	1.00	mg/L	103.0	80-120
Water	LCS	Silver (Ag)-Total	WG2078597-5		0.0967	0.100	mg/L	96.7	80-120
Water	LCS	Sodium (Na)-Total	WG2078597-5		52.1	50.0	mg/L	104.1	80-120
Water	LCS	Strontium (Sr)-Total	WG2078597-5		0.250	0.250	mg/L	100.2	80-120
Water	LCS	Thallium (Tl)-Total	WG2078597-5		1.08	1.00	mg/L	107.8	80-120
Water	LCS	Tin (Sn)-Total	WG2078597-5		0.498	0.500	mg/L	99.7	80-120
Water	LCS	Titanium (Ti)-Total	WG2078597-5		0.256	0.250	mg/L	102.6	80-120
Water	LCS	Uranium (U)-Total	WG2078597-5		0.00522	0.00500	mg/L	104.4	80-120
Water	LCS	Vanadium (V)-Total	WG2078597-5		0.519	0.500	mg/L	103.9	80-120
Water	LCS	Zinc (Zn)-Total	WG2078597-5		0.485	0.500	mg/L	96.9	80-120
Water	LCS	Zirconium (Zr)-Total	WG2078597-5		0.0962	0.100	mg/L	96.2	80-120
Water	MB	Aluminum (Al)-Total	WG2078597-1		<0.00050	<0.0005	mg/L	-	0.0005

Water	MB	Antimony (Sb)-Total	WG2078597-1		<0.000020	<0.00002	mg/L	-	0.00002
Water	MB	Arsenic (As)-Total	WG2078597-1		<0.000020	<0.00002	mg/L	-	0.00002
Water	MB	Barium (Ba)-Total	WG2078597-1		<0.000020	<0.00002	mg/L	-	0.00002
Water	MB	Beryllium (Be)-Total	WG2078597-1		<0.000010	<0.00001	mg/L	-	0.00001
Water	MB	Bismuth (Bi)-Total	WG2078597-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Boron (B)-Total	WG2078597-1		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Cadmium (Cd)-Total	WG2078597-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Calcium (Ca)-Total	WG2078597-1		<0.030	<0.03	mg/L	-	0.03
Water	MB	Chromium (Cr)-Total	WG2078597-1		<0.00010	<0.0001	mg/L	-	0.0001
Water	MB	Cobalt (Co)-Total	WG2078597-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Copper (Cu)-Total	WG2078597-1		<0.00010	<0.0001	mg/L	-	0.0001
Water	MB	Iron (Fe)-Total	WG2078597-1		<0.0010	<0.001	mg/L	-	0.001
Water	MB	Lead (Pb)-Total	WG2078597-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Lithium (Li)-Total	WG2078597-1		<0.00050	<0.0005	mg/L	-	0.0005
Water	MB	Magnesium (Mg)-Total	WG2078597-1		<0.030	<0.03	mg/L	-	0.03
Water	MB	Manganese (Mn)-Total	WG2078597-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Molybdenum (Mo)-Total	WG2078597-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Nickel (Ni)-Total	WG2078597-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Phosphorus (P)-Total	WG2078597-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Potassium (K)-Total	WG2078597-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Selenium (Se)-Total	WG2078597-1		<0.000040	<0.00004	mg/L	-	0.00004
Water	MB	Silicon (Si)-Total	WG2078597-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Silver (Ag)-Total	WG2078597-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Sodium (Na)-Total	WG2078597-1		<0.010	<0.01	mg/L	-	0.01
Water	MB	Strontium (Sr)-Total	WG2078597-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Thallium (Tl)-Total	WG2078597-1		<0.0000020	<0.000002	mg/L	-	0.000002
Water	MB	Tin (Sn)-Total	WG2078597-1		<0.000010	<0.00001	mg/L	-	0.00001
Water	MB	Titanium (Ti)-Total	WG2078597-1		<0.00050	<0.0005	mg/L	-	0.0005
Water	MB	Uranium (U)-Total	WG2078597-1		<0.0000020	<0.000002	mg/L	-	0.000002
Water	MB	Vanadium (V)-Total	WG2078597-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Zinc (Zn)-Total	WG2078597-1		<0.00050	<0.0005	mg/L	-	0.0005
Water	MB	Zirconium (Zr)-Total	WG2078597-1		<0.00010	<0.0001	mg/L	-	0.0001
Dissolved Metals									
Water	CRM	Aluminum (Al)-Dissolved	WG2078598-2	VA-HIGH-WATRM	1.99	2.00	mg/L	99.5	80-120
Water	CRM	Antimony (Sb)-Dissolved	WG2078598-2	VA-HIGH-WATRM	0.987	1.00	mg/L	98.7	80-120
Water	CRM	Arsenic (As)-Dissolved	WG2078598-2	VA-HIGH-WATRM	1.03	1.00	mg/L	103.0	80-120
Water	CRM	Barium (Ba)-Dissolved	WG2078598-2	VA-HIGH-WATRM	0.247	0.250	mg/L	99.0	80-120
Water	CRM	Beryllium (Be)-Dissolved	WG2078598-2	VA-HIGH-WATRM	0.0911	0.100	mg/L	91.1	80-120
Water	CRM	Bismuth (Bi)-Dissolved	WG2078598-2	VA-HIGH-WATRM	1.00	1.00	mg/L	100.4	80-120
Water	CRM	Boron (B)-Dissolved	WG2078598-2	VA-HIGH-WATRM	0.83	1.00	mg/L	83.4	80-120
Water	CRM	Cadmium (Cd)-Dissolved	WG2078598-2	VA-HIGH-WATRM	0.0941	0.100	mg/L	94.1	80-120
Water	CRM	Calcium (Ca)-Dissolved	WG2078598-2	VA-HIGH-WATRM	52.1	50.0	mg/L	104.1	80-120
Water	CRM	Chromium (Cr)-Dissolved	WG2078598-2	VA-HIGH-WATRM	0.248	0.250	mg/L	99.0	80-120
Water	CRM	Cobalt (Co)-Dissolved	WG2078598-2	VA-HIGH-WATRM	0.248	0.250	mg/L	99.3	80-120
Water	CRM	Copper (Cu)-Dissolved	WG2078598-2	VA-HIGH-WATRM	0.246	0.250	mg/L	98.3	80-120
Water	CRM	Iron (Fe)-Dissolved	WG2078598-2	VA-HIGH-WATRM	0.951	1.00	mg/L	95.1	80-120
Water	CRM	Lead (Pb)-Dissolved	WG2078598-2	VA-HIGH-WATRM	0.513	0.500	mg/L	102.7	80-120
Water	CRM	Lithium (Li)-Dissolved	WG2078598-2	VA-HIGH-WATRM	0.226	0.250	mg/L	90.3	80-120
Water	CRM	Magnesium (Mg)-Dissolved	WG2078598-2	VA-HIGH-WATRM	50.3	50.0	mg/L	100.5	80-120
Water	CRM	Manganese (Mn)-Dissolved	WG2078598-2	VA-HIGH-WATRM	0.253	0.250	mg/L	101.2	80-120
Water	CRM	Molybdenum (Mo)-Dissolved	WG2078598-2	VA-HIGH-WATRM	0.246	0.250	mg/L	98.4	80-120
Water	CRM	Nickel (Ni)-Dissolved	WG2078598-2	VA-HIGH-WATRM	0.504	0.500	mg/L	100.7	80-120
Water	CRM	Phosphorus (P)-Dissolved	WG2078598-2	VA-HIGH-WATRM	2.48	2.50	mg/L	99.0	80-120
Water	CRM	Potassium (K)-Dissolved	WG2078598-2	VA-HIGH-WATRM	48.9	50.0	mg/L	97.8	80-120
Water	CRM	Selenium (Se)-Dissolved	WG2078598-2	VA-HIGH-WATRM	0.983	1.00	mg/L	98.3	80-120
Water	CRM	Silicon (Si)-Dissolved	WG2078598-2	VA-HIGH-WATRM	1.02	1.00	mg/L	102.5	80-120
Water	CRM	Silver (Ag)-Dissolved	WG2078598-2	VA-HIGH-WATRM	0.0959	0.100	mg/L	95.9	80-120
Water	CRM	Sodium (Na)-Dissolved	WG2078598-2	VA-HIGH-WATRM	50.9	50.0	mg/L	101.8	80-120
Water	CRM	Strontium (Sr)-Dissolved	WG2078598-2	VA-HIGH-WATRM	0.245	0.250	mg/L	98.2	80-120
Water	CRM	Thallium (Tl)-Dissolved	WG2078598-2	VA-HIGH-WATRM	1.03	1.00	mg/L	102.8	80-120
Water	CRM	Tin (Sn)-Dissolved	WG2078598-2	VA-HIGH-WATRM	0.496	0.500	mg/L	99.2	80-120
Water	CRM	Titanium (Ti)-Dissolved	WG2078598-2	VA-HIGH-WATRM	0.244	0.250	mg/L	97.6	80-120
Water	CRM	Uranium (U)-Dissolved	WG2078598-2	VA-HIGH-WATRM	0.00517	0.00500	mg/L	103.3	80-120
Water	CRM	Vanadium (V)-Dissolved	WG2078598-2	VA-HIGH-WATRM	0.508	0.500	mg/L	101.7	80-120
Water	CRM	Zinc (Zn)-Dissolved	WG2078598-2	VA-HIGH-WATRM	0.483	0.500	mg/L	96.6	80-120
Water	CRM	Zirconium (Zr)-Dissolved	WG2078598-2	VA-HIGH-WATRM	0.0946	0.100	mg/L	94.6	80-120
Water	LCS	Aluminum (Al)-Dissolved	WG2078598-3		1.99	2.00	mg/L	99.5	80-120
Water	LCS	Antimony (Sb)-Dissolved	WG2078598-3		0.987	1.00	mg/L	98.7	80-120
Water	LCS	Arsenic (As)-Dissolved	WG2078598-3		1.03	1.00	mg/L	103.0	80-120
Water	LCS	Barium (Ba)-Dissolved	WG2078598-3		0.247	0.250	mg/L	99.0	80-120
Water	LCS	Beryllium (Be)-Dissolved	WG2078598-3		0.0911	0.100	mg/L	91.1	80-120
Water	LCS	Bismuth (Bi)-Dissolved	WG2078598-3		1.00	1.00	mg/L	100.4	80-120
Water	LCS	Boron (B)-Dissolved	WG2078598-3		0.834	1.00	mg/L	83.4	80-120
Water	LCS	Cadmium (Cd)-Dissolved	WG2078598-3		0.0941	0.100	mg/L	94.1	80-120
Water	LCS	Calcium (Ca)-Dissolved	WG2078598-3		52.1	50.0	mg/L	104.1	80-120
Water	LCS	Chromium (Cr)-Dissolved	WG2078598-3		0.248	0.250	mg/L	99.0	80-120
Water	LCS	Cobalt (Co)-Dissolved	WG2078598-3		0.248	0.250	mg/L	99.3	80-120
Water	LCS	Copper (Cu)-Dissolved	WG2078598-3		0.246	0.250	mg/L	98.3	80-120
Water	LCS	Iron (Fe)-Dissolved	WG2078598-3		0.951	1.00	mg/L	95.1	80-120

Water	LCS	Lead (Pb)-Dissolved	WG2078598-3		0.513	0.500	mg/L	102.7	80-120
Water	LCS	Lithium (Li)-Dissolved	WG2078598-3		0.226	0.250	mg/L	90.3	80-120
Water	LCS	Magnesium (Mg)-Dissolved	WG2078598-3		50.3	50.0	mg/L	100.5	80-120
Water	LCS	Manganese (Mn)-Dissolved	WG2078598-3		0.253	0.250	mg/L	101.2	80-120
Water	LCS	Molybdenum (Mo)-Dissolved	WG2078598-3		0.246	0.250	mg/L	98.4	80-120
Water	LCS	Nickel (Ni)-Dissolved	WG2078598-3		0.504	0.500	mg/L	100.7	80-120
Water	LCS	Phosphorus (P)-Dissolved	WG2078598-3		2.48	2.50	mg/L	99.0	80-120
Water	LCS	Potassium (K)-Dissolved	WG2078598-3		48.9	50.0	mg/L	97.8	80-120
Water	LCS	Selenium (Se)-Dissolved	WG2078598-3		0.983	1.00	mg/L	98.3	80-120
Water	LCS	Silicon (Si)-Dissolved	WG2078598-3		1.02	1.00	mg/L	102.5	80-120
Water	LCS	Silver (Ag)-Dissolved	WG2078598-3		0.0959	0.100	mg/L	95.9	80-120
Water	LCS	Sodium (Na)-Dissolved	WG2078598-3		50.9	50.0	mg/L	101.8	80-120
Water	LCS	Strontium (Sr)-Dissolved	WG2078598-3		0.245	0.250	mg/L	98.2	80-120
Water	LCS	Thallium (Tl)-Dissolved	WG2078598-3		1.03	1.00	mg/L	102.8	80-120
Water	LCS	Tin (Sn)-Dissolved	WG2078598-3		0.496	0.500	mg/L	99.2	80-120
Water	LCS	Titanium (Ti)-Dissolved	WG2078598-3		0.244	0.250	mg/L	97.6	80-120
Water	LCS	Uranium (U)-Dissolved	WG2078598-3		0.00517	0.00500	mg/L	103.3	80-120
Water	LCS	Vanadium (V)-Dissolved	WG2078598-3		0.508	0.500	mg/L	101.7	80-120
Water	LCS	Zinc (Zn)-Dissolved	WG2078598-3		0.483	0.500	mg/L	96.6	80-120
Water	LCS	Zirconium (Zr)-Dissolved	WG2078598-3		0.0946	0.100	mg/L	94.6	80-120
Water	LCS	Mercury (Hg)-Dissolved	WG2079302-2		0.00469	0.00500	ug/L	93.9	80-120
Water	MB	Aluminum (Al)-Dissolved	WG2078598-1		<0.00050	<0.0005	mg/L	-	0.0005
Water	MB	Antimony (Sb)-Dissolved	WG2078598-1		<0.000020	<0.00002	mg/L	-	0.00002
Water	MB	Arsenic (As)-Dissolved	WG2078598-1		<0.000020	<0.00002	mg/L	-	0.00002
Water	MB	Barium (Ba)-Dissolved	WG2078598-1		<0.000020	<0.00002	mg/L	-	0.00002
Water	MB	Beryllium (Be)-Dissolved	WG2078598-1		<0.000010	<0.00001	mg/L	-	0.00001
Water	MB	Bismuth (Bi)-Dissolved	WG2078598-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Boron (B)-Dissolved	WG2078598-1		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Cadmium (Cd)-Dissolved	WG2078598-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Calcium (Ca)-Dissolved	WG2078598-1		<0.030	<0.03	mg/L	-	0.03
Water	MB	Chromium (Cr)-Dissolved	WG2078598-1		<0.00010	<0.0001	mg/L	-	0.0001
Water	MB	Cobalt (Co)-Dissolved	WG2078598-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Copper (Cu)-Dissolved	WG2078598-1		<0.00010	<0.0001	mg/L	-	0.0001
Water	MB	Iron (Fe)-Dissolved	WG2078598-1		<0.0010	<0.001	mg/L	-	0.001
Water	MB	Lead (Pb)-Dissolved	WG2078598-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Lithium (Li)-Dissolved	WG2078598-1		<0.00050	<0.0005	mg/L	-	0.0005
Water	MB	Magnesium (Mg)-Dissolved	WG2078598-1		<0.030	<0.03	mg/L	-	0.03
Water	MB	Manganese (Mn)-Dissolved	WG2078598-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Molybdenum (Mo)-Dissolved	WG2078598-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Nickel (Ni)-Dissolved	WG2078598-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Phosphorus (P)-Dissolved	WG2078598-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Potassium (K)-Dissolved	WG2078598-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Selenium (Se)-Dissolved	WG2078598-1		<0.000040	<0.00004	mg/L	-	0.00004
Water	MB	Silicon (Si)-Dissolved	WG2078598-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Silver (Ag)-Dissolved	WG2078598-1		<0.0000050	<0.000005	mg/L	-	0.000005
Water	MB	Sodium (Na)-Dissolved	WG2078598-1		<0.010	<0.01	mg/L	-	0.01
Water	MB	Strontium (Sr)-Dissolved	WG2078598-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Thallium (Tl)-Dissolved	WG2078598-1		<0.0000020	<0.000002	mg/L	-	0.000002
Water	MB	Tin (Sn)-Dissolved	WG2078598-1		<0.000010	<0.00001	mg/L	-	0.00001
Water	MB	Titanium (Ti)-Dissolved	WG2078598-1		<0.00050	<0.0005	mg/L	-	0.0005
Water	MB	Uranium (U)-Dissolved	WG2078598-1		<0.0000020	<0.000002	mg/L	-	0.000002
Water	MB	Vanadium (V)-Dissolved	WG2078598-1		<0.000050	<0.00005	mg/L	-	0.00005
Water	MB	Zinc (Zn)-Dissolved	WG2078598-1		<0.00050	<0.0005	mg/L	-	0.0005
Water	MB	Zirconium (Zr)-Dissolved	WG2078598-1		<0.00010	<0.0001	mg/L	-	0.0001
Water	MB	Mercury (Hg)-Dissolved	WG2079302-1		<0.00050	<0.0005	ug/L	-	0.0005
Water	MS	Mercury (Hg)-Dissolved	WG2079302-3	L1604267-1	0.00470	0.00500	ug/L	94.1	70-130
Aggregate Organics									
Water	LCS	BOD	WG2078257-2		180	198	mg/L	90.7	85-115
Water	LCS	BOD	WG2078257-6		198	198	mg/L	100.2	85-115
Water	LCS	COD	WG2083333-3		736	750	mg/L	98.1	85-115
Water	LCS	COD	WG2083333-7		738	750	mg/L	98.4	85-115
Water	LCS	COD	WG2083333-10		741	750	mg/L	98.9	85-115
Water	MB	BOD	WG2078257-1		<2.0	<2	mg/L	-	2
Water	MB	BOD	WG2078257-5		<2.0	<2	mg/L	-	2
Water	MB	COD	WG2083333-1		<20	<20	mg/L	-	20
Water	MB	COD	WG2083333-5		<20	<20	mg/L	-	20
Water	MB	COD	WG2083333-9		<20	<20	mg/L	-	20
Water	MS	COD	WG2083333-4	Anonymous	498	500	mg/L	99.6	75-125

Project 15-1438
Report To Kyle Hawes, ECOSCAPE ENVIRONMENTAL CONSULTANTS LTD.
ALS File No. L1605547
Date Received 30-Apr-15 11:10
Date 29-May-15

REPLICATE RESULTS

Sample ID	Matrix	ALS ID	Analyte	Replicate 1	Replicate 2	Units	RPD	RPD Limit	Diff	Diff Limit	Qualifier
Physical Tests											
L1605547-14	Water	WG2081464-36	Conductivity	139	138	uS/cm	0.4	10	-	-	-
L1605547-34	Water	WG2081464-37	Conductivity	140	140	uS/cm	0.2	10	-	-	-
L1605547-14	Water	WG2081464-36	pH	8.08	8.10	pH	-	-	0.02	0.3	J
L1605547-34	Water	WG2081464-37	pH	8.11	8.11	pH	-	-	0.00	0.3	J
L1605547-1	Water	WG2080939-3	Total Suspended Solids	<3.0	3.8	mg/L	N/A	20	-	-	RPD-NA
L1605547-21	Water	WG2080939-6	Total Suspended Solids	<3.0	<3.0	mg/L	N/A	20	-	-	RPD-NA
L1605547-30	Water	WG2080888-6	Total Dissolved Solids	84	80	mg/L	4.9	20	-	-	-
L1605547-8	Water	WG2079918-15	Turbidity	0.45	0.46	NTU	2.2	15	-	-	-
L1605547-29	Water	WG2079918-18	Turbidity	0.42	0.42	NTU	0.7	15	-	-	-
Anions and Nutrients											
L1605547-10	Water	WG2081903-7	Alkalinity, Total (as CaCO3)	63.3	64.6	mg/L	2.0	20	-	-	-
L1605547-29	Water	WG2081903-10	Alkalinity, Total (as CaCO3)	62.8	64.2	mg/L	2.1	20	-	-	-
L1605547-11	Water	WG2082883-11	Ammonia, Total (as N)	<0.0050	<0.0050	mg/L	N/A	20	-	-	RPD-NA
L1605547-17	Water	WG2082892-11	Ammonia, Total (as N)	<0.0050	<0.0050	mg/L	N/A	20	-	-	RPD-NA
L1605547-34	Water	WG2082892-7	Ammonia, Total (as N)	0.0306	0.0295	mg/L	3.6	20	-	-	-
L1605547-13	Water	WG2079980-6	Bromide (Br)	<0.050	<0.050	mg/L	N/A	20	-	-	RPD-NA
L1605547-36	Water	WG2079980-9	Bromide (Br)	<0.050	<0.050	mg/L	N/A	20	-	-	RPD-NA
L1605547-13	Water	WG2079980-6	Chloride (Cl)	0.93	0.92	mg/L	0.2	20	-	-	-
L1605547-36	Water	WG2079980-9	Chloride (Cl)	<0.50	<0.50	mg/L	N/A	20	-	-	RPD-NA
L1605547-13	Water	WG2079980-6	Fluoride (F)	0.077	0.077	mg/L	0.3	20	-	-	-
L1605547-36	Water	WG2079980-9	Fluoride (F)	<0.020	<0.020	mg/L	N/A	20	-	-	RPD-NA
L1605547-13	Water	WG2079980-6	Nitrate (as N)	0.133	0.133	mg/L	0.6	20	-	-	-
L1605547-36	Water	WG2079980-9	Nitrate (as N)	<0.0050	<0.0050	mg/L	N/A	20	-	-	RPD-NA
L1605547-13	Water	WG2079980-6	Nitrite (as N)	<0.0010	<0.0010	mg/L	N/A	20	-	-	RPD-NA
L1605547-36	Water	WG2079980-9	Nitrite (as N)	<0.0010	<0.0010	mg/L	N/A	20	-	-	RPD-NA
L1605547-2	Water	WG2084504-7	Total Kjeldahl Nitrogen	0.073	0.070	mg/L	3.4	20	-	-	-
L1605547-18	Water	WG2084504-3	Total Kjeldahl Nitrogen	0.092	0.112	mg/L	19	20	-	-	-
L1605547-8	Water	WG2079820-7	Phosphorus (P)-Total Dissolved	<0.0020	<0.0020	mg/L	N/A	20	-	-	RPD-NA
L1605547-31	Water	WG2079820-11	Phosphorus (P)-Total Dissolved	<0.0020	<0.0020	mg/L	N/A	20	-	-	RPD-NA
L1605547-11	Water	WG2080166-11	Phosphorus (P)-Total	0.0032	0.0034	mg/L	6.6	20	-	-	-
L1605547-17	Water	WG2080166-15	Phosphorus (P)-Total	<0.0020	<0.0020	mg/L	N/A	20	-	-	RPD-NA
L1605547-33	Water	WG2080166-19	Phosphorus (P)-Total	0.0021	<0.0020	mg/L	N/A	20	-	-	RPD-NA
L1605547-13	Water	WG2079980-6	Sulfate (SO4)	11.9	11.9	mg/L	0.1	20	-	-	-
Organic / Inorganic Carbon											
L1605547-1	Water	WG2082488-6	Total Organic Carbon	1.23	1.21	mg/L	1.4	20	-	-	-
L1605547-23	Water	WG2083945-6	Total Organic Carbon	1.27	1.32	mg/L	4.1	20	-	-	-
Total Metals											
L1605547-10	Water	WG2082888-3	Mercury (Hg)-Total	<0.00050	<0.00050	ug/L	N/A	20	-	-	RPD-NA
L1605547-22	Water	WG2083708-3	Mercury (Hg)-Total	<0.00050	<0.00050	ug/L	N/A	20	-	-	RPD-NA
L1605547-34	Water	WG2085162-3	Mercury (Hg)-Total	<0.00050	<0.00050	ug/L	N/A	20	-	-	RPD-NA
Total Metals (Undigested)											
L1605547-5	Water	WG2080115-3	Aluminum (Al)-Total	0.0101	0.0107	mg/L	5.9	20	-	-	-
L1605547-5	Water	WG2080115-3	Antimony (Sb)-Total	0.000041	0.000044	mg/L	8.0	20	-	-	-
L1605547-5	Water	WG2080115-3	Arsenic (As)-Total	0.000227	0.000245	mg/L	7.4	20	-	-	-
L1605547-5	Water	WG2080115-3	Barium (Ba)-Total	0.0203	0.0202	mg/L	0.6	20	-	-	-
L1605547-5	Water	WG2080115-3	Beryllium (Be)-Total	<0.000010	<0.000010	mg/L	N/A	20	-	-	RPD-NA
L1605547-5	Water	WG2080115-3	Bismuth (Bi)-Total	<0.0000050	<0.0000050	mg/L	N/A	20	-	-	RPD-NA
L1605547-5	Water	WG2080115-3	Boron (B)-Total	<0.0050	<0.0050	mg/L	N/A	20	-	-	RPD-NA
L1605547-5	Water	WG2080115-3	Cadmium (Cd)-Total	0.0000159	0.0000172	mg/L	7.7	20	-	-	-
L1605547-5	Water	WG2080115-3	Calcium (Ca)-Total	20.1	19.4	mg/L	3.6	20	-	-	-
L1605547-5	Water	WG2080115-3	Chromium (Cr)-Total	<0.00010	<0.00010	mg/L	N/A	20	-	-	RPD-NA
L1605547-5	Water	WG2080115-3	Cobalt (Co)-Total	0.0000125	0.0000088	mg/L	-	-	0.0000037	0.00001	J
L1605547-5	Water	WG2080115-3	Copper (Cu)-Total	0.00031	0.00032	mg/L	3.7	20	-	-	-
L1605547-5	Water	WG2080115-3	Iron (Fe)-Total	0.0113	0.0109	mg/L	3.4	20	-	-	-
L1605547-5	Water	WG2080115-3	Lead (Pb)-Total	0.0000518	0.0000555	mg/L	7.0	20	-	-	-
L1605547-5	Water	WG2080115-3	Lithium (Li)-Total	0.00113	0.00111	mg/L	1.4	20	-	-	-
L1605547-5	Water	WG2080115-3	Magnesium (Mg)-Total	4.45	4.30	mg/L	3.4	20	-	-	-
L1605547-5	Water	WG2080115-3	Manganese (Mn)-Total	0.00202	0.00190	mg/L	5.9	20	-	-	-
L1605547-5	Water	WG2080115-3	Molybdenum (Mo)-Total	0.000564	0.000562	mg/L	0.5	20	-	-	-
L1605547-5	Water	WG2080115-3	Nickel (Ni)-Total	0.000312	0.000302	mg/L	3.5	20	-	-	-
L1605547-5	Water	WG2080115-3	Phosphorus (P)-Total	<0.050	<0.050	mg/L	N/A	20	-	-	RPD-NA
L1605547-5	Water	WG2080115-3	Potassium (K)-Total	0.611	0.580	mg/L	5.3	20	-	-	-
L1605547-5	Water	WG2080115-3	Selenium (Se)-Total	0.000275	0.000291	mg/L	5.6	20	-	-	-
L1605547-5	Water	WG2080115-3	Silicon (Si)-Total	2.35	2.25	mg/L	4.4	20	-	-	-
L1605547-5	Water	WG2080115-3	Silver (Ag)-Total	<0.0000050	<0.0000050	mg/L	N/A	20	-	-	RPD-NA
L1605547-5	Water	WG2080115-3	Sodium (Na)-Total	1.55	1.56	mg/L	0.5	20	-	-	-
L1605547-5	Water	WG2080115-3	Strontium (Sr)-Total	0.107	0.110	mg/L	2.3	20	-	-	-
L1605547-5	Water	WG2080115-3	Thallium (Tl)-Total	0.0000025	0.0000026	mg/L	4.7	20	-	-	-
L1605547-5	Water	WG2080115-3	Tin (Sn)-Total	<0.000010	<0.000010	mg/L	N/A	20	-	-	RPD-NA
L1605547-5	Water	WG2080115-3	Titanium (Ti)-Total	<0.00050	<0.00050	mg/L	N/A	20	-	-	RPD-NA

L1605547-5	Water	WG2080115-3	Uranium (U)-Total	0.000513	0.000512	mg/L	0.2	20	-	-	-
L1605547-5	Water	WG2080115-3	Vanadium (V)-Total	0.000120	0.000118	mg/L	1.9	20	-	-	-
L1605547-5	Water	WG2080115-3	Zinc (Zn)-Total	0.00121	0.00115	mg/L	4.7	20	-	-	-
L1605547-5	Water	WG2080115-3	Zirconium (Zr)-Total	<0.00010	<0.00010	mg/L	N/A	20	-	-	RPD-NA
Dissolved Metals											
L1605547-5	Water	WG2082887-3	Mercury (Hg)-Dissolved	<0.00050	<0.00050	ug/L	N/A	20	-	-	RPD-NA
L1605547-17	Water	WG2083707-3	Mercury (Hg)-Dissolved	<0.00050	<0.00050	ug/L	N/A	20	-	-	RPD-NA
L1605547-29	Water	WG2085156-3	Mercury (Hg)-Dissolved	<0.00050	<0.00050	ug/L	N/A	20	-	-	RPD-NA
Aggregate Organics											
L1605547-3	Water	WG2080530-3	BOD	<2.0	<2.0	mg/L	N/A	20	-	-	RPD-NA
L1605547-20	Water	WG2080530-7	BOD	<2.0	<2.0	mg/L	N/A	20	-	-	RPD-NA
L1605547-30	Water	WG2080530-10	BOD	<2.0	<2.0	mg/L	N/A	20	-	-	RPD-NA
L1605547-1	Water	WG2083882-2	COD	<20	<20	mg/L	N/A	20	-	-	RPD-NA
L1605547-27	Water	WG2083882-7	COD	<20	<20	mg/L	N/A	20	-	-	RPD-NA
Anions and Nutrients											
L1605547-36	Water	WG2079980-9	Sulfate (SO4)	<0.30	<0.30	mg/L	N/A	20	-	-	RPD-NA

Project 15-1438
Report To Kyle Hawes, ECOSCAPE ENVIRONMENTAL CONSULTANTS LTD.
ALS File No. L1605547
Date Received 30-Apr-15 11:10
Date 29-May-15

QUALITY CONTROL RESULTS

Matrix	QC Type	Analyte	QC Spl. No.	Reference	Result	Target	Units	%	Limits	Qualifier
Physical Tests										
Water	CRM	Turbidity	WG2079918-2	VA-FORM-40	40.0	40.0	NTU	100.0	85-115	
Water	CRM	Turbidity	WG2079918-5	VA-FORM-40	40.3	40.0	NTU	100.8	85-115	
Water	CRM	Turbidity	WG2079918-8	VA-FORM-40	39.7	40.0	NTU	99.3	85-115	
Water	CRM	Turbidity	WG2080315-2	VA-FORM-40	39.9	40.0	NTU	99.8	85-115	
Water	CRM	Turbidity	WG2080315-5	VA-FORM-40	39.8	40.0	NTU	99.5	85-115	
Water	CRM	Turbidity	WG2079918-11	VA-FORM-40	40.0	40.0	NTU	100.0	85-115	
Water	CRM	Turbidity	WG2079918-14	VA-FORM-40	39.9	40.0	NTU	99.8	85-115	
Water	CRM	Turbidity	WG2079918-17	VA-FORM-40	39.8	40.0	NTU	99.5	85-115	
Water	CRM	Conductivity	WG2081464-17	VA-EC-PCT-CONTROL	145	147	uS/cm	98.5	90-110	
Water	CRM	Conductivity	WG2081464-18	VA-EC-PCT-CONTROL	146	147	uS/cm	99.0	90-110	
Water	CRM	Conductivity	WG2081464-19	VA-EC-PCT-CONTROL	146	147	uS/cm	99.1	90-110	
Water	CRM	Conductivity	WG2081464-20	VA-EC-PCT-CONTROL	145	147	uS/cm	98.7	90-110	
Water	CRM	Conductivity	WG2081464-21	VA-EC-PCT-CONTROL	145	147	uS/cm	98.6	90-110	
Water	CRM	Conductivity	WG2081464-22	VA-EC-PCT-CONTROL	146	147	uS/cm	99.5	90-110	
Water	CRM	Conductivity	WG2081464-23	VA-EC-PCT-CONTROL	147	147	uS/cm	99.7	90-110	
Water	CRM	pH	WG2081464-25	VA-PH7-BUF	7.01	7.00	pH	7.01	6.9-7.1	
Water	CRM	pH	WG2081464-26	VA-PH7-BUF	7.02	7.00	pH	7.02	6.9-7.1	
Water	CRM	pH	WG2081464-27	VA-PH7-BUF	7.02	7.00	pH	7.02	6.9-7.1	
Water	CRM	pH	WG2081464-28	VA-PH7-BUF	7.02	7.00	pH	7.02	6.9-7.1	
Water	CRM	pH	WG2081464-29	VA-PH7-BUF	7.02	7.00	pH	7.02	6.9-7.1	
Water	CRM	pH	WG2081464-30	VA-PH7-BUF	7.02	7.00	pH	7.02	6.9-7.1	
Water	CRM	pH	WG2081464-31	VA-PH7-BUF	7.01	7.00	pH	7.01	6.9-7.1	
Water	LCS	Total Dissolved Solids	WG2080888-2		427	425	mg/L	100.4	85-115	
Water	LCS	Total Dissolved Solids	WG2080888-5		431	425	mg/L	101.5	85-115	
Water	LCS	Total Dissolved Solids	WG2080888-8		436	425	mg/L	102.7	85-115	
Water	LCS	Total Suspended Solids	WG2080939-2		78.2	75.0	mg/L	104.3	85-115	
Water	LCS	Total Suspended Solids	WG2080939-5		75.8	75.0	mg/L	101.1	85-115	
Water	MB	Turbidity	WG2079918-1		<0.10	<0.1	NTU	-	0.1	
Water	MB	Turbidity	WG2079918-4		<0.10	<0.1	NTU	-	0.1	
Water	MB	Turbidity	WG2079918-7		<0.10	<0.1	NTU	-	0.1	
Water	MB	Turbidity	WG2080315-1		<0.10	<0.1	NTU	-	0.1	
Water	MB	Turbidity	WG2080315-4		<0.10	<0.1	NTU	-	0.1	
Water	MB	Total Dissolved Solids	WG2080888-1		<10	<10	mg/L	-	10	
Water	MB	Total Dissolved Solids	WG2080888-4		<10	<10	mg/L	-	10	
Water	MB	Total Dissolved Solids	WG2080888-7		<10	<10	mg/L	-	10	
Water	MB	Total Suspended Solids	WG2080939-1		<3.0	<3	mg/L	-	3	
Water	MB	Total Suspended Solids	WG2080939-4		<3.0	<3	mg/L	-	3	
Water	MB	Conductivity	WG2081464-1		<2.0	<2	uS/cm	-	2	
Water	MB	Conductivity	WG2081464-2		<2.0	<2	uS/cm	-	2	
Water	MB	Conductivity	WG2081464-3		<2.0	<2	uS/cm	-	2	
Water	MB	Conductivity	WG2081464-4		<2.0	<2	uS/cm	-	2	
Water	MB	Conductivity	WG2081464-5		<2.0	<2	uS/cm	-	2	
Water	MB	Conductivity	WG2081464-6		<2.0	<2	uS/cm	-	2	
Water	MB	Conductivity	WG2081464-7		<2.0	<2	uS/cm	-	2	
Water	MB	Turbidity	WG2079918-10		<0.10	<0.1	NTU	-	0.1	
Water	MB	Turbidity	WG2079918-13		<0.10	<0.1	NTU	-	0.1	
Water	MB	Turbidity	WG2079918-16		<0.10	<0.1	NTU	-	0.1	
Anions and Nutrients										
Water	CRM	Phosphorus (P)-Total Dissolvec	WG2079820-2	VA-ERA-PO4	7.36	7.17	mg/L	102.7	80-120	
Water	CRM	Phosphorus (P)-Total Dissolvec	WG2079820-6	VA-ERA-PO4	7.52	7.17	mg/L	104.9	80-120	
Water	CRM	Phosphorus (P)-Total	WG2080166-2	VA-ERA-PO4	7.54	7.17	mg/L	105.2	80-120	
Water	CRM	Phosphorus (P)-Total	WG2080166-6	VA-ERA-PO4	7.72	7.17	mg/L	107.7	80-120	
Water	CRM	Phosphorus (P)-Total	WG2081116-2	VA-ERA-PO4	7.29	7.17	mg/L	101.7	80-120	
Water	CRM	Phosphorus (P)-Total	WG2081116-6	VA-ERA-PO4	7.35	7.17	mg/L	102.5	80-120	
Water	CRM	Alkalinity, Total (as CaCO3)	WG2081903-2	VA-ALKL-CONTROL	15.6	15.0	mg/L	104.2	85-115	
Water	CRM	Alkalinity, Total (as CaCO3)	WG2081903-6	VA-ALKM-CONTROL	82.7	75.0	mg/L	110.3	85-115	
Water	CRM	Alkalinity, Total (as CaCO3)	WG2081903-9	VA-ALKH-CONTROL	256	250	mg/L	102.3	85-115	
Water	CRM	Ammonia, Total (as N)	WG2082883-2	VA-NH3-F	0.119	0.120	mg/L	99.2	85-115	
Water	CRM	Ammonia, Total (as N)	WG2082883-4	VA-NH3-F	0.124	0.120	mg/L	103.0	85-115	
Water	CRM	Ammonia, Total (as N)	WG2082883-6	VA-NH3-F	0.116	0.120	mg/L	97.0	85-115	
Water	CRM	Ammonia, Total (as N)	WG2082883-8	VA-NH3-F	0.116	0.120	mg/L	96.4	85-115	
Water	CRM	Ammonia, Total (as N)	WG2082892-2	VA-NH3-F	0.119	0.120	mg/L	99.4	85-115	
Water	CRM	Ammonia, Total (as N)	WG2082892-4	VA-NH3-F	0.118	0.120	mg/L	98.6	85-115	
Water	CRM	Ammonia, Total (as N)	WG2082892-6	VA-NH3-F	0.119	0.120	mg/L	98.8	85-115	
Water	CRM	Phosphorus (P)-Total Dissolvec	WG2079820-10	VA-ERA-PO4	7.60	7.17	mg/L	106.0	80-120	
Water	CRM	Phosphorus (P)-Total	WG2080166-10	VA-ERA-PO4	7.90	7.17	mg/L	110.2	80-120	
Water	CRM	Phosphorus (P)-Total	WG2080166-14	VA-ERA-PO4	7.68	7.17	mg/L	107.1	80-120	
Water	CRM	Phosphorus (P)-Total	WG2080166-18	VA-ERA-PO4	7.84	7.17	mg/L	109.3	80-120	
Water	LCS	Bromide (Br)	WG2079980-2		0.508	0.500	mg/L	101.7	85-115	
Water	LCS	Chloride (Cl)	WG2079980-2		101	100	mg/L	100.7	90-110	
Water	LCS	Fluoride (F)	WG2079980-2		1.00	1.00	mg/L	99.98	90-110	

Water	LCS	Nitrate (as N)	WG2079980-2		2.50	2.50	mg/L	100.1	90-110
Water	LCS	Nitrite (as N)	WG2079980-2		0.499	0.500	mg/L	99.8	90-110
Water	LCS	Sulfate (SO4)	WG2079980-2		101	100	mg/L	101.1	90-110
Water	LCS	Total Kjeldahl Nitrogen	WG2084504-2		1.06	1.00	mg/L	105.8	75-125
Water	LCS	Total Kjeldahl Nitrogen	WG2084504-6		1.05	1.00	mg/L	105.5	75-125
Water	LCS	Total Kjeldahl Nitrogen	WG2085230-2		1.01	1.00	mg/L	100.6	75-125
Water	LCS	Total Kjeldahl Nitrogen	WG2085230-6		1.04	1.00	mg/L	104.3	75-125
Water	LCS	Bromide (Br)	WG2079980-12		0.511	0.500	mg/L	102.2	85-115
Water	LCS	Chloride (Cl)	WG2079980-12		101	100	mg/L	101.2	90-110
Water	LCS	Fluoride (F)	WG2079980-12		1.01	1.00	mg/L	100.5	90-110
Water	LCS	Nitrate (as N)	WG2079980-12		2.52	2.50	mg/L	100.6	90-110
Water	LCS	Nitrite (as N)	WG2079980-12		0.496	0.500	mg/L	99.2	90-110
Water	LCS	Sulfate (SO4)	WG2079980-12		101	100	mg/L	101.4	90-110
Water	MB	Phosphorus (P)-Total Dissolvec	WG2079820-1		<0.0020	<0.002	mg/L	-	0.002
Water	MB	Phosphorus (P)-Total Dissolvec	WG2079820-5		<0.0020	<0.002	mg/L	-	0.002
Water	MB	Phosphorus (P)-Total Dissolvec	WG2079820-9		<0.0020	<0.002	mg/L	-	0.002
Water	MB	Bromide (Br)	WG2079980-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Chloride (Cl)	WG2079980-1		<0.50	<0.5	mg/L	-	0.5
Water	MB	Fluoride (F)	WG2079980-1		<0.020	<0.02	mg/L	-	0.02
Water	MB	Nitrate (as N)	WG2079980-1		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Nitrite (as N)	WG2079980-1		<0.0010	<0.001	mg/L	-	0.001
Water	MB	Sulfate (SO4)	WG2079980-1		<0.30	<0.3	mg/L	-	0.3
Water	MB	Bromide (Br)	WG2079980-4		<0.050	<0.05	mg/L	-	0.05
Water	MB	Chloride (Cl)	WG2079980-4		<0.50	<0.5	mg/L	-	0.5
Water	MB	Fluoride (F)	WG2079980-4		<0.020	<0.02	mg/L	-	0.02
Water	MB	Nitrate (as N)	WG2079980-4		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Nitrite (as N)	WG2079980-4		<0.0010	<0.001	mg/L	-	0.001
Water	MB	Sulfate (SO4)	WG2079980-4		<0.30	<0.3	mg/L	-	0.3
Water	MB	Bromide (Br)	WG2079980-7		<0.050	<0.05	mg/L	-	0.05
Water	MB	Chloride (Cl)	WG2079980-7		<0.50	<0.5	mg/L	-	0.5
Water	MB	Fluoride (F)	WG2079980-7		<0.020	<0.02	mg/L	-	0.02
Water	MB	Nitrate (as N)	WG2079980-7		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Nitrite (as N)	WG2079980-7		<0.0010	<0.001	mg/L	-	0.001
Water	MB	Sulfate (SO4)	WG2079980-7		<0.30	<0.3	mg/L	-	0.3
Water	MB	Phosphorus (P)-Total	WG2080166-1		<0.0020	<0.002	mg/L	-	0.002
Water	MB	Phosphorus (P)-Total	WG2080166-5		<0.0020	<0.002	mg/L	-	0.002
Water	MB	Phosphorus (P)-Total	WG2080166-9		<0.0020	<0.002	mg/L	-	0.002
Water	MB	Phosphorus (P)-Total	WG2081116-1		<0.0020	<0.002	mg/L	-	0.002
Water	MB	Phosphorus (P)-Total	WG2081116-5		<0.0020	<0.002	mg/L	-	0.002
Water	MB	Alkalinity, Total (as CaCO3)	WG2081903-1		<2.0	<2	mg/L	-	2
Water	MB	Alkalinity, Total (as CaCO3)	WG2081903-5		<2.0	<2	mg/L	-	2
Water	MB	Alkalinity, Total (as CaCO3)	WG2081903-8		<2.0	<2	mg/L	-	2
Water	MB	Ammonia, Total (as N)	WG2082883-1		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Ammonia, Total (as N)	WG2082883-3		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Ammonia, Total (as N)	WG2082883-5		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Ammonia, Total (as N)	WG2082883-7		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Ammonia, Total (as N)	WG2082892-1		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Ammonia, Total (as N)	WG2082892-3		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Ammonia, Total (as N)	WG2082892-5		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Total Kjeldahl Nitrogen	WG2084504-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Total Kjeldahl Nitrogen	WG2084504-5		<0.050	<0.05	mg/L	-	0.05
Water	MB	Total Kjeldahl Nitrogen	WG2085230-1		<0.050	<0.05	mg/L	-	0.05
Water	MB	Total Kjeldahl Nitrogen	WG2085230-5		<0.050	<0.05	mg/L	-	0.05
Water	MB	Bromide (Br)	WG2079980-10		<0.050	<0.05	mg/L	-	0.05
Water	MB	Chloride (Cl)	WG2079980-10		<0.50	<0.5	mg/L	-	0.5
Water	MB	Fluoride (F)	WG2079980-10		<0.020	<0.02	mg/L	-	0.02
Water	MB	Nitrate (as N)	WG2079980-10		<0.0050	<0.005	mg/L	-	0.005
Water	MB	Nitrite (as N)	WG2079980-10		<0.0010	<0.001	mg/L	-	0.001
Water	MB	Sulfate (SO4)	WG2079980-10		<0.30	<0.3	mg/L	-	0.3
Water	MB	Phosphorus (P)-Total	WG2080166-13		<0.0020	<0.002	mg/L	-	0.002
Water	MB	Phosphorus (P)-Total	WG2080166-17		<0.0020	<0.002	mg/L	-	0.002
Water	MB	Alkalinity, Total (as CaCO3)	WG2081903-11		<2.0	<2	mg/L	-	2
Water	MB	Alkalinity, Total (as CaCO3)	WG2081903-14		<2.0	<2	mg/L	-	2
Water	MB	Alkalinity, Total (as CaCO3)	WG2081903-16		<2.0	<2	mg/L	-	2
Water	MB	Alkalinity, Total (as CaCO3)	WG2081903-18		<2.0	<2	mg/L	-	2
Water	MS	Phosphorus (P)-Total Dissolvec	WG2079820-4	Anonymous	0.0525	0.0500	mg/L	104.9	70-130
Water	MS	Phosphorus (P)-Total Dissolvec	WG2079820-8	L1605547-9	0.0512	0.0500	mg/L	102.3	70-130
Water	MS	Bromide (Br)	WG2079980-5	Anonymous	0.514	0.500	mg/L	102.9	75-125
Water	MS	Fluoride (F)	WG2079980-5	Anonymous	1.01	1.00	mg/L	101.3	75-125
Water	MS	Nitrate (as N)	WG2079980-5	Anonymous	2.53	2.50	mg/L	101.3	75-125
Water	MS	Nitrite (as N)	WG2079980-5	Anonymous	0.501	0.500	mg/L	100.1	75-125
Water	MS	Sulfate (SO4)	WG2079980-5	Anonymous	102	100	mg/L	102.3	75-125
Water	MS	Bromide (Br)	WG2079980-8	L1605547-2	0.524	0.500	mg/L	104.7	75-125
Water	MS	Chloride (Cl)	WG2079980-8	L1605547-2	104	101	mg/L	103.2	75-125
Water	MS	Fluoride (F)	WG2079980-8	L1605547-2	1.09	1.07	mg/L	102.4	75-125
Water	MS	Nitrate (as N)	WG2079980-8	L1605547-2	2.68	2.63	mg/L	102.1	75-125
Water	MS	Nitrite (as N)	WG2079980-8	L1605547-2	0.502	0.500	mg/L	100.4	75-125
Water	MS	Sulfate (SO4)	WG2079980-8	L1605547-2	113	111	mg/L	101.7	75-125
Water	MS	Phosphorus (P)-Total	WG2080166-4	Anonymous	0.0544	0.0640	mg/L	80.7	70-130
Water	MS	Phosphorus (P)-Total	WG2080166-8	Anonymous	0.0548	0.0545	mg/L	100.6	70-130
Water	MS	Phosphorus (P)-Total	WG2081116-4	Anonymous	0.117	0.107	mg/L	N/A	-	MS-B
Water	MS	Phosphorus (P)-Total	WG2081116-8	Anonymous	0.0584	0.0647	mg/L	87.4	70-130
Water	MS	Ammonia, Total (as N)	WG2082892-8	L1605547-34	0.231	0.231	mg/L	100.2	75-125
Water	MS	Total Kjeldahl Nitrogen	WG2084504-4	L1605547-19	1.18	1.13	mg/L	104.0	70-130

Water	MS	Total Kjeldahl Nitrogen	WG2084504-8	L1605547-3	1.10	1.08	mg/L	102.0	70-130	
Water	MS	Total Kjeldahl Nitrogen	WG2085230-4	Anonymous	1.05	1.00	mg/L	104.7	70-130	
Water	MS	Total Kjeldahl Nitrogen	WG2085230-8	Anonymous	1.07	1.00	mg/L	107.4	70-130	
Water	MS	Phosphorus (P)-Total Dissolved	WG2079820-12	L1605547-32	0.0527	0.0521	mg/L	101.3	70-130	
Water	MS	Bromide (Br)	WG2079980-11	L1605547-35	0.510	0.500	mg/L	102.0	75-125	
Water	MS	Chloride (Cl)	WG2079980-11	L1605547-35	101	100	mg/L	101.2	75-125	
Water	MS	Fluoride (F)	WG2079980-11	L1605547-35	1.00	1.00	mg/L	100.2	75-125	
Water	MS	Nitrate (as N)	WG2079980-11	L1605547-35	2.51	2.50	mg/L	100.5	75-125	
Water	MS	Nitrite (as N)	WG2079980-11	L1605547-35	0.495	0.500	mg/L	99.0	75-125	
Water	MS	Sulfate (SO4)	WG2079980-11	L1605547-35	101	100	mg/L	101.3	75-125	
Water	MS	Phosphorus (P)-Total	WG2080166-12	L1605547-12	0.0381	0.0500	mg/L	76.3	70-130	
Water	MS	Phosphorus (P)-Total	WG2080166-16	L1605547-18	0.0398	0.0500	mg/L	79.5	70-130	
Water	MS	Phosphorus (P)-Total	WG2080166-20	L1605547-34	0.0394	0.0500	mg/L	78.8	70-130	
Water	MS	Ammonia, Total (as N)	WG2082883-10	Anonymous	0.225	0.227	mg/L	99.0	75-125	
Water	MS	Ammonia, Total (as N)	WG2082883-12	L1605547-11	0.201	0.200	mg/L	100.6	75-125	
Water	MS	Ammonia, Total (as N)	WG2082892-10	Anonymous	0.231	0.222	mg/L	104.5	75-125	
Water	MS	Ammonia, Total (as N)	WG2082892-12	L1605547-17	0.206	0.200	mg/L	103.0	75-125	
Organic / Inorganic Carbon										
Water	LCS	Total Organic Carbon	WG2082488-1		8.56	8.57	mg/L	99.8	80-120	
Water	LCS	Total Organic Carbon	WG2082488-5		8.67	8.57	mg/L	101.1	80-120	
Water	LCS	Total Organic Carbon	WG2083945-1		9.11	8.57	mg/L	106.3	80-120	
Water	LCS	Total Organic Carbon	WG2083945-9		9.04	8.57	mg/L	105.5	80-120	
Water	LCS	Total Organic Carbon	WG2084896-1		8.68	8.57	mg/L	101.2	80-120	
Water	LCS	Total Organic Carbon	WG2084896-5		9.04	8.57	mg/L	105.4	80-120	
Water	LCS	Total Organic Carbon	WG2084896-9		8.64	8.57	mg/L	100.9	80-120	
Water	LCS	Total Organic Carbon	WG2085570-1		8.65	8.57	mg/L	100.9	80-120	
Water	LCS	Total Organic Carbon	WG2085570-5		8.35	8.57	mg/L	97.5	80-120	
Water	LCS	Total Organic Carbon	WG2085570-9		8.69	8.57	mg/L	101.4	80-120	
Water	LCS	Total Organic Carbon	WG2084896-13		8.72	8.57	mg/L	101.8	80-120	
Water	MB	Total Organic Carbon	WG2082488-4		<0.50	<0.5	mg/L	-	0.5	
Water	MB	Total Organic Carbon	WG2083945-4		<0.50	<0.5	mg/L	-	0.5	
Water	MB	Total Organic Carbon	WG2083945-8		<0.50	<0.5	mg/L	-	0.5	
Water	MB	Total Organic Carbon	WG2084896-4		<0.50	<0.5	mg/L	-	0.5	
Water	MB	Total Organic Carbon	WG2084896-8		<0.50	<0.5	mg/L	-	0.5	
Water	MB	Total Organic Carbon	WG2085570-4		<0.50	<0.5	mg/L	-	0.5	
Water	MB	Total Organic Carbon	WG2085570-8		<0.50	<0.5	mg/L	-	0.5	
Water	MB	Total Organic Carbon	WG2084896-12		<0.50	<0.5	mg/L	-	0.5	
Water	MS	Total Organic Carbon	WG2082488-7	L1605547-2	6.55	6.35	mg/L	103.9	70-130	
Water	MS	Total Organic Carbon	WG2083945-7	L1605547-24	6.49	6.25	mg/L	104.8	70-130	
Water	MS	Total Organic Carbon	WG2084896-3	Anonymous	10.5	11.4	mg/L	N/A	-	MS-B
Water	MS	Total Organic Carbon	WG2084896-7	Anonymous	11.8	11.7	mg/L	N/A	-	MS-B
Water	MS	Total Organic Carbon	WG2085570-3	Anonymous	9.01	8.82	mg/L	103.8	70-130	
Water	MS	Total Organic Carbon	WG2085570-7	Anonymous	7.09	6.75	mg/L	106.8	70-130	
Water	MS	Total Organic Carbon	WG2084896-11	Anonymous	10.7	10.4	mg/L	N/A	-	MS-B
Total Metals										
Water	LCS	Mercury (Hg)-Total	WG2082888-2		0.00457	0.00500	ug/L	91.4	80-120	
Water	LCS	Mercury (Hg)-Total	WG2083708-2		0.00516	0.00500	ug/L	103.1	80-120	
Water	LCS	Mercury (Hg)-Total	WG2085162-2		0.00500	0.00500	ug/L	99.9	80-120	
Water	MB	Mercury (Hg)-Total	WG2082888-1		<0.00050	<0.0005	ug/L	-	0.0005	
Water	MB	Mercury (Hg)-Total	WG2083708-1		<0.00050	<0.0005	ug/L	-	0.0005	
Water	MB	Mercury (Hg)-Total	WG2085162-1		<0.00050	<0.0005	ug/L	-	0.0005	
Water	MS	Mercury (Hg)-Total	WG2082888-4	L1605547-8	0.00474	0.00500	ug/L	94.9	70-130	
Water	MS	Mercury (Hg)-Total	WG2083708-4	L1605547-20	0.00497	0.00500	ug/L	99.4	70-130	
Total Metals (Undigested)										
Water	CRM	Aluminum (Al)-Total	WG2080115-2	VA-HIGH-WATRM	2.00	2.00	mg/L	99.9	80-120	
Water	CRM	Antimony (Sb)-Total	WG2080115-2	VA-HIGH-WATRM	1.04	1.00	mg/L	103.9	80-120	
Water	CRM	Arsenic (As)-Total	WG2080115-2	VA-HIGH-WATRM	1.03	1.00	mg/L	103.2	80-120	
Water	CRM	Barium (Ba)-Total	WG2080115-2	VA-HIGH-WATRM	0.254	0.250	mg/L	101.4	80-120	
Water	CRM	Beryllium (Be)-Total	WG2080115-2	VA-HIGH-WATRM	0.0993	0.100	mg/L	99.3	80-120	
Water	CRM	Bismuth (Bi)-Total	WG2080115-2	VA-HIGH-WATRM	1.08	1.00	mg/L	107.9	80-120	
Water	CRM	Boron (B)-Total	WG2080115-2	VA-HIGH-WATRM	0.95	1.00	mg/L	95.0	80-120	
Water	CRM	Cadmium (Cd)-Total	WG2080115-2	VA-HIGH-WATRM	0.0989	0.100	mg/L	98.9	80-120	
Water	CRM	Calcium (Ca)-Total	WG2080115-2	VA-HIGH-WATRM	53.5	50.0	mg/L	107.0	80-120	
Water	CRM	Chromium (Cr)-Total	WG2080115-2	VA-HIGH-WATRM	0.262	0.250	mg/L	104.7	80-120	
Water	CRM	Cobalt (Co)-Total	WG2080115-2	VA-HIGH-WATRM	0.248	0.250	mg/L	99.1	80-120	
Water	CRM	Copper (Cu)-Total	WG2080115-2	VA-HIGH-WATRM	0.241	0.250	mg/L	96.2	80-120	
Water	CRM	Iron (Fe)-Total	WG2080115-2	VA-HIGH-WATRM	0.944	1.00	mg/L	94.4	80-120	
Water	CRM	Lead (Pb)-Total	WG2080115-2	VA-HIGH-WATRM	0.534	0.500	mg/L	106.8	80-120	
Water	CRM	Lithium (Li)-Total	WG2080115-2	VA-HIGH-WATRM	0.250	0.250	mg/L	100.1	80-120	
Water	CRM	Magnesium (Mg)-Total	WG2080115-2	VA-HIGH-WATRM	51.9	50.0	mg/L	103.8	80-120	
Water	CRM	Manganese (Mn)-Total	WG2080115-2	VA-HIGH-WATRM	0.253	0.250	mg/L	101.0	80-120	
Water	CRM	Molybdenum (Mo)-Total	WG2080115-2	VA-HIGH-WATRM	0.260	0.250	mg/L	103.9	80-120	
Water	CRM	Nickel (Ni)-Total	WG2080115-2	VA-HIGH-WATRM	0.510	0.500	mg/L	102.0	80-120	
Water	CRM	Phosphorus (P)-Total	WG2080115-2	VA-HIGH-WATRM	2.48	2.50	mg/L	99.3	80-120	
Water	CRM	Potassium (K)-Total	WG2080115-2	VA-HIGH-WATRM	51.0	50.0	mg/L	101.9	80-120	
Water	CRM	Selenium (Se)-Total	WG2080115-2	VA-HIGH-WATRM	0.990	1.00	mg/L	99.0	80-120	
Water	CRM	Silicon (Si)-Total	WG2080115-2	VA-HIGH-WATRM	1.03	1.00	mg/L	102.7	80-120	
Water	CRM	Silver (Ag)-Total	WG2080115-2	VA-HIGH-WATRM	0.0971	0.100	mg/L	97.1	80-120	
Water	CRM	Sodium (Na)-Total	WG2080115-2	VA-HIGH-WATRM	49.9	50.0	mg/L	99.7	80-120	

Water	CRM	Strontium (Sr)-Total	WG2080115-2	VA-HIGH-WATRM	0.248	0.250	mg/L	99.2	80-120	
Water	CRM	Thallium (Tl)-Total	WG2080115-2	VA-HIGH-WATRM	1.05	1.00	mg/L	105.4	80-120	
Water	CRM	Tin (Sn)-Total	WG2080115-2	VA-HIGH-WATRM	0.502	0.500	mg/L	100.4	80-120	
Water	CRM	Titanium (Ti)-Total	WG2080115-2	VA-HIGH-WATRM	0.240	0.250	mg/L	96.2	80-120	
Water	CRM	Uranium (U)-Total	WG2080115-2	VA-HIGH-WATRM	0.00531	0.00500	mg/L	106.2	80-120	
Water	CRM	Vanadium (V)-Total	WG2080115-2	VA-HIGH-WATRM	0.510	0.500	mg/L	101.9	80-120	
Water	CRM	Zinc (Zn)-Total	WG2080115-2	VA-HIGH-WATRM	0.489	0.500	mg/L	97.8	80-120	
Water	CRM	Zirconium (Zr)-Total	WG2080115-2	VA-HIGH-WATRM	0.0956	0.100	mg/L	95.6	80-120	
Water	LCS	Aluminum (Al)-Total	WG2080115-4		2.00	2.00	mg/L	99.9	80-120	
Water	LCS	Antimony (Sb)-Total	WG2080115-4		1.04	1.00	mg/L	103.9	80-120	
Water	LCS	Arsenic (As)-Total	WG2080115-4		1.03	1.00	mg/L	103.2	80-120	
Water	LCS	Barium (Ba)-Total	WG2080115-4		0.254	0.250	mg/L	101.4	80-120	
Water	LCS	Beryllium (Be)-Total	WG2080115-4		0.0993	0.100	mg/L	99.3	80-120	
Water	LCS	Bismuth (Bi)-Total	WG2080115-4		1.08	1.00	mg/L	107.9	80-120	
Water	LCS	Boron (B)-Total	WG2080115-4		0.950	1.00	mg/L	95.0	80-120	
Water	LCS	Cadmium (Cd)-Total	WG2080115-4		0.0989	0.100	mg/L	98.9	80-120	
Water	LCS	Calcium (Ca)-Total	WG2080115-4		53.5	50.0	mg/L	107.0	80-120	
Water	LCS	Chromium (Cr)-Total	WG2080115-4		0.262	0.250	mg/L	104.7	80-120	
Water	LCS	Cobalt (Co)-Total	WG2080115-4		0.248	0.250	mg/L	99.1	80-120	
Water	LCS	Copper (Cu)-Total	WG2080115-4		0.241	0.250	mg/L	96.2	80-120	
Water	LCS	Iron (Fe)-Total	WG2080115-4		0.944	1.00	mg/L	94.4	80-120	
Water	LCS	Lead (Pb)-Total	WG2080115-4		0.534	0.500	mg/L	106.8	80-120	
Water	LCS	Lithium (Li)-Total	WG2080115-4		0.250	0.250	mg/L	100.1	80-120	
Water	LCS	Magnesium (Mg)-Total	WG2080115-4		51.9	50.0	mg/L	103.8	80-120	
Water	LCS	Manganese (Mn)-Total	WG2080115-4		0.253	0.250	mg/L	101.0	80-120	
Water	LCS	Molybdenum (Mo)-Total	WG2080115-4		0.260	0.250	mg/L	103.9	80-120	
Water	LCS	Nickel (Ni)-Total	WG2080115-4		0.510	0.500	mg/L	102.0	80-120	
Water	LCS	Phosphorus (P)-Total	WG2080115-4		2.48	2.50	mg/L	99.3	80-120	
Water	LCS	Potassium (K)-Total	WG2080115-4		51.0	50.0	mg/L	101.9	80-120	
Water	LCS	Selenium (Se)-Total	WG2080115-4		0.990	1.00	mg/L	99.0	80-120	
Water	LCS	Silicon (Si)-Total	WG2080115-4		1.03	1.00	mg/L	102.7	80-120	
Water	LCS	Silver (Ag)-Total	WG2080115-4		0.0971	0.100	mg/L	97.1	80-120	
Water	LCS	Sodium (Na)-Total	WG2080115-4		49.9	50.0	mg/L	99.7	80-120	
Water	LCS	Strontium (Sr)-Total	WG2080115-4		0.248	0.250	mg/L	99.2	80-120	
Water	LCS	Thallium (Tl)-Total	WG2080115-4		1.05	1.00	mg/L	105.4	80-120	
Water	LCS	Tin (Sn)-Total	WG2080115-4		0.502	0.500	mg/L	100.4	80-120	
Water	LCS	Titanium (Ti)-Total	WG2080115-4		0.240	0.250	mg/L	96.2	80-120	
Water	LCS	Uranium (U)-Total	WG2080115-4		0.00531	0.00500	mg/L	106.2	80-120	
Water	LCS	Vanadium (V)-Total	WG2080115-4		0.510	0.500	mg/L	101.9	80-120	
Water	LCS	Zinc (Zn)-Total	WG2080115-4		0.489	0.500	mg/L	97.8	80-120	
Water	LCS	Zirconium (Zr)-Total	WG2080115-4		0.0956	0.100	mg/L	95.6	80-120	
Water	MB	Aluminum (Al)-Total	WG2080115-1		<0.00050	<0.0005	mg/L	-	0.0005	
Water	MB	Antimony (Sb)-Total	WG2080115-1		<0.000020	<0.00002	mg/L	-	0.00002	
Water	MB	Arsenic (As)-Total	WG2080115-1		<0.000020	<0.00002	mg/L	-	0.00002	
Water	MB	Barium (Ba)-Total	WG2080115-1		<0.000020	<0.00002	mg/L	-	0.00002	
Water	MB	Beryllium (Be)-Total	WG2080115-1		<0.000010	<0.00001	mg/L	-	0.00001	
Water	MB	Bismuth (Bi)-Total	WG2080115-1		<0.0000050	<0.000005	mg/L	-	0.000005	
Water	MB	Boron (B)-Total	WG2080115-1		<0.0050	<0.005	mg/L	-	0.005	
Water	MB	Cadmium (Cd)-Total	WG2080115-1		<0.0000050	<0.000005	mg/L	-	0.000005	
Water	MB	Calcium (Ca)-Total	WG2080115-1		<0.030	<0.03	mg/L	-	0.03	
Water	MB	Chromium (Cr)-Total	WG2080115-1		<0.00010	<0.0001	mg/L	-	0.0001	
Water	MB	Cobalt (Co)-Total	WG2080115-1		<0.0000050	<0.000005	mg/L	-	0.000005	
Water	MB	Copper (Cu)-Total	WG2080115-1		<0.00010	<0.0001	mg/L	-	0.0001	
Water	MB	Iron (Fe)-Total	WG2080115-1		<0.0010	<0.001	mg/L	-	0.001	
Water	MB	Lead (Pb)-Total	WG2080115-1		<0.0000050	<0.000005	mg/L	-	0.000005	
Water	MB	Lithium (Li)-Total	WG2080115-1		<0.00050	<0.0005	mg/L	-	0.0005	
Water	MB	Magnesium (Mg)-Total	WG2080115-1		<0.030	<0.03	mg/L	-	0.03	
Water	MB	Manganese (Mn)-Total	WG2080115-1		<0.000050	<0.00005	mg/L	-	0.00005	
Water	MB	Molybdenum (Mo)-Total	WG2080115-1		<0.000050	<0.00005	mg/L	-	0.00005	
Water	MB	Nickel (Ni)-Total	WG2080115-1		<0.000050	<0.00005	mg/L	-	0.00005	
Water	MB	Phosphorus (P)-Total	WG2080115-1		<0.050	<0.05	mg/L	-	0.05	
Water	MB	Potassium (K)-Total	WG2080115-1		<0.050	<0.05	mg/L	-	0.05	
Water	MB	Selenium (Se)-Total	WG2080115-1		<0.000040	<0.00004	mg/L	-	0.00004	
Water	MB	Silicon (Si)-Total	WG2080115-1		<0.050	<0.05	mg/L	-	0.05	
Water	MB	Silver (Ag)-Total	WG2080115-1		<0.0000050	<0.000005	mg/L	-	0.000005	
Water	MB	Sodium (Na)-Total	WG2080115-1		<0.010	<0.01	mg/L	-	0.01	
Water	MB	Strontium (Sr)-Total	WG2080115-1		<0.000050	<0.00005	mg/L	-	0.00005	
Water	MB	Thallium (Tl)-Total	WG2080115-1		<0.0000020	<0.000002	mg/L	-	0.000002	
Water	MB	Tin (Sn)-Total	WG2080115-1		<0.000010	<0.00001	mg/L	-	0.00001	
Water	MB	Titanium (Ti)-Total	WG2080115-1		<0.00050	<0.0005	mg/L	-	0.0005	
Water	MB	Uranium (U)-Total	WG2080115-1		<0.0000020	<0.000002	mg/L	-	0.000002	
Water	MB	Vanadium (V)-Total	WG2080115-1		<0.000050	<0.00005	mg/L	-	0.00005	
Water	MB	Zinc (Zn)-Total	WG2080115-1		<0.00050	<0.0005	mg/L	-	0.0005	
Water	MB	Zirconium (Zr)-Total	WG2080115-1		<0.00010	<0.0001	mg/L	-	0.0001	
Water	MS	Aluminum (Al)-Total	WG2080115-6	L1605547-25	0.206	0.211	mg/L	97.5	70-130	
Water	MS	Antimony (Sb)-Total	WG2080115-6	L1605547-25	0.0190	0.0201	mg/L	94.3	70-130	
Water	MS	Arsenic (As)-Total	WG2080115-6	L1605547-25	0.0199	0.0203	mg/L	98.1	70-130	
Water	MS	Barium (Ba)-Total	WG2080115-6	L1605547-25	0.0398	0.0403	mg/L	N/A	-	MS-B
Water	MS	Beryllium (Be)-Total	WG2080115-6	L1605547-25	0.0389	0.0400	mg/L	97.2	70-130	
Water	MS	Bismuth (Bi)-Total	WG2080115-6	L1605547-25	0.00882	0.0100	mg/L	88.1	70-130	
Water	MS	Boron (B)-Total	WG2080115-6	L1605547-25	0.0993	0.100	mg/L	99.3	70-130	
Water	MS	Cadmium (Cd)-Total	WG2080115-6	L1605547-25	0.00390	0.00403	mg/L	96.9	70-130	
Water	MS	Calcium (Ca)-Total	WG2080115-6	L1605547-25	71.8	69.7	mg/L	104.2	70-130	

Water	MS	Chromium (Cr)-Total	WG2080115-6	L1605547-25	0.0387	0.0401	mg/L	96.5	70-130	
Water	MS	Cobalt (Co)-Total	WG2080115-6	L1605547-25	0.0191	0.0200	mg/L	95.6	70-130	
Water	MS	Copper (Cu)-Total	WG2080115-6	L1605547-25	0.0191	0.0204	mg/L	93.5	70-130	
Water	MS	Iron (Fe)-Total	WG2080115-6	L1605547-25	1.93	2.01	mg/L	95.8	70-130	
Water	MS	Lead (Pb)-Total	WG2080115-6	L1605547-25	0.0190	0.0201	mg/L	94.7	70-130	
Water	MS	Lithium (Li)-Total	WG2080115-6	L1605547-25	0.100	0.101	mg/L	99.5	70-130	
Water	MS	Magnesium (Mg)-Total	WG2080115-6	L1605547-25	55.8	54.3	mg/L	103.0	70-130	
Water	MS	Manganese (Mn)-Total	WG2080115-6	L1605547-25	0.0212	0.0223	mg/L	94.4	70-130	
Water	MS	Molybdenum (Mo)-Total	WG2080115-6	L1605547-25	0.0199	0.0206	mg/L	96.7	70-130	
Water	MS	Nickel (Ni)-Total	WG2080115-6	L1605547-25	0.0384	0.0403	mg/L	95.2	70-130	
Water	MS	Phosphorus (P)-Total	WG2080115-6	L1605547-25	2.51	2.50	mg/L	100.4	70-130	
Water	MS	Potassium (K)-Total	WG2080115-6	L1605547-25	49.7	50.6	mg/L	98.1	70-130	
Water	MS	Selenium (Se)-Total	WG2080115-6	L1605547-25	0.0410	0.0404	mg/L	101.7	70-130	
Water	MS	Silicon (Si)-Total	WG2080115-6	L1605547-25	3.29	3.30	mg/L	N/A	-	MS-B
Water	MS	Silver (Ag)-Total	WG2080115-6	L1605547-25	0.00377	0.00400	mg/L	94.2	70-130	
Water	MS	Sodium (Na)-Total	WG2080115-6	L1605547-25	3.51	3.64	mg/L	93.5	70-130	
Water	MS	Strontium (Sr)-Total	WG2080115-6	L1605547-25	0.129	0.131	mg/L	N/A	-	MS-B
Water	MS	Thallium (Tl)-Total	WG2080115-6	L1605547-25	0.00376	0.00402	mg/L	93.5	70-130	
Water	MS	Tin (Sn)-Total	WG2080115-6	L1605547-25	0.0197	0.0200	mg/L	98.3	70-130	
Water	MS	Titanium (Ti)-Total	WG2080115-6	L1605547-25	0.0385	0.0400	mg/L	96.4	70-130	
Water	MS	Uranium (U)-Total	WG2080115-6	L1605547-25	0.00423	0.00454	mg/L	92.2	70-130	
Water	MS	Vanadium (V)-Total	WG2080115-6	L1605547-25	0.0957	0.100	mg/L	95.6	70-130	
Water	MS	Zinc (Zn)-Total	WG2080115-6	L1605547-25	0.376	0.402	mg/L	93.6	70-130	
Water	MS	Zirconium (Zr)-Total	WG2080115-6	L1605547-25	0.0392	0.0400	mg/L	98.0	70-130	
Dissolved Metals										
Water	CRM	Aluminum (Al)-Dissolved	WG2080119-2	VA-HIGH-WATRM	1.97	2.00	mg/L	98.5	80-120	
Water	CRM	Antimony (Sb)-Dissolved	WG2080119-2	VA-HIGH-WATRM	1.00	1.00	mg/L	100.5	80-120	
Water	CRM	Arsenic (As)-Dissolved	WG2080119-2	VA-HIGH-WATRM	1.01	1.00	mg/L	101.5	80-120	
Water	CRM	Barium (Ba)-Dissolved	WG2080119-2	VA-HIGH-WATRM	0.252	0.250	mg/L	101.0	80-120	
Water	CRM	Beryllium (Be)-Dissolved	WG2080119-2	VA-HIGH-WATRM	0.101	0.100	mg/L	100.7	80-120	
Water	CRM	Bismuth (Bi)-Dissolved	WG2080119-2	VA-HIGH-WATRM	1.03	1.00	mg/L	102.9	80-120	
Water	CRM	Boron (B)-Dissolved	WG2080119-2	VA-HIGH-WATRM	0.96	1.00	mg/L	96.0	80-120	
Water	CRM	Cadmium (Cd)-Dissolved	WG2080119-2	VA-HIGH-WATRM	0.0960	0.100	mg/L	96.0	80-120	
Water	CRM	Calcium (Ca)-Dissolved	WG2080119-2	VA-HIGH-WATRM	51.8	50.0	mg/L	103.6	80-120	
Water	CRM	Chromium (Cr)-Dissolved	WG2080119-2	VA-HIGH-WATRM	0.246	0.250	mg/L	98.5	80-120	
Water	CRM	Cobalt (Co)-Dissolved	WG2080119-2	VA-HIGH-WATRM	0.246	0.250	mg/L	98.3	80-120	
Water	CRM	Copper (Cu)-Dissolved	WG2080119-2	VA-HIGH-WATRM	0.238	0.250	mg/L	95.2	80-120	
Water	CRM	Iron (Fe)-Dissolved	WG2080119-2	VA-HIGH-WATRM	0.912	1.00	mg/L	91.2	80-120	
Water	CRM	Lead (Pb)-Dissolved	WG2080119-2	VA-HIGH-WATRM	0.516	0.500	mg/L	103.2	80-120	
Water	CRM	Lithium (Li)-Dissolved	WG2080119-2	VA-HIGH-WATRM	0.257	0.250	mg/L	102.7	80-120	
Water	CRM	Magnesium (Mg)-Dissolved	WG2080119-2	VA-HIGH-WATRM	49.6	50.0	mg/L	99.2	80-120	
Water	CRM	Manganese (Mn)-Dissolved	WG2080119-2	VA-HIGH-WATRM	0.248	0.250	mg/L	99.0	80-120	
Water	CRM	Molybdenum (Mo)-Dissolved	WG2080119-2	VA-HIGH-WATRM	0.247	0.250	mg/L	99.0	80-120	
Water	CRM	Nickel (Ni)-Dissolved	WG2080119-2	VA-HIGH-WATRM	0.496	0.500	mg/L	99.2	80-120	
Water	CRM	Phosphorus (P)-Dissolved	WG2080119-2	VA-HIGH-WATRM	2.53	2.50	mg/L	101.3	80-120	
Water	CRM	Potassium (K)-Dissolved	WG2080119-2	VA-HIGH-WATRM	47.0	50.0	mg/L	94.1	80-120	
Water	CRM	Selenium (Se)-Dissolved	WG2080119-2	VA-HIGH-WATRM	0.982	1.00	mg/L	98.2	80-120	
Water	CRM	Silicon (Si)-Dissolved	WG2080119-2	VA-HIGH-WATRM	1.01	1.00	mg/L	101.0	80-120	
Water	CRM	Silver (Ag)-Dissolved	WG2080119-2	VA-HIGH-WATRM	0.0956	0.100	mg/L	95.6	80-120	
Water	CRM	Sodium (Na)-Dissolved	WG2080119-2	VA-HIGH-WATRM	49.5	50.0	mg/L	98.9	80-120	
Water	CRM	Strontium (Sr)-Dissolved	WG2080119-2	VA-HIGH-WATRM	0.248	0.250	mg/L	99.3	80-120	
Water	CRM	Thallium (Tl)-Dissolved	WG2080119-2	VA-HIGH-WATRM	1.02	1.00	mg/L	101.8	80-120	
Water	CRM	Tin (Sn)-Dissolved	WG2080119-2	VA-HIGH-WATRM	0.502	0.500	mg/L	100.3	80-120	
Water	CRM	Titanium (Ti)-Dissolved	WG2080119-2	VA-HIGH-WATRM	0.235	0.250	mg/L	94.2	80-120	
Water	CRM	Uranium (U)-Dissolved	WG2080119-2	VA-HIGH-WATRM	0.00514	0.00500	mg/L	102.7	80-120	
Water	CRM	Vanadium (V)-Dissolved	WG2080119-2	VA-HIGH-WATRM	0.496	0.500	mg/L	99.3	80-120	
Water	CRM	Zinc (Zn)-Dissolved	WG2080119-2	VA-HIGH-WATRM	0.482	0.500	mg/L	96.4	80-120	
Water	CRM	Zirconium (Zr)-Dissolved	WG2080119-2	VA-HIGH-WATRM	0.0960	0.100	mg/L	96.0	80-120	
Water	LCS	Aluminum (Al)-Dissolved	WG2080119-3		1.97	2.00	mg/L	98.5	80-120	
Water	LCS	Antimony (Sb)-Dissolved	WG2080119-3		1.00	1.00	mg/L	100.5	80-120	
Water	LCS	Arsenic (As)-Dissolved	WG2080119-3		1.01	1.00	mg/L	101.5	80-120	
Water	LCS	Barium (Ba)-Dissolved	WG2080119-3		0.252	0.250	mg/L	101.0	80-120	
Water	LCS	Beryllium (Be)-Dissolved	WG2080119-3		0.101	0.100	mg/L	100.7	80-120	
Water	LCS	Bismuth (Bi)-Dissolved	WG2080119-3		1.03	1.00	mg/L	102.9	80-120	
Water	LCS	Boron (B)-Dissolved	WG2080119-3		0.960	1.00	mg/L	96.0	80-120	
Water	LCS	Cadmium (Cd)-Dissolved	WG2080119-3		0.0960	0.100	mg/L	96.0	80-120	
Water	LCS	Calcium (Ca)-Dissolved	WG2080119-3		51.8	50.0	mg/L	103.6	80-120	
Water	LCS	Chromium (Cr)-Dissolved	WG2080119-3		0.246	0.250	mg/L	98.5	80-120	
Water	LCS	Cobalt (Co)-Dissolved	WG2080119-3		0.246	0.250	mg/L	98.3	80-120	
Water	LCS	Copper (Cu)-Dissolved	WG2080119-3		0.238	0.250	mg/L	95.2	80-120	
Water	LCS	Iron (Fe)-Dissolved	WG2080119-3		0.912	1.00	mg/L	91.2	80-120	
Water	LCS	Lead (Pb)-Dissolved	WG2080119-3		0.516	0.500	mg/L	103.2	80-120	
Water	LCS	Lithium (Li)-Dissolved	WG2080119-3		0.257	0.250	mg/L	102.7	80-120	
Water	LCS	Magnesium (Mg)-Dissolved	WG2080119-3		49.6	50.0	mg/L	99.2	80-120	
Water	LCS	Manganese (Mn)-Dissolved	WG2080119-3		0.248	0.250	mg/L	99.0	80-120	
Water	LCS	Molybdenum (Mo)-Dissolved	WG2080119-3		0.247	0.250	mg/L	99.0	80-120	
Water	LCS	Nickel (Ni)-Dissolved	WG2080119-3		0.496	0.500	mg/L	99.2	80-120	
Water	LCS	Phosphorus (P)-Dissolved	WG2080119-3		2.53	2.50	mg/L	101.3	80-120	
Water	LCS	Potassium (K)-Dissolved	WG2080119-3		47.0	50.0	mg/L	94.1	80-120	
Water	LCS	Selenium (Se)-Dissolved	WG2080119-3		0.982	1.00	mg/L	98.2	80-120	
Water	LCS	Silicon (Si)-Dissolved	WG2080119-3		1.01	1.00	mg/L	101.0	80-120	
Water	LCS	Silver (Ag)-Dissolved	WG2080119-3		0.0956	0.100	mg/L	95.6	80-120	
Water	LCS	Sodium (Na)-Dissolved	WG2080119-3		49.5	50.0	mg/L	98.9	80-120	
Water	LCS	Strontium (Sr)-Dissolved	WG2080119-3		0.248	0.250	mg/L	99.3	80-120	

Water	LCS	Thallium (Tl)-Dissolved	WG2080119-3		1.02	1.00	mg/L	101.8	80-120	
Water	LCS	Tin (Sn)-Dissolved	WG2080119-3		0.502	0.500	mg/L	100.3	80-120	
Water	LCS	Titanium (Ti)-Dissolved	WG2080119-3		0.235	0.250	mg/L	94.2	80-120	
Water	LCS	Uranium (U)-Dissolved	WG2080119-3		0.00514	0.00500	mg/L	102.7	80-120	
Water	LCS	Vanadium (V)-Dissolved	WG2080119-3		0.496	0.500	mg/L	99.3	80-120	
Water	LCS	Zinc (Zn)-Dissolved	WG2080119-3		0.482	0.500	mg/L	96.4	80-120	
Water	LCS	Zirconium (Zr)-Dissolved	WG2080119-3		0.0960	0.100	mg/L	96.0	80-120	
Water	LCS	Mercury (Hg)-Dissolved	WG2082887-2		0.00455	0.00500	ug/L	91.1	80-120	
Water	LCS	Mercury (Hg)-Dissolved	WG2083707-2		0.00469	0.00500	ug/L	93.8	80-120	
Water	LCS	Mercury (Hg)-Dissolved	WG2085156-2		0.00482	0.00500	ug/L	96.4	80-120	
Water	MB	Aluminum (Al)-Dissolved	WG2080119-1		<0.00050	<0.0005	mg/L	-	0.0005	
Water	MB	Antimony (Sb)-Dissolved	WG2080119-1		<0.000020	<0.00002	mg/L	-	0.00002	
Water	MB	Arsenic (As)-Dissolved	WG2080119-1		<0.000020	<0.00002	mg/L	-	0.00002	
Water	MB	Barium (Ba)-Dissolved	WG2080119-1		<0.000020	<0.00002	mg/L	-	0.00002	
Water	MB	Beryllium (Be)-Dissolved	WG2080119-1		<0.000010	<0.00001	mg/L	-	0.00001	
Water	MB	Bismuth (Bi)-Dissolved	WG2080119-1		<0.0000050	<0.000005	mg/L	-	0.000005	
Water	MB	Boron (B)-Dissolved	WG2080119-1		<0.0050	<0.005	mg/L	-	0.005	
Water	MB	Cadmium (Cd)-Dissolved	WG2080119-1		<0.0000050	<0.000005	mg/L	-	0.000005	
Water	MB	Calcium (Ca)-Dissolved	WG2080119-1		<0.030	<0.03	mg/L	-	0.03	
Water	MB	Chromium (Cr)-Dissolved	WG2080119-1		<0.00010	<0.0001	mg/L	-	0.0001	
Water	MB	Cobalt (Co)-Dissolved	WG2080119-1		<0.0000050	<0.000005	mg/L	-	0.000005	
Water	MB	Copper (Cu)-Dissolved	WG2080119-1		<0.00010	<0.0001	mg/L	-	0.0001	
Water	MB	Iron (Fe)-Dissolved	WG2080119-1		<0.0010	<0.001	mg/L	-	0.001	
Water	MB	Lead (Pb)-Dissolved	WG2080119-1		<0.0000050	<0.000005	mg/L	-	0.000005	
Water	MB	Lithium (Li)-Dissolved	WG2080119-1		<0.00050	<0.0005	mg/L	-	0.0005	
Water	MB	Magnesium (Mg)-Dissolved	WG2080119-1		<0.030	<0.03	mg/L	-	0.03	
Water	MB	Manganese (Mn)-Dissolved	WG2080119-1		<0.000050	<0.00005	mg/L	-	0.00005	
Water	MB	Molybdenum (Mo)-Dissolved	WG2080119-1		<0.000050	<0.00005	mg/L	-	0.00005	
Water	MB	Nickel (Ni)-Dissolved	WG2080119-1		<0.000050	<0.00005	mg/L	-	0.00005	
Water	MB	Phosphorus (P)-Dissolved	WG2080119-1		<0.050	<0.05	mg/L	-	0.05	
Water	MB	Potassium (K)-Dissolved	WG2080119-1		<0.050	<0.05	mg/L	-	0.05	
Water	MB	Selenium (Se)-Dissolved	WG2080119-1		<0.000040	<0.00004	mg/L	-	0.00004	
Water	MB	Silicon (Si)-Dissolved	WG2080119-1		<0.050	<0.05	mg/L	-	0.05	
Water	MB	Silver (Ag)-Dissolved	WG2080119-1		<0.0000050	<0.000005	mg/L	-	0.000005	
Water	MB	Sodium (Na)-Dissolved	WG2080119-1		<0.010	<0.01	mg/L	-	0.01	
Water	MB	Strontium (Sr)-Dissolved	WG2080119-1		<0.000050	<0.00005	mg/L	-	0.00005	
Water	MB	Thallium (Tl)-Dissolved	WG2080119-1		<0.0000020	<0.000002	mg/L	-	0.000002	
Water	MB	Tin (Sn)-Dissolved	WG2080119-1		<0.000010	<0.00001	mg/L	-	0.00001	
Water	MB	Titanium (Ti)-Dissolved	WG2080119-1		<0.00050	<0.0005	mg/L	-	0.0005	
Water	MB	Uranium (U)-Dissolved	WG2080119-1		<0.0000020	<0.000002	mg/L	-	0.000002	
Water	MB	Vanadium (V)-Dissolved	WG2080119-1		<0.000050	<0.00005	mg/L	-	0.00005	
Water	MB	Zinc (Zn)-Dissolved	WG2080119-1		<0.00050	<0.0005	mg/L	-	0.0005	
Water	MB	Zirconium (Zr)-Dissolved	WG2080119-1		<0.00010	<0.0001	mg/L	-	0.0001	
Water	MB	Mercury (Hg)-Dissolved	WG2082887-1		<0.00050	<0.0005	ug/L	-	0.0005	
Water	MB	Mercury (Hg)-Dissolved	WG2083707-1		<0.00050	<0.0005	ug/L	-	0.0005	
Water	MB	Mercury (Hg)-Dissolved	WG2085156-1		<0.00050	<0.0005	ug/L	-	0.0005	
Water	MS	Mercury (Hg)-Dissolved	WG2082887-5	L1605547-2	0.00467	0.00500	ug/L	93.4	70-130	
Water	MS	Mercury (Hg)-Dissolved	WG2083707-4	L1605547-14	0.00495	0.00500	ug/L	98.9	70-130	
Water	MS	Mercury (Hg)-Dissolved	WG2085156-4	L1605547-26	0.00492	0.00500	ug/L	98.4	70-130	
Water	MS	Aluminum (Al)-Dissolved	WG2080119-17	L1605547-24	0.200	0.206	mg/L	96.8	70-130	
Water	MS	Antimony (Sb)-Dissolved	WG2080119-17	L1605547-24	0.0186	0.0200	mg/L	93.0	70-130	
Water	MS	Arsenic (As)-Dissolved	WG2080119-17	L1605547-24	0.0199	0.0202	mg/L	98.4	70-130	
Water	MS	Barium (Ba)-Dissolved	WG2080119-17	L1605547-24	0.0387	0.0402	mg/L	N/A	-	MS-B
Water	MS	Beryllium (Be)-Dissolved	WG2080119-17	L1605547-24	0.0391	0.0400	mg/L	97.8	70-130	
Water	MS	Bismuth (Bi)-Dissolved	WG2080119-17	L1605547-24	0.00879	0.0100	mg/L	87.9	70-130	
Water	MS	Boron (B)-Dissolved	WG2080119-17	L1605547-24	0.0993	0.100	mg/L	99.3	70-130	
Water	MS	Cadmium (Cd)-Dissolved	WG2080119-17	L1605547-24	0.00385	0.00402	mg/L	95.8	70-130	
Water	MS	Calcium (Ca)-Dissolved	WG2080119-17	L1605547-24	71.8	69.6	mg/L	104.4	70-130	
Water	MS	Chromium (Cr)-Dissolved	WG2080119-17	L1605547-24	0.0380	0.0400	mg/L	95.0	70-130	
Water	MS	Cobalt (Co)-Dissolved	WG2080119-17	L1605547-24	0.0190	0.0200	mg/L	94.9	70-130	
Water	MS	Copper (Cu)-Dissolved	WG2080119-17	L1605547-24	0.0189	0.0203	mg/L	93.1	70-130	
Water	MS	Iron (Fe)-Dissolved	WG2080119-17	L1605547-24	1.87	2.00	mg/L	93.4	70-130	
Water	MS	Lead (Pb)-Dissolved	WG2080119-17	L1605547-24	0.0189	0.0200	mg/L	94.2	70-130	
Water	MS	Lithium (Li)-Dissolved	WG2080119-17	L1605547-24	0.101	0.101	mg/L	99.7	70-130	
Water	MS	Magnesium (Mg)-Dissolved	WG2080119-17	L1605547-24	56.2	54.4	mg/L	103.6	70-130	
Water	MS	Manganese (Mn)-Dissolved	WG2080119-17	L1605547-24	0.0213	0.0223	mg/L	95.0	70-130	
Water	MS	Molybdenum (Mo)-Dissolved	WG2080119-17	L1605547-24	0.0199	0.0205	mg/L	97.0	70-130	
Water	MS	Nickel (Ni)-Dissolved	WG2080119-17	L1605547-24	0.0383	0.0403	mg/L	95.0	70-130	
Water	MS	Phosphorus (P)-Dissolved	WG2080119-17	L1605547-24	2.52	2.50	mg/L	100.8	70-130	
Water	MS	Potassium (K)-Dissolved	WG2080119-17	L1605547-24	49.3	50.6	mg/L	97.3	70-130	
Water	MS	Selenium (Se)-Dissolved	WG2080119-17	L1605547-24	0.0417	0.0402	mg/L	103.5	70-130	
Water	MS	Silicon (Si)-Dissolved	WG2080119-17	L1605547-24	3.23	3.26	mg/L	N/A	-	MS-B
Water	MS	Silver (Ag)-Dissolved	WG2080119-17	L1605547-24	0.00370	0.00400	mg/L	92.4	70-130	
Water	MS	Sodium (Na)-Dissolved	WG2080119-17	L1605547-24	3.47	3.59	mg/L	94.0	70-130	
Water	MS	Strontium (Sr)-Dissolved	WG2080119-17	L1605547-24	0.127	0.130	mg/L	N/A	-	MS-B
Water	MS	Thallium (Tl)-Dissolved	WG2080119-17	L1605547-24	0.00368	0.00400	mg/L	91.9	70-130	
Water	MS	Tin (Sn)-Dissolved	WG2080119-17	L1605547-24	0.0193	0.0200	mg/L	96.7	70-130	
Water	MS	Titanium (Ti)-Dissolved	WG2080119-17	L1605547-24	0.0375	0.0400	mg/L	93.7	70-130	
Water	MS	Uranium (U)-Dissolved	WG2080119-17	L1605547-24	0.00420	0.00454	mg/L	91.6	70-130	
Water	MS	Vanadium (V)-Dissolved	WG2080119-17	L1605547-24	0.0948	0.100	mg/L	94.7	70-130	
Water	MS	Zinc (Zn)-Dissolved	WG2080119-17	L1605547-24	0.374	0.401	mg/L	93.2	70-130	
Water	MS	Zirconium (Zr)-Dissolved	WG2080119-17	L1605547-24	0.0395	0.0400	mg/L	98.7	70-130	

Aggregate Organics

Water	LCS	BOD	WG2080530-2		207	198	mg/L	104.4	85-115
Water	LCS	BOD	WG2080530-6		186	198	mg/L	93.9	85-115
Water	LCS	BOD	WG2080530-9		202	198	mg/L	101.9	85-115
Water	LCS	COD	WG2083882-3		753	750	mg/L	100.4	85-115
Water	LCS	COD	WG2083882-6		793	750	mg/L	105.8	85-115
Water	LCS	COD	WG2085190-3		774	750	mg/L	103.2	85-115
Water	LCS	COD	WG2085190-7		740	750	mg/L	98.7	85-115
Water	LCS	COD	WG2085190-8		753	750	mg/L	100.3	85-115
Water	LCS	COD	WG2083882-10		757	750	mg/L	100.9	85-115
Water	MB	BOD	WG2080530-1		<2.0	<2	mg/L	-	2
Water	MB	BOD	WG2080530-5		<2.0	<2	mg/L	-	2
Water	MB	BOD	WG2080530-8		<2.0	<2	mg/L	-	2
Water	MB	COD	WG2083882-1		<20	<20	mg/L	-	20
Water	MB	COD	WG2083882-5		<20	<20	mg/L	-	20
Water	MB	COD	WG2083882-9		<20	<20	mg/L	-	20
Water	MB	COD	WG2085190-1		<20	<20	mg/L	-	20
Water	MB	COD	WG2085190-5		<20	<20	mg/L	-	20
Water	MB	COD	WG2085190-6		<20	<20	mg/L	-	20
Water	MS	COD	WG2083882-4	Anonymous	502	500	mg/L	100.4	75-125
Water	MS	COD	WG2083882-8	L1605547-34	509	500	mg/L	101.9	75-125
Water	MS	COD	WG2085190-4	Anonymous	501	500	mg/L	100.1	75-125
Water	MS	COD	WG2085190-10	Anonymous	504	500	mg/L	100.7	75-125

Duplicates L1645254

Job Reference 15-1438
Report To Kyle Hawes, ECOSCAPE ENVIRONMENTAL CONSULTANTS LTD.
Date Received 21-Jul-2015 8:30
Report Date 17-Aug-2015 15:48
Report Revision 1

ALS ID	Reference	Client Sample ID	QC Type	QC Lot #	Analyte	ampleResult	plicateResult	tectionLimit	Units	tPD	DLimit	Diff	DiffLimit	Qual	Eval	Matrix	Class
Physical Tests (Water)																	
WG2134229-36	L1645254-6	BIRCHBANK L SH	DUP	343661	Conductivity	129	130	2.0	uS/cm	0.2	10	-			✓	Water	Physical Tests
WG2134229-37	L1645254-27	OLD BRIDGE R 1M ABOVE BED	DUP	343661	Conductivity	129	129	2.0	uS/cm	0.3	10	-			✓	Water	Physical Tests
WG2134229-36	L1645254-6	BIRCHBANK L SH	DUP	343661	pH	8.11	8.12	0.10	pH	-		0.01	0.3		✓	Water	Physical Tests
WG2134229-37	L1645254-27	OLD BRIDGE R 1M ABOVE BED	DUP	343661	pH	8.11	8.11	0.10	pH	-		0.00	0.3		✓	Water	Physical Tests
WG2133992-6	L1645254-8	STONEY CK R 1M DEEP	DUP	343693	Total Suspended Solids	<3.0	<3.0	3.0	mg/L	N/A	20	-			✓	Water	Physical Tests
WG2133992-9	L1645254-27	OLD BRIDGE R 1M ABOVE BED	DUP	343693	Total Suspended Solids	<3.0	<3.0	3.0	mg/L	N/A	20	-			✓	Water	Physical Tests
WG2133363-6	L1645254-20	DUPLICATE 1	DUP	343254	Total Dissolved Solids	78	76	13	mg/L	2.2	20	-			✓	Water	Physical Tests
WG2133363-9	L1645254-30	OLD BRIDGE L SH	DUP	343254	Total Dissolved Solids	70	67	13	mg/L	3.4	20	-			✓	Water	Physical Tests
WG2133691-6	L1645254-30	OLD BRIDGE L SH	DUP	343253	Turbidity	0.70	0.69	0.10	NTU	1	15	-			✓	Water	Physical Tests
WG2133691-9	L1645254-9	STONEY CK R 1M ABOVE BED	DUP	343253	Turbidity	0.76	0.76	0.10	NTU	0.4	15	-			✓	Water	Physical Tests
Anions and Nutrients (Water)																	
WG2134709-3	L1645254-8	STONEY CK R 1M DEEP	DUP	344061	Alkalinity, Total (as CaCO3)	54.8	54.5	2.0	mg/L	0.6	20	-			✓	Water	Anions and Nutrients
WG2134709-6	L1645254-28	OLD BRIDGE L 1M ABOVE BED	DUP	344061	Alkalinity, Total (as CaCO3)	57.3	56.8	2.0	mg/L	0.8	20	-			✓	Water	Anions and Nutrients
WG2134566-10	L1645254-7	STONEY CK R SH	DUP	343991	Alkalinity, Total (as CaCO3)	60.6	55.2	2.0	mg/L	9.3	20	-			✓	Water	Anions and Nutrients
WG2135331-11	L1645254-1	BIRCHBANK R SH	DUP	345336	Ammonia, Total (as N)	0.0066	0.0071	0.0050	mg/L	7	20	-			✓	Water	Anions and Nutrients
WG2135331-13	L1645254-7	STONEY CK R SH	DUP	345336	Ammonia, Total (as N)	0.0120	0.0123	0.0050	mg/L	2.4	20	-			✓	Water	Anions and Nutrients
WG2135331-15	L1645254-25	OLD BRIDGE R SH	DUP	345336	Ammonia, Total (as N)	0.0103	0.0105	0.0050	mg/L	1.9	20	-			✓	Water	Anions and Nutrients
WG2132944-12	L1645254-16	MAGLIOS R 1M ABOVE BED	DUP	343655	Bromide (Br)	<0.050	<0.050	0.050	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2132944-15	L1645254-36	NEW BRIDGE L SH	DUP	343655	Bromide (Br)	<0.050	<0.050	0.050	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2132944-12	L1645254-16	MAGLIOS R 1M ABOVE BED	DUP	343655	Chloride (Cl)	<0.50	<0.50	0.50	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2132944-15	L1645254-36	NEW BRIDGE L SH	DUP	343655	Chloride (Cl)	<0.50	<0.50	0.50	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2132944-12	L1645254-16	MAGLIOS R 1M ABOVE BED	DUP	343655	Fluoride (F)	0.062	0.061	0.020	mg/L	0.3	20	-			✓	Water	Anions and Nutrients
WG2132944-15	L1645254-36	NEW BRIDGE L SH	DUP	343655	Fluoride (F)	0.059	0.059	0.020	mg/L	0.2	20	-			✓	Water	Anions and Nutrients
WG2132944-12	L1645254-16	MAGLIOS R 1M ABOVE BED	DUP	343655	Nitrate (as N)	0.0480	0.0479	0.0050	mg/L	0.1	20	-			✓	Water	Anions and Nutrients
WG2132944-15	L1645254-36	NEW BRIDGE L SH	DUP	343655	Nitrate (as N)	0.0472	0.0472	0.0050	mg/L	0	20	-			✓	Water	Anions and Nutrients
WG2132944-12	L1645254-16	MAGLIOS R 1M ABOVE BED	DUP	343655	Nitrite (as N)	<0.0010	0.0014	0.0010	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2132944-15	L1645254-36	NEW BRIDGE L SH	DUP	343655	Nitrite (as N)	0.0011	0.0011	0.0010	mg/L	2	20	-			✓	Water	Anions and Nutrients
WG2135785-7	L1645254-6	BIRCHBANK L SH	DUP	344894	Total Kjeldahl Nitrogen	0.087	0.091	0.050	mg/L	3.9	20	-			✓	Water	Anions and Nutrients
WG2135785-11	L1645254-31	NEW BRIDGE R SH	DUP	344894	Total Kjeldahl Nitrogen	0.117	0.089	0.050	mg/L	-		0.028	0.1		✓	Water	Anions and Nutrients
WG2133775-3	L1645254-1	BIRCHBANK R SH	DUP	343409	Phosphorus (P)-Total Dissolved	<0.0020	<0.0020	0.0020	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2133775-7	L1645254-21	DUPLICATE 2	DUP	343410	Phosphorus (P)-Total Dissolved	<0.0020	<0.0020	0.0020	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2133773-3	L1645254-27	OLD BRIDGE R 1M ABOVE BED	DUP	343387	Phosphorus (P)-Total	0.0029	0.0021	0.0020	mg/L	-		0.0008	0.004		✓	Water	Anions and Nutrients
WG2132944-12	L1645254-16	MAGLIOS R 1M ABOVE BED	DUP	343655	Sulfate (SO4)	10.1	10.1	0.30	mg/L	0	20	-			✓	Water	Anions and Nutrients
WG2132944-15	L1645254-36	NEW BRIDGE L SH	DUP	343655	Sulfate (SO4)	9.99	10.0	0.30	mg/L	0.1	20	-			✓	Water	Anions and Nutrients
Organic / Inorganic Carbon (Water)																	
WG2134068-2	L1645254-9	STONEY CK R 1M ABOVE BED	DUP	344324	Total Organic Carbon	1.37	1.20	0.50	mg/L	13	20	-			✓	Water	Organic / Inorganic Carbon
WG2134068-6	L1645254-17	MAGLIOS L 1M ABOVE BED	DUP	344324	Total Organic Carbon	1.37	1.10	0.50	mg/L	-		0.27	1		✓	Water	Organic / Inorganic Carbon
WG2133936-10	L1645254-1	BIRCHBANK R SH	DUP	344298	Total Organic Carbon	1.42	1.31	0.50	mg/L	8.2	20	-			✓	Water	Organic / Inorganic Carbon
WG2134068-14	L1645254-34	NEW BRIDGE L 1M ABOVE BED	DUP	344324	Total Organic Carbon	1.21	1.03	0.50	mg/L	17	20	-			✓	Water	Organic / Inorganic Carbon
Total Metals (Water)																	
WG2135586-6	L1645254-15	MAGLIOS R 1M DEEP	DUP	344749	Mercury (Hg)-Total	<0.00050	<0.00050	0.00050	ug/L	N/A	20	-			✓	Water	Total Metals
WG2135609-3	L1645254-22	DUPLICATE 3	DUP	344776	Mercury (Hg)-Total	<0.00050	<0.00050	0.00050	ug/L	N/A	20	-			✓	Water	Total Metals
Total Metals (Undigested) (Water)																	
WG2133564-9	L1645254-2	BIRCHBANK R 1M DEEP	DUP	343151	Aluminum (Al)-Total	0.0171	0.0164	0.00050	mg/L	4.2	20	-			✓	Water	Total Metals (Undigested)
WG2133564-11	L1645254-22	DUPLICATE 3	DUP	343151	Aluminum (Al)-Total	0.0154	0.0168	0.00050	mg/L	8.4	20	-			✓	Water	Total Metals (Undigested)
WG2133564-9	L1645254-2	BIRCHBANK R 1M DEEP	DUP	343151	Antimony (Sb)-Total	0.000026	0.000030	0.000020	mg/L	12	20	-			✓	Water	Total Metals (Undigested)
WG2133564-11	L1645254-22	DUPLICATE 3	DUP	343151	Antimony (Sb)-Total	0.000022	0.000021	0.000020	mg/L	6.8	20	-			✓	Water	Total Metals (Undigested)
WG2133564-9	L1645254-2	BIRCHBANK R 1M DEEP	DUP	343151	Arsenic (As)-Total	0.000149	0.000157	0.000020	mg/L	5.4	20	-			✓	Water	Total Metals (Undigested)
WG2133564-11	L1645254-22	DUPLICATE 3	DUP	343151	Arsenic (As)-Total	0.000153	0.000159	0.000020	mg/L	3.8	20	-			✓	Water	Total Metals (Undigested)
WG2133564-9	L1645254-2	BIRCHBANK R 1M DEEP	DUP	343151	Barium (Ba)-Total	0.0178	0.0178	0.000020	mg/L	0.4	20	-			✓	Water	Total Metals (Undigested)
WG2133564-11	L1645254-22	DUPLICATE 3	DUP	343151	Barium (Ba)-Total	0.0166	0.0167	0.000020	mg/L	0.5	20	-			✓	Water	Total Metals (Undigested)
WG2133564-9	L1645254-2	BIRCHBANK R 1M DEEP	DUP	343151	Beryllium (Be)-Total	<0.000010	<0.000010	0.000010	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2133564-11	L1645254-22	DUPLICATE 3	DUP	343151	Beryllium (Be)-Total	<0.000010	<0.000010	0.000010	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2133564-9	L1645254-2	BIRCHBANK R 1M DEEP	DUP	343151	Bismuth (Bi)-Total	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2133564-11	L1645254-22	DUPLICATE 3	DUP	343151	Bismuth (Bi)-Total	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2133564-9	L1645254-2	BIRCHBANK R 1M DEEP	DUP	343151	Boron (B)-Total	<0.0050	<0.0050	0.0050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2133564-11	L1645254-22	DUPLICATE 3	DUP	343151	Boron (B)-Total	<0.0050	<0.0050	0.0050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2133564-9	L1645254-2	BIRCHBANK R 1M DEEP	DUP	343151	Cadmium (Cd)-Total	0.0000117	0.0000083	0.0000050	mg/L	-		0.0000034	0.00001		✓	Water	Total Metals (Undigested)
WG2133564-11	L1645254-22	DUPLICATE 3	DUP	343151	Cadmium (Cd)-Total	0.0000114	0.0000114	0.0000050	mg/L	0.6	20	-			✓	Water	Total Metals (Undigested)
WG2133564-9	L1645254-2	BIRCHBANK R 1M DEEP	DUP	343151	Calcium (Ca)-Total	18.0	18.1	0.030	mg/L	0.4	20	-			✓	Water	Total Metals (Undigested)
WG2133564-11	L1645254-22	DUPLICATE 3	DUP	343151	Calcium (Ca)-Total	17.8	17.6	0.030	mg/L	0.9	20	-			✓	Water	Total Metals (Undigested)
WG2133564-9	L1645254-2	BIRCHBANK R 1M DEEP	DUP	343151	Chromium (Cr)-Total	<0.00010	<0.00010	0.00010	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2133564-11	L1645254-22	DUPLICATE 3	DUP	343151	Chromium (Cr)-Total	<0.00010	<0.00010	0.00010	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2133564-9	L1645254-2	BIRCHBANK R 1M DEEP	DUP	343151	Cobalt (Co)-Total	0.0000166	0.0000155	0.0000050	mg/L	6.7	20	-			✓	Water	Total Metals (Undigested)
WG2133564-11	L1645254-22	DUPLICATE 3	DUP	343151	Cobalt (Co)-Total	0.0000121	0.0000097	0.0000050	mg/L	-		0.0000024	0.00001		✓	Water	Total Metals (Undigested)
WG2133564-9	L1645254-2	BIRCHBANK R 1M DEEP	DUP	343151	Copper (Cu)-Total	0.00033	0.00032	0.00010	mg/L	1.9	20	-			✓	Water	Total Metals (Undigested)
WG2133564-11	L1645254-22	DUPLICATE 3	DUP	343151	Copper (Cu)-Total	0.00029	0.00028	0.00010	mg/L	4.4	20	-			✓	Water	Total Metals (Undigested)
WG2133564-9	L1645254-2	BIRCHBANK R 1M DEEP	DUP	343151	Iron (Fe)-Total	0.0108	0.0109	0.0010	mg/L	0.9	20	-			✓	Water	Total Metals (Undigested)
WG2133564-11	L1645254-22	DUPLICATE 3	DUP	343151	Iron (Fe)-Total	0.0081	0.0078	0.0010	mg/L	2.8	20	-			✓	Water	Total Metals (Undigested)
WG2133564-9	L1645254-2	BIRCHBANK R 1M DEEP	DUP	343151	Lead (Pb)-Total	0.0000551	0.0000494	0.0000050	mg/L	11	20	-			✓	Water	Total Metals (Undigested)
WG2133564-11	L1645254-22	DUPLICATE 3	DUP	343151	Lead (Pb)-Total	0.0000470	0.0000467	0.0000050	mg/L	0.6	20	-			✓	Water	Total Metals (Undigested)
WG2133564-9	L1645254-2	BIRCHBANK R 1M DEEP	DUP	343151	Lithium (Li)-Total	0.00125	0.00125	0.00050	mg/L	0.3	20	-			✓	Water	Total Metals (Undigested)
WG2133564-11	L1645254-22	DUPLICATE 3	DUP	343151	Lithium (Li)-Total	0.00073	0.00076	0.00050	mg/L	4.3	20	-			✓	Water	Total Metals (Undigested)
WG2133564-9	L1645254-2	BIRCHBANK R 1M DEEP	DUP	343151	Magnesium (Mg)-Total	3.96	3.96	0.030	mg/L	0.1	20	-			✓	Water	Total Metals (Undigested)
WG2133564-11	L1645254-22	DUPLICATE 3	DUP	343151	Magnesium (Mg)-Total	3.83	3.77	0.030	mg/L	1.5	20	-			✓	Water	Total Metals (Undigested)
WG2133564-9	L1645254-2	BIRCHBANK R 1M DEEP	DUP	343151	Manganese (Mn)-Total	0.00164	0.00155	0.000050	mg/L	5.4	20	-			✓	Water	Total Metals (Undigested)
WG2133564-11	L1645254-22	DUPLICATE 3	DUP	343151	Manganese (Mn)-Total	0.00159	0.00164	0.000050	mg/L	3.3	20	-			✓	Water	Total Metals (Undigested)
WG2133564-9	L1645254-2	BIRCHBANK R 1M DEEP	DUP	343151	Molybdenum (Mo)-Total	0.000520	0.000501	0.000050	mg/L	3.7	20	-			✓	Water	Total Metals (Undigested)
WG2133564-11	L1645254-22	DUPLICATE 3	DUP	343151	Molybdenum (Mo)-Total	0.000492	0.000497	0.000050	mg/L	1.1	20	-			✓	Water	Total Metals (Undigested)
WG2133564-9	L1645254-2	BIRCHBANK R 1M DEEP	DUP	343151	Nickel (Ni)-Total	0.000339	0.000322	0.000050	mg/L	5	20	-			✓	Water	Total Metals (Undigested)
WG2133564-11	L1645254-22	DUPLICATE 3	DUP	343151	Nickel (Ni)-Total	0.000298	0.000306	0.000050	mg/L	2.8	20	-			✓	Water	Total Metals (Undigested)
WG2133564-9	L1645254-2	BIRCHBANK R 1M DEEP	DUP	343151	Phosphorus (P)-Total	<0.050	<0.050	0.050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2133564-11	L1645254-22	DUPLICATE 3	DUP	343151	Phosphorus (P)-Total	<0.050	<0.050	0.050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2133564-9	L1645254-2	BIRCHBANK R 1M DEEP	DUP	343151	Potassium (K)-Total	0.581	0.576	0.050	mg/L	0.9	20	-			✓	Water	Total Metals (Undigested)
WG2133564-11	L1645254-22	DUPLICATE 3	DUP	343151	Potassium (K)-Total	0.560	0.520	0.050	mg/L	7.4	20	-			✓	Water	Total Metals (Undigested)
WG2133564-9	L1645254-2	BIRCHBANK R 1M DEEP	DUP	343151	Selenium (Se)-Total	0.000136	0.000184	0.000040	mg/L	-		0.000048	0.00008		✓	Water	Total Metals (Undigested)
WG2133564-11	L1645254-22	DUPLICATE 3	DUP	343151	Selenium (Se)-Total	0.000126	0.000152	0.000040	mg/L	19	20	-			✓	Water	Total Metals (Undigested)
WG2133564-9	L1645254-2	BIRCHBANK R 1M DEEP	DUP	343151	Silicon (Si)-Total	1.34	1.37	0.050	mg/L	2.1	20	-			✓	Water	Total Metals (Undigested)
WG2133564-11	L1645254-22	DUPLICATE 3	DUP	343151	Silicon (Si)-Total	1.28	1.25	0.050	mg/L	2.1	20	-			✓	Water	Total Metals (Undigested)
WG2133564-9	L1645254-2	BIRCHBANK R 1M DEEP	DUP	343151	Silver (Ag)-Total	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2133564-11	L1645254-22	DUPLICATE 3	DUP	343151	Silver (Ag)-Total	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2133564-9	L1645254-2	BIRCHBANK R 1M DEEP	DUP	343151	Sodium (Na)-Total	1.06	1.07	0.010	mg/L	0.9	20	-			✓	Water	Total Metals (Undigested)
WG2133564-11	L1645254-22	DUPLICATE 3	DUP	343151	Sodium (Na)-Total	1.02	1.05	0.010	mg/L	2.2	20	-			✓	Water	Total Metals (Undigested)
WG2133564-9	L1645254-2	BIRCHBANK R 1M DEEP	DUP	343151	Strontium (Sr)-Total	0.109	0.109	0.000050	mg/L	0.5	20	-			✓	Water	Total Metals (Undigested)
WG2133564-11	L1645254-22	DUPLICATE 3	DUP	343151	Strontium (Sr)-Total	0.106	0.106	0.000050	mg/L	0.1	20	-			✓	Water	Total Metals (Undigested)
WG2133564-9	L1645254-2	BIRCHBANK R 1M DEEP	DUP	343151	Thallium (Tl)-Total	0.0000035	0.0000036	0.0000020	mg/L	4.2	20	-			✓	Water	Total Metals (Undigested)
WG2133564-11	L1645254-22	DUPLICATE 3	DUP	343151	Thallium (Tl)-Total	<0.0000020	0.0000023	0.0000020	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2133564-9	L1645254-2	BIRCHBANK R 1M DEEP	DUP	343151	Tin (Sn)-Total	<0.000010	<0.000010	0.000010	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2133564-11	L1645254-22	DUPLICATE 3	DUP	343151	Tin (Sn)-Total	<0.000010	<0.000010	0.000010	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2133564-9	L1645254-2	BIRCHBANK R 1M DEEP	DUP	343151	Titanium (Ti)-Total	<0.00050	<0.00050	0.00050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2133564-11	L1645254-22	DUPLICATE 3	DUP	343151	Titanium (Ti)-Total	<0.00050	<0.00050	0.00050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2133564-9	L1645254-2	BIRCHBANK R 1M DEEP	DUP	343151	Uranium (U)-Total	0.000433	0.000422	0.0000020	mg/L	2.6	20	-			✓	Water	Total Metals (Undigested)
WG2133564-11	L1645254-22	DUPLICATE 3	DUP	343151	Uranium (U)-Total	0.000383	0.000387	0.0000020	mg/L	1.1	20	-			✓	Water	Total Metals (Undigested)
WG2133564-9	L1645254-2	BIRCHBANK R 1M DEEP	DUP	343151	Vanadium (V)-Total	0.000141	0.000140	0.000050	mg/L	0.5	20	-			✓	Water	Total Metals (Undigested)
WG2133564-11	L1645254-22	DUPLICATE 3	DUP	343151	Vanadium (V)-Total	0.000153	0.000154	0.000050	mg/L	0.8	20	-			✓	Water	Total Metals (Undigested)
WG2133564-9	L1645254-2	BIRCHBANK R 1M DEEP	DUP	343151	Zinc (Zn)-Total	0.00078	0.00093	0.00050	mg/L	-		0.00049	0.001		✓	Water	Total Metals (Undigested)
WG2133564-11	L1645254-22	DUPLICATE 3	DUP	343151	Zinc (Zn)-Total	0.00085	0.00056	0.00050	mg/L	-		0.00029	0.001		✓	Water	Total Metals (Undigested)
WG2133564-9	L1645254-2	BIRCHBANK R 1M DEEP	DUP	343151	Zirconium (Zr)-Total	<0.00010	<0.00010	0.00010	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2133564-11	L1645254-22	DUPLICATE 3	DUP	343151	Zirconium (Zr)-Total	<0.00010	<0.00010	0.00010	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
Dissolved Metals (Water)																	
WG2133730-3	L1645254-5	BIRCHBANK L 1M DEEP	DUP	343281	Aluminum (Al)-Dissolved	0.00978	0.00994	0.00050	mg/L	1.6	20	-			✓	Water	Dissolved Metals
WG2133730-3	L1645254-5	BIRCHBANK L 1M DEEP	DUP	343281	Antimony (Sb)-Dissolved	0.000026	0.000029	0.000020	mg/L	12	20	-			✓	Water	Dissolved Metals
WG2133730-3	L1645254-5	BIRCHBANK L 1M DEEP	DUP	343281	Arsenic (As)-Dissolved	0.000153	0.000156	0.000020	mg/L	1.8	20	-			✓	Water	Dissolved Metals
WG2133730-3	L1645254-5	BIRCHBANK L 1M DEEP	DUP	343281	Barium (Ba)-Dissolved	0.0166	0.0169	0.000020	mg/L	1.5	20	-			✓	Water	Dissolved Metals
WG2133730-3	L1645254-5	BIRCHBANK L 1M DEEP	DUP	343281	Beryllium (Be)-Dissolved	<0.000010	<0.000010	0.000010	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2133730-3	L1645254-5	BIRCHBANK L 1M DEEP	DUP	343281	Bismuth (Bi)-Dissolved	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2133730-3	L1645254-5	BIRCHBANK L 1M DEEP	DUP	343281	Boron (B)-Dissolved	<0.0050	<0.0050	0.0050	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2133730-3	L1645254-5	BIRCHBANK L 1M DEEP	DUP	343281	Cadmium (Cd)-Dissolved	0.0000092	0.0000075	0.0000050	mg/L	-		0.0000017	0.00001		✓	Water	Dissolved Metals
WG2133730-3	L1645254-5	BIRCHBANK L 1M DEEP	DUP	343281	Calcium (Ca)-Dissolved	18.3	18.0	0.030	mg/L	1.8	20	-			✓	Water	Dissolved Metals

WG2133730-3	L1645254-5	BIRCHBANK L 1M DEEP	DUP	343281	Chromium (Cr)-Dissolved	<0.00010	<0.00010	0.00010	mg/L	N/A	20	-	✓	Water	Dissolved Metals
WG2133730-3	L1645254-5	BIRCHBANK L 1M DEEP	DUP	343281	Cobalt (Co)-Dissolved	0.0000058	0.0000055	0.0000050	mg/L	5.3	20	-	✓	Water	Dissolved Metals
WG2133730-3	L1645254-5	BIRCHBANK L 1M DEEP	DUP	343281	Copper (Cu)-Dissolved	0.00029	0.00030	0.00010	mg/L	3.8	20	-	✓	Water	Dissolved Metals
WG2133730-3	L1645254-5	BIRCHBANK L 1M DEEP	DUP	343281	Iron (Fe)-Dissolved	0.0015	0.0013	0.0010	mg/L	15	20	-	✓	Water	Dissolved Metals
WG2133730-3	L1645254-5	BIRCHBANK L 1M DEEP	DUP	343281	Lead (Pb)-Dissolved	0.0000564	0.0000523	0.0000050	mg/L	7.6	20	-	✓	Water	Dissolved Metals
WG2133730-3	L1645254-5	BIRCHBANK L 1M DEEP	DUP	343281	Lithium (Li)-Dissolved	0.00087	0.00084	0.00050	mg/L	3.3	20	-	✓	Water	Dissolved Metals
WG2133730-3	L1645254-5	BIRCHBANK L 1M DEEP	DUP	343281	Magnesium (Mg)-Dissolved	3.98	3.91	0.030	mg/L	1.7	20	-	✓	Water	Dissolved Metals
WG2133730-3	L1645254-5	BIRCHBANK L 1M DEEP	DUP	343281	Manganese (Mn)-Dissolved	0.000390	0.000380	0.000050	mg/L	2.5	20	-	✓	Water	Dissolved Metals
WG2135571-4	L1645254-1	BIRCHBANK R SH	DUP	344740	Mercury (Hg)-Dissolved	<0.00050	<0.00050	0.00050	ug/L	N/A	20	-	✓	Water	Dissolved Metals
WG2135571-6	L1645254-21	DUPLICATE 2	DUP	344740	Mercury (Hg)-Dissolved	<0.00050	<0.00050	0.00050	ug/L	N/A	20	-	✓	Water	Dissolved Metals
WG2133730-3	L1645254-5	BIRCHBANK L 1M DEEP	DUP	343281	Molybdenum (Mo)-Dissolved	0.000481	0.000501	0.000050	mg/L	4	20	-	✓	Water	Dissolved Metals
WG2133730-3	L1645254-5	BIRCHBANK L 1M DEEP	DUP	343281	Nickel (Ni)-Dissolved	0.000266	0.000243	0.000050	mg/L	9.3	20	-	✓	Water	Dissolved Metals
WG2133730-3	L1645254-5	BIRCHBANK L 1M DEEP	DUP	343281	Phosphorus (P)-Dissolved	<0.050	<0.050	0.050	mg/L	N/A	20	-	✓	Water	Dissolved Metals
WG2133730-3	L1645254-5	BIRCHBANK L 1M DEEP	DUP	343281	Potassium (K)-Dissolved	0.550	0.553	0.050	mg/L	0.6	20	-	✓	Water	Dissolved Metals
WG2133730-3	L1645254-5	BIRCHBANK L 1M DEEP	DUP	343281	Selenium (Se)-Dissolved	0.000140	0.000133	0.000040	mg/L	5.1	20	-	✓	Water	Dissolved Metals
WG2133730-3	L1645254-5	BIRCHBANK L 1M DEEP	DUP	343281	Silicon (Si)-Dissolved	1.34	1.32	0.050	mg/L	1.2	20	-	✓	Water	Dissolved Metals
WG2133730-3	L1645254-5	BIRCHBANK L 1M DEEP	DUP	343281	Silver (Ag)-Dissolved	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-	✓	Water	Dissolved Metals
WG2133730-3	L1645254-5	BIRCHBANK L 1M DEEP	DUP	343281	Sodium (Na)-Dissolved	1.05	1.05	0.010	mg/L	0.8	20	-	✓	Water	Dissolved Metals
WG2133730-3	L1645254-5	BIRCHBANK L 1M DEEP	DUP	343281	Strontium (Sr)-Dissolved	0.107	0.106	0.000050	mg/L	1.2	20	-	✓	Water	Dissolved Metals
WG2133730-3	L1645254-5	BIRCHBANK L 1M DEEP	DUP	343281	Thallium (Tl)-Dissolved	0.0000022	<0.0000020	0.0000020	mg/L	N/A	20	-	✓	Water	Dissolved Metals
WG2133730-3	L1645254-5	BIRCHBANK L 1M DEEP	DUP	343281	Tin (Sn)-Dissolved	<0.000010	<0.000010	0.000010	mg/L	N/A	20	-	✓	Water	Dissolved Metals
WG2133730-3	L1645254-5	BIRCHBANK L 1M DEEP	DUP	343281	Titanium (Ti)-Dissolved	<0.00050	<0.00050	0.00050	mg/L	N/A	20	-	✓	Water	Dissolved Metals
WG2133730-3	L1645254-5	BIRCHBANK L 1M DEEP	DUP	343281	Uranium (U)-Dissolved	0.000390	0.000401	0.0000020	mg/L	2.8	20	-	✓	Water	Dissolved Metals
WG2133730-3	L1645254-5	BIRCHBANK L 1M DEEP	DUP	343281	Vanadium (V)-Dissolved	0.000117	0.000116	0.000050	mg/L	0.2	20	-	✓	Water	Dissolved Metals
WG2133730-3	L1645254-5	BIRCHBANK L 1M DEEP	DUP	343281	Zinc (Zn)-Dissolved	0.00125	0.00117	0.00050	mg/L	6.5	20	-	✓	Water	Dissolved Metals
WG2133730-3	L1645254-5	BIRCHBANK L 1M DEEP	DUP	343281	Zirconium (Zr)-Dissolved	<0.00010	<0.00010	0.00010	mg/L	N/A	20	-	✓	Water	Dissolved Metals
Aggregate Organics (Water)															
WG2133296-7	L1645254-7	STONEY CK R SH	DUP	342934	BOD	<2.0	<2.0	2.0	mg/L	N/A	20	-	✓	Water	Aggregate Organics
WG2134241-3	L1645254-28	OLD BRIDGE L 1M ABOVE BED	DUP	343662	BOD	<2.0	<2.0	2.0	mg/L	N/A	20	-	✓	Water	Aggregate Organics
WG2134502-7	L1645254-12	STONEY CK L SH	DUP	343900	COD	<20	<20	20	mg/L	N/A	20	-	✓	Water	Aggregate Organics
WG2135429-7	L1645254-34	NEW BRIDGE L 1M ABOVE BED	DUP	344624	COD	<20	<20	20	mg/L	N/A	20	-	✓	Water	Aggregate Organics

Evaluation Legend

✓ Met ALS Data Quality Objectives

Quality Control L1645254

Job Reference 15-1438
Report To Kyle Hawes, ECOSCAPE ENVIRONMENTAL CONSULTANTS LTD.
Date Received 21-Jul-2015 8:30
Report Date 17-Aug-2015 15:48
Report Revision 1

QC Type	Analyte	QC Lot #	ALS QC ID	Result	Target	Units	%	Limit	Units	Qual	Eval	Matrix	Class
Physical Tests (Water)													
CRM	Conductivity	343588	WG2134113-17	151	146.9	uS/cm	102.9	90-110	%		✓	Water	Physical Tests
CRM	Conductivity	343588	WG2134113-18	149	146.9	uS/cm	101.4	90-110	%		✓	Water	Physical Tests
CRM	Conductivity	343588	WG2134113-19	153	146.9	uS/cm	104.3	90-110	%		✓	Water	Physical Tests
CRM	Conductivity	343588	WG2134113-20	150	146.9	uS/cm	102.0	90-110	%		✓	Water	Physical Tests
CRM	Conductivity	343588	WG2134113-21	151	146.9	uS/cm	102.7	90-110	%		✓	Water	Physical Tests
CRM	Conductivity	343661	WG2134229-17	149	146.9	uS/cm	101.1	90-110	%		✓	Water	Physical Tests
CRM	Conductivity	343661	WG2134229-18	148	146.9	uS/cm	100.7	90-110	%		✓	Water	Physical Tests
CRM	Conductivity	343661	WG2134229-19	150	146.9	uS/cm	101.8	90-110	%		✓	Water	Physical Tests
CRM	Conductivity	343661	WG2134229-20	150	146.9	uS/cm	101.8	90-110	%		✓	Water	Physical Tests
CRM	Conductivity	343661	WG2134229-21	150	146.9	uS/cm	102.3	90-110	%		✓	Water	Physical Tests
CRM	Conductivity	343661	WG2134229-22	150	146.9	uS/cm	102.1	90-110	%		✓	Water	Physical Tests
CRM	Conductivity	343661	WG2134229-23	149	146.9	uS/cm	101.5	90-110	%		✓	Water	Physical Tests
CRM	Conductivity	343661	WG2134229-24	149	146.9	uS/cm	101.7	90-110	%		✓	Water	Physical Tests
CRM	pH	343588	WG2134113-25	7.01	7	pH	7.01	6.9-7.1	pH		✓	Water	Physical Tests
CRM	pH	343588	WG2134113-26	7.02	7	pH	7.02	6.9-7.1	pH		✓	Water	Physical Tests
CRM	pH	343588	WG2134113-27	7.01	7	pH	7.01	6.9-7.1	pH		✓	Water	Physical Tests
CRM	pH	343588	WG2134113-28	7.01	7	pH	7.01	6.9-7.1	pH		✓	Water	Physical Tests
CRM	pH	343588	WG2134113-29	7.01	7	pH	7.01	6.9-7.1	pH		✓	Water	Physical Tests
CRM	pH	343661	WG2134229-25	7.01	7	pH	7.01	6.9-7.1	pH		✓	Water	Physical Tests
CRM	pH	343661	WG2134229-26	7.01	7	pH	7.01	6.9-7.1	pH		✓	Water	Physical Tests
CRM	pH	343661	WG2134229-27	7.01	7	pH	7.01	6.9-7.1	pH		✓	Water	Physical Tests
CRM	pH	343661	WG2134229-28	7.01	7	pH	7.01	6.9-7.1	pH		✓	Water	Physical Tests
CRM	pH	343661	WG2134229-29	7.01	7	pH	7.01	6.9-7.1	pH		✓	Water	Physical Tests
CRM	pH	343661	WG2134229-30	7.01	7	pH	7.01	6.9-7.1	pH		✓	Water	Physical Tests
CRM	pH	343661	WG2134229-31	7.01	7	pH	7.01	6.9-7.1	pH		✓	Water	Physical Tests
CRM	pH	343661	WG2134229-32	7.01	7	pH	7.01	6.9-7.1	pH		✓	Water	Physical Tests
CRM	Turbidity	343253	WG2133691-2	38.0	40	NTU	95.0	85-115	%		✓	Water	Physical Tests
CRM	Turbidity	343253	WG2133691-5	38.3	40	NTU	95.8	85-115	%		✓	Water	Physical Tests
CRM	Turbidity	343253	WG2133691-8	38.5	40	NTU	96.3	85-115	%		✓	Water	Physical Tests
CRM	Turbidity	343293	WG2133748-2	37.1	40	NTU	92.8	85-115	%		✓	Water	Physical Tests
CRM	Turbidity	343293	WG2133748-5	37.8	40	NTU	94.5	85-115	%		✓	Water	Physical Tests
Anions and Nutrients (Water)													
CRM	Alkalinity, Total (as CaC	343991	WG2134566-2	16.1	15	mg/L	107.2	85-115	%		✓	Water	Anions and Nutrients
CRM	Alkalinity, Total (as CaC	343991	WG2134566-5	71.9	75	mg/L	95.9	85-115	%		✓	Water	Anions and Nutrients
CRM	Alkalinity, Total (as CaC	343991	WG2134566-8	250	250	mg/L	99.9	85-115	%		✓	Water	Anions and Nutrients
CRM	Alkalinity, Total (as CaC	344061	WG2134709-2	15.3	15	mg/L	102.0	85-115	%		✓	Water	Anions and Nutrients
CRM	Alkalinity, Total (as CaC	344061	WG2134709-5	75.2	75	mg/L	100.3	85-115	%		✓	Water	Anions and Nutrients
CRM	Alkalinity, Total (as CaC	344061	WG2134709-8	262	250	mg/L	104.9	85-115	%		✓	Water	Anions and Nutrients
CRM	Ammonia, Total (as N)	345348	WG2135117-2	0.119	0.12	mg/L	98.8	85-115	%		✓	Water	Anions and Nutrients
CRM	Ammonia, Total (as N)	345348	WG2135117-4	0.118	0.12	mg/L	98.4	85-115	%		✓	Water	Anions and Nutrients
CRM	Ammonia, Total (as N)	345348	WG2135117-6	0.117	0.12	mg/L	97.8	85-115	%		✓	Water	Anions and Nutrients
CRM	Ammonia, Total (as N)	345348	WG2135117-8	0.115	0.12	mg/L	95.7	85-115	%		✓	Water	Anions and Nutrients
CRM	Ammonia, Total (as N)	345336	WG2135331-2	0.129	0.12	mg/L	107.3	85-115	%		✓	Water	Anions and Nutrients
CRM	Ammonia, Total (as N)	345336	WG2135331-4	0.118	0.12	mg/L	97.9	85-115	%		✓	Water	Anions and Nutrients
CRM	Ammonia, Total (as N)	345336	WG2135331-6	0.114	0.12	mg/L	95.0	85-115	%		✓	Water	Anions and Nutrients
CRM	Ammonia, Total (as N)	345336	WG2135331-8	0.116	0.12	mg/L	97.0	85-115	%		✓	Water	Anions and Nutrients
CRM	Ammonia, Total (as N)	345348	WG2135117-10	0.113	0.12	mg/L	94.4	85-115	%		✓	Water	Anions and Nutrients
CRM	Ammonia, Total (as N)	345348	WG2135117-18	0.115	0.12	mg/L	95.7	85-115	%		✓	Water	Anions and Nutrients
CRM	Ammonia, Total (as N)	345336	WG2135331-10	0.118	0.12	mg/L	98.4	85-115	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total [	343409	WG2133775-2	7.60	7.17	mg/L	105.9	80-120	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total [	343410	WG2133775-6	7.62	7.17	mg/L	106.2	80-120	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total	343387	WG2133773-2	7.49	7.17	mg/L	104.5	80-120	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total	343388	WG2133773-6	7.43	7.17	mg/L	103.6	80-120	%		✓	Water	Anions and Nutrients
Physical Tests (Water)													
LCS	Total Suspended Solids	343693	WG2133992-2	68.6	75	mg/L	91.5	85-115	%		✓	Water	Physical Tests
LCS	Total Suspended Solids	343693	WG2133992-5	68.4	75	mg/L	91.2	85-115	%		✓	Water	Physical Tests
LCS	Total Suspended Solids	343693	WG2133992-8	65.4	75	mg/L	87.2	85-115	%		✓	Water	Physical Tests
LCS	Total Dissolved Solids	343254	WG2133363-2	419	425	mg/L	98.7	85-115	%		✓	Water	Physical Tests
LCS	Total Dissolved Solids	343254	WG2133363-5	420	425	mg/L	98.8	85-115	%		✓	Water	Physical Tests
LCS	Total Dissolved Solids	343254	WG2133363-8	417	425	mg/L	98.2	85-115	%		✓	Water	Physical Tests
Anions and Nutrients (Water)													
LCS	Bromide (Br)	343655	WG2132944-2	0.529	0.5	mg/L	105.9	85-115	%		✓	Water	Anions and Nutrients
LCS	Bromide (Br)	343655	WG2132944-18	0.529	0.5	mg/L	105.9	85-115	%		✓	Water	Anions and Nutrients
LCS	Chloride (Cl)	343655	WG2132944-2	102	100	mg/L	102.3	90-110	%		✓	Water	Anions and Nutrients
LCS	Chloride (Cl)	343655	WG2132944-18	102	100	mg/L	101.7	90-110	%		✓	Water	Anions and Nutrients
LCS	Fluoride (F)	343655	WG2132944-2	1.05	1	mg/L	104.6	90-110	%		✓	Water	Anions and Nutrients
LCS	Fluoride (F)	343655	WG2132944-18	1.03	1	mg/L	103.0	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrate (as N)	343655	WG2132944-2	2.56	2.5	mg/L	102.3	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrate (as N)	343655	WG2132944-18	2.54	2.5	mg/L	101.5	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrite (as N)	343655	WG2132944-2	0.514	0.5	mg/L	102.7	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrite (as N)	343655	WG2132944-18	0.510	0.5	mg/L	101.9	90-110	%		✓	Water	Anions and Nutrients

LCS	Total Kjeldahl Nitrogen	344894	WG2135785-2	1.03	1	mg/L	103.4	75-125	%	✓	Water	Anions and Nutrients
LCS	Total Kjeldahl Nitrogen	344894	WG2135785-6	1.03	1	mg/L	103.0	75-125	%	✓	Water	Anions and Nutrients
LCS	Total Kjeldahl Nitrogen	344894	WG2135785-10	1.01	1	mg/L	100.8	75-125	%	✓	Water	Anions and Nutrients
LCS	Sulfate (SO4)	343655	WG2132944-2	102	100	mg/L	102.5	90-110	%	✓	Water	Anions and Nutrients
LCS	Sulfate (SO4)	343655	WG2132944-18	102	100	mg/L	101.9	90-110	%	✓	Water	Anions and Nutrients
Organic / Inorganic Carbon (Water)												
LCS	Total Organic Carbon	344298	WG2133936-1	8.83	8.57	mg/L	103.0	80-120	%	✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	344298	WG2133936-5	7.78	8.57	mg/L	90.8	80-120	%	✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	344298	WG2133936-9	8.23	8.57	mg/L	96.0	80-120	%	✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	344324	WG2134068-1	8.28	8.57	mg/L	96.7	80-120	%	✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	344324	WG2134068-5	8.29	8.57	mg/L	96.7	80-120	%	✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	344324	WG2134068-9	8.27	8.57	mg/L	96.5	80-120	%	✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	345726	WG2134203-1	8.47	8.57	mg/L	98.8	80-120	%	✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	345726	WG2134203-5	8.31	8.57	mg/L	96.9	80-120	%	✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	345726	WG2134203-9	8.36	8.57	mg/L	97.6	80-120	%	✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	346056	WG2136347-1	8.30	8.57	mg/L	96.9	80-120	%	✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	346056	WG2136347-5	8.51	8.57	mg/L	99.4	80-120	%	✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	346056	WG2136347-9	8.69	8.57	mg/L	101.4	80-120	%	✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	344298	WG2133936-13	8.00	8.57	mg/L	93.3	80-120	%	✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	344298	WG2133936-17	8.11	8.57	mg/L	94.6	80-120	%	✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	344324	WG2134068-13	8.76	8.57	mg/L	102.2	80-120	%	✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	344324	WG2134068-17	8.80	8.57	mg/L	102.7	80-120	%	✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	345726	WG2134203-13	8.48	8.57	mg/L	99.0	80-120	%	✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	345726	WG2134203-17	8.52	8.57	mg/L	99.4	80-120	%	✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	345726	WG2134203-21	8.48	8.57	mg/L	98.9	80-120	%	✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	346056	WG2136347-13	8.92	8.57	mg/L	104.1	80-120	%	✓	Water	Organic / Inorganic Carbon
Total Metals (Water)												
LCS	Mercury (Hg)-Total	344749	WG2135586-3	0.00498	0.005	ug/L	99.5	80-120	%	✓	Water	Total Metals
LCS	Mercury (Hg)-Total	344776	WG2135609-2	0.00484	0.005	ug/L	96.7	80-120	%	✓	Water	Total Metals
Total Metals (Undigested) (Water)												
LCS	Aluminum (Al)-Total	343151	WG2133564-6	2.02	2	mg/L	101.1	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Antimony (Sb)-Total	343151	WG2133564-6	0.996	1	mg/L	99.6	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Arsenic (As)-Total	343151	WG2133564-6	1.00	1	mg/L	100.3	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Barium (Ba)-Total	343151	WG2133564-6	0.253	0.25	mg/L	101.4	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Beryllium (Be)-Total	343151	WG2133564-6	0.0993	0.1	mg/L	99.3	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Bismuth (Bi)-Total	343151	WG2133564-6	0.986	1	mg/L	98.6	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Boron (B)-Total	343151	WG2133564-6	0.982	1	mg/L	98.2	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Cadmium (Cd)-Total	343151	WG2133564-6	0.0994	0.1	mg/L	99.4	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Calcium (Ca)-Total	343151	WG2133564-6	52.0	50	mg/L	104.0	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Chromium (Cr)-Total	343151	WG2133564-6	0.251	0.25	mg/L	100.4	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Cobalt (Co)-Total	343151	WG2133564-6	0.250	0.25	mg/L	100.2	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Copper (Cu)-Total	343151	WG2133564-6	0.247	0.25	mg/L	98.7	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Iron (Fe)-Total	343151	WG2133564-6	0.999	1	mg/L	99.9	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Lead (Pb)-Total	343151	WG2133564-6	0.503	0.5	mg/L	100.5	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Lithium (Li)-Total	343151	WG2133564-6	0.249	0.25	mg/L	99.6	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Magnesium (Mg)-Total	343151	WG2133564-6	47.7	50	mg/L	95.5	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Manganese (Mn)-Total	343151	WG2133564-6	0.252	0.25	mg/L	100.6	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Molybdenum (Mo)-Tota	343151	WG2133564-6	0.247	0.25	mg/L	98.8	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Nickel (Ni)-Total	343151	WG2133564-6	0.507	0.5	mg/L	101.4	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Phosphorus (P)-Total	343151	WG2133564-6	2.51	2.5	mg/L	100.4	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Potassium (K)-Total	343151	WG2133564-6	50.2	50	mg/L	100.4	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Selenium (Se)-Total	343151	WG2133564-6	0.989	1	mg/L	98.9	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Silicon (Si)-Total	343151	WG2133564-6	1.01	1	mg/L	101.0	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Silver (Ag)-Total	343151	WG2133564-6	0.101	0.1	mg/L	101.0	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Sodium (Na)-Total	343151	WG2133564-6	50.6	50	mg/L	101.2	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Strontium (Sr)-Total	343151	WG2133564-6	0.251	0.25	mg/L	100.4	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Thallium (Tl)-Total	343151	WG2133564-6	0.999	1	mg/L	99.9	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Tin (Sn)-Total	343151	WG2133564-6	0.504	0.5	mg/L	100.8	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Titanium (Ti)-Total	343151	WG2133564-6	0.242	0.25	mg/L	96.8	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Uranium (U)-Total	343151	WG2133564-6	0.00505	0.005	mg/L	101.0	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Vanadium (V)-Total	343151	WG2133564-6	0.516	0.5	mg/L	103.2	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Zinc (Zn)-Total	343151	WG2133564-6	0.465	0.5	mg/L	92.9	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Zirconium (Zr)-Total	343151	WG2133564-6	0.0947	0.1	mg/L	94.7	80-120	%	✓	Water	Total Metals (Undigested)
Dissolved Metals (Water)												
LCS	Aluminum (Al)-Dissolve	343281	WG2133730-2	2.11	2	mg/L	105.4	80-120	%	✓	Water	Dissolved Metals
LCS	Antimony (Sb)-Dissolve	343281	WG2133730-2	1.00	1	mg/L	100.1	80-120	%	✓	Water	Dissolved Metals
LCS	Arsenic (As)-Dissolved	343281	WG2133730-2	1.02	1	mg/L	101.9	80-120	%	✓	Water	Dissolved Metals
LCS	Barium (Ba)-Dissolved	343281	WG2133730-2	0.260	0.25	mg/L	104.2	80-120	%	✓	Water	Dissolved Metals
LCS	Beryllium (Be)-Dissolve	343281	WG2133730-2	0.103	0.1	mg/L	103.0	80-120	%	✓	Water	Dissolved Metals
LCS	Bismuth (Bi)-Dissolved	343281	WG2133730-2	1.00	1	mg/L	100.2	80-120	%	✓	Water	Dissolved Metals
LCS	Boron (B)-Dissolved	343281	WG2133730-2	0.977	1	mg/L	97.7	80-120	%	✓	Water	Dissolved Metals
LCS	Cadmium (Cd)-Dissolve	343281	WG2133730-2	0.0992	0.1	mg/L	99.2	80-120	%	✓	Water	Dissolved Metals
LCS	Calcium (Ca)-Dissolvec	343281	WG2133730-2	50.4	50	mg/L	100.9	80-120	%	✓	Water	Dissolved Metals
LCS	Chromium (Cr)-Dissolve	343281	WG2133730-2	0.253	0.25	mg/L	101.1	80-120	%	✓	Water	Dissolved Metals
LCS	Cobalt (Co)-Dissolved	343281	WG2133730-2	0.258	0.25	mg/L	103.4	80-120	%	✓	Water	Dissolved Metals
LCS	Copper (Cu)-Dissolved	343281	WG2133730-2	0.282	0.25	mg/L	113.0	80-120	%	✓	Water	Dissolved Metals
LCS	Iron (Fe)-Dissolved	343281	WG2133730-2	1.03	1	mg/L	102.6	80-120	%	✓	Water	Dissolved Metals
LCS	Lead (Pb)-Dissolved	343281	WG2133730-2	0.508	0.5	mg/L	101.5	80-120	%	✓	Water	Dissolved Metals
LCS	Lithium (Li)-Dissolved	343281	WG2133730-2	0.254	0.25	mg/L	101.7	80-120	%	✓	Water	Dissolved Metals
LCS	Magnesium (Mg)-Disso	343281	WG2133730-2	49.9	50	mg/L	99.8	80-120	%	✓	Water	Dissolved Metals
LCS	Manganese (Mn)-Disso	343281	WG2133730-2	0.257	0.25	mg/L	103.0	80-120	%	✓	Water	Dissolved Metals
LCS	Mercury (Hg)-Dissolved	344740	WG2135571-3	0.00493	0.005	ug/L	98.5	80-120	%	✓	Water	Dissolved Metals

LCS	Molybdenum (Mo)-Diss	343281	WG2133730-2	0.249	0.25	mg/L	99.5	80-120	%	✓	Water	Dissolved Metals
LCS	Nickel (Ni)-Dissolved	343281	WG2133730-2	0.518	0.5	mg/L	103.6	80-120	%	✓	Water	Dissolved Metals
LCS	Phosphorus (P)-Dissolv	343281	WG2133730-2	2.52	2.5	mg/L	100.8	80-120	%	✓	Water	Dissolved Metals
LCS	Potassium (K)-Dissolve	343281	WG2133730-2	51.2	50	mg/L	102.5	80-120	%	✓	Water	Dissolved Metals
LCS	Selenium (Se)-Dissolve	343281	WG2133730-2	1.01	1	mg/L	100.7	80-120	%	✓	Water	Dissolved Metals
LCS	Silicon (Si)-Dissolved	343281	WG2133730-2	1.12	1	mg/L	111.7	80-120	%	✓	Water	Dissolved Metals
LCS	Silver (Ag)-Dissolved	343281	WG2133730-2	0.101	0.1	mg/L	100.8	80-120	%	✓	Water	Dissolved Metals
LCS	Sodium (Na)-Dissolved	343281	WG2133730-2	53.1	50	mg/L	106.2	80-120	%	✓	Water	Dissolved Metals
LCS	Strontium (Sr)-Dissolve	343281	WG2133730-2	0.257	0.25	mg/L	103.0	80-120	%	✓	Water	Dissolved Metals
LCS	Thallium (Tl)-Dissolved	343281	WG2133730-2	1.01	1	mg/L	100.9	80-120	%	✓	Water	Dissolved Metals
LCS	Tin (Sn)-Dissolved	343281	WG2133730-2	0.511	0.5	mg/L	102.1	80-120	%	✓	Water	Dissolved Metals
LCS	Titanium (Ti)-Dissolved	343281	WG2133730-2	0.258	0.25	mg/L	103.4	80-120	%	✓	Water	Dissolved Metals
LCS	Uranium (U)-Dissolved	343281	WG2133730-2	0.00539	0.005	mg/L	107.7	80-120	%	✓	Water	Dissolved Metals
LCS	Vanadium (V)-Dissolve	343281	WG2133730-2	0.522	0.5	mg/L	104.4	80-120	%	✓	Water	Dissolved Metals
LCS	Zinc (Zn)-Dissolved	343281	WG2133730-2	0.527	0.5	mg/L	105.4	80-120	%	✓	Water	Dissolved Metals
LCS	Zirconium (Zr)-Dissolve	343281	WG2133730-2	0.0970	0.1	mg/L	97.0	80-120	%	✓	Water	Dissolved Metals
Aggregate Organics (Water)												
LCS	BOD	342934	WG2133296-2	188	198	mg/L	94.7	85-115	%	✓	Water	Aggregate Organics
LCS	BOD	342934	WG2133296-6	195	198	mg/L	98.5	85-115	%	✓	Water	Aggregate Organics
LCS	BOD	343662	WG2134241-2	209	198	mg/L	105.8	85-115	%	✓	Water	Aggregate Organics
LCS	COD	343900	WG2134502-3	752	750	mg/L	100.2	85-115	%	✓	Water	Aggregate Organics
LCS	COD	343900	WG2134502-6	750	750	mg/L	99.97	85-115	%	✓	Water	Aggregate Organics
LCS	COD	344624	WG2135429-3	738	750	mg/L	98.4	85-115	%	✓	Water	Aggregate Organics
LCS	COD	344624	WG2135429-6	749	750	mg/L	99.9	85-115	%	✓	Water	Aggregate Organics
LCS	COD	343900	WG2134502-10	758	750	mg/L	101.1	85-115	%	✓	Water	Aggregate Organics
LCS	COD	344624	WG2135429-10	752	750	mg/L	100.3	85-115	%	✓	Water	Aggregate Organics
Physical Tests (Water)												
MB	Conductivity	343588	WG2134113-1	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Conductivity	343588	WG2134113-3	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Conductivity	343588	WG2134113-4	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Conductivity	343588	WG2134113-5	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Conductivity	343661	WG2134229-1	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Conductivity	343661	WG2134229-2	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Conductivity	343661	WG2134229-3	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Conductivity	343661	WG2134229-4	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Conductivity	343661	WG2134229-5	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Conductivity	343661	WG2134229-6	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Conductivity	343661	WG2134229-7	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Conductivity	343661	WG2134229-8	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Total Suspended Solids	343693	WG2133992-1	<3.0		mg/L	-	<3.0	mg/L	✓	Water	Physical Tests
MB	Total Suspended Solids	343693	WG2133992-4	<3.0		mg/L	-	<3.0	mg/L	✓	Water	Physical Tests
MB	Total Suspended Solids	343693	WG2133992-7	<3.0		mg/L	-	<3.0	mg/L	✓	Water	Physical Tests
MB	Total Dissolved Solids	343254	WG2133363-1	<10		mg/L	-	<10	mg/L	✓	Water	Physical Tests
MB	Total Dissolved Solids	343254	WG2133363-4	<10		mg/L	-	<10	mg/L	✓	Water	Physical Tests
MB	Total Dissolved Solids	343254	WG2133363-7	<10		mg/L	-	<10	mg/L	✓	Water	Physical Tests
MB	Turbidity	343253	WG2133691-1	<0.10		NTU	-	<0.10	NTU	✓	Water	Physical Tests
MB	Turbidity	343253	WG2133691-4	<0.10		NTU	-	<0.10	NTU	✓	Water	Physical Tests
MB	Turbidity	343253	WG2133691-7	<0.10		NTU	-	<0.10	NTU	✓	Water	Physical Tests
MB	Turbidity	343293	WG2133748-1	<0.10		NTU	-	<0.10	NTU	✓	Water	Physical Tests
MB	Turbidity	343293	WG2133748-4	<0.10		NTU	-	<0.10	NTU	✓	Water	Physical Tests
Anions and Nutrients (Water)												
MB	Alkalinity, Total (as CaC	343991	WG2134566-1	<2.0		mg/L	-	<2.0	mg/L	✓	Water	Anions and Nutrients
MB	Alkalinity, Total (as CaC	343991	WG2134566-4	<2.0		mg/L	-	<2.0	mg/L	✓	Water	Anions and Nutrients
MB	Alkalinity, Total (as CaC	343991	WG2134566-7	<2.0		mg/L	-	<2.0	mg/L	✓	Water	Anions and Nutrients
MB	Alkalinity, Total (as CaC	344061	WG2134709-1	<2.0		mg/L	-	<2.0	mg/L	✓	Water	Anions and Nutrients
MB	Alkalinity, Total (as CaC	344061	WG2134709-4	<2.0		mg/L	-	<2.0	mg/L	✓	Water	Anions and Nutrients
MB	Alkalinity, Total (as CaC	344061	WG2134709-7	<2.0		mg/L	-	<2.0	mg/L	✓	Water	Anions and Nutrients
MB	Alkalinity, Total (as CaC	343991	WG2134566-11	<2.0		mg/L	-	<2.0	mg/L	✓	Water	Anions and Nutrients
MB	Alkalinity, Total (as CaC	344061	WG2134709-10	<2.0		mg/L	-	<2.0	mg/L	✓	Water	Anions and Nutrients
MB	Alkalinity, Total (as CaC	344061	WG2134709-12	<2.0		mg/L	-	<2.0	mg/L	✓	Water	Anions and Nutrients
MB	Alkalinity, Total (as CaC	344061	WG2134709-14	<2.0		mg/L	-	<2.0	mg/L	✓	Water	Anions and Nutrients
MB	Ammonia, Total (as N)	345348	WG2135117-1	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Ammonia, Total (as N)	345348	WG2135117-3	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Ammonia, Total (as N)	345348	WG2135117-5	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Ammonia, Total (as N)	345348	WG2135117-7	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Ammonia, Total (as N)	345348	WG2135117-9	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Ammonia, Total (as N)	345336	WG2135331-1	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Ammonia, Total (as N)	345336	WG2135331-3	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Ammonia, Total (as N)	345336	WG2135331-5	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Ammonia, Total (as N)	345336	WG2135331-7	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Ammonia, Total (as N)	345336	WG2135331-9	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Ammonia, Total (as N)	345348	WG2135117-17	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	343655	WG2132944-1	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	343655	WG2132944-4	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	343655	WG2132944-7	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	343655	WG2132944-10	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	343655	WG2132944-13	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	343655	WG2132944-16	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	343655	WG2132944-1	<0.50		mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	343655	WG2132944-4	<0.50		mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	343655	WG2132944-7	<0.50		mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	343655	WG2132944-10	<0.50		mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	343655	WG2132944-13	<0.50		mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients

MB	Chloride (Cl)	343655	WG2132944-16	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	343655	WG2132944-1	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	343655	WG2132944-4	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	343655	WG2132944-7	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	343655	WG2132944-10	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	343655	WG2132944-13	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	343655	WG2132944-16	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	343655	WG2132944-1	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	343655	WG2132944-4	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	343655	WG2132944-7	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	343655	WG2132944-10	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	343655	WG2132944-13	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	343655	WG2132944-16	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	343655	WG2132944-1	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	343655	WG2132944-4	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	343655	WG2132944-7	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	343655	WG2132944-10	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	343655	WG2132944-13	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	343655	WG2132944-16	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Total Kjeldahl Nitrogen	344894	WG2135785-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Total Kjeldahl Nitrogen	344894	WG2135785-5	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Total Kjeldahl Nitrogen	344894	WG2135785-9	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total [	343409	WG2133775-1	<0.0020	mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total [	343410	WG2133775-5	<0.0020	mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total	343387	WG2133773-1	<0.0020	mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total	343388	WG2133773-5	<0.0020	mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	343655	WG2132944-1	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	343655	WG2132944-4	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	343655	WG2132944-7	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	343655	WG2132944-10	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	343655	WG2132944-13	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	343655	WG2132944-16	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
Organic / Inorganic Carbon (Water)											
MB	Total Organic Carbon	344298	WG2133936-4	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	344298	WG2133936-8	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	344324	WG2134068-4	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	344324	WG2134068-8	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	345726	WG2134203-4	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	345726	WG2134203-8	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	346056	WG2136347-4	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	346056	WG2136347-8	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	344298	WG2133936-12	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	344298	WG2133936-16	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	344324	WG2134068-12	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	344324	WG2134068-16	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	345726	WG2134203-12	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	345726	WG2134203-16	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	345726	WG2134203-20	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	346056	WG2136347-12	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
Total Metals (Water)											
MB	Mercury (Hg)-Total	344749	WG2135586-1	<0.00050	ug/L	-	<0.00050	ug/L	✓	Water	Total Metals
MB	Mercury (Hg)-Total	344749	WG2135586-2	<0.00050	ug/L	-	<0.00050	ug/L	✓	Water	Total Metals
MB	Mercury (Hg)-Total	344776	WG2135609-1	<0.00050	ug/L	-	<0.00050	ug/L	✓	Water	Total Metals
Total Metals (Undigested) (Water)											
MB	Aluminum (Al)-Total	343151	WG2133564-5	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Total Metals (Undigested)
MB	Antimony (Sb)-Total	343151	WG2133564-5	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Arsenic (As)-Total	343151	WG2133564-5	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Barium (Ba)-Total	343151	WG2133564-5	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Beryllium (Be)-Total	343151	WG2133564-5	<0.000010	mg/L	-	<0.000010	mg/L	✓	Water	Total Metals (Undigested)
MB	Bismuth (Bi)-Total	343151	WG2133564-5	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Boron (B)-Total	343151	WG2133564-5	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Total Metals (Undigested)
MB	Cadmium (Cd)-Total	343151	WG2133564-5	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Calcium (Ca)-Total	343151	WG2133564-5	<0.030	mg/L	-	<0.030	mg/L	✓	Water	Total Metals (Undigested)
MB	Chromium (Cr)-Total	343151	WG2133564-5	<0.00010	mg/L	-	<0.00010	mg/L	✓	Water	Total Metals (Undigested)
MB	Cobalt (Co)-Total	343151	WG2133564-5	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Copper (Cu)-Total	343151	WG2133564-5	<0.00010	mg/L	-	<0.00010	mg/L	✓	Water	Total Metals (Undigested)
MB	Iron (Fe)-Total	343151	WG2133564-5	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Total Metals (Undigested)
MB	Lead (Pb)-Total	343151	WG2133564-5	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Lithium (Li)-Total	343151	WG2133564-5	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Total Metals (Undigested)
MB	Magnesium (Mg)-Total	343151	WG2133564-5	<0.030	mg/L	-	<0.030	mg/L	✓	Water	Total Metals (Undigested)
MB	Manganese (Mn)-Total	343151	WG2133564-5	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Molybdenum (Mo)-Tota	343151	WG2133564-5	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Nickel (Ni)-Total	343151	WG2133564-5	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Phosphorus (P)-Total	343151	WG2133564-5	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Total Metals (Undigested)
MB	Potassium (K)-Total	343151	WG2133564-5	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Total Metals (Undigested)
MB	Selenium (Se)-Total	343151	WG2133564-5	<0.000040	mg/L	-	<0.000040	mg/L	✓	Water	Total Metals (Undigested)
MB	Silicon (Si)-Total	343151	WG2133564-5	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Total Metals (Undigested)
MB	Silver (Ag)-Total	343151	WG2133564-5	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Sodium (Na)-Total	343151	WG2133564-5	<0.010	mg/L	-	<0.010	mg/L	✓	Water	Total Metals (Undigested)
MB	Strontium (Sr)-Total	343151	WG2133564-5	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Thallium (Tl)-Total	343151	WG2133564-5	<0.0000020	mg/L	-	<0.0000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Tin (Sn)-Total	343151	WG2133564-5	<0.000010	mg/L	-	<0.000010	mg/L	✓	Water	Total Metals (Undigested)
MB	Titanium (Ti)-Total	343151	WG2133564-5	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Total Metals (Undigested)

MB	Uranium (U)-Total	343151	WG2133564-5	<0.0000020	mg/L	-	<0.0000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Vanadium (V)-Total	343151	WG2133564-5	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Zinc (Zn)-Total	343151	WG2133564-5	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Total Metals (Undigested)
MB	Zirconium (Zr)-Total	343151	WG2133564-5	<0.00010	mg/L	-	<0.00010	mg/L	✓	Water	Total Metals (Undigested)
Dissolved Metals (Water)											
MB	Aluminum (Al)-Dissolve	343281	WG2133730-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Dissolved Metals
MB	Antimony (Sb)-Dissolve	343281	WG2133730-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Dissolved Metals
MB	Arsenic (As)-Dissolved	343281	WG2133730-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Dissolved Metals
MB	Barium (Ba)-Dissolved	343281	WG2133730-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Dissolved Metals
MB	Beryllium (Be)-Dissolve	343281	WG2133730-1	<0.000010	mg/L	-	<0.000010	mg/L	✓	Water	Dissolved Metals
MB	Bismuth (Bi)-Dissolved	343281	WG2133730-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals
MB	Boron (B)-Dissolved	343281	WG2133730-1	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Dissolved Metals
MB	Cadmium (Cd)-Dissolve	343281	WG2133730-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals
MB	Calcium (Ca)-Dissolvec	343281	WG2133730-1	<0.030	mg/L	-	<0.030	mg/L	✓	Water	Dissolved Metals
MB	Chromium (Cr)-Dissolv	343281	WG2133730-1	<0.00010	mg/L	-	<0.00010	mg/L	✓	Water	Dissolved Metals
MB	Cobalt (Co)-Dissolved	343281	WG2133730-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals
MB	Copper (Cu)-Dissolved	343281	WG2133730-1	<0.00010	mg/L	-	<0.00010	mg/L	✓	Water	Dissolved Metals
MB	Iron (Fe)-Dissolved	343281	WG2133730-1	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Dissolved Metals
MB	Lead (Pb)-Dissolved	343281	WG2133730-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals
MB	Lithium (Li)-Dissolved	343281	WG2133730-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Dissolved Metals
MB	Magnesium (Mg)-Disso	343281	WG2133730-1	<0.030	mg/L	-	<0.030	mg/L	✓	Water	Dissolved Metals
MB	Manganese (Mn)-Disso	343281	WG2133730-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Dissolved Metals
MB	Mercury (Hg)-Dissolved	344740	WG2135571-1	<0.00050	ug/L	-	<0.00050	ug/L	✓	Water	Dissolved Metals
MB	Mercury (Hg)-Dissolved	344740	WG2135571-2	<0.00050	ug/L	-	<0.00050	ug/L	✓	Water	Dissolved Metals
MB	Molybdenum (Mo)-Diss	343281	WG2133730-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Dissolved Metals
MB	Nickel (Ni)-Dissolved	343281	WG2133730-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Dissolved Metals
MB	Phosphorus (P)-Dissolv	343281	WG2133730-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Dissolved Metals
MB	Potassium (K)-Dissolve	343281	WG2133730-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Dissolved Metals
MB	Selenium (Se)-Dissolve	343281	WG2133730-1	<0.000040	mg/L	-	<0.000040	mg/L	✓	Water	Dissolved Metals
MB	Silicon (Si)-Dissolved	343281	WG2133730-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Dissolved Metals
MB	Silver (Ag)-Dissolved	343281	WG2133730-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals
MB	Sodium (Na)-Dissolved	343281	WG2133730-1	<0.010	mg/L	-	<0.010	mg/L	✓	Water	Dissolved Metals
MB	Strontium (Sr)-Dissolve	343281	WG2133730-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Dissolved Metals
MB	Thallium (Tl)-Dissolved	343281	WG2133730-1	<0.0000020	mg/L	-	<0.0000020	mg/L	✓	Water	Dissolved Metals
MB	Tin (Sn)-Dissolved	343281	WG2133730-1	<0.000010	mg/L	-	<0.000010	mg/L	✓	Water	Dissolved Metals
MB	Titanium (Ti)-Dissolved	343281	WG2133730-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Dissolved Metals
MB	Uranium (U)-Dissolved	343281	WG2133730-1	<0.0000020	mg/L	-	<0.0000020	mg/L	✓	Water	Dissolved Metals
MB	Vanadium (V)-Dissolve	343281	WG2133730-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Dissolved Metals
MB	Zinc (Zn)-Dissolved	343281	WG2133730-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Dissolved Metals
MB	Zirconium (Zr)-Dissolve	343281	WG2133730-1	<0.00010	mg/L	-	<0.00010	mg/L	✓	Water	Dissolved Metals
Aggregate Organics (Water)											
MB	BOD	342934	WG2133296-1	<2.0	mg/L	-	<2.0	mg/L	✓	Water	Aggregate Organics
MB	BOD	342934	WG2133296-5	<2.0	mg/L	-	<2.0	mg/L	✓	Water	Aggregate Organics
MB	BOD	343662	WG2134241-1	<2.0	mg/L	-	<2.0	mg/L	✓	Water	Aggregate Organics
MB	COD	343900	WG2134502-1	<20	mg/L	-	<20	mg/L	✓	Water	Aggregate Organics
MB	COD	343900	WG2134502-5	<20	mg/L	-	<20	mg/L	✓	Water	Aggregate Organics
MB	COD	343900	WG2134502-9	<20	mg/L	-	<20	mg/L	✓	Water	Aggregate Organics
MB	COD	344624	WG2135429-1	<20	mg/L	-	<20	mg/L	✓	Water	Aggregate Organics
MB	COD	344624	WG2135429-5	<20	mg/L	-	<20	mg/L	✓	Water	Aggregate Organics
MB	COD	344624	WG2135429-9	<20	mg/L	-	<20	mg/L	✓	Water	Aggregate Organics
Anions and Nutrients (Water)											
MS	Ammonia, Total (as N)	345336	BIRCHBANK R SI	0.201	0.207	mg/L	97.3	75-125	%	✓	Water	Anions and Nutrients
MS	Ammonia, Total (as N)	345336	STONEY CK R SI	0.228	0.212	mg/L	107.9	75-125	%	✓	Water	Anions and Nutrients
MS	Ammonia, Total (as N)	345336	OLD BRIDGE R S	0.222	0.21	mg/L	106.1	75-125	%	✓	Water	Anions and Nutrients
MS	Bromide (Br)	343655	NEW BRIDGE R	0.541	0.5	mg/L	108.1	75-125	%	✓	Water	Anions and Nutrients
MS	Chloride (Cl)	343655	NEW BRIDGE R	107	100	mg/L	106.6	75-125	%	✓	Water	Anions and Nutrients
MS	Fluoride (F)	343655	NEW BRIDGE R	1.14	1.06	mg/L	107.8	75-125	%	✓	Water	Anions and Nutrients
MS	Nitrate (as N)	343655	NEW BRIDGE R	2.69	2.55	mg/L	105.9	75-125	%	✓	Water	Anions and Nutrients
MS	Nitrite (as N)	343655	NEW BRIDGE R	0.529	0.501	mg/L	105.5	75-125	%	✓	Water	Anions and Nutrients
MS	Total Kjeldahl Nitrogen	344894	STONEY CK R SI	1.10	1.08985	mg/L	100.6	70-130	%	✓	Water	Anions and Nutrients
MS	Total Kjeldahl Nitrogen	344894	NEW BRIDGE R	1.05	1.0929	mg/L	95.7	70-130	%	✓	Water	Anions and Nutrients
MS	Phosphorus (P)-Total [	343410	DUPLICATE 3	0.0498	0.05	mg/L	99.6	70-130	%	✓	Water	Anions and Nutrients
MS	Phosphorus (P)-Total [	343409	BIRCHBANK R 1I	0.0500	0.05	mg/L	99.9	70-130	%	✓	Water	Anions and Nutrients
MS	Phosphorus (P)-Total	343387	OLD BRIDGE L 1	0.0451	0.0524	mg/L	85.4	70-130	%	✓	Water	Anions and Nutrients
MS	Sulfate (SO4)	343655	NEW BRIDGE R	115	110	mg/L	104.8	75-125	%	✓	Water	Anions and Nutrients
Organic / Inorganic Carbon (Water)											
MS	Total Organic Carbon	344324	MAGLIOS L 1M D	5.79	6.43	mg/L	87.1	70-130	%	✓	Water	Organic / Inorganic Carbon
MS	Total Organic Carbon	344298	BIRCHBANK R 1I	5.59	6.2	mg/L	87.7	70-130	%	✓	Water	Organic / Inorganic Carbon
MS	Total Organic Carbon	344324	NEW BRIDGE L 1	6.38	6.3	mg/L	101.5	70-130	%	✓	Water	Organic / Inorganic Carbon
MS	Total Organic Carbon	346056	NEW BRIDGE R	5.97	6.1	mg/L	97.5	70-130	%	✓	Water	Organic / Inorganic Carbon
MS	Total Organic Carbon	344324	STONEY CK L 1M	6.49	6.21	mg/L	105.5	70-130	%	✓	Water	Organic / Inorganic Carbon
MS	Total Organic Carbon	344324	OLD BRIDGE R 1	6.11	6.43	mg/L	93.6	70-130	%	✓	Water	Organic / Inorganic Carbon
Total Metals (Water)											
MS	Mercury (Hg)-Total	344749	STONEY CK R SI	0.00519	0.005	ug/L	103.7	70-130	%	✓	Water	Total Metals
MS	Mercury (Hg)-Total	344776	NEW BRIDGE L 1	0.00486	0.005	ug/L	97.3	70-130	%	✓	Water	Total Metals
Total Metals (Undigested) (Water)											
MS	Aluminum (Al)-Total	343151	MAGLIOS R 1M D	0.221	0.217	mg/L	102.1	70-130	%	✓	Water	Total Metals (Undigested)
MS	Aluminum (Al)-Total	343151	NEW BRIDGE R	0.213	0.216	mg/L	98.5	70-130	%	✓	Water	Total Metals (Undigested)
MS	Antimony (Sb)-Total	343151	MAGLIOS R 1M D	0.0172	0.02	mg/L	85.5	70-130	%	✓	Water	Total Metals (Undigested)
MS	Antimony (Sb)-Total	343151	NEW BRIDGE R	0.0188	0.02	mg/L	93.9	70-130	%	✓	Water	Total Metals (Undigested)

MS	Arsenic (As)-Total	343151	MAGLIOS R 1M D	0.0210	0.0202	mg/L	104.4	70-130	%	✓	Water	Total Metals (Undigested)
MS	Arsenic (As)-Total	343151	NEW BRIDGE R	0.0199	0.0202	mg/L	98.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Barium (Ba)-Total	343151	MAGLIOS R 1M D	0.0380	0.0375	mg/L	102.7	70-130	%	✓	Water	Total Metals (Undigested)
MS	Barium (Ba)-Total	343151	NEW BRIDGE R	0.0354	0.0372	mg/L	91.2	70-130	%	✓	Water	Total Metals (Undigested)
MS	Beryllium (Be)-Total	343151	MAGLIOS R 1M D	0.0392	0.04	mg/L	98.0	70-130	%	✓	Water	Total Metals (Undigested)
MS	Beryllium (Be)-Total	343151	NEW BRIDGE R	0.0400	0.04	mg/L	100.0	70-130	%	✓	Water	Total Metals (Undigested)
MS	Bismuth (Bi)-Total	343151	MAGLIOS R 1M D	0.00888	0.01	mg/L	88.8	70-130	%	✓	Water	Total Metals (Undigested)
MS	Bismuth (Bi)-Total	343151	NEW BRIDGE R	0.00845	0.01	mg/L	84.5	70-130	%	✓	Water	Total Metals (Undigested)
MS	Boron (B)-Total	343151	MAGLIOS R 1M D	0.0876	0.1	mg/L	87.6	70-130	%	✓	Water	Total Metals (Undigested)
MS	Boron (B)-Total	343151	NEW BRIDGE R	0.103	0.1	mg/L	103.3	70-130	%	✓	Water	Total Metals (Undigested)
MS	Cadmium (Cd)-Total	343151	MAGLIOS R 1M D	0.00410	0.00401	mg/L	102.2	70-130	%	✓	Water	Total Metals (Undigested)
MS	Cadmium (Cd)-Total	343151	NEW BRIDGE R	0.00390	0.00401	mg/L	97.1	70-130	%	✓	Water	Total Metals (Undigested)
MS	Calcium (Ca)-Total	343151	MAGLIOS R 1M D	66.1	67.5	mg/L	97.3	70-130	%	✓	Water	Total Metals (Undigested)
MS	Calcium (Ca)-Total	343151	NEW BRIDGE R	67.6	67.6	mg/L	99.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Chromium (Cr)-Total	343151	MAGLIOS R 1M D	0.0405	0.04	mg/L	101.3	70-130	%	✓	Water	Total Metals (Undigested)
MS	Chromium (Cr)-Total	343151	NEW BRIDGE R	0.0386	0.04	mg/L	96.6	70-130	%	✓	Water	Total Metals (Undigested)
MS	Cobalt (Co)-Total	343151	MAGLIOS R 1M D	0.0200	0.02	mg/L	99.98	70-130	%	✓	Water	Total Metals (Undigested)
MS	Cobalt (Co)-Total	343151	NEW BRIDGE R	0.0194	0.02	mg/L	96.8	70-130	%	✓	Water	Total Metals (Undigested)
MS	Copper (Cu)-Total	343151	MAGLIOS R 1M D	0.0205	0.0203	mg/L	100.8	70-130	%	✓	Water	Total Metals (Undigested)
MS	Copper (Cu)-Total	343151	NEW BRIDGE R	0.0196	0.0203	mg/L	96.7	70-130	%	✓	Water	Total Metals (Undigested)
MS	Iron (Fe)-Total	343151	MAGLIOS R 1M D	2.01	2.01	mg/L	99.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Iron (Fe)-Total	343151	NEW BRIDGE R	1.93	2.01	mg/L	96.1	70-130	%	✓	Water	Total Metals (Undigested)
MS	Lead (Pb)-Total	343151	MAGLIOS R 1M D	0.0193	0.0201	mg/L	95.5	70-130	%	✓	Water	Total Metals (Undigested)
MS	Lead (Pb)-Total	343151	NEW BRIDGE R	0.0180	0.02	mg/L	90.0	70-130	%	✓	Water	Total Metals (Undigested)
MS	Lithium (Li)-Total	343151	MAGLIOS R 1M D	0.0951	0.1	mg/L	95.1	70-130	%	✓	Water	Total Metals (Undigested)
MS	Lithium (Li)-Total	343151	NEW BRIDGE R	0.106	0.101	mg/L	104.8	70-130	%	✓	Water	Total Metals (Undigested)
MS	Magnesium (Mg)-Total	343151	MAGLIOS R 1M D	49.6	53.8	mg/L	91.6	70-130	%	✓	Water	Total Metals (Undigested)
MS	Magnesium (Mg)-Total	343151	NEW BRIDGE R	51.2	53.9	mg/L	94.6	70-130	%	✓	Water	Total Metals (Undigested)
MS	Manganese (Mn)-Total	343151	MAGLIOS R 1M D	0.0221	0.0217	mg/L	102.0	70-130	%	✓	Water	Total Metals (Undigested)
MS	Manganese (Mn)-Total	343151	NEW BRIDGE R	0.0215	0.0216	mg/L	99.6	70-130	%	✓	Water	Total Metals (Undigested)
MS	Molybdenum (Mo)-Tota	343151	MAGLIOS R 1M D	0.0174	0.0205	mg/L	84.5	70-130	%	✓	Water	Total Metals (Undigested)
MS	Molybdenum (Mo)-Tota	343151	NEW BRIDGE R	0.0188	0.0205	mg/L	91.6	70-130	%	✓	Water	Total Metals (Undigested)
MS	Nickel (Ni)-Total	343151	MAGLIOS R 1M D	0.0397	0.0403	mg/L	98.4	70-130	%	✓	Water	Total Metals (Undigested)
MS	Nickel (Ni)-Total	343151	NEW BRIDGE R	0.0387	0.0403	mg/L	96.1	70-130	%	✓	Water	Total Metals (Undigested)
MS	Phosphorus (P)-Total	343151	MAGLIOS R 1M D	2.31	2.5	mg/L	92.5	70-130	%	✓	Water	Total Metals (Undigested)
MS	Phosphorus (P)-Total	343151	NEW BRIDGE R	2.40	2.5	mg/L	95.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Potassium (K)-Total	343151	MAGLIOS R 1M D	44.9	50.5	mg/L	88.7	70-130	%	✓	Water	Total Metals (Undigested)
MS	Potassium (K)-Total	343151	NEW BRIDGE R	46.8	50.6	mg/L	92.5	70-130	%	✓	Water	Total Metals (Undigested)
MS	Selenium (Se)-Total	343151	MAGLIOS R 1M D	0.0425	0.0402	mg/L	105.7	70-130	%	✓	Water	Total Metals (Undigested)
MS	Selenium (Se)-Total	343151	NEW BRIDGE R	0.0396	0.0402	mg/L	98.6	70-130	%	✓	Water	Total Metals (Undigested)
MS	Silver (Ag)-Total	343151	MAGLIOS R 1M D	0.00401	0.004	mg/L	100.4	70-130	%	✓	Water	Total Metals (Undigested)
MS	Silver (Ag)-Total	343151	NEW BRIDGE R	0.00384	0.004	mg/L	95.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Sodium (Na)-Total	343151	MAGLIOS R 1M D	3.04	3.01	mg/L	101.4	70-130	%	✓	Water	Total Metals (Undigested)
MS	Sodium (Na)-Total	343151	NEW BRIDGE R	2.97	3.04	mg/L	96.7	70-130	%	✓	Water	Total Metals (Undigested)
MS	Thallium (Tl)-Total	343151	MAGLIOS R 1M D	0.00373	0.00401	mg/L	93.1	70-130	%	✓	Water	Total Metals (Undigested)
MS	Thallium (Tl)-Total	343151	NEW BRIDGE R	0.00360	0.00401	mg/L	89.8	70-130	%	✓	Water	Total Metals (Undigested)
MS	Tin (Sn)-Total	343151	MAGLIOS R 1M D	0.0172	0.02	mg/L	86.1	70-130	%	✓	Water	Total Metals (Undigested)
MS	Tin (Sn)-Total	343151	NEW BRIDGE R	0.0189	0.02	mg/L	94.4	70-130	%	✓	Water	Total Metals (Undigested)
MS	Titanium (Ti)-Total	343151	MAGLIOS R 1M D	0.0366	0.04	mg/L	91.4	70-130	%	✓	Water	Total Metals (Undigested)
MS	Titanium (Ti)-Total	343151	NEW BRIDGE R	0.0386	0.04	mg/L	96.6	70-130	%	✓	Water	Total Metals (Undigested)
MS	Uranium (U)-Total	343151	MAGLIOS R 1M D	0.00403	0.00438	mg/L	91.1	70-130	%	✓	Water	Total Metals (Undigested)
MS	Uranium (U)-Total	343151	NEW BRIDGE R	0.00386	0.00439	mg/L	86.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Vanadium (V)-Total	343151	MAGLIOS R 1M D	0.103	0.1	mg/L	102.5	70-130	%	✓	Water	Total Metals (Undigested)
MS	Vanadium (V)-Total	343151	NEW BRIDGE R	0.0994	0.1	mg/L	99.2	70-130	%	✓	Water	Total Metals (Undigested)
MS	Zinc (Zn)-Total	343151	MAGLIOS R 1M D	0.385	0.402	mg/L	95.8	70-130	%	✓	Water	Total Metals (Undigested)
MS	Zinc (Zn)-Total	343151	NEW BRIDGE R	0.377	0.401	mg/L	94.1	70-130	%	✓	Water	Total Metals (Undigested)
MS	Zirconium (Zr)-Total	343151	MAGLIOS R 1M D	0.0344	0.04	mg/L	86.0	70-130	%	✓	Water	Total Metals (Undigested)
MS	Zirconium (Zr)-Total	343151	NEW BRIDGE R	0.0376	0.04	mg/L	94.0	70-130	%	✓	Water	Total Metals (Undigested)

Dissolved Metals (Water)

MS	Aluminum (Al)-Dissolve	343281	NEW BRIDGE L 1	0.207	0.21	mg/L	98.4	70-130	%	✓	Water	Dissolved Metals
MS	Antimony (Sb)-Dissolve	343281	NEW BRIDGE L 1	0.0195	0.02	mg/L	97.6	70-130	%	✓	Water	Dissolved Metals
MS	Arsenic (As)-Dissolved	343281	NEW BRIDGE L 1	0.0199	0.0202	mg/L	98.9	70-130	%	✓	Water	Dissolved Metals
MS	Barium (Ba)-Dissolved	343281	NEW BRIDGE L 1	0.0353	0.0365	mg/L	94.3	70-130	%	✓	Water	Dissolved Metals
MS	Beryllium (Be)-Dissolve	343281	NEW BRIDGE L 1	0.0399	0.04	mg/L	99.8	70-130	%	✓	Water	Dissolved Metals
MS	Bismuth (Bi)-Dissolved	343281	NEW BRIDGE L 1	0.00871	0.01	mg/L	87.1	70-130	%	✓	Water	Dissolved Metals
MS	Boron (B)-Dissolved	343281	NEW BRIDGE L 1	0.103	0.1	mg/L	102.9	70-130	%	✓	Water	Dissolved Metals
MS	Cadmium (Cd)-Dissolve	343281	NEW BRIDGE L 1	0.00391	0.00401	mg/L	97.4	70-130	%	✓	Water	Dissolved Metals
MS	Calcium (Ca)-Dissolved	343281	NEW BRIDGE L 1	67.2	67.7	mg/L	98.9	70-130	%	✓	Water	Dissolved Metals
MS	Chromium (Cr)-Dissolve	343281	NEW BRIDGE L 1	0.0392	0.04	mg/L	98.1	70-130	%	✓	Water	Dissolved Metals
MS	Cobalt (Co)-Dissolved	343281	NEW BRIDGE L 1	0.0194	0.02	mg/L	97.2	70-130	%	✓	Water	Dissolved Metals
MS	Copper (Cu)-Dissolved	343281	NEW BRIDGE L 1	0.0199	0.0203	mg/L	98.0	70-130	%	✓	Water	Dissolved Metals
MS	Iron (Fe)-Dissolved	343281	NEW BRIDGE L 1	1.92	2	mg/L	95.7	70-130	%	✓	Water	Dissolved Metals
MS	Lead (Pb)-Dissolved	343281	NEW BRIDGE L 1	0.0186	0.02	mg/L	92.9	70-130	%	✓	Water	Dissolved Metals
MS	Lithium (Li)-Dissolved	343281	NEW BRIDGE L 1	0.107	0.101	mg/L	105.9	70-130	%	✓	Water	Dissolved Metals
MS	Magnesium (Mg)-Disso	343281	NEW BRIDGE L 1	50.6	53.8	mg/L	93.6	70-130	%	✓	Water	Dissolved Metals
MS	Manganese (Mn)-Disso	343281	NEW BRIDGE L 1	0.0201	0.0204	mg/L	98.8	70-130	%	✓	Water	Dissolved Metals
MS	Mercury (Hg)-Dissolved	344740	BIRCHBANK L 1M	0.00497	0.005	ug/L	99.3	70-130	%	✓	Water	Dissolved Metals
MS	Mercury (Hg)-Dissolved	344740	OLD BRIDGE L 1	0.00486	0.005	ug/L	97.2	70-130	%	✓	Water	Dissolved Metals
MS	Molybdenum (Mo)-Diss	343281	NEW BRIDGE L 1	0.0192	0.0205	mg/L	93.4	70-130	%	✓	Water	Dissolved Metals
MS	Nickel (Ni)-Dissolved	343281	NEW BRIDGE L 1	0.0386	0.0403	mg/L	95.9	70-130	%	✓	Water	Dissolved Metals
MS	Phosphorus (P)-Dissolv	343281	NEW BRIDGE L 1	2.34	2.5	mg/L	93.7	70-130	%	✓	Water	Dissolved Metals
MS	Potassium (K)-Dissolve	343281	NEW BRIDGE L 1	45.9	50.5	mg/L	90.7	70-130	%	✓	Water	Dissolved Metals
MS	Selenium (Se)-Dissolve	343281	NEW BRIDGE L 1	0.0394	0.0401	mg/L	98.1	70-130	%	✓	Water	Dissolved Metals
MS	Silver (Ag)-Dissolved	343281	NEW BRIDGE L 1	0.00399	0.004	mg/L	99.6	70-130	%	✓	Water	Dissolved Metals
MS	Sodium (Na)-Dissolved	343281	NEW BRIDGE L 1	2.95	3.03	mg/L	96.1	70-130	%	✓	Water	Dissolved Metals

MS	Thallium (Tl)-Dissolved	343281	NEW BRIDGE L 1	0.00372	0.004	mg/L	92.9	70-130	%	✓	Water	Dissolved Metals
MS	Tin (Sn)-Dissolved	343281	NEW BRIDGE L 1	0.0194	0.02	mg/L	97.0	70-130	%	✓	Water	Dissolved Metals
MS	Titanium (Ti)-Dissolved	343281	NEW BRIDGE L 1	0.0383	0.04	mg/L	95.8	70-130	%	✓	Water	Dissolved Metals
MS	Uranium (U)-Dissolved	343281	NEW BRIDGE L 1	0.00401	0.00439	mg/L	90.3	70-130	%	✓	Water	Dissolved Metals
MS	Vanadium (V)-Dissolve	343281	NEW BRIDGE L 1	0.100	0.1	mg/L	99.95	70-130	%	✓	Water	Dissolved Metals
MS	Zinc (Zn)-Dissolved	343281	NEW BRIDGE L 1	0.383	0.402	mg/L	95.3	70-130	%	✓	Water	Dissolved Metals
MS	Zirconium (Zr)-Dissolve	343281	NEW BRIDGE L 1	0.0384	0.04	mg/L	95.9	70-130	%	✓	Water	Dissolved Metals
Aggregate Organics (Water)												
MS	COD	343900	MAGLIOS R SH	519	500	mg/L	103.9	75-125	%	✓	Water	Aggregate Organics

Evaluation Legend

✓	Met ALS Data Quality Objectives

Duplicates L1691592

Job Reference
Report To Kyle Hawes, ECOSCAPE ENVIRONMENTAL CONSULTANTS LTD.
Date Received 21-Oct-2015 15:35
Report Date 23-Nov-2015 13:00
Report Version 1

ALS ID	Reference	Client Sample ID	QC Type	QC Lot #	Analyte	Sample Result	Duplicate Result	Detection Limit	Units	RPD	RPD Limit	Diff	Diff Limit	Qual	Eval	Matrix	Class
Physical Tests (Water)																	
WG2198934-34	L1691592-19	WANETA COMP	DUP	395214	Conductivity	136	136	2.0	uS/cm	0.1	10	-			✓	Water	Physical Tests
WG2198934-35	L1691592-33	NEW BRIDGE R 1M ABOVE BED	DUP	395214	Conductivity	136	136	2.0	uS/cm	0.5	10	-			✓	Water	Physical Tests
WG2198934-34	L1691592-19	WANETA COMP	DUP	395214	pH	7.99	7.99	0.10	pH	-		0.00	0.3		✓	Water	Physical Tests
WG2198934-35	L1691592-33	NEW BRIDGE R 1M ABOVE BED	DUP	395214	pH	8.01	8.01	0.10	pH	-		0.00	0.3		✓	Water	Physical Tests
WG2198050-9	L1691592-36	NEW BRIDGE L SH	DUP	394614	Total Suspended Solids	<3.0	<3.0	3.0	mg/L	N/A	20	-			✓	Water	Physical Tests
WG2198043-6	L1691592-15	MAGLIOS R 1M ABOVE BED	DUP	394548	Total Dissolved Solids	86	85	13	mg/L	0.8	20	-			✓	Water	Physical Tests
WG2198128-9	L1691592-7	STONEY CK R SH	DUP	394581	Turbidity	0.39	0.39	0.10	NTU	1	15	-			✓	Water	Physical Tests
Anions and Nutrients (Water)																	
WG2198399-6	L1691592-17	MAGLIOS L 1M DEEP	DUP	394840	Alkalinity, Total (as CaCO3)	58.3	58.7	2.0	mg/L	0.8	20	-			✓	Water	Anions and Nutrients
WG2200273-15	L1691592-1	BIRCH BANK R SH	DUP	397250	Ammonia, Total (as N)	<0.0050	<0.0050	0.0050	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2200295-11	L1691592-15	MAGLIOS R 1M ABOVE BED	DUP	397747	Ammonia, Total (as N)	0.0082	0.0083	0.0050	mg/L	0.8	20	-			✓	Water	Anions and Nutrients
WG2200295-13	L1691592-35	NEW BRIDGE L 1M DEEP	DUP	397747	Ammonia, Total (as N)	0.0065	0.0065	0.0050	mg/L	0.8	20	-			✓	Water	Anions and Nutrients
WG2198178-3	L1691592-9	STONEY CK R 1M ABOVE BED	DUP	395645	Bromide (Br)	<0.050	<0.050	0.050	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2198178-6	L1691592-28	OLD BRIDGE L 1M ABOVE BED	DUP	395645	Bromide (Br)	<0.050	<0.050	0.050	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2198178-3	L1691592-9	STONEY CK R 1M ABOVE BED	DUP	395645	Chloride (Cl)	<0.50	<0.50	0.50	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2198178-6	L1691592-28	OLD BRIDGE L 1M ABOVE BED	DUP	395645	Chloride (Cl)	<0.50	<0.50	0.50	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2198178-3	L1691592-9	STONEY CK R 1M ABOVE BED	DUP	395645	Fluoride (F)	0.053	0.054	0.020	mg/L	3.3	20	-			✓	Water	Anions and Nutrients
WG2198178-6	L1691592-28	OLD BRIDGE L 1M ABOVE BED	DUP	395645	Fluoride (F)	0.053	0.054	0.020	mg/L	1.5	20	-			✓	Water	Anions and Nutrients
WG2198178-3	L1691592-9	STONEY CK R 1M ABOVE BED	DUP	395645	Nitrate (as N)	0.0720	0.0725	0.0050	mg/L	0.6	20	-			✓	Water	Anions and Nutrients
WG2198178-6	L1691592-28	OLD BRIDGE L 1M ABOVE BED	DUP	395645	Nitrate (as N)	0.0764	0.0742	0.0050	mg/L	3	20	-			✓	Water	Anions and Nutrients
WG2198178-3	L1691592-9	STONEY CK R 1M ABOVE BED	DUP	395645	Nitrite (as N)	<0.0010	<0.0010	0.0010	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2198178-6	L1691592-28	OLD BRIDGE L 1M ABOVE BED	DUP	395645	Nitrite (as N)	0.0011	<0.0010	0.0010	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2198368-3	L1691592-5	BIRCH BANK L 1M DEEP	DUP	394781	Total Kjeldahl Nitrogen	0.082	0.080	0.050	mg/L	3.1	20	-			✓	Water	Anions and Nutrients
WG2198368-7	L1691592-25	OLD BRIDGE R SH	DUP	394781	Total Kjeldahl Nitrogen	0.093	0.091	0.050	mg/L	2.2	20	-			✓	Water	Anions and Nutrients
WG2198313-3	L1691592-14	MAGLIOS R 1M DEEP	DUP	395432	Phosphorus (P)-Total Dissolved	<0.0020	<0.0020	0.0020	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2198313-7	L1691592-34	NEW BRIDGE L 1M ABOVE BED	DUP	395433	Phosphorus (P)-Total Dissolved	<0.0020	<0.0020	0.0020	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2198060-7	L1691592-30	OLD BRIDGE L SH	DUP	394631	Phosphorus (P)-Total	0.0024	0.0022	0.0020	mg/L	8.4	20	-			✓	Water	Anions and Nutrients
WG2198178-3	L1691592-9	STONEY CK R 1M ABOVE BED	DUP	395645	Sulfate (SO4)	11.2	11.2	0.30	mg/L	0.1	20	-			✓	Water	Anions and Nutrients
WG2198178-6	L1691592-28	OLD BRIDGE L 1M ABOVE BED	DUP	395645	Sulfate (SO4)	11.2	11.2	0.30	mg/L	0.1	20	-			✓	Water	Anions and Nutrients
Organic / Inorganic Carbon (Water)																	
WG2198053-2	L1691592-4	BIRCH BANK L 1M ABOVE BED	DUP	395388	Total Organic Carbon	0.99	0.88	0.50	mg/L	12	20	-			✓	Water	Organic / Inorganic Carbon
WG2198053-6	L1691592-14	MAGLIOS R 1M DEEP	DUP	395388	Total Organic Carbon	1.09	0.95	0.50	mg/L	13	20	-			✓	Water	Organic / Inorganic Carbon
WG2198053-10	L1691592-32	NEW BRIDGE R 1M DEEP	DUP	395388	Total Organic Carbon	0.75	0.81	0.50	mg/L	8.4	20	-			✓	Water	Organic / Inorganic Carbon
Total Metals (Water)																	
WG2200021-3	L1691592-9	STONEY CK R 1M ABOVE BED	DUP	396122	Mercury (Hg)-Total	<0.00050	<0.00050	0.00050	ug/L	N/A	20	-			✓	Water	Total Metals
WG2200024-3	L1691592-18	MAGLIOS L SH	DUP	396125	Mercury (Hg)-Total	<0.00050	<0.00050	0.00050	ug/L	N/A	20	-			✓	Water	Total Metals
Total Metals (Undigested) (Water)																	
WG2198048-3	L1691592-10	STONEY CK L 1M ABOVE BED	DUP	394528	Aluminum (Al)-Total	0.0107	0.0100	0.00050	mg/L	6.3	20	-			✓	Water	Total Metals (Undigested)
WG2198048-4	L1691592-30	OLD BRIDGE L SH	DUP	394528	Aluminum (Al)-Total	0.0108	0.0101	0.00050	mg/L	6.7	20	-			✓	Water	Total Metals (Undigested)
WG2198048-3	L1691592-10	STONEY CK L 1M ABOVE BED	DUP	394528	Antimony (Sb)-Total	<0.000020	<0.000020	0.000020	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2198048-4	L1691592-30	OLD BRIDGE L SH	DUP	394528	Antimony (Sb)-Total	0.000021	0.000023	0.000020	mg/L	5.5	20	-			✓	Water	Total Metals (Undigested)
WG2198048-3	L1691592-10	STONEY CK L 1M ABOVE BED	DUP	394528	Arsenic (As)-Total	0.000129	0.000149	0.000020	mg/L	14	20	-			✓	Water	Total Metals (Undigested)
WG2198048-4	L1691592-30	OLD BRIDGE L SH	DUP	394528	Arsenic (As)-Total	0.000166	0.000132	0.000020	mg/L	-		0.000034	0.00004		✓	Water	Total Metals (Undigested)
WG2198048-3	L1691592-10	STONEY CK L 1M ABOVE BED	DUP	394528	Barium (Ba)-Total	0.0166	0.0167	0.000020	mg/L	0.7	20	-			✓	Water	Total Metals (Undigested)
WG2198048-4	L1691592-30	OLD BRIDGE L SH	DUP	394528	Barium (Ba)-Total	0.0168	0.0170	0.000020	mg/L	1.4	20	-			✓	Water	Total Metals (Undigested)
WG2198048-3	L1691592-10	STONEY CK L 1M ABOVE BED	DUP	394528	Beryllium (Be)-Total	<0.000010	<0.000010	0.000010	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2198048-4	L1691592-30	OLD BRIDGE L SH	DUP	394528	Beryllium (Be)-Total	<0.000010	<0.000010	0.000010	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2198048-3	L1691592-10	STONEY CK L 1M ABOVE BED	DUP	394528	Bismuth (Bi)-Total	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2198048-4	L1691592-30	OLD BRIDGE L SH	DUP	394528	Bismuth (Bi)-Total	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2198048-3	L1691592-10	STONEY CK L 1M ABOVE BED	DUP	394528	Boron (B)-Total	0.0054	<0.0050	0.0050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2198048-4	L1691592-30	OLD BRIDGE L SH	DUP	394528	Boron (B)-Total	<0.0050	<0.0050	0.0050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2198048-3	L1691592-10	STONEY CK L 1M ABOVE BED	DUP	394528	Cadmium (Cd)-Total	0.0000053	0.0000054	0.0000050	mg/L	2.4	20	-			✓	Water	Total Metals (Undigested)
WG2198048-4	L1691592-30	OLD BRIDGE L SH	DUP	394528	Cadmium (Cd)-Total	0.0000093	0.0000120	0.0000050	mg/L	-		0.0000028	0.00001		✓	Water	Total Metals (Undigested)
WG2198048-3	L1691592-10	STONEY CK L 1M ABOVE BED	DUP	394528	Calcium (Ca)-Total	18.4	18.0	0.030	mg/L	2.1	20	-			✓	Water	Total Metals (Undigested)
WG2198048-4	L1691592-30	OLD BRIDGE L SH	DUP	394528	Calcium (Ca)-Total	18.1	18.3	0.030	mg/L	1	20	-			✓	Water	Total Metals (Undigested)
WG2198048-3	L1691592-10	STONEY CK L 1M ABOVE BED	DUP	394528	Chromium (Cr)-Total	<0.00010	<0.00010	0.00010	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2198048-4	L1691592-30	OLD BRIDGE L SH	DUP	394528	Chromium (Cr)-Total	<0.00010	<0.00010	0.00010	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2198048-3	L1691592-10	STONEY CK L 1M ABOVE BED	DUP	394528	Cobalt (Co)-Total	0.0000074	0.0000077	0.0000050	mg/L	4	20	-			✓	Water	Total Metals (Undigested)
WG2198048-4	L1691592-30	OLD BRIDGE L SH	DUP	394528	Cobalt (Co)-Total	0.0000082	0.0000089	0.0000050	mg/L	8.4	20	-			✓	Water	Total Metals (Undigested)
WG2198048-3	L1691592-10	STONEY CK L 1M ABOVE BED	DUP	394528	Copper (Cu)-Total	0.00031	0.00031	0.00010	mg/L	0.4	20	-			✓	Water	Total Metals (Undigested)
WG2198048-4	L1691592-30	OLD BRIDGE L SH	DUP	394528	Copper (Cu)-Total	0.00029	0.00028	0.00010	mg/L	1.2	20	-			✓	Water	Total Metals (Undigested)
WG2198048-3	L1691592-10	STONEY CK L 1M ABOVE BED	DUP	394528	Iron (Fe)-Total	0.0059	0.0054	0.0010	mg/L	9.1	20	-			✓	Water	Total Metals (Undigested)
WG2198048-4	L1691592-30	OLD BRIDGE L SH	DUP	394528	Iron (Fe)-Total	0.0053	0.0055	0.0010	mg/L	3	20	-			✓	Water	Total Metals (Undigested)
WG2198048-3	L1691592-10	STONEY CK L 1M ABOVE BED	DUP	394528	Lead (Pb)-Total	0.0000276	0.0000286	0.0000050	mg/L	3.6	20	-			✓	Water	Total Metals (Undigested)
WG2198048-4	L1691592-30	OLD BRIDGE L SH	DUP	394528	Lead (Pb)-Total	0.0000837	0.0000911	0.0000050	mg/L	8.4	20	-			✓	Water	Total Metals (Undigested)
WG2198048-3	L1691592-10	STONEY CK L 1M ABOVE BED	DUP	394528	Lithium (Li)-Total	0.00105	0.00112	0.00050	mg/L	6.2	20	-			✓	Water	Total Metals (Undigested)
WG2198048-4	L1691592-30	OLD BRIDGE L SH	DUP	394528	Lithium (Li)-Total	0.00116	0.00106	0.00050	mg/L	9.1	20	-			✓	Water	Total Metals (Undigested)
WG2198048-3	L1691592-10	STONEY CK L 1M ABOVE BED	DUP	394528	Magnesium (Mg)-Total	4.36	4.27	0.030	mg/L	2.1	20	-			✓	Water	Total Metals (Undigested)
WG2198048-4	L1691592-30	OLD BRIDGE L SH	DUP	394528	Magnesium (Mg)-Total	4.27	4.31	0.030	mg/L	0.9	20	-			✓	Water	Total Metals (Undigested)
WG2198048-3	L1691592-10	STONEY CK L 1M ABOVE BED	DUP	394528	Manganese (Mn)-Total	0.00126	0.00113	0.000050	mg/L	10	20	-			✓	Water	Total Metals (Undigested)
WG2198048-4	L1691592-30	OLD BRIDGE L SH	DUP	394528	Manganese (Mn)-Total	0.00207	0.00196	0.000050	mg/L	5.5	20	-			✓	Water	Total Metals (Undigested)
WG2198048-3	L1691592-10	STONEY CK L 1M ABOVE BED	DUP	394528	Molybdenum (Mo)-Total	0.000457	0.000456	0.000050	mg/L	0.4	20	-			✓	Water	Total Metals (Undigested)
WG2198048-4	L1691592-30	OLD BRIDGE L SH	DUP	394528	Molybdenum (Mo)-Total	0.000459	0.000482	0.000050	mg/L	4.9	20	-			✓	Water	Total Metals (Undigested)
WG2198048-3	L1691592-10	STONEY CK L 1M ABOVE BED	DUP	394528	Nickel (Ni)-Total	0.000442	0.000368	0.000050	mg/L	18	20	-			✓	Water	Total Metals (Undigested)
WG2198048-4	L1691592-30	OLD BRIDGE L SH	DUP	394528	Nickel (Ni)-Total	0.000385	0.000396	0.000050	mg/L	2.8	20	-			✓	Water	Total Metals (Undigested)
WG2198048-3	L1691592-10	STONEY CK L 1M ABOVE BED	DUP	394528	Phosphorus (P)-Total	<0.050	<0.050	0.050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2198048-4	L1691592-30	OLD BRIDGE L SH	DUP	394528	Phosphorus (P)-Total	<0.050	<0.050	0.050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2198048-3	L1691592-10	STONEY CK L 1M ABOVE BED	DUP	394528	Potassium (K)-Total	0.662	0.626	0.050	mg/L	5.5	20	-			✓	Water	Total Metals (Undigested)
WG2198048-4	L1691592-30	OLD BRIDGE L SH	DUP	394528	Potassium (K)-Total	0.586	0.596	0.050	mg/L	1.8	20	-			✓	Water	Total Metals (Undigested)
WG2198048-3	L1691592-10	STONEY CK L 1M ABOVE BED	DUP	394528	Selenium (Se)-Total	0.000110	0.000098	0.000040	mg/L	12	20	-			✓	Water	Total Metals (Undigested)
WG2198048-4	L1691592-30	OLD BRIDGE L SH	DUP	394528	Selenium (Se)-Total	0.000134	0.000105	0.000040	mg/L	-		0.000029	0.00008		✓	Water	Total Metals (Undigested)
WG2198048-3	L1691592-10	STONEY CK L 1M ABOVE BED	DUP	394528	Silicon (Si)-Total	1.20	1.19	0.050	mg/L	1	20	-			✓	Water	Total Metals (Undigested)
WG2198048-4	L1691592-30	OLD BRIDGE L SH	DUP	394528	Silicon (Si)-Total	1.20	1.20	0.050	mg/L	0.4	20	-			✓	Water	Total Metals (Undigested)
WG2198048-3	L1691592-10	STONEY CK L 1M ABOVE BED	DUP	394528	Silver (Ag)-Total	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2198048-4	L1691592-30	OLD BRIDGE L SH	DUP	394528	Silver (Ag)-Total	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2198048-3	L1691592-10	STONEY CK L 1M ABOVE BED	DUP	394528	Sodium (Na)-Total	1.16	1.16	0.010	mg/L	0.2	20	-			✓	Water	Total Metals (Undigested)
WG2198048-4	L1691592-30	OLD BRIDGE L SH	DUP	394528	Sodium (Na)-Total	1.19	1.18	0.010	mg/L	0.9	20	-			✓	Water	Total Metals (Undigested)
WG2198048-3	L1691592-10	STONEY CK L 1M ABOVE BED	DUP	394528	Strontium (Sr)-Total	0.116	0.115	0.000050	mg/L	0.9	20	-			✓	Water	Total Metals (Undigested)
WG2198048-4	L1691592-30	OLD BRIDGE L SH	DUP	394528	Strontium (Sr)-Total	0.119	0.119	0.000050	mg/L	0.5	20	-			✓	Water	Total Metals (Undigested)
WG2198048-3	L1691592-10	STONEY CK L 1M ABOVE BED	DUP	394528	Thallium (Tl)-Total	0.0000041	0.0000030	0.0000020	mg/L	-		0.0000011	0.000004		✓	Water	Total Metals (Undigested)
WG2198048-4	L1691592-30	OLD BRIDGE L SH	DUP	394528	Thallium (Tl)-Total	0.0000032	0.0000035	0.0000020	mg/L	9.5	20	-			✓	Water	Total Metals (Undigested)
WG2198048-3	L1691592-10	STONEY CK L 1M ABOVE BED	DUP	394528	Tin (Sn)-Total	<0.000010	<0.000010	0.000010	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2198048-4	L1691592-30	OLD BRIDGE L SH	DUP	394528	Tin (Sn)-Total	<0.000010	<0.000010	0.000010	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2198048-3	L1691592-10	STONEY CK L 1M ABOVE BED	DUP	394528	Titanium (Ti)-Total	<0.00050	<0.00050	0.00050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2198048-4	L1691592-30	OLD BRIDGE L SH	DUP	394528	Titanium (Ti)-Total	<0.00050	<0.00050	0.00050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2198048-3	L1691592-10	STONEY CK L 1M ABOVE BED	DUP	394528	Uranium (U)-Total	0.000386	0.000386	0.0000020	mg/L	0.1	20	-			✓	Water	Total Metals (Undigested)
WG2198048-4	L1691592-30	OLD BRIDGE L SH	DUP	394528	Uranium (U)-Total	0.000410	0.000405	0.0000020	mg/L	1.3	20	-			✓	Water	Total Metals (Undigested)
WG2198048-3	L1691592-10	STONEY CK L 1M ABOVE BED	DUP	394528	Vanadium (V)-Total	0.000097	0.000096	0.000050	mg/L	1	20	-			✓	Water	Total Metals (Undigested)
WG2198048-4	L1691592-30	OLD BRIDGE L SH	DUP	394528	Vanadium (V)-Total	0.000100	0.000099	0.000050	mg/L	0.9	20	-			✓	Water	Total Metals (Undigested)
WG2198048-3	L1691592-10	STONEY CK L 1M ABOVE BED	DUP	394528	Zinc (Zn)-Total	0.00053	0.00056	0.00050	mg/L	5.4	20	-			✓	Water	Total Metals (Undigested)
WG2198048-4	L1691592-30	OLD BRIDGE L SH	DUP	394528	Zinc (Zn)-Total	0.00059	0.00059	0.00050	mg/L	0.5	20	-			✓	Water	Total Metals (Undigested)
WG2198048-3	L1691592-10	STONEY CK L 1M ABOVE BED	DUP	394528	Zirconium (Zr)-Total	<0.00010	<0.00010	0.00010	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2198048-4	L1691592-30	OLD BRIDGE L SH	DUP	394528	Zirconium (Zr)-Total	<0.00010	<0.00010	0.00010	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
Dissolved Metals (Water)																	
WG2200020-3	L1691592-2	BIRCH BANK R 1M DEEP	DUP	396121	Mercury (Hg)-Dissolved	<0.00050	<0.00050	0.00050	ug/L	N/A	20	-			✓	Water	Dissolved Metals
WG2200023-3	L1691592-12	STONEY CK L SH	DUP	396123	Mercury (Hg)-Dissolved	<0.00050	<0.00050	0.00050	ug/L	N/A	20	-			✓	Water	Dissolved Metals
WG2201375-3	L1691592-27	OLD BRIDGE R 1M ABOVE BED	DUP	397261	Mercury (Hg)-Dissolved	<0.00050	<0.00050	0.00050	ug/L	N/A	20	-			✓	Water	Dissolved Metals
Aggregate Organics (Water)																	
WG2198400-3	L1691592-3	BIRCH BANK R 1M ABOVE BED	DUP	394850	BOD	<2.0	<2.0	2.0	mg/L	N/A	20	-			✓	Water	Aggregate Organics
WG2201848-2	L1691592-1	BIRCH BANK R SH	DUP	397598	COD	<20	<20	20	mg/L	N/A	20	-			✓	Water	Aggregate Organics
WG2201848-7	L1691592-21	DUPLICATE 2	DUP	397598	COD	<20	<20	20	mg/L	N/A	20	-			✓	Water	Aggregate Organics

Evaluation Legend

✓ QC Lot met ALS Data Quality Objectives

Quality Control L1691592

Job Reference
Report To Kyle Hawes, ECOSCAPE ENVIRONMENTAL CONSULTANTS LTD.
Date Received 21-Oct-2015 15:35
Report Date 23-Nov-2015 13:00
Report Version 1

QC Type	Analyte	QC Lot #	ALS QC ID	Result	Target	Units	%	Limit	Units	Qual	Eval	Matrix	Class
Physical Tests (Water)													
CRM	Conductivity	395214	WG2198934-17	152	147	uS/cm	103.5	90-110	%		✓	Water	Physical Tests
CRM	Conductivity	395214	WG2198934-18	150	147	uS/cm	102.0	90-110	%		✓	Water	Physical Tests
CRM	Conductivity	395214	WG2198934-19	157	147	uS/cm	106.8	90-110	%		✓	Water	Physical Tests
CRM	Conductivity	395214	WG2198934-20	151	147	uS/cm	102.6	90-110	%		✓	Water	Physical Tests
CRM	Conductivity	395214	WG2198934-21	153	147	uS/cm	103.9	90-110	%		✓	Water	Physical Tests
CRM	Conductivity	395214	WG2198934-22	153	147	uS/cm	104.2	90-110	%		✓	Water	Physical Tests
CRM	Conductivity	395227	WG2198941-17	148	147	uS/cm	101.0	90-110	%		✓	Water	Physical Tests
CRM	Conductivity	395227	WG2198941-18	146	147	uS/cm	99.3	90-110	%		✓	Water	Physical Tests
CRM	Conductivity	395227	WG2198941-19	146	147	uS/cm	99.4	90-110	%		✓	Water	Physical Tests
CRM	Conductivity	395227	WG2198941-20	146	147	uS/cm	99.1	90-110	%		✓	Water	Physical Tests
CRM	Conductivity	395227	WG2198941-21	148	147	uS/cm	100.6	90-110	%		✓	Water	Physical Tests
CRM	Conductivity	395227	WG2198941-22	147	147	uS/cm	99.9	90-110	%		✓	Water	Physical Tests
CRM	Conductivity	395227	WG2198941-23	147	147	uS/cm	100.2	90-110	%		✓	Water	Physical Tests
CRM	pH	395214	WG2198934-25	7.02	7	pH	7.02	6.9-7.1	pH		✓	Water	Physical Tests
CRM	pH	395214	WG2198934-26	7.03	7	pH	7.03	6.9-7.1	pH		✓	Water	Physical Tests
CRM	pH	395214	WG2198934-27	7.03	7	pH	7.03	6.9-7.1	pH		✓	Water	Physical Tests
CRM	pH	395214	WG2198934-28	7.03	7	pH	7.03	6.9-7.1	pH		✓	Water	Physical Tests
CRM	pH	395214	WG2198934-29	7.03	7	pH	7.03	6.9-7.1	pH		✓	Water	Physical Tests
CRM	pH	395214	WG2198934-30	7.02	7	pH	7.02	6.9-7.1	pH		✓	Water	Physical Tests
CRM	pH	395227	WG2198941-25	7.01	7	pH	7.01	6.9-7.1	pH		✓	Water	Physical Tests
CRM	pH	395227	WG2198941-26	7.02	7	pH	7.02	6.9-7.1	pH		✓	Water	Physical Tests
CRM	pH	395227	WG2198941-27	7.01	7	pH	7.01	6.9-7.1	pH		✓	Water	Physical Tests
CRM	pH	395227	WG2198941-28	7.01	7	pH	7.01	6.9-7.1	pH		✓	Water	Physical Tests
CRM	pH	395227	WG2198941-29	7.01	7	pH	7.01	6.9-7.1	pH		✓	Water	Physical Tests
CRM	pH	395227	WG2198941-30	7.01	7	pH	7.01	6.9-7.1	pH		✓	Water	Physical Tests
CRM	pH	395227	WG2198941-31	7.01	7	pH	7.01	6.9-7.1	pH		✓	Water	Physical Tests
CRM	Turbidity	394581	WG2198128-2	40.8	40	NTU	102.0	85-115	%		✓	Water	Physical Tests
CRM	Turbidity	394581	WG2198128-5	40.6	40	NTU	101.5	85-115	%		✓	Water	Physical Tests
CRM	Turbidity	394581	WG2198128-8	40.8	40	NTU	102.0	85-115	%		✓	Water	Physical Tests
CRM	Turbidity	394581	WG2198128-11	40.9	40	NTU	102.3	85-115	%		✓	Water	Physical Tests
CRM	Turbidity	394581	WG2198128-14	40.6	40	NTU	101.5	85-115	%		✓	Water	Physical Tests
Anions and Nutrients (Water)													
CRM	Alkalinity, Total (as CaCO3)	394840	WG2198399-2	15.1	15	mg/L	100.5	85-115	%		✓	Water	Anions and Nutrients
CRM	Alkalinity, Total (as CaCO3)	394840	WG2198399-5	73.4	75	mg/L	97.9	85-115	%		✓	Water	Anions and Nutrients
CRM	Alkalinity, Total (as CaCO3)	394840	WG2198399-8	259	250	mg/L	103.8	85-115	%		✓	Water	Anions and Nutrients
CRM	Ammonia, Total (as N)	397250	WG2200273-2	0.120	0.12	mg/L	100.0	85-115	%		✓	Water	Anions and Nutrients
CRM	Ammonia, Total (as N)	397250	WG2200273-4	0.119	0.12	mg/L	99.0	85-115	%		✓	Water	Anions and Nutrients
CRM	Ammonia, Total (as N)	397250	WG2200273-6	0.120	0.12	mg/L	99.8	85-115	%		✓	Water	Anions and Nutrients
CRM	Ammonia, Total (as N)	397250	WG2200273-8	0.121	0.12	mg/L	100.6	85-115	%		✓	Water	Anions and Nutrients
CRM	Ammonia, Total (as N)	397747	WG2200295-2	0.121	0.12	mg/L	100.8	85-115	%		✓	Water	Anions and Nutrients
CRM	Ammonia, Total (as N)	397747	WG2200295-4	0.122	0.12	mg/L	101.7	85-115	%		✓	Water	Anions and Nutrients
CRM	Ammonia, Total (as N)	397747	WG2200295-6	0.117	0.12	mg/L	97.8	85-115	%		✓	Water	Anions and Nutrients
CRM	Ammonia, Total (as N)	397747	WG2200295-8	0.119	0.12	mg/L	98.8	85-115	%		✓	Water	Anions and Nutrients
CRM	Ammonia, Total (as N)	397747	WG2200295-10	0.120	0.12	mg/L	100.0	85-115	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total Dissolved	394632	WG2198099-2	7.58	7.17	mg/L	105.7	80-120	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total Dissolved	394633	WG2198099-6	7.57	7.17	mg/L	105.6	80-120	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total Dissolved	395432	WG2198313-2	7.21	7.17	mg/L	100.5	80-120	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total Dissolved	395433	WG2198313-6	7.46	7.17	mg/L	104.1	80-120	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total	394630	WG2198060-2	7.59	7.17	mg/L	105.8	80-120	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total	394631	WG2198060-6	7.16	7.17	mg/L	99.9	80-120	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total	394639	WG2198046-10	7.11	7.17	mg/L	99.2	80-120	%		✓	Water	Anions and Nutrients
Physical Tests (Water)													
LCS	Total Suspended Solids	394614	WG2198050-2	72.9	75	mg/L	97.2	85-115	%		✓	Water	Physical Tests
LCS	Total Suspended Solids	394614	WG2198050-5	74.4	75	mg/L	99.2	85-115	%		✓	Water	Physical Tests
LCS	Total Suspended Solids	394614	WG2198050-8	72.1	75	mg/L	96.2	85-115	%		✓	Water	Physical Tests
LCS	Total Dissolved Solids	394548	WG2198043-2	427	425	mg/L	100.4	85-115	%		✓	Water	Physical Tests
LCS	Total Dissolved Solids	394548	WG2198043-5	431	425	mg/L	101.4	85-115	%		✓	Water	Physical Tests
Anions and Nutrients (Water)													
LCS	Bromide (Br)	395645	WG2198178-2	0.506	0.5	mg/L	101.2	85-115	%		✓	Water	Anions and Nutrients
LCS	Bromide (Br)	396215	WG2199796-2	0.512	0.5	mg/L	102.3	85-115	%		✓	Water	Anions and Nutrients
LCS	Bromide (Br)	396215	WG2199796-9	0.517	0.5	mg/L	103.5	85-115	%		✓	Water	Anions and Nutrients
LCS	Bromide (Br)	395645	WG2198178-18	0.508	0.5	mg/L	101.6	85-115	%		✓	Water	Anions and Nutrients
LCS	Chloride (Cl)	395645	WG2198178-2	101	100	mg/L	101.2	90-110	%		✓	Water	Anions and Nutrients
LCS	Chloride (Cl)	396215	WG2199796-2	101	100	mg/L	101.2	90-110	%		✓	Water	Anions and Nutrients
LCS	Chloride (Cl)	396215	WG2199796-9	102	100	mg/L	101.8	90-110	%		✓	Water	Anions and Nutrients
LCS	Chloride (Cl)	395645	WG2198178-18	101	100	mg/L	101.4	90-110	%		✓	Water	Anions and Nutrients
LCS	Fluoride (F)	395645	WG2198178-2	1.02	1	mg/L	101.7	90-110	%		✓	Water	Anions and Nutrients
LCS	Fluoride (F)	396215	WG2199796-2	1.01	1	mg/L	101.4	90-110	%		✓	Water	Anions and Nutrients
LCS	Fluoride (F)	396215	WG2199796-9	1.02	1	mg/L	102.2	90-110	%		✓	Water	Anions and Nutrients
LCS	Fluoride (F)	395645	WG2198178-18	1.02	1	mg/L	102.4	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrate (as N)	395645	WG2198178-2	2.52	2.5	mg/L	100.7	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrate (as N)	396215	WG2199796-2	2.52	2.5	mg/L	100.9	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrate (as N)	396215	WG2199796-9	2.54	2.5	mg/L	101.5	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrate (as N)	395645	WG2198178-18	2.52	2.5	mg/L	100.6	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrite (as N)	395645	WG2198178-2	0.501	0.5	mg/L	100.2	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrite (as N)	396215	WG2199796-2	0.504	0.5	mg/L	100.8	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrite (as N)	396215	WG2199796-9	0.507	0.5	mg/L	101.3	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrite (as N)	395645	WG2198178-18	0.500	0.5	mg/L	100.1	90-110	%		✓	Water	Anions and Nutrients
LCS	Total Kjeldahl Nitrogen	394781	WG2198368-2	1.06	1	mg/L	105.7	75-125	%		✓	Water	Anions and Nutrients

LCS	Total Kjeldahl Nitrogen	394781	WG2198368-6	1.05	1	mg/L	105.0	75-125	%	✓	Water	Anions and Nutrients
LCS	Sulfate (SO4)	395645	WG2198178-2	102	100	mg/L	101.6	90-110	%	✓	Water	Anions and Nutrients
LCS	Sulfate (SO4)	396215	WG2199796-2	101	100	mg/L	101.4	90-110	%	✓	Water	Anions and Nutrients
LCS	Sulfate (SO4)	396215	WG2199796-9	102	100	mg/L	102.1	90-110	%	✓	Water	Anions and Nutrients
LCS	Sulfate (SO4)	395645	WG2198178-18	102	100	mg/L	101.8	90-110	%	✓	Water	Anions and Nutrients
Organic / Inorganic Carbon (Water)												
LCS	Total Organic Carbon	395388	WG2198053-1	8.51	8.57	mg/L	99.2	80-120	%	✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	395388	WG2198053-5	8.56	8.57	mg/L	99.9	80-120	%	✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	395388	WG2198053-9	8.18	8.57	mg/L	95.4	80-120	%	✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	395388	WG2198053-13	8.35	8.57	mg/L	97.5	80-120	%	✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	395388	WG2198053-17	8.32	8.57	mg/L	97.1	80-120	%	✓	Water	Organic / Inorganic Carbon
Total Metals (Water)												
LCS	Mercury (Hg)-Total	396122	WG2200021-2	0.00499	0.005	ug/L	99.8	80-120	%	✓	Water	Total Metals
LCS	Mercury (Hg)-Total	396125	WG2200024-2	0.00502	0.005	ug/L	100.4	80-120	%	✓	Water	Total Metals
LCS	Mercury (Hg)-Total	397290	WG2201376-2	0.00502	0.005	ug/L	100.4	80-120	%	✓	Water	Total Metals
Total Metals (Undigested) (Water)												
LCS	Aluminum (Al)-Total	394528	WG2198048-2	2.14	2	mg/L	106.8	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Antimony (Sb)-Total	394528	WG2198048-2	0.984	1	mg/L	98.4	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Arsenic (As)-Total	394528	WG2198048-2	1.00	1	mg/L	100.1	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Barium (Ba)-Total	394528	WG2198048-2	0.250	0.25	mg/L	99.8	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Beryllium (Be)-Total	394528	WG2198048-2	0.0986	0.1	mg/L	98.6	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Bismuth (Bi)-Total	394528	WG2198048-2	0.984	1	mg/L	98.4	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Boron (B)-Total	394528	WG2198048-2	0.938	1	mg/L	93.8	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Cadmium (Cd)-Total	394528	WG2198048-2	0.0963	0.1	mg/L	96.3	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Calcium (Ca)-Total	394528	WG2198048-2	51.5	50	mg/L	102.9	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Chromium (Cr)-Total	394528	WG2198048-2	0.240	0.25	mg/L	95.8	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Cobalt (Co)-Total	394528	WG2198048-2	0.246	0.25	mg/L	98.4	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Copper (Cu)-Total	394528	WG2198048-2	0.236	0.25	mg/L	94.4	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Iron (Fe)-Total	394528	WG2198048-2	0.956	1	mg/L	95.6	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Lead (Pb)-Total	394528	WG2198048-2	0.505	0.5	mg/L	100.9	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Lithium (Li)-Total	394528	WG2198048-2	0.248	0.25	mg/L	99.2	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Magnesium (Mg)-Total	394528	WG2198048-2	50.5	50	mg/L	101.0	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Manganese (Mn)-Total	394528	WG2198048-2	0.249	0.25	mg/L	99.6	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Molybdenum (Mo)-Total	394528	WG2198048-2	0.250	0.25	mg/L	99.8	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Nickel (Ni)-Total	394528	WG2198048-2	0.492	0.5	mg/L	98.4	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Phosphorus (P)-Total	394528	WG2198048-2	2.55	2.5	mg/L	102.1	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Potassium (K)-Total	394528	WG2198048-2	49.6	50	mg/L	99.2	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Selenium (Se)-Total	394528	WG2198048-2	0.979	1	mg/L	97.9	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Silicon (Si)-Total	394528	WG2198048-2	1.04	1	mg/L	104.3	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Silver (Ag)-Total	394528	WG2198048-2	0.0992	0.1	mg/L	99.2	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Sodium (Na)-Total	394528	WG2198048-2	50.8	50	mg/L	101.5	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Strontium (Sr)-Total	394528	WG2198048-2	0.241	0.25	mg/L	96.4	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Thallium (Tl)-Total	394528	WG2198048-2	0.995	1	mg/L	99.5	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Tin (Sn)-Total	394528	WG2198048-2	0.485	0.5	mg/L	96.9	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Titanium (Ti)-Total	394528	WG2198048-2	0.239	0.25	mg/L	95.8	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Uranium (U)-Total	394528	WG2198048-2	0.00506	0.005	mg/L	101.2	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Vanadium (V)-Total	394528	WG2198048-2	0.498	0.5	mg/L	99.6	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Zinc (Zn)-Total	394528	WG2198048-2	0.474	0.5	mg/L	94.8	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Zirconium (Zr)-Total	394528	WG2198048-2	0.0874	0.1	mg/L	87.4	80-120	%	✓	Water	Total Metals (Undigested)
Dissolved Metals (Water)												
LCS	Aluminum (Al)-Dissolved	394534	WG2198049-2	2.13	2	mg/L	106.4	80-120	%	✓	Water	Dissolved Metals
LCS	Antimony (Sb)-Dissolved	394534	WG2198049-2	0.992	1	mg/L	99.2	80-120	%	✓	Water	Dissolved Metals
LCS	Arsenic (As)-Dissolved	394534	WG2198049-2	1.02	1	mg/L	102.1	80-120	%	✓	Water	Dissolved Metals
LCS	Barium (Ba)-Dissolved	394534	WG2198049-2	0.248	0.25	mg/L	99.0	80-120	%	✓	Water	Dissolved Metals
LCS	Beryllium (Be)-Dissolved	394534	WG2198049-2	0.0984	0.1	mg/L	98.4	80-120	%	✓	Water	Dissolved Metals
LCS	Bismuth (Bi)-Dissolved	394534	WG2198049-2	0.989	1	mg/L	98.9	80-120	%	✓	Water	Dissolved Metals
LCS	Boron (B)-Dissolved	394534	WG2198049-2	0.945	1	mg/L	94.5	80-120	%	✓	Water	Dissolved Metals
LCS	Cadmium (Cd)-Dissolved	394534	WG2198049-2	0.100	0.1	mg/L	99.96	80-120	%	✓	Water	Dissolved Metals
LCS	Calcium (Ca)-Dissolved	394534	WG2198049-2	51.8	50	mg/L	103.5	80-120	%	✓	Water	Dissolved Metals
LCS	Chromium (Cr)-Dissolved	394534	WG2198049-2	0.242	0.25	mg/L	96.6	80-120	%	✓	Water	Dissolved Metals
LCS	Cobalt (Co)-Dissolved	394534	WG2198049-2	0.251	0.25	mg/L	100.5	80-120	%	✓	Water	Dissolved Metals
LCS	Copper (Cu)-Dissolved	394534	WG2198049-2	0.245	0.25	mg/L	97.9	80-120	%	✓	Water	Dissolved Metals
LCS	Iron (Fe)-Dissolved	394534	WG2198049-2	0.970	1	mg/L	97.0	80-120	%	✓	Water	Dissolved Metals
LCS	Lead (Pb)-Dissolved	394534	WG2198049-2	0.510	0.5	mg/L	101.9	80-120	%	✓	Water	Dissolved Metals
LCS	Lithium (Li)-Dissolved	394534	WG2198049-2	0.250	0.25	mg/L	100.1	80-120	%	✓	Water	Dissolved Metals
LCS	Magnesium (Mg)-Dissolved	394534	WG2198049-2	50.2	50	mg/L	100.4	80-120	%	✓	Water	Dissolved Metals
LCS	Manganese (Mn)-Dissolved	394534	WG2198049-2	0.255	0.25	mg/L	102.0	80-120	%	✓	Water	Dissolved Metals
LCS	Mercury (Hg)-Dissolved	396121	WG2200020-2	0.00499	0.005	ug/L	99.8	80-120	%	✓	Water	Dissolved Metals
LCS	Mercury (Hg)-Dissolved	396123	WG2200023-2	0.00500	0.005	ug/L	100.1	80-120	%	✓	Water	Dissolved Metals
LCS	Mercury (Hg)-Dissolved	397261	WG2201375-2	0.00499	0.005	ug/L	99.9	80-120	%	✓	Water	Dissolved Metals
LCS	Molybdenum (Mo)-Dissolved	394534	WG2198049-2	0.250	0.25	mg/L	99.9	80-120	%	✓	Water	Dissolved Metals
LCS	Nickel (Ni)-Dissolved	394534	WG2198049-2	0.507	0.5	mg/L	101.3	80-120	%	✓	Water	Dissolved Metals
LCS	Phosphorus (P)-Dissolved	394534	WG2198049-2	2.53	2.5	mg/L	101.4	80-120	%	✓	Water	Dissolved Metals
LCS	Potassium (K)-Dissolved	394534	WG2198049-2	50.3	50	mg/L	100.6	80-120	%	✓	Water	Dissolved Metals
LCS	Selenium (Se)-Dissolved	394534	WG2198049-2	1.00	1	mg/L	100.0	80-120	%	✓	Water	Dissolved Metals
LCS	Silicon (Si)-Dissolved	394534	WG2198049-2	1.05	1	mg/L	104.8	80-120	%	✓	Water	Dissolved Metals
LCS	Silver (Ag)-Dissolved	394534	WG2198049-2	0.0992	0.1	mg/L	99.2	80-120	%	✓	Water	Dissolved Metals
LCS	Sodium (Na)-Dissolved	394534	WG2198049-2	51.8	50	mg/L	103.6	80-120	%	✓	Water	Dissolved Metals
LCS	Strontium (Sr)-Dissolved	394534	WG2198049-2	0.240	0.25	mg/L	96.0	80-120	%	✓	Water	Dissolved Metals
LCS	Thallium (Tl)-Dissolved	394534	WG2198049-2	1.00	1	mg/L	100.1	80-120	%	✓	Water	Dissolved Metals
LCS	Tin (Sn)-Dissolved	394534	WG2198049-2	0.500	0.5	mg/L	99.9	80-120	%	✓	Water	Dissolved Metals
LCS	Titanium (Ti)-Dissolved	394534	WG2198049-2	0.254	0.25	mg/L	101.6	80-120	%	✓	Water	Dissolved Metals
LCS	Uranium (U)-Dissolved	394534	WG2198049-2	0.00509	0.005	mg/L	101.9	80-120	%	✓	Water	Dissolved Metals
LCS	Vanadium (V)-Dissolved	394534	WG2198049-2	0.515	0.5	mg/L	103.0	80-120	%	✓	Water	Dissolved Metals
LCS	Zinc (Zn)-Dissolved	394534	WG2198049-2	0.477	0.5	mg/L	95.5	80-120	%	✓	Water	Dissolved Metals
LCS	Zirconium (Zr)-Dissolved	394534	WG2198049-2	0.0884	0.1	mg/L	88.4	80-120	%	✓	Water	Dissolved Metals
Aggregate Organics (Water)												
LCS	BOD	394850	WG2198400-2	193	198	mg/L	97.6	85-115	%	✓	Water	Aggregate Organics
LCS	BOD	394850	WG2198400-6	190	198	mg/L	95.9	85-115	%	✓	Water	Aggregate Organics
LCS	COD	397598	WG2201848-3	747	750	mg/L	99.6	85-115	%	✓	Water	Aggregate Organics

LCS	COD	397598	WG2201848-6	750	750	mg/L	99.9	85-115	%	✓	Water	Aggregate Organics
LCS	COD	397598	WG2201848-10	747	750	mg/L	99.6	85-115	%	✓	Water	Aggregate Organics
Physical Tests (Water)												
MB	Conductivity	395214	WG2198934-1	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Conductivity	395214	WG2198934-2	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Conductivity	395214	WG2198934-3	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Conductivity	395214	WG2198934-4	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Conductivity	395214	WG2198934-5	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Conductivity	395214	WG2198934-6	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Conductivity	395227	WG2198941-1	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Conductivity	395227	WG2198941-2	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Conductivity	395227	WG2198941-3	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Conductivity	395227	WG2198941-5	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Conductivity	395227	WG2198941-6	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Conductivity	395227	WG2198941-7	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Total Suspended Solids	394614	WG2198050-1	<3.0		mg/L	-	<3.0	mg/L	✓	Water	Physical Tests
MB	Total Suspended Solids	394614	WG2198050-4	<3.0		mg/L	-	<3.0	mg/L	✓	Water	Physical Tests
MB	Total Suspended Solids	394614	WG2198050-7	<3.0		mg/L	-	<3.0	mg/L	✓	Water	Physical Tests
MB	Total Dissolved Solids	394548	WG2198043-1	<10		mg/L	-	<10	mg/L	✓	Water	Physical Tests
MB	Total Dissolved Solids	394548	WG2198043-4	<10		mg/L	-	<10	mg/L	✓	Water	Physical Tests
MB	Turbidity	394581	WG2198128-1	<0.10		NTU	-	<0.10	NTU	✓	Water	Physical Tests
MB	Turbidity	394581	WG2198128-4	<0.10		NTU	-	<0.10	NTU	✓	Water	Physical Tests
MB	Turbidity	394581	WG2198128-7	<0.10		NTU	-	<0.10	NTU	✓	Water	Physical Tests
MB	Turbidity	394581	WG2198128-10	<0.10		NTU	-	<0.10	NTU	✓	Water	Physical Tests
MB	Turbidity	394581	WG2198128-13	<0.10		NTU	-	<0.10	NTU	✓	Water	Physical Tests
Anions and Nutrients (Water)												
MB	Alkalinity, Total (as CaCO3)	394840	WG2198399-1	<2.0		mg/L	-	<2.0	mg/L	✓	Water	Anions and Nutrients
MB	Alkalinity, Total (as CaCO3)	394840	WG2198399-4	<2.0		mg/L	-	<2.0	mg/L	✓	Water	Anions and Nutrients
MB	Alkalinity, Total (as CaCO3)	394840	WG2198399-7	<2.0		mg/L	-	<2.0	mg/L	✓	Water	Anions and Nutrients
MB	Ammonia, Total (as N)	397250	WG2200273-1	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Ammonia, Total (as N)	397250	WG2200273-3	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Ammonia, Total (as N)	397250	WG2200273-5	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Ammonia, Total (as N)	397250	WG2200273-7	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Ammonia, Total (as N)	397747	WG2200295-1	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Ammonia, Total (as N)	397747	WG2200295-3	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Ammonia, Total (as N)	397747	WG2200295-5	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Ammonia, Total (as N)	397747	WG2200295-7	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Ammonia, Total (as N)	397747	WG2200295-9	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	395645	WG2198178-1	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	395645	WG2198178-4	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	395645	WG2198178-7	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	396215	WG2199796-1	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	396215	WG2199796-4	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	396215	WG2199796-7	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	395645	WG2198178-10	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	395645	WG2198178-13	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	395645	WG2198178-16	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	395645	WG2198178-1	<0.50		mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	395645	WG2198178-4	<0.50		mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	395645	WG2198178-7	<0.50		mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	396215	WG2199796-1	<0.50		mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	396215	WG2199796-4	<0.50		mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	396215	WG2199796-7	<0.50		mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	395645	WG2198178-10	<0.50		mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	395645	WG2198178-13	<0.50		mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	395645	WG2198178-16	<0.50		mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	395645	WG2198178-1	<0.020		mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	395645	WG2198178-4	<0.020		mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	395645	WG2198178-7	<0.020		mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	396215	WG2199796-1	<0.020		mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	396215	WG2199796-4	<0.020		mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	396215	WG2199796-7	<0.020		mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	395645	WG2198178-10	<0.020		mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	395645	WG2198178-13	<0.020		mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	395645	WG2198178-16	<0.020		mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	395645	WG2198178-1	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	395645	WG2198178-4	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	395645	WG2198178-7	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	396215	WG2199796-1	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	396215	WG2199796-4	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	396215	WG2199796-7	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	395645	WG2198178-10	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	395645	WG2198178-13	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	395645	WG2198178-16	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	395645	WG2198178-1	<0.0010		mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	395645	WG2198178-4	<0.0010		mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	395645	WG2198178-7	<0.0010		mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	396215	WG2199796-1	<0.0010		mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	396215	WG2199796-4	<0.0010		mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	396215	WG2199796-7	<0.0010		mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	395645	WG2198178-10	<0.0010		mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	395645	WG2198178-13	<0.0010		mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	395645	WG2198178-16	<0.0010		mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Total Kjeldahl Nitrogen	394781	WG2198368-1	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Total Kjeldahl Nitrogen	394781	WG2198368-5	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total Dissolved	394632	WG2198099-1	<0.0020		mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total Dissolved	394633	WG2198099-5	<0.0020		mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total Dissolved	395432	WG2198313-1	<0.0020		mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total Dissolved	395433	WG2198313-5	<0.0020		mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total	394639	WG2198046-9	<0.0020		mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total	394630	WG2198060-1	<0.0020		mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total	394631	WG2198060-5	<0.0020		mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	395645	WG2198178-1	<0.30		mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients

MB	Sulfate (SO4)	395645	WG2198178-4	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	395645	WG2198178-7	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	396215	WG2199796-1	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	396215	WG2199796-4	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	396215	WG2199796-7	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	395645	WG2198178-10	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	395645	WG2198178-13	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	395645	WG2198178-16	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
Organic / Inorganic Carbon (Water)											
MB	Total Organic Carbon	395388	WG2198053-4	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	395388	WG2198053-8	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	395388	WG2198053-12	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	395388	WG2198053-16	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
Total Metals (Water)											
MB	Mercury (Hg)-Total	396122	WG2200021-1	<0.00050	ug/L	-	<0.00050	ug/L	✓	Water	Total Metals
MB	Mercury (Hg)-Total	396125	WG2200024-1	<0.00050	ug/L	-	<0.00050	ug/L	✓	Water	Total Metals
MB	Mercury (Hg)-Total	397290	WG2201376-1	<0.00050	ug/L	-	<0.00050	ug/L	✓	Water	Total Metals
Total Metals (Undigested) (Water)											
MB	Aluminum (Al)-Total	394528	WG2198048-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Total Metals (Undigested)
MB	Antimony (Sb)-Total	394528	WG2198048-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Arsenic (As)-Total	394528	WG2198048-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Barium (Ba)-Total	394528	WG2198048-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Beryllium (Be)-Total	394528	WG2198048-1	<0.000010	mg/L	-	<0.000010	mg/L	✓	Water	Total Metals (Undigested)
MB	Bismuth (Bi)-Total	394528	WG2198048-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Boron (B)-Total	394528	WG2198048-1	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Total Metals (Undigested)
MB	Cadmium (Cd)-Total	394528	WG2198048-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Calcium (Ca)-Total	394528	WG2198048-1	<0.030	mg/L	-	<0.030	mg/L	✓	Water	Total Metals (Undigested)
MB	Chromium (Cr)-Total	394528	WG2198048-1	<0.00010	mg/L	-	<0.00010	mg/L	✓	Water	Total Metals (Undigested)
MB	Cobalt (Co)-Total	394528	WG2198048-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Copper (Cu)-Total	394528	WG2198048-1	<0.00010	mg/L	-	<0.00010	mg/L	✓	Water	Total Metals (Undigested)
MB	Iron (Fe)-Total	394528	WG2198048-1	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Total Metals (Undigested)
MB	Lead (Pb)-Total	394528	WG2198048-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Lithium (Li)-Total	394528	WG2198048-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Total Metals (Undigested)
MB	Magnesium (Mg)-Total	394528	WG2198048-1	<0.030	mg/L	-	<0.030	mg/L	✓	Water	Total Metals (Undigested)
MB	Manganese (Mn)-Total	394528	WG2198048-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Molybdenum (Mo)-Total	394528	WG2198048-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Nickel (Ni)-Total	394528	WG2198048-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Phosphorus (P)-Total	394528	WG2198048-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Total Metals (Undigested)
MB	Potassium (K)-Total	394528	WG2198048-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Total Metals (Undigested)
MB	Selenium (Se)-Total	394528	WG2198048-1	<0.000040	mg/L	-	<0.000040	mg/L	✓	Water	Total Metals (Undigested)
MB	Silicon (Si)-Total	394528	WG2198048-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Total Metals (Undigested)
MB	Silver (Ag)-Total	394528	WG2198048-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Sodium (Na)-Total	394528	WG2198048-1	<0.010	mg/L	-	<0.010	mg/L	✓	Water	Total Metals (Undigested)
MB	Strontium (Sr)-Total	394528	WG2198048-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Thallium (Tl)-Total	394528	WG2198048-1	<0.0000020	mg/L	-	<0.0000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Tin (Sn)-Total	394528	WG2198048-1	<0.000010	mg/L	-	<0.000010	mg/L	✓	Water	Total Metals (Undigested)
MB	Titanium (Ti)-Total	394528	WG2198048-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Total Metals (Undigested)
MB	Uranium (U)-Total	394528	WG2198048-1	<0.0000020	mg/L	-	<0.0000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Vanadium (V)-Total	394528	WG2198048-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Zinc (Zn)-Total	394528	WG2198048-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Total Metals (Undigested)
MB	Zirconium (Zr)-Total	394528	WG2198048-1	<0.00010	mg/L	-	<0.00010	mg/L	✓	Water	Total Metals (Undigested)
Dissolved Metals (Water)											
MB	Aluminum (Al)-Dissolved	394534	WG2198049-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Dissolved Metals
MB	Antimony (Sb)-Dissolved	394534	WG2198049-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Dissolved Metals
MB	Arsenic (As)-Dissolved	394534	WG2198049-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Dissolved Metals
MB	Barium (Ba)-Dissolved	394534	WG2198049-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Dissolved Metals
MB	Beryllium (Be)-Dissolved	394534	WG2198049-1	<0.000010	mg/L	-	<0.000010	mg/L	✓	Water	Dissolved Metals
MB	Bismuth (Bi)-Dissolved	394534	WG2198049-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals
MB	Boron (B)-Dissolved	394534	WG2198049-1	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Dissolved Metals
MB	Cadmium (Cd)-Dissolved	394534	WG2198049-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals
MB	Calcium (Ca)-Dissolved	394534	WG2198049-1	<0.030	mg/L	-	<0.030	mg/L	✓	Water	Dissolved Metals
MB	Chromium (Cr)-Dissolved	394534	WG2198049-1	<0.00010	mg/L	-	<0.00010	mg/L	✓	Water	Dissolved Metals
MB	Cobalt (Co)-Dissolved	394534	WG2198049-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals
MB	Copper (Cu)-Dissolved	394534	WG2198049-1	<0.00010	mg/L	-	<0.00010	mg/L	✓	Water	Dissolved Metals
MB	Iron (Fe)-Dissolved	394534	WG2198049-1	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Dissolved Metals
MB	Lead (Pb)-Dissolved	394534	WG2198049-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals
MB	Lithium (Li)-Dissolved	394534	WG2198049-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Dissolved Metals
MB	Magnesium (Mg)-Dissolved	394534	WG2198049-1	<0.030	mg/L	-	<0.030	mg/L	✓	Water	Dissolved Metals
MB	Manganese (Mn)-Dissolved	394534	WG2198049-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Dissolved Metals
MB	Mercury (Hg)-Dissolved	396121	WG2200020-1	<0.00050	ug/L	-	<0.00050	ug/L	✓	Water	Dissolved Metals
MB	Mercury (Hg)-Dissolved	396123	WG2200023-1	<0.00050	ug/L	-	<0.00050	ug/L	✓	Water	Dissolved Metals
MB	Mercury (Hg)-Dissolved	397261	WG2201375-1	<0.00050	ug/L	-	<0.00050	ug/L	✓	Water	Dissolved Metals
MB	Molybdenum (Mo)-Dissolved	394534	WG2198049-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Dissolved Metals
MB	Nickel (Ni)-Dissolved	394534	WG2198049-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Dissolved Metals
MB	Phosphorus (P)-Dissolved	394534	WG2198049-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Dissolved Metals
MB	Potassium (K)-Dissolved	394534	WG2198049-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Dissolved Metals
MB	Selenium (Se)-Dissolved	394534	WG2198049-1	<0.000040	mg/L	-	<0.000040	mg/L	✓	Water	Dissolved Metals
MB	Silicon (Si)-Dissolved	394534	WG2198049-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Dissolved Metals
MB	Silver (Ag)-Dissolved	394534	WG2198049-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals
MB	Sodium (Na)-Dissolved	394534	WG2198049-1	<0.010	mg/L	-	<0.010	mg/L	✓	Water	Dissolved Metals
MB	Strontium (Sr)-Dissolved	394534	WG2198049-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Dissolved Metals
MB	Thallium (Tl)-Dissolved	394534	WG2198049-1	<0.0000020	mg/L	-	<0.0000020	mg/L	✓	Water	Dissolved Metals
MB	Tin (Sn)-Dissolved	394534	WG2198049-1	<0.000010	mg/L	-	<0.000010	mg/L	✓	Water	Dissolved Metals
MB	Titanium (Ti)-Dissolved	394534	WG2198049-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Dissolved Metals
MB	Uranium (U)-Dissolved	394534	WG2198049-1	<0.0000020	mg/L	-	<0.0000020	mg/L	✓	Water	Dissolved Metals
MB	Vanadium (V)-Dissolved	394534	WG2198049-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Dissolved Metals
MB	Zinc (Zn)-Dissolved	394534	WG2198049-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Dissolved Metals
MB	Zirconium (Zr)-Dissolved	394534	WG2198049-1	<0.00010	mg/L	-	<0.00010	mg/L	✓	Water	Dissolved Metals
Aggregate Organics (Water)											
MB	BOD	394850	WG2198400-1	<2.0	mg/L	-	<2.0	mg/L	✓	Water	Aggregate Organics

MB	BOD	394850	WG2198400-5	<2.0		mg/L	-	<2.0	mg/L	✓	Water	Aggregate Organics
MB	COD	397598	WG2201848-1	<20		mg/L	-	<20	mg/L	✓	Water	Aggregate Organics
MB	COD	397598	WG2201848-5	<20		mg/L	-	<20	mg/L	✓	Water	Aggregate Organics
MB	COD	397598	WG2201848-9	<20		mg/L	-	<20	mg/L	✓	Water	Aggregate Organics
Anions and Nutrients (Water)												
MS	Ammonia, Total (as N)	397250	BIRCH BANK R SH	0.202	0.2	mg/L	101.2	75-125	%	✓	Water	Anions and Nutrients
MS	Ammonia, Total (as N)	397747	NEW BRIDGE L 1M DEEP	0.208	0.206	mg/L	100.8	75-125	%	✓	Water	Anions and Nutrients
MS	Ammonia, Total (as N)	397747	MAGLIOS R 1M ABOVE BED	0.203	0.208	mg/L	97.2	75-125	%	✓	Water	Anions and Nutrients
MS	Bromide (Br)	395645	NEW BRIDGE R SH	0.479	0.5	mg/L	95.8	75-125	%	✓	Water	Anions and Nutrients
MS	Bromide (Br)	395645	BIRCH BANK L 1M DEEP	0.520	0.5	mg/L	104.0	75-125	%	✓	Water	Anions and Nutrients
MS	Bromide (Br)	395645	OLD BRIDGE R 1M ABOVE BED	0.504	0.5	mg/L	100.7	75-125	%	✓	Water	Anions and Nutrients
MS	Chloride (Cl)	395645	NEW BRIDGE R SH	96.7	101	mg/L	95.9	75-125	%	✓	Water	Anions and Nutrients
MS	Chloride (Cl)	395645	BIRCH BANK L 1M DEEP	104	100	mg/L	103.5	75-125	%	✓	Water	Anions and Nutrients
MS	Chloride (Cl)	395645	OLD BRIDGE R 1M ABOVE BED	100	100	mg/L	100.4	75-125	%	✓	Water	Anions and Nutrients
MS	Fluoride (F)	395645	NEW BRIDGE R SH	1.07	1.11	mg/L	95.9	75-125	%	✓	Water	Anions and Nutrients
MS	Fluoride (F)	395645	BIRCH BANK L 1M DEEP	1.09	1.05	mg/L	103.4	75-125	%	✓	Water	Anions and Nutrients
MS	Fluoride (F)	395645	OLD BRIDGE R 1M ABOVE BED	1.06	1.06	mg/L	100.3	75-125	%	✓	Water	Anions and Nutrients
MS	Nitrate (as N)	395645	NEW BRIDGE R SH	2.46	2.59	mg/L	94.8	75-125	%	✓	Water	Anions and Nutrients
MS	Nitrate (as N)	395645	BIRCH BANK L 1M DEEP	2.63	2.57	mg/L	102.4	75-125	%	✓	Water	Anions and Nutrients
MS	Nitrate (as N)	395645	OLD BRIDGE R 1M ABOVE BED	2.55	2.58	mg/L	98.7	75-125	%	✓	Water	Anions and Nutrients
MS	Nitrite (as N)	395645	NEW BRIDGE R SH	0.477	0.501	mg/L	95.0	75-125	%	✓	Water	Anions and Nutrients
MS	Nitrite (as N)	395645	BIRCH BANK L 1M DEEP	0.509	0.5	mg/L	101.9	75-125	%	✓	Water	Anions and Nutrients
MS	Nitrite (as N)	395645	OLD BRIDGE R 1M ABOVE BED	0.496	0.5	mg/L	99.2	75-125	%	✓	Water	Anions and Nutrients
MS	Total Kjeldahl Nitrogen	394781	BIRCH BANK L SH	1.10	1.08	mg/L	102.5	70-130	%	✓	Water	Anions and Nutrients
MS	Total Kjeldahl Nitrogen	394781	OLD BRIDGE R 1M DEEP	1.10	1.09	mg/L	100.8	70-130	%	✓	Water	Anions and Nutrients
MS	Phosphorus (P)-Total Dissolved	395433	NEW BRIDGE L 1M DEEP	0.0496	0.05	mg/L	99.2	70-130	%	✓	Water	Anions and Nutrients
MS	Phosphorus (P)-Total Dissolved	395432	MAGLIOS R 1M ABOVE BED	0.0502	0.05	mg/L	100.4	70-130	%	✓	Water	Anions and Nutrients
MS	Phosphorus (P)-Total	394631	NEW BRIDGE R SH	0.0495	0.0523	mg/L	94.3	70-130	%	✓	Water	Anions and Nutrients
MS	Sulfate (SO4)	395645	NEW BRIDGE R SH	111	117	mg/L	93.8	75-125	%	✓	Water	Anions and Nutrients
MS	Sulfate (SO4)	395645	BIRCH BANK L 1M DEEP	113	111	mg/L	101.7	75-125	%	✓	Water	Anions and Nutrients
MS	Sulfate (SO4)	395645	OLD BRIDGE R 1M ABOVE BED	110	112	mg/L	98.5	75-125	%	✓	Water	Anions and Nutrients
Organic / Inorganic Carbon (Water)												
MS	Total Organic Carbon	395388	BIRCH BANK L 1M DEEP	6.08	5.94	mg/L	102.9	70-130	%	✓	Water	Organic / Inorganic Carbon
MS	Total Organic Carbon	395388	MAGLIOS R 1M ABOVE BED	6.03	5.84	mg/L	103.9	70-130	%	✓	Water	Organic / Inorganic Carbon
MS	Total Organic Carbon	395388	NEW BRIDGE R 1M ABOVE BED	5.84	5.69	mg/L	103.0	70-130	%	✓	Water	Organic / Inorganic Carbon
Total Metals (Water)												
MS	Mercury (Hg)-Total	397290	NEW BRIDGE R SH	0.00632	0.00628	ug/L	100.9	70-130	%	✓	Water	Total Metals
MS	Mercury (Hg)-Total	396125	MAGLIOS R 1M ABOVE BED	0.00510	0.005	ug/L	102.0	70-130	%	✓	Water	Total Metals
Total Metals (Undigested) (Water)												
MS	Aluminum (Al)-Total	394528	DUPLICATE 1	0.202	0.211	mg/L	95.5	70-130	%	✓	Water	Total Metals (Undigested)
MS	Aluminum (Al)-Total	394528	BIRCH BANK L SH	0.208	0.21	mg/L	99.0	70-130	%	✓	Water	Total Metals (Undigested)
MS	Antimony (Sb)-Total	394528	DUPLICATE 1	0.0194	0.0204	mg/L	94.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Antimony (Sb)-Total	394528	BIRCH BANK L SH	0.0187	0.02	mg/L	93.6	70-130	%	✓	Water	Total Metals (Undigested)
MS	Arsenic (As)-Total	394528	DUPLICATE 1	0.0202	0.0203	mg/L	99.8	70-130	%	✓	Water	Total Metals (Undigested)
MS	Arsenic (As)-Total	394528	BIRCH BANK L SH	0.0200	0.0201	mg/L	99.4	70-130	%	✓	Water	Total Metals (Undigested)
MS	Barium (Ba)-Total	394528	DUPLICATE 1	0.0362	0.0371	mg/L	95.8	70-130	%	✓	Water	Total Metals (Undigested)
MS	Barium (Ba)-Total	394528	BIRCH BANK L SH	0.0352	0.0365	mg/L	93.5	70-130	%	✓	Water	Total Metals (Undigested)
MS	Beryllium (Be)-Total	394528	DUPLICATE 1	0.0383	0.04	mg/L	95.8	70-130	%	✓	Water	Total Metals (Undigested)
MS	Beryllium (Be)-Total	394528	BIRCH BANK L SH	0.0378	0.04	mg/L	94.5	70-130	%	✓	Water	Total Metals (Undigested)
MS	Bismuth (Bi)-Total	394528	DUPLICATE 1	0.00840	0.01	mg/L	84.0	70-130	%	✓	Water	Total Metals (Undigested)
MS	Bismuth (Bi)-Total	394528	BIRCH BANK L SH	0.00835	0.01	mg/L	83.5	70-130	%	✓	Water	Total Metals (Undigested)
MS	Boron (B)-Total	394528	DUPLICATE 1	0.0973	0.1	mg/L	97.3	70-130	%	✓	Water	Total Metals (Undigested)

MS	Boron (B)-Total	394528	BIRCH BANK L SH	0.102	0.1	mg/L	101.5	70-130	%	✓	Water	Total Metals (Undigested)
MS	Cadmium (Cd)-Total	394528	DUPLICATE 1	0.00452	0.00468	mg/L	96.1	70-130	%	✓	Water	Total Metals (Undigested)
MS	Cadmium (Cd)-Total	394528	BIRCH BANK L SH	0.00368	0.00401	mg/L	91.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Calcium (Ca)-Total	394528	DUPLICATE 1	70.0	69.8	mg/L	100.5	70-130	%	✓	Water	Total Metals (Undigested)
MS	Calcium (Ca)-Total	394528	BIRCH BANK L SH	69.7	67.9	mg/L	103.6	70-130	%	✓	Water	Total Metals (Undigested)
MS	Chromium (Cr)-Total	394528	DUPLICATE 1	0.0391	0.04	mg/L	97.8	70-130	%	✓	Water	Total Metals (Undigested)
MS	Chromium (Cr)-Total	394528	BIRCH BANK L SH	0.0370	0.04	mg/L	92.5	70-130	%	✓	Water	Total Metals (Undigested)
MS	Cobalt (Co)-Total	394528	DUPLICATE 1	0.0191	0.02	mg/L	95.4	70-130	%	✓	Water	Total Metals (Undigested)
MS	Cobalt (Co)-Total	394528	BIRCH BANK L SH	0.0188	0.02	mg/L	93.8	70-130	%	✓	Water	Total Metals (Undigested)
MS	Copper (Cu)-Total	394528	DUPLICATE 1	0.0198	0.0209	mg/L	94.4	70-130	%	✓	Water	Total Metals (Undigested)
MS	Copper (Cu)-Total	394528	BIRCH BANK L SH	0.0190	0.0203	mg/L	93.4	70-130	%	✓	Water	Total Metals (Undigested)
MS	Iron (Fe)-Total	394528	DUPLICATE 1	1.85	2.01	mg/L	92.4	70-130	%	✓	Water	Total Metals (Undigested)
MS	Iron (Fe)-Total	394528	BIRCH BANK L SH	1.90	2.01	mg/L	95.0	70-130	%	✓	Water	Total Metals (Undigested)
MS	Lead (Pb)-Total	394528	DUPLICATE 1	0.0190	0.0208	mg/L	91.2	70-130	%	✓	Water	Total Metals (Undigested)
MS	Lead (Pb)-Total	394528	BIRCH BANK L SH	0.0182	0.02	mg/L	90.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Lithium (Li)-Total	394528	DUPLICATE 1	0.0979	0.1	mg/L	97.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Lithium (Li)-Total	394528	BIRCH BANK L SH	0.0933	0.101	mg/L	92.3	70-130	%	✓	Water	Total Metals (Undigested)
MS	Magnesium (Mg)-Total	394528	DUPLICATE 1	49.6	54.3	mg/L	90.6	70-130	%	✓	Water	Total Metals (Undigested)
MS	Magnesium (Mg)-Total	394528	BIRCH BANK L SH	52.6	54.3	mg/L	96.7	70-130	%	✓	Water	Total Metals (Undigested)
MS	Manganese (Mn)-Total	394528	DUPLICATE 1	0.0235	0.0241	mg/L	96.7	70-130	%	✓	Water	Total Metals (Undigested)
MS	Manganese (Mn)-Total	394528	BIRCH BANK L SH	0.0203	0.0213	mg/L	94.8	70-130	%	✓	Water	Total Metals (Undigested)
MS	Molybdenum (Mo)-Total	394528	DUPLICATE 1	0.0197	0.0205	mg/L	96.0	70-130	%	✓	Water	Total Metals (Undigested)
MS	Molybdenum (Mo)-Total	394528	BIRCH BANK L SH	0.0191	0.0204	mg/L	93.3	70-130	%	✓	Water	Total Metals (Undigested)
MS	Nickel (Ni)-Total	394528	DUPLICATE 1	0.0375	0.04	mg/L	93.8	70-130	%	✓	Water	Total Metals (Undigested)
MS	Nickel (Ni)-Total	394528	BIRCH BANK L SH	0.0391	0.0404	mg/L	96.8	70-130	%	✓	Water	Total Metals (Undigested)
MS	Phosphorus (P)-Total	394528	DUPLICATE 1	2.40	2.5	mg/L	96.1	70-130	%	✓	Water	Total Metals (Undigested)
MS	Phosphorus (P)-Total	394528	BIRCH BANK L SH	2.46	2.5	mg/L	98.2	70-130	%	✓	Water	Total Metals (Undigested)
MS	Potassium (K)-Total	394528	DUPLICATE 1	47.3	50.6	mg/L	93.4	70-130	%	✓	Water	Total Metals (Undigested)
MS	Potassium (K)-Total	394528	BIRCH BANK L SH	48.5	50.6	mg/L	95.8	70-130	%	✓	Water	Total Metals (Undigested)
MS	Selenium (Se)-Total	394528	DUPLICATE 1	0.0399	0.0409	mg/L	97.5	70-130	%	✓	Water	Total Metals (Undigested)
MS	Selenium (Se)-Total	394528	BIRCH BANK L SH	0.0396	0.0401	mg/L	98.7	70-130	%	✓	Water	Total Metals (Undigested)
MS	Silver (Ag)-Total	394528	DUPLICATE 1	0.00378	0.004	mg/L	94.4	70-130	%	✓	Water	Total Metals (Undigested)
MS	Silver (Ag)-Total	394528	BIRCH BANK L SH	0.00383	0.004	mg/L	95.6	70-130	%	✓	Water	Total Metals (Undigested)
MS	Sodium (Na)-Total	394528	DUPLICATE 1	3.56	3.71	mg/L	92.3	70-130	%	✓	Water	Total Metals (Undigested)
MS	Sodium (Na)-Total	394528	BIRCH BANK L SH	3.10	3.15	mg/L	97.7	70-130	%	✓	Water	Total Metals (Undigested)
MS	Thallium (Tl)-Total	394528	DUPLICATE 1	0.00405	0.00441	mg/L	91.1	70-130	%	✓	Water	Total Metals (Undigested)
MS	Thallium (Tl)-Total	394528	BIRCH BANK L SH	0.00363	0.004	mg/L	90.6	70-130	%	✓	Water	Total Metals (Undigested)
MS	Tin (Sn)-Total	394528	DUPLICATE 1	0.0190	0.02	mg/L	95.0	70-130	%	✓	Water	Total Metals (Undigested)
MS	Tin (Sn)-Total	394528	BIRCH BANK L SH	0.0184	0.02	mg/L	92.0	70-130	%	✓	Water	Total Metals (Undigested)
MS	Titanium (Ti)-Total	394528	DUPLICATE 1	0.0387	0.04	mg/L	96.8	70-130	%	✓	Water	Total Metals (Undigested)
MS	Titanium (Ti)-Total	394528	BIRCH BANK L SH	0.0387	0.04	mg/L	96.6	70-130	%	✓	Water	Total Metals (Undigested)
MS	Uranium (U)-Total	394528	DUPLICATE 1	0.00411	0.00441	mg/L	92.5	70-130	%	✓	Water	Total Metals (Undigested)
MS	Uranium (U)-Total	394528	BIRCH BANK L SH	0.00405	0.00439	mg/L	91.6	70-130	%	✓	Water	Total Metals (Undigested)
MS	Vanadium (V)-Total	394528	DUPLICATE 1	0.0956	0.1	mg/L	95.5	70-130	%	✓	Water	Total Metals (Undigested)
MS	Vanadium (V)-Total	394528	BIRCH BANK L SH	0.0958	0.1	mg/L	95.7	70-130	%	✓	Water	Total Metals (Undigested)
MS	Zinc (Zn)-Total	394528	DUPLICATE 1	0.368	0.408	mg/L	89.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Zinc (Zn)-Total	394528	BIRCH BANK L SH	0.367	0.4	mg/L	91.8	70-130	%	✓	Water	Total Metals (Undigested)
MS	Zirconium (Zr)-Total	394528	DUPLICATE 1	0.0386	0.04	mg/L	96.5	70-130	%	✓	Water	Total Metals (Undigested)
MS	Zirconium (Zr)-Total	394528	BIRCH BANK L SH	0.0371	0.04	mg/L	92.7	70-130	%	✓	Water	Total Metals (Undigested)
Dissolved Metals (Water)												
MS	Mercury (Hg)-Dissolved	396123	DUPLICATE 2	0.00514	0.005	ug/L	102.8	70-130	%	✓	Water	Dissolved Metals
MS	Mercury (Hg)-Dissolved	397261	NEW BRIDGE L SH	0.00528	0.005	ug/L	105.6	70-130	%	✓	Water	Dissolved Metals
MS	Mercury (Hg)-Dissolved	396121	BIRCH BANK L 1M ABOVE BED	0.00471	0.005	ug/L	94.1	70-130	%	✓	Water	Dissolved Metals
Aggregate Organics (Water)												
MS	COD	397598	DUPLICATE 3	523	500	mg/L	104.5	75-125	%	✓	Water	Aggregate Organics
MS	COD	397598	BIRCH BANK R 1M DEEP	543	500	mg/L	108.5	75-125	%	✓	Water	Aggregate Organics

Evaluation Legend

✓ QC Lot met ALS Data Quality Objectives

Duplicates L1743861

Job Reference 15-1438
Report To Kyle Hawes, ECOSCAPE ENVIRONMENTAL CONSULTANTS LTD.
Date Received 11-Mar-2016 8:30
Report Date 5-Apr-2016 14:36
Report Version 1

ALS ID	Reference	Client Sample ID	QC Type	QC Lot #	Analyte	Sample Result	Duplicate Result	Detection Limit	Units	RPD	RPD Limit	Diff	Diff Limit	Qual	Eval	Matrix	Class
Anions and Nutrients (Water)																	
WG2274474-3	L1743861-4	MAGLIOS RSH	DUP	453257	Bromide (Br)	<0.050	<0.050	0.050	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2274474-3	L1743861-4	MAGLIOS RSH	DUP	453257	Chloride (Cl)	1.21	1.21	0.50	mg/L	0.2	20	-			✓	Water	Anions and Nutrients
WG2274474-3	L1743861-4	MAGLIOS RSH	DUP	453257	Fluoride (F)	0.075	0.076	0.020	mg/L	0.2	20	-			✓	Water	Anions and Nutrients
WG2274474-3	L1743861-4	MAGLIOS RSH	DUP	453257	Nitrate (as N)	0.158	0.158	0.0050	mg/L	0.4	20	-			✓	Water	Anions and Nutrients
WG2274474-3	L1743861-4	MAGLIOS RSH	DUP	453257	Nitrite (as N)	<0.0010	<0.0010	0.0010	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2276592-7	L1743861-4	MAGLIOS RSH	DUP	454463	Total Kjeldahl Nitrogen	0.103	0.097	0.050	mg/L	5.4	20	-			✓	Water	Anions and Nutrients
WG2274474-3	L1743861-4	MAGLIOS RSH	DUP	453257	Sulfate (SO4)	12.6	12.6	0.30	mg/L	0.3	20	-			✓	Water	Anions and Nutrients
Total Metals (Water)																	
WG2276799-8	L1743861-7	DUPLICATE	DUP	454623	Mercury (Hg)-Total	0.00209	0.00208	0.00050	ug/L	0.5	20	-			✓	Water	Total Metals
Dissolved Metals (Water)																	
WG2277286-3	L1743861-6	NEW BRIDGE RSH	DUP	454988	Mercury (Hg)-Dissolved	0.00079	0.00081	0.00050	ug/L	2.9	20	-			✓	Water	Dissolved Metals

Evaluation Legend

✓ QC Lot met ALS Data Quality Objectives

Quality Control L1743861

Job Reference 15-1438
Report To Kyle Hawes, ECOSCAPE ENVIRONMENTAL CONSULTANTS LTD.
Date Received 11-Mar-2016 8:30
Report Date 5-Apr-2016 14:36
Report Version 1

QC Type	Analyte	QC Lot #	ALS QC ID	Result	Target	Units	%	Limit	Units	Qual	Eval	Matrix	Class
Physical Tests (Water)													
CRM	Conductivity	453769	WG2275016-9	148	147	uS/cm	100.7	90-110	%		✓	Water	Physical Tests
CRM	Conductivity	454324	WG2276055-4	148	147	uS/cm	101.0	90-110	%		✓	Water	Physical Tests
CRM	Conductivity	453711	WG2274932-14	152	147	uS/cm	103.2	90-110	%		✓	Water	Physical Tests
CRM	Conductivity	453712	WG2274932-19	149	147	uS/cm	101.6	90-110	%		✓	Water	Physical Tests
CRM	pH	453769	WG2275016-7	7.01	7	pH	7.01	6.9-7.1	pH		✓	Water	Physical Tests
CRM	pH	454324	WG2276055-2	7.01	7	pH	7.01	6.9-7.1	pH		✓	Water	Physical Tests
CRM	pH	453711	WG2274932-12	7.01	7	pH	7.01	6.9-7.1	pH		✓	Water	Physical Tests
CRM	pH	453712	WG2274932-17	7.01	7	pH	7.01	6.9-7.1	pH		✓	Water	Physical Tests
CRM	Turbidity	452751	WG2274389-2	40.1	40	NTU	100.3	85-115	%		✓	Water	Physical Tests
CRM	Turbidity	452751	WG2274389-5	40.5	40	NTU	101.3	85-115	%		✓	Water	Physical Tests
Anions and Nutrients (Water)													
CRM	Alkalinity, Total (as CaCO3)	456813	WG2279625-2	14.6	15	mg/L	97.3	85-115	%		✓	Water	Anions and Nutrients
CRM	Alkalinity, Total (as CaCO3)	456813	WG2279625-5	74.4	75	mg/L	99.2	85-115	%		✓	Water	Anions and Nutrients
CRM	Alkalinity, Total (as CaCO3)	456813	WG2279625-8	259	250	mg/L	103.7	85-115	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total Dissolved	452827	WG2274337-10	7.37	7.17	mg/L	102.8	80-120	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total	454095	WG2276065-6	7.08	7.17	mg/L	98.8	80-120	%		✓	Water	Anions and Nutrients
Physical Tests (Water)													
LCS	Total Suspended Solids	453701	WG2275273-5	79.0	75	mg/L	105.3	85-115	%		✓	Water	Physical Tests
LCS	Total Dissolved Solids	453519	WG2275308-5	414	425	mg/L	97.4	85-115	%		✓	Water	Physical Tests
Anions and Nutrients (Water)													
LCS	Ammonia, Total (as N)	455645	WG2277337-2	0.119	0.12	mg/L	99.3	85-115	%		✓	Water	Anions and Nutrients
LCS	Bromide (Br)	453257	WG2274474-2	0.519	0.5	mg/L	103.8	85-115	%		✓	Water	Anions and Nutrients
LCS	Bromide (Br)	453257	WG2274474-21	0.518	0.5	mg/L	103.6	85-115	%		✓	Water	Anions and Nutrients
LCS	Chloride (Cl)	453257	WG2274474-2	102	100	mg/L	102.2	90-110	%		✓	Water	Anions and Nutrients
LCS	Chloride (Cl)	453257	WG2274474-21	102	100	mg/L	102.3	90-110	%		✓	Water	Anions and Nutrients
LCS	Fluoride (F)	453257	WG2274474-2	1.03	1	mg/L	103.1	90-110	%		✓	Water	Anions and Nutrients
LCS	Fluoride (F)	453257	WG2274474-21	1.04	1	mg/L	103.7	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrate (as N)	453257	WG2274474-2	2.56	2.5	mg/L	102.2	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrate (as N)	453257	WG2274474-21	2.56	2.5	mg/L	102.3	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrite (as N)	453257	WG2274474-2	0.511	0.5	mg/L	102.1	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrite (as N)	453257	WG2274474-21	0.511	0.5	mg/L	102.1	90-110	%		✓	Water	Anions and Nutrients
LCS	Total Kjeldahl Nitrogen	454463	WG2276592-2	1.03	1	mg/L	102.8	75-125	%		✓	Water	Anions and Nutrients
LCS	Total Kjeldahl Nitrogen	454463	WG2276592-6	1.05	1	mg/L	104.9	75-125	%		✓	Water	Anions and Nutrients
LCS	Total Kjeldahl Nitrogen	454463	WG2276592-10	1.07	1	mg/L	107.2	75-125	%		✓	Water	Anions and Nutrients
LCS	Total Kjeldahl Nitrogen	454463	WG2276592-14	1.05	1	mg/L	104.8	75-125	%		✓	Water	Anions and Nutrients
LCS	Total Kjeldahl Nitrogen	454463	WG2276592-18	1.03	1	mg/L	103.1	75-125	%		✓	Water	Anions and Nutrients
LCS	Sulfate (SO4)	453257	WG2274474-2	102	100	mg/L	102.4	90-110	%		✓	Water	Anions and Nutrients
LCS	Sulfate (SO4)	453257	WG2274474-21	103	100	mg/L	102.6	90-110	%		✓	Water	Anions and Nutrients
Organic / Inorganic Carbon (Water)													
LCS	Total Organic Carbon	455051	WG2275780-1	8.55	8.57	mg/L	99.7	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	455051	WG2275780-5	8.70	8.57	mg/L	101.5	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	455051	WG2275780-9	8.81	8.57	mg/L	102.9	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	455070	WG2276304-1	8.66	8.57	mg/L	101.0	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	455070	WG2276304-5	8.53	8.57	mg/L	99.5	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	455070	WG2276304-9	8.55	8.57	mg/L	99.7	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	455051	WG2275780-13	9.02	8.57	mg/L	105.3	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	455070	WG2276304-13	8.68	8.57	mg/L	101.3	80-120	%		✓	Water	Organic / Inorganic Carbon
Total Metals (Water)													
LCS	Mercury (Hg)-Total	454623	WG2276799-4	0.00493	0.005	ug/L	98.6	80-120	%		✓	Water	Total Metals
Total Metals (Undigested) (Water)													
LCS	Aluminum (Al)-Total	452761	WG2274401-2	2.04	2	mg/L	102.0	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Antimony (Sb)-Total	452761	WG2274401-2	0.987	1	mg/L	98.7	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Arsenic (As)-Total	452761	WG2274401-2	0.981	1	mg/L	98.1	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Barium (Ba)-Total	452761	WG2274401-2	0.248	0.25	mg/L	99.3	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Beryllium (Be)-Total	452761	WG2274401-2	0.0992	0.1	mg/L	99.2	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Bismuth (Bi)-Total	452761	WG2274401-2	0.963	1	mg/L	96.3	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Boron (B)-Total	452761	WG2274401-2	0.928	1	mg/L	92.8	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Cadmium (Cd)-Total	452761	WG2274401-2	0.0972	0.1	mg/L	97.2	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Calcium (Ca)-Total	452761	WG2274401-2	52.7	50	mg/L	105.4	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Chromium (Cr)-Total	452761	WG2274401-2	0.244	0.25	mg/L	97.7	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Cobalt (Co)-Total	452761	WG2274401-2	0.247	0.25	mg/L	98.7	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Copper (Cu)-Total	452761	WG2274401-2	0.242	0.25	mg/L	96.9	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Iron (Fe)-Total	452761	WG2274401-2	0.964	1	mg/L	96.4	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Lead (Pb)-Total	452761	WG2274401-2	0.490	0.5	mg/L	97.9	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Lithium (Li)-Total	452761	WG2274401-2	0.255	0.25	mg/L	101.9	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Magnesium (Mg)-Total	452761	WG2274401-2	49.7	50	mg/L	99.4	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Manganese (Mn)-Total	452761	WG2274401-2	0.247	0.25	mg/L	98.8	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Molybdenum (Mo)-Total	452761	WG2274401-2	0.244	0.25	mg/L	97.5	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Nickel (Ni)-Total	452761	WG2274401-2	0.489	0.5	mg/L	97.8	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Phosphorus (P)-Total	452761	WG2274401-2	2.57	2.5	mg/L	102.6	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Potassium (K)-Total	452761	WG2274401-2	49.8	50	mg/L	99.5	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Selenium (Se)-Total	452761	WG2274401-2	1.01	1	mg/L	100.7	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Silicon (Si)-Total	452761	WG2274401-2	1.03	1	mg/L	103.0	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Silver (Ag)-Total	452761	WG2274401-2	0.0988	0.1	mg/L	98.8	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Sodium (Na)-Total	452761	WG2274401-2	50.9	50	mg/L	101.7	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Strontium (Sr)-Total	452761	WG2274401-2	0.238	0.25	mg/L	95.2	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Thallium (Tl)-Total	452761	WG2274401-2	0.981	1	mg/L	98.1	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Tin (Sn)-Total	452761	WG2274401-2	0.487	0.5	mg/L	97.5	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Titanium (Ti)-Total	452761	WG2274401-2	0.238	0.25	mg/L	95.2	80-120	%		✓	Water	Total Metals (Undigested)

LCS	Uranium (U)-Total	452761	WG2274401-2	0.00491	0.005	mg/L	98.1	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Vanadium (V)-Total	452761	WG2274401-2	0.505	0.5	mg/L	100.9	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Zinc (Zn)-Total	452761	WG2274401-2	0.483	0.5	mg/L	96.7	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Zirconium (Zr)-Total	452761	WG2274401-2	0.0922	0.1	mg/L	92.2	80-120	%	✓	Water	Total Metals (Undigested)
Dissolved Metals (Water)												
LCS	Aluminum (Al)-Dissolved	452282	WG2273794-2	2.12	2	mg/L	106.0	80-120	%	✓	Water	Dissolved Metals
LCS	Aluminum (Al)-Dissolved	453785	WG2275737-2	1.91	2	mg/L	95.7	80-120	%	✓	Water	Dissolved Metals
LCS	Antimony (Sb)-Dissolved	452282	WG2273794-2	0.984	1	mg/L	98.4	80-120	%	✓	Water	Dissolved Metals
LCS	Antimony (Sb)-Dissolved	453785	WG2275737-2	0.938	1	mg/L	93.8	80-120	%	✓	Water	Dissolved Metals
LCS	Arsenic (As)-Dissolved	452282	WG2273794-2	1.00	1	mg/L	100.5	80-120	%	✓	Water	Dissolved Metals
LCS	Arsenic (As)-Dissolved	453785	WG2275737-2	0.933	1	mg/L	93.3	80-120	%	✓	Water	Dissolved Metals
LCS	Barium (Ba)-Dissolved	452282	WG2273794-2	0.257	0.25	mg/L	102.8	80-120	%	✓	Water	Dissolved Metals
LCS	Barium (Ba)-Dissolved	453785	WG2275737-2	0.240	0.25	mg/L	96.1	80-120	%	✓	Water	Dissolved Metals
LCS	Beryllium (Be)-Dissolved	452282	WG2273794-2	0.100	0.1	mg/L	100.3	80-120	%	✓	Water	Dissolved Metals
LCS	Beryllium (Be)-Dissolved	453785	WG2275737-2	0.0942	0.1	mg/L	94.2	80-120	%	✓	Water	Dissolved Metals
LCS	Bismuth (Bi)-Dissolved	452282	WG2273794-2	0.984	1	mg/L	98.4	80-120	%	✓	Water	Dissolved Metals
LCS	Bismuth (Bi)-Dissolved	453785	WG2275737-2	0.949	1	mg/L	94.9	80-120	%	✓	Water	Dissolved Metals
LCS	Boron (B)-Dissolved	452282	WG2273794-2	0.941	1	mg/L	94.1	80-120	%	✓	Water	Dissolved Metals
LCS	Cadmium (Cd)-Dissolved	452282	WG2273794-2	0.0980	0.1	mg/L	98.0	80-120	%	✓	Water	Dissolved Metals
LCS	Cadmium (Cd)-Dissolved	453785	WG2275737-2	0.0945	0.1	mg/L	94.5	80-120	%	✓	Water	Dissolved Metals
LCS	Calcium (Ca)-Dissolved	453785	WG2275737-2	52.4	50	mg/L	104.9	80-120	%	✓	Water	Dissolved Metals
LCS	Chromium (Cr)-Dissolved	452282	WG2273794-2	0.250	0.25	mg/L	99.9	80-120	%	✓	Water	Dissolved Metals
LCS	Chromium (Cr)-Dissolved	453785	WG2275737-2	0.231	0.25	mg/L	92.2	80-120	%	✓	Water	Dissolved Metals
LCS	Cobalt (Co)-Dissolved	452282	WG2273794-2	0.245	0.25	mg/L	98.0	80-120	%	✓	Water	Dissolved Metals
LCS	Cobalt (Co)-Dissolved	453785	WG2275737-2	0.232	0.25	mg/L	92.8	80-120	%	✓	Water	Dissolved Metals
LCS	Copper (Cu)-Dissolved	452282	WG2273794-2	0.240	0.25	mg/L	96.0	80-120	%	✓	Water	Dissolved Metals
LCS	Copper (Cu)-Dissolved	453785	WG2275737-2	0.231	0.25	mg/L	92.6	80-120	%	✓	Water	Dissolved Metals
LCS	Iron (Fe)-Dissolved	452282	WG2273794-2	0.916	1	mg/L	91.6	80-120	%	✓	Water	Dissolved Metals
LCS	Iron (Fe)-Dissolved	453785	WG2275737-2	0.879	1	mg/L	87.9	80-120	%	✓	Water	Dissolved Metals
LCS	Lead (Pb)-Dissolved	452282	WG2273794-2	0.494	0.5	mg/L	98.8	80-120	%	✓	Water	Dissolved Metals
LCS	Lead (Pb)-Dissolved	453785	WG2275737-2	0.472	0.5	mg/L	94.3	80-120	%	✓	Water	Dissolved Metals
LCS	Lithium (Li)-Dissolved	452282	WG2273794-2	0.250	0.25	mg/L	100.1	80-120	%	✓	Water	Dissolved Metals
LCS	Lithium (Li)-Dissolved	453785	WG2275737-2	0.224	0.25	mg/L	89.5	80-120	%	✓	Water	Dissolved Metals
LCS	Magnesium (Mg)-Dissolved	453785	WG2275737-2	49.9	50	mg/L	99.8	80-120	%	✓	Water	Dissolved Metals
LCS	Manganese (Mn)-Dissolved	452282	WG2273794-2	0.244	0.25	mg/L	97.6	80-120	%	✓	Water	Dissolved Metals
LCS	Manganese (Mn)-Dissolved	453785	WG2275737-2	0.228	0.25	mg/L	91.3	80-120	%	✓	Water	Dissolved Metals
LCS	Mercury (Hg)-Dissolved	454988	WG2277286-2	0.00479	0.005	ug/L	95.8	80-120	%	✓	Water	Dissolved Metals
LCS	Molybdenum (Mo)-Dissolved	452282	WG2273794-2	0.246	0.25	mg/L	98.2	80-120	%	✓	Water	Dissolved Metals
LCS	Molybdenum (Mo)-Dissolved	453785	WG2275737-2	0.237	0.25	mg/L	94.8	80-120	%	✓	Water	Dissolved Metals
LCS	Nickel (Ni)-Dissolved	452282	WG2273794-2	0.496	0.5	mg/L	99.1	80-120	%	✓	Water	Dissolved Metals
LCS	Nickel (Ni)-Dissolved	453785	WG2275737-2	0.473	0.5	mg/L	94.6	80-120	%	✓	Water	Dissolved Metals
LCS	Phosphorus (P)-Dissolved	453785	WG2275737-2	2.52	2.5	mg/L	100.9	80-120	%	✓	Water	Dissolved Metals
LCS	Potassium (K)-Dissolved	453785	WG2275737-2	49.4	50	mg/L	98.9	80-120	%	✓	Water	Dissolved Metals
LCS	Selenium (Se)-Dissolved	452282	WG2273794-2	0.917	1	mg/L	91.7	80-120	%	✓	Water	Dissolved Metals
LCS	Selenium (Se)-Dissolved	453785	WG2275737-2	0.973	1	mg/L	97.3	80-120	%	✓	Water	Dissolved Metals
LCS	Silicon (Si)-Dissolved	453785	WG2275737-2	1.06	1	mg/L	105.7	80-120	%	✓	Water	Dissolved Metals
LCS	Silver (Ag)-Dissolved	452282	WG2273794-2	0.0984	0.1	mg/L	98.4	80-120	%	✓	Water	Dissolved Metals
LCS	Silver (Ag)-Dissolved	453785	WG2275737-2	0.0943	0.1	mg/L	94.3	80-120	%	✓	Water	Dissolved Metals
LCS	Sodium (Na)-Dissolved	452282	WG2273794-2	50.2	50	mg/L	100.4	80-120	%	✓	Water	Dissolved Metals
LCS	Sodium (Na)-Dissolved	453785	WG2275737-2	44.6	50	mg/L	89.1	80-120	%	✓	Water	Dissolved Metals
LCS	Strontium (Sr)-Dissolved	452282	WG2273794-2	0.241	0.25	mg/L	96.4	80-120	%	✓	Water	Dissolved Metals
LCS	Strontium (Sr)-Dissolved	453785	WG2275737-2	0.234	0.25	mg/L	93.5	80-120	%	✓	Water	Dissolved Metals
LCS	Thallium (Tl)-Dissolved	452282	WG2273794-2	1.01	1	mg/L	101.0	80-120	%	✓	Water	Dissolved Metals
LCS	Thallium (Tl)-Dissolved	453785	WG2275737-2	0.926	1	mg/L	92.6	80-120	%	✓	Water	Dissolved Metals
LCS	Tin (Sn)-Dissolved	452282	WG2273794-2	0.495	0.5	mg/L	99.1	80-120	%	✓	Water	Dissolved Metals
LCS	Tin (Sn)-Dissolved	453785	WG2275737-2	0.473	0.5	mg/L	94.5	80-120	%	✓	Water	Dissolved Metals
LCS	Titanium (Ti)-Dissolved	452282	WG2273794-2	0.248	0.25	mg/L	99.3	80-120	%	✓	Water	Dissolved Metals
LCS	Titanium (Ti)-Dissolved	453785	WG2275737-2	0.237	0.25	mg/L	94.9	80-120	%	✓	Water	Dissolved Metals
LCS	Uranium (U)-Dissolved	452282	WG2273794-2	0.00494	0.005	mg/L	98.8	80-120	%	✓	Water	Dissolved Metals
LCS	Uranium (U)-Dissolved	453785	WG2275737-2	0.00457	0.005	mg/L	91.4	80-120	%	✓	Water	Dissolved Metals
LCS	Vanadium (V)-Dissolved	452282	WG2273794-2	0.511	0.5	mg/L	102.2	80-120	%	✓	Water	Dissolved Metals
LCS	Vanadium (V)-Dissolved	453785	WG2275737-2	0.463	0.5	mg/L	92.6	80-120	%	✓	Water	Dissolved Metals
LCS	Zinc (Zn)-Dissolved	452282	WG2273794-2	0.480	0.5	mg/L	96.1	80-120	%	✓	Water	Dissolved Metals
LCS	Zinc (Zn)-Dissolved	453785	WG2275737-2	0.459	0.5	mg/L	91.8	80-120	%	✓	Water	Dissolved Metals
LCS	Zirconium (Zr)-Dissolved	452282	WG2273794-2	0.0890	0.1	mg/L	89.0	80-120	%	✓	Water	Dissolved Metals
LCS	Zirconium (Zr)-Dissolved	453785	WG2275737-2	0.0862	0.1	mg/L	86.2	80-120	%	✓	Water	Dissolved Metals
Aggregate Organics (Water)												
LCS	BOD	452878	WG2274554-2	192	198	mg/L	97.2	85-115	%	✓	Water	Aggregate Organics
LCS	COD	456249	WG2278911-7	751	750	mg/L	100.2	85-115	%	✓	Water	Aggregate Organics
LCS	COD	456249	WG2278911-10	748	750	mg/L	99.8	85-115	%	✓	Water	Aggregate Organics
Physical Tests (Water)												
MB	Conductivity	453769	WG2275016-6	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Conductivity	454324	WG2276055-1	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Conductivity	453711	WG2274932-11	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Conductivity	453712	WG2274932-16	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Total Suspended Solids	453701	WG2275273-4	<3.0		mg/L	-	<3.0	mg/L	✓	Water	Physical Tests
MB	Total Dissolved Solids	453519	WG2275308-4	<10		mg/L	-	<10	mg/L	✓	Water	Physical Tests
MB	Turbidity	452751	WG2274389-1	<0.10		NTU	-	<0.10	NTU	✓	Water	Physical Tests
MB	Turbidity	452751	WG2274389-4	<0.10		NTU	-	<0.10	NTU	✓	Water	Physical Tests
Anions and Nutrients (Water)												
MB	Alkalinity, Total (as CaCO3)	456813	WG2279625-1	<2.0		mg/L	-	<2.0	mg/L	✓	Water	Anions and Nutrients
MB	Alkalinity, Total (as CaCO3)	456813	WG2279625-4	<2.0		mg/L	-	<2.0	mg/L	✓	Water	Anions and Nutrients
MB	Alkalinity, Total (as CaCO3)	456813	WG2279625-7	<2.0		mg/L	-	<2.0	mg/L	✓	Water	Anions and Nutrients
MB	Alkalinity, Total (as CaCO3)	456813	WG2279625-10	<2.0		mg/L	-	<2.0	mg/L	✓	Water	Anions and Nutrients
MB	Alkalinity, Total (as CaCO3)	456813	WG2279625-12	<2.0		mg/L	-	<2.0	mg/L	✓	Water	Anions and Nutrients
MB	Ammonia, Total (as N)	455645	WG2277337-1	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	453257	WG2274474-1	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	453257	WG2274474-4	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	453257	WG2274474-7	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	453257	WG2274474-10	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	453257	WG2274474-13	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	453257	WG2274474-16	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	453257	WG2274474-19	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	453257	WG2274474-1	<0.50		mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients

MB	Chloride (Cl)	453257	WG2274474-4	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	453257	WG2274474-7	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	453257	WG2274474-10	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	453257	WG2274474-13	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	453257	WG2274474-16	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	453257	WG2274474-19	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	453257	WG2274474-1	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	453257	WG2274474-4	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	453257	WG2274474-7	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	453257	WG2274474-10	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	453257	WG2274474-13	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	453257	WG2274474-16	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	453257	WG2274474-19	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	453257	WG2274474-1	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	453257	WG2274474-4	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	453257	WG2274474-7	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	453257	WG2274474-10	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	453257	WG2274474-13	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	453257	WG2274474-16	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	453257	WG2274474-19	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	453257	WG2274474-1	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	453257	WG2274474-4	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	453257	WG2274474-7	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	453257	WG2274474-10	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	453257	WG2274474-13	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	453257	WG2274474-16	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	453257	WG2274474-19	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Total Kjeldahl Nitrogen	454463	WG2276592-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Total Kjeldahl Nitrogen	454463	WG2276592-5	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Total Kjeldahl Nitrogen	454463	WG2276592-9	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Total Kjeldahl Nitrogen	454463	WG2276592-13	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Total Kjeldahl Nitrogen	454463	WG2276592-17	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total Dissolved	452827	WG2274337-9	<0.0020	mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total	454095	WG2276065-5	<0.0020	mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	453257	WG2274474-1	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	453257	WG2274474-4	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	453257	WG2274474-7	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	453257	WG2274474-10	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	453257	WG2274474-13	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	453257	WG2274474-16	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	453257	WG2274474-19	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
Organic / Inorganic Carbon (Water)											
MB	Total Organic Carbon	455051	WG2275780-4	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	455051	WG2275780-8	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	455070	WG2276304-4	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	455070	WG2276304-8	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	455051	WG2275780-12	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	455070	WG2276304-12	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
Total Metals (Water)											
MB	Mercury (Hg)-Total	454623	WG2276799-1	<0.00050	ug/L	-	<0.00050	ug/L	✓	Water	Total Metals
MB	Mercury (Hg)-Total	454623	WG2276799-2	<0.00050	ug/L	-	<0.00050	ug/L	✓	Water	Total Metals
MB	Mercury (Hg)-Total	454623	WG2276799-3	<0.00050	ug/L	-	<0.00050	ug/L	✓	Water	Total Metals
Total Metals (Undigested) (Water)											
MB	Aluminum (Al)-Total	452761	WG2274401-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Total Metals (Undigested)
MB	Antimony (Sb)-Total	452761	WG2274401-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Arsenic (As)-Total	452761	WG2274401-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Barium (Ba)-Total	452761	WG2274401-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Beryllium (Be)-Total	452761	WG2274401-1	<0.000010	mg/L	-	<0.000010	mg/L	✓	Water	Total Metals (Undigested)
MB	Bismuth (Bi)-Total	452761	WG2274401-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Boron (B)-Total	452761	WG2274401-1	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Total Metals (Undigested)
MB	Cadmium (Cd)-Total	452761	WG2274401-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Calcium (Ca)-Total	452761	WG2274401-1	<0.030	mg/L	-	<0.030	mg/L	✓	Water	Total Metals (Undigested)
MB	Chromium (Cr)-Total	452761	WG2274401-1	<0.00010	mg/L	-	<0.00010	mg/L	✓	Water	Total Metals (Undigested)
MB	Cobalt (Co)-Total	452761	WG2274401-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Copper (Cu)-Total	452761	WG2274401-1	<0.00010	mg/L	-	<0.00010	mg/L	✓	Water	Total Metals (Undigested)
MB	Iron (Fe)-Total	452761	WG2274401-1	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Total Metals (Undigested)
MB	Lead (Pb)-Total	452761	WG2274401-1	<0.000010	mg/L	-	<0.000010	mg/L	✓	Water	Total Metals (Undigested)
MB	Lithium (Li)-Total	452761	WG2274401-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Total Metals (Undigested)
MB	Magnesium (Mg)-Total	452761	WG2274401-1	<0.030	mg/L	-	<0.030	mg/L	✓	Water	Total Metals (Undigested)
MB	Manganese (Mn)-Total	452761	WG2274401-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Molybdenum (Mo)-Total	452761	WG2274401-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Nickel (Ni)-Total	452761	WG2274401-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Phosphorus (P)-Total	452761	WG2274401-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Total Metals (Undigested)
MB	Potassium (K)-Total	452761	WG2274401-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Total Metals (Undigested)
MB	Selenium (Se)-Total	452761	WG2274401-1	<0.000040	mg/L	-	<0.000040	mg/L	✓	Water	Total Metals (Undigested)
MB	Silicon (Si)-Total	452761	WG2274401-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Total Metals (Undigested)
MB	Silver (Ag)-Total	452761	WG2274401-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Sodium (Na)-Total	452761	WG2274401-1	<0.010	mg/L	-	<0.010	mg/L	✓	Water	Total Metals (Undigested)
MB	Strontium (Sr)-Total	452761	WG2274401-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Thallium (Tl)-Total	452761	WG2274401-1	<0.0000020	mg/L	-	<0.0000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Tin (Sn)-Total	452761	WG2274401-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Titanium (Ti)-Total	452761	WG2274401-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Total Metals (Undigested)
MB	Uranium (U)-Total	452761	WG2274401-1	<0.0000020	mg/L	-	<0.0000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Vanadium (V)-Total	452761	WG2274401-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Zinc (Zn)-Total	452761	WG2274401-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Total Metals (Undigested)
MB	Zirconium (Zr)-Total	452761	WG2274401-1	<0.00010	mg/L	-	<0.00010	mg/L	✓	Water	Total Metals (Undigested)
Dissolved Metals (Water)											
MB	Aluminum (Al)-Dissolved	452282	WG2273794-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Dissolved Metals
MB	Aluminum (Al)-Dissolved	453785	WG2275737-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Dissolved Metals
MB	Antimony (Sb)-Dissolved	452282	WG2273794-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Dissolved Metals
MB	Antimony (Sb)-Dissolved	453785	WG2275737-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Dissolved Metals
MB	Arsenic (As)-Dissolved	452282	WG2273794-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Dissolved Metals
MB	Arsenic (As)-Dissolved	453785	WG2275737-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Dissolved Metals
MB	Barium (Ba)-Dissolved	452282	WG2273794-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Dissolved Metals

MB	Barium (Ba)-Dissolved	453785	WG2275737-1	<0.000020	mg/L	-	<0.000020	mg/L		✓	Water	Dissolved Metals
MB	Beryllium (Be)-Dissolved	452282	WG2273794-1	<0.000010	mg/L	-	<0.000010	mg/L		✓	Water	Dissolved Metals
MB	Beryllium (Be)-Dissolved	453785	WG2275737-1	<0.000010	mg/L	-	<0.000010	mg/L		✓	Water	Dissolved Metals
MB	Bismuth (Bi)-Dissolved	452282	WG2273794-1	<0.0000050	mg/L	-	<0.0000050	mg/L		✓	Water	Dissolved Metals
MB	Bismuth (Bi)-Dissolved	453785	WG2275737-1	<0.0000050	mg/L	-	<0.0000050	mg/L		✓	Water	Dissolved Metals
MB	Boron (B)-Dissolved	452282	WG2273794-1	<0.010	mg/L	-	<0.010	mg/L		✓	Water	Dissolved Metals
MB	Boron (B)-Dissolved	453785	WG2275737-1	<0.010	mg/L	-	<0.010	mg/L		✓	Water	Dissolved Metals
MB	Cadmium (Cd)-Dissolved	452282	WG2273794-1	<0.0000050	mg/L	-	<0.0000050	mg/L		✓	Water	Dissolved Metals
MB	Cadmium (Cd)-Dissolved	453785	WG2275737-1	<0.0000050	mg/L	-	<0.0000050	mg/L		✓	Water	Dissolved Metals
MB	Calcium (Ca)-Dissolved	453785	WG2275737-1	<0.030	mg/L	-	<0.030	mg/L		✓	Water	Dissolved Metals
MB	Chromium (Cr)-Dissolved	452282	WG2273794-1	<0.00010	mg/L	-	<0.00010	mg/L		✓	Water	Dissolved Metals
MB	Chromium (Cr)-Dissolved	453785	WG2275737-1	<0.00010	mg/L	-	<0.00010	mg/L		✓	Water	Dissolved Metals
MB	Cobalt (Co)-Dissolved	452282	WG2273794-1	<0.0000050	mg/L	-	<0.0000050	mg/L		✓	Water	Dissolved Metals
MB	Cobalt (Co)-Dissolved	453785	WG2275737-1	<0.0000050	mg/L	-	<0.0000050	mg/L		✓	Water	Dissolved Metals
MB	Copper (Cu)-Dissolved	452282	WG2273794-1	<0.00010	mg/L	-	<0.00010	mg/L		✓	Water	Dissolved Metals
MB	Copper (Cu)-Dissolved	453785	WG2275737-1	<0.00010	mg/L	-	<0.00010	mg/L		✓	Water	Dissolved Metals
MB	Iron (Fe)-Dissolved	452282	WG2273794-1	<0.0010	mg/L	-	<0.0010	mg/L		✓	Water	Dissolved Metals
MB	Iron (Fe)-Dissolved	453785	WG2275737-1	0.0017	mg/L	-	<0.0010	mg/L	MB-LOR	×	Water	Dissolved Metals
MB	Lead (Pb)-Dissolved	452282	WG2273794-1	<0.0000050	mg/L	-	<0.0000050	mg/L		✓	Water	Dissolved Metals
MB	Lead (Pb)-Dissolved	453785	WG2275737-1	<0.0000050	mg/L	-	<0.0000050	mg/L		✓	Water	Dissolved Metals
MB	Lithium (Li)-Dissolved	452282	WG2273794-1	<0.00050	mg/L	-	<0.00050	mg/L		✓	Water	Dissolved Metals
MB	Lithium (Li)-Dissolved	453785	WG2275737-1	<0.00050	mg/L	-	<0.00050	mg/L		✓	Water	Dissolved Metals
MB	Magnesium (Mg)-Dissolved	453785	WG2275737-1	<0.030	mg/L	-	<0.030	mg/L		✓	Water	Dissolved Metals
MB	Manganese (Mn)-Dissolved	452282	WG2273794-1	<0.000050	mg/L	-	<0.000050	mg/L		✓	Water	Dissolved Metals
MB	Manganese (Mn)-Dissolved	453785	WG2275737-1	<0.000050	mg/L	-	<0.000050	mg/L		✓	Water	Dissolved Metals
MB	Mercury (Hg)-Dissolved	454988	WG2277286-1	<0.00050	ug/L	-	<0.00050	ug/L		✓	Water	Dissolved Metals
MB	Molybdenum (Mo)-Dissolved	452282	WG2273794-1	<0.000050	mg/L	-	<0.000050	mg/L		✓	Water	Dissolved Metals
MB	Molybdenum (Mo)-Dissolved	453785	WG2275737-1	<0.000050	mg/L	-	<0.000050	mg/L		✓	Water	Dissolved Metals
MB	Nickel (Ni)-Dissolved	452282	WG2273794-1	<0.000050	mg/L	-	<0.000050	mg/L		✓	Water	Dissolved Metals
MB	Nickel (Ni)-Dissolved	453785	WG2275737-1	0.000063	mg/L	-	<0.000050	mg/L	MB-LOR	×	Water	Dissolved Metals
MB	Phosphorus (P)-Dissolved	453785	WG2275737-1	<0.050	mg/L	-	<0.050	mg/L		✓	Water	Dissolved Metals
MB	Potassium (K)-Dissolved	453785	WG2275737-1	<0.050	mg/L	-	<0.050	mg/L		✓	Water	Dissolved Metals
MB	Selenium (Se)-Dissolved	452282	WG2273794-1	<0.000040	mg/L	-	<0.000040	mg/L		✓	Water	Dissolved Metals
MB	Selenium (Se)-Dissolved	453785	WG2275737-1	<0.000040	mg/L	-	<0.000040	mg/L		✓	Water	Dissolved Metals
MB	Silicon (Si)-Dissolved	453785	WG2275737-1	<0.050	mg/L	-	<0.050	mg/L		✓	Water	Dissolved Metals
MB	Silver (Ag)-Dissolved	452282	WG2273794-1	<0.0000050	mg/L	-	<0.0000050	mg/L		✓	Water	Dissolved Metals
MB	Silver (Ag)-Dissolved	453785	WG2275737-1	<0.0000050	mg/L	-	<0.0000050	mg/L		✓	Water	Dissolved Metals
MB	Sodium (Na)-Dissolved	452282	WG2273794-1	<0.010	mg/L	-	<0.010	mg/L		✓	Water	Dissolved Metals
MB	Sodium (Na)-Dissolved	453785	WG2275737-1	<0.010	mg/L	-	<0.010	mg/L		✓	Water	Dissolved Metals
MB	Strontium (Sr)-Dissolved	452282	WG2273794-1	<0.00010	mg/L	-	<0.00010	mg/L		✓	Water	Dissolved Metals
MB	Strontium (Sr)-Dissolved	453785	WG2275737-1	<0.00010	mg/L	-	<0.00010	mg/L		✓	Water	Dissolved Metals
MB	Thallium (Tl)-Dissolved	452282	WG2273794-1	<0.0000020	mg/L	-	<0.0000020	mg/L		✓	Water	Dissolved Metals
MB	Thallium (Tl)-Dissolved	453785	WG2275737-1	<0.0000020	mg/L	-	<0.0000020	mg/L		✓	Water	Dissolved Metals
MB	Tin (Sn)-Dissolved	452282	WG2273794-1	<0.000010	mg/L	-	<0.000010	mg/L		✓	Water	Dissolved Metals
MB	Tin (Sn)-Dissolved	453785	WG2275737-1	<0.000010	mg/L	-	<0.000010	mg/L		✓	Water	Dissolved Metals
MB	Titanium (Ti)-Dissolved	452282	WG2273794-1	<0.00030	mg/L	-	<0.00030	mg/L		✓	Water	Dissolved Metals
MB	Titanium (Ti)-Dissolved	453785	WG2275737-1	<0.00030	mg/L	-	<0.00030	mg/L		✓	Water	Dissolved Metals
MB	Uranium (U)-Dissolved	452282	WG2273794-1	<0.0000020	mg/L	-	<0.0000020	mg/L		✓	Water	Dissolved Metals
MB	Uranium (U)-Dissolved	453785	WG2275737-1	<0.0000020	mg/L	-	<0.0000020	mg/L		✓	Water	Dissolved Metals
MB	Vanadium (V)-Dissolved	452282	WG2273794-1	<0.000050	mg/L	-	<0.000050	mg/L		✓	Water	Dissolved Metals
MB	Vanadium (V)-Dissolved	453785	WG2275737-1	<0.000050	mg/L	-	<0.000050	mg/L		✓	Water	Dissolved Metals
MB	Zinc (Zn)-Dissolved	452282	WG2273794-1	<0.00050	mg/L	-	<0.00050	mg/L		✓	Water	Dissolved Metals
MB	Zinc (Zn)-Dissolved	453785	WG2275737-1	<0.00050	mg/L	-	<0.00050	mg/L		✓	Water	Dissolved Metals
MB	Zirconium (Zr)-Dissolved	452282	WG2273794-1	<0.00010	mg/L	-	<0.00010	mg/L		✓	Water	Dissolved Metals
MB	Zirconium (Zr)-Dissolved	453785	WG2275737-1	<0.00010	mg/L	-	<0.00010	mg/L		✓	Water	Dissolved Metals
Aggregate Organics (Water)												
MB	BOD	452878	WG2274554-1	<2.0	mg/L	-	<2.0	mg/L		✓	Water	Aggregate Organics
MB	COD	456249	WG2278911-5	<20	mg/L	-	<20	mg/L		✓	Water	Aggregate Organics
MB	COD	456249	WG2278911-9	<20	mg/L	-	<20	mg/L		✓	Water	Aggregate Organics
Anions and Nutrients (Water)												
MS	Bromide (Br)	453257	MAGLIOS RSH	0.519	0.5	mg/L	103.9	75-125	%	✓	Water	Anions and Nutrients
MS	Chloride (Cl)	453257	MAGLIOS RSH	103	101	mg/L	101.9	75-125	%	✓	Water	Anions and Nutrients
MS	Fluoride (F)	453257	MAGLIOS RSH	1.10	1.08	mg/L	102.1	75-125	%	✓	Water	Anions and Nutrients
MS	Nitrate (as N)	453257	MAGLIOS RSH	2.69	2.66	mg/L	101.4	75-125	%	✓	Water	Anions and Nutrients
MS	Nitrite (as N)	453257	MAGLIOS RSH	0.503	0.5	mg/L	100.6	75-125	%	✓	Water	Anions and Nutrients
MS	Total Kjeldahl Nitrogen	454463	OLD BRIDGE RSH	1.12	1.12	mg/L	100.3	70-130	%	✓	Water	Anions and Nutrients
MS	Sulfate (SO4)	453257	MAGLIOS RSH	113	113	mg/L	100.5	75-125	%	✓	Water	Anions and Nutrients
Total Metals (Water)												
MS	Mercury (Hg)-Total	454623	BIRCHBANK RSH	0.00491	0.005	ug/L	98.2	70-130	%	✓	Water	Total Metals
Total Metals (Undigested) (Water)												
MS	Aluminum (Al)-Total	452761	WANETA RSH	0.207	0.215	mg/L	96.4	70-130	%	✓	Water	Total Metals (Undigested)
MS	Antimony (Sb)-Total	452761	WANETA RSH	0.0204	0.0201	mg/L	101.5	70-130	%	✓	Water	Total Metals (Undigested)
MS	Arsenic (As)-Total	452761	WANETA RSH	0.0199	0.0203	mg/L	97.8	70-130	%	✓	Water	Total Metals (Undigested)
MS	Beryllium (Be)-Total	452761	WANETA RSH	0.0401	0.04	mg/L	100.3	70-130	%	✓	Water	Total Metals (Undigested)
MS	Bismuth (Bi)-Total	452761	WANETA RSH	0.00874	0.01	mg/L	87.4	70-130	%	✓	Water	Total Metals (Undigested)
MS	Boron (B)-Total	452761	WANETA RSH	0.104	0.1	mg/L	104.4	70-130	%	✓	Water	Total Metals (Undigested)
MS	Cadmium (Cd)-Total	452761	WANETA RSH	0.00399	0.00403	mg/L	98.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Calcium (Ca)-Total	452761	WANETA RSH	73.4	71.3	mg/L	104.1	70-130	%	✓	Water	Total Metals (Undigested)
MS	Chromium (Cr)-Total	452761	WANETA RSH	0.0391	0.04	mg/L	97.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Cobalt (Co)-Total	452761	WANETA RSH	0.0194	0.02	mg/L	97.2	70-130	%	✓	Water	Total Metals (Undigested)
MS	Copper (Cu)-Total	452761	WANETA RSH	0.0190	0.0204	mg/L	92.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Iron (Fe)-Total	452761	WANETA RSH	1.93	2.01	mg/L	95.7	70-130	%	✓	Water	Total Metals (Undigested)
MS	Lead (Pb)-Total	452761	WANETA RSH	0.0192	0.0201	mg/L	95.7	70-130	%	✓	Water	Total Metals (Undigested)
MS	Lithium (Li)-Total	452761	WANETA RSH	0.106	0.102	mg/L	104.1	70-130	%	✓	Water	Total Metals (Undigested)
MS	Magnesium (Mg)-Total	452761	WANETA RSH	54.4	54.9	mg/L	99.0	70-130	%	✓	Water	Total Metals (Undigested)
MS	Manganese (Mn)-Total	452761	WANETA RSH	0.0214	0.0224	mg/L	95.4	70-130	%	✓	Water	Total Metals (Undigested)
MS	Molybdenum (Mo)-Total	452761	WANETA RSH	0.0201	0.0205	mg/L	98.0	70-130	%	✓	Water	Total Metals (Undigested)
MS	Nickel (Ni)-Total	452761	WANETA RSH	0.0390	0.0402	mg/L	96.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Phosphorus (P)-Total	452761	WANETA RSH	2.49	2.5	mg/L	99.7	70-130	%	✓	Water	Total Metals (Undigested)
MS	Potassium (K)-Total	452761	WANETA RSH	51.5	50.7	mg/L	101.7	70-130	%	✓	Water	Total Metals (Undigested)
MS	Selenium (Se)-Total	452761	WANETA RSH	0.0423	0.0404	mg/L	104.8	70-130	%	✓	Water	Total Metals (Undigested)
MS	Silver (Ag)-Total	452761	WANETA RSH	0.00399	0.004	mg/L	99.7	70-130	%	✓	Water	Total Metals (Undigested)

MS	Thallium (Tl)-Total	452761	WANETA RSH	0.00384	0.00402	mg/L	95.5	70-130	%	✓	Water	Total Metals (Undigested)
MS	Tin (Sn)-Total	452761	WANETA RSH	0.0199	0.02	mg/L	99.5	70-130	%	✓	Water	Total Metals (Undigested)
MS	Titanium (Ti)-Total	452761	WANETA RSH	0.0400	0.04	mg/L	100.1	70-130	%	✓	Water	Total Metals (Undigested)
MS	Uranium (U)-Total	452761	WANETA RSH	0.00440	0.00457	mg/L	96.0	70-130	%	✓	Water	Total Metals (Undigested)
MS	Vanadium (V)-Total	452761	WANETA RSH	0.0983	0.1	mg/L	98.1	70-130	%	✓	Water	Total Metals (Undigested)
MS	Zinc (Zn)-Total	452761	WANETA RSH	0.383	0.403	mg/L	95.0	70-130	%	✓	Water	Total Metals (Undigested)
MS	Zirconium (Zr)-Total	452761	WANETA RSH	0.0386	0.04	mg/L	96.5	70-130	%	✓	Water	Total Metals (Undigested)

Qualifier Legend

MB-LOR	Method Blank exceeds ALS DQO. Limits of Reporting have been adjusted for samples with positive hits below 5x blank level.

Evaluation Legend

✓	QC Lot met ALS Data Quality Objectives
✘	QC Lot did not meet ALS Data Quality Objectives

Duplicates L1746315

Job Reference TML-AREMP
Report To Kyle Hawes, ECOSCAPE ENVIRONMENTAL CONSULTANTS LTD.
Date Received 18-Mar-2016 9:00
Report Date 6-Apr-2016 17:51
Report Version 1

ALS ID	Reference	Client Sample ID	QC Type	QC Lot #	Analyte	Sample Result	Duplicate Result	Detection Limit	Units	RPD	RPD Limit	Diff	Diff Limit	Qual	Eval	Matrix	Class
Physical Tests (Water)																	
WG2278454-25	L1746315-6	BIRCH BANK L-SH	DUP	456143	Conductivity	156	157	2.0	uS/cm	0.4	10	-			✓	Water	Physical Tests
WG2278454-30	L1746315-25	OLD BRIDGE R-SH	DUP	456144	Conductivity	160	162	2.0	uS/cm	1.1	10	-			✓	Water	Physical Tests
WG2278454-25	L1746315-6	BIRCH BANK L-SH	DUP	456143	pH	8.04	8.06	0.10	pH	-		0.02	0.3		✓	Water	Physical Tests
WG2278454-30	L1746315-25	OLD BRIDGE R-SH	DUP	456144	pH	8.03	8.03	0.10	pH	-		0.00	0.3		✓	Water	Physical Tests
WG2279166-3	L1746315-1	BIRCH BANK R-SH	DUP	456471	Total Suspended Solids	<3.0	<3.0	3.0	mg/L	N/A	20	-			✓	Water	Physical Tests
WG2279166-6	L1746315-21	DUPLICATE 2	DUP	456472	Total Suspended Solids	<3.0	<3.0	3.0	mg/L	N/A	20	-			✓	Water	Physical Tests
WG2278181-6	L1746315-21	DUPLICATE 2	DUP	455709	Total Dissolved Solids	93	95	13	mg/L	2.8	20	-			✓	Water	Physical Tests
WG2278181-9	L1746315-22	DUPLICATE 3	DUP	455710	Total Dissolved Solids	93	86	13	mg/L	8.6	20	-			✓	Water	Physical Tests
WG2278142-6	L1746315-12	STONEY CK L-SH	DUP	455638	Turbidity	0.36	0.35	0.10	NTU	4.5	15	-			✓	Water	Physical Tests
WG2278142-9	L1746315-32	NEW BRIDGE R-1MD	DUP	455638	Turbidity	0.29	0.31	0.10	NTU	5.4	15	-			✓	Water	Physical Tests
Anions and Nutrients (Water)																	
WG2278454-25	L1746315-6	BIRCH BANK L-SH	DUP	456143	Alkalinity, Total (as CaCO3)	65.2	65.2	1.0	mg/L	0	20	-			✓	Water	Anions and Nutrients
WG2278454-30	L1746315-25	OLD BRIDGE R-SH	DUP	456144	Alkalinity, Total (as CaCO3)	64.6	65.8	1.0	mg/L	1.8	20	-			✓	Water	Anions and Nutrients
WG2282372-7	L1746315-11	STONEY CK L-1MD	DUP	459051	Ammonia, Total (as N)	<0.0050	<0.0050	0.0050	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2282714-3	L1746315-16	MAGLIOS R-1MAB	DUP	459268	Ammonia, Total (as N)	0.0108	0.0115	0.0050	mg/L	6.1	20	-			✓	Water	Anions and Nutrients
WG2282714-7	L1746315-33	NEW BRIDGE R-1MAB	DUP	459269	Ammonia, Total (as N)	0.0061	0.0061	0.0050	mg/L	0	20	-			✓	Water	Anions and Nutrients
WG2277971-3	L1746315-25	OLD BRIDGE R-SH	DUP	459167	Bromide (Br)	<0.050	<0.050	0.050	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2277971-3	L1746315-25	OLD BRIDGE R-SH	DUP	459167	Chloride (Cl)	1.29	1.29	0.10	mg/L	0	20	-			✓	Water	Anions and Nutrients
WG2277971-3	L1746315-25	OLD BRIDGE R-SH	DUP	459167	Fluoride (F)	0.085	0.084	0.020	mg/L	1.1	20	-			✓	Water	Anions and Nutrients
WG2277971-3	L1746315-25	OLD BRIDGE R-SH	DUP	459167	Nitrate (as N)	0.161	0.161	0.0050	mg/L	0.2	20	-			✓	Water	Anions and Nutrients
WG2277971-3	L1746315-25	OLD BRIDGE R-SH	DUP	459167	Nitrite (as N)	<0.0010	<0.0010	0.0010	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2279761-7	L1746315-2	BIRCH BANK R-1M D	DUP	456923	Total Kjeldahl Nitrogen	0.057	<0.050	0.050	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2279761-11	L1746315-17	MAGLIOS L-1MAB	DUP	456923	Total Kjeldahl Nitrogen	0.091	0.080	0.050	mg/L	12	20	-			✓	Water	Anions and Nutrients
WG2279761-15	L1746315-34	NEW BRIDGE L-1MAB	DUP	456923	Total Kjeldahl Nitrogen	0.086	0.066	0.050	mg/L	-		0.020	0.1		✓	Water	Anions and Nutrients
WG2278242-3	L1746315-1	BIRCH BANK R-SH	DUP	455779	Phosphorus (P)-Total Dissolved	<0.0020	<0.0020	0.0020	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2278366-3	L1746315-13	WANETA COMP	DUP	455906	Phosphorus (P)-Total Dissolved	<0.0020	<0.0020	0.0020	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2278366-7	L1746315-33	NEW BRIDGE R-1MAB	DUP	455907	Phosphorus (P)-Total Dissolved	<0.0020	<0.0020	0.0020	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2278233-3	L1746315-26	OLD BRIDGE R-1MD	DUP	455773	Phosphorus (P)-Total	0.0031	0.0028	0.0020	mg/L	9.9	20	-			✓	Water	Anions and Nutrients
WG2278393-3	L1746315-23	FIELD BLANK	DUP	455883	Phosphorus (P)-Total	0.0049	0.0054	0.0020	mg/L	8.2	20	-			✓	Water	Anions and Nutrients
WG2278232-11	L1746315-7	STONEY CK R-SH	DUP	455782	Phosphorus (P)-Total	0.0037	0.0035	0.0020	mg/L	5.6	20	-			✓	Water	Anions and Nutrients
WG2278232-15	L1746315-19	MAGLIOS L-SH	DUP	455783	Phosphorus (P)-Total	0.0049	0.0039	0.0020	mg/L	-		0.0010	0.004		✓	Water	Anions and Nutrients
WG2277971-3	L1746315-25	OLD BRIDGE R-SH	DUP	459167	Sulfate (SO4)	13.2	13.2	0.050	mg/L	0	20	-			✓	Water	Anions and Nutrients
Organic / Inorganic Carbon (Water)																	
WG2282280-6	L1746315-2	BIRCH BANK R-1M D	DUP	459642	Total Organic Carbon	1.21	1.24	0.50	mg/L	2.8	20	-			✓	Water	Organic / Inorganic Carbon
WG2282280-10	L1746315-20	DUPLICATE 1	DUP	459642	Total Organic Carbon	1.21	1.15	0.50	mg/L	5.4	20	-			✓	Water	Organic / Inorganic Carbon
Total Metals (Water)																	
WG2280095-3	L1746315-36	NEW BRIDGE L-SH	DUP	457239	Mercury (Hg)-Total	<0.00050	<0.00050	0.00050	ug/L	N/A	20	-			✓	Water	Total Metals
WG2280095-7	L1746315-21	DUPLICATE 2	DUP	457239	Mercury (Hg)-Total	<0.00050	<0.00050	0.00050	ug/L	N/A	20	-			✓	Water	Total Metals
Total Metals (Undigested) (Water)																	
WG2278223-3	L1746315-5	BIRCH BANK L-1M D	DUP	455716	Aluminum (Al)-Total	0.0127	0.0126	0.00050	mg/L	0.4	20	-			✓	Water	Total Metals (Undigested)
WG2278223-5	L1746315-24	TRAVEL BLANK	DUP	455716	Aluminum (Al)-Total	<0.00050	<0.00050	0.00050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2278223-3	L1746315-5	BIRCH BANK L-1M D	DUP	455716	Antimony (Sb)-Total	0.000043	0.000040	0.000020	mg/L	6.7	20	-			✓	Water	Total Metals (Undigested)
WG2278223-5	L1746315-24	TRAVEL BLANK	DUP	455716	Antimony (Sb)-Total	<0.000020	<0.000020	0.000020	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2278223-3	L1746315-5	BIRCH BANK L-1M D	DUP	455716	Arsenic (As)-Total	0.000297	0.000278	0.000020	mg/L	6.4	20	-			✓	Water	Total Metals (Undigested)
WG2278223-5	L1746315-24	TRAVEL BLANK	DUP	455716	Arsenic (As)-Total	<0.000020	<0.000020	0.000020	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2278223-3	L1746315-5	BIRCH BANK L-1M D	DUP	455716	Barium (Ba)-Total	0.0242	0.0242	0.000020	mg/L	0.3	20	-			✓	Water	Total Metals (Undigested)
WG2278223-5	L1746315-24	TRAVEL BLANK	DUP	455716	Barium (Ba)-Total	<0.000020	<0.000020	0.000020	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2278223-3	L1746315-5	BIRCH BANK L-1M D	DUP	455716	Beryllium (Be)-Total	<0.000010	<0.000010	0.000010	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2278223-5	L1746315-24	TRAVEL BLANK	DUP	455716	Beryllium (Be)-Total	<0.000010	<0.000010	0.000010	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2278223-3	L1746315-5	BIRCH BANK L-1M D	DUP	455716	Bismuth (Bi)-Total	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2278223-5	L1746315-24	TRAVEL BLANK	DUP	455716	Bismuth (Bi)-Total	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2278223-3	L1746315-5	BIRCH BANK L-1M D	DUP	455716	Boron (B)-Total	<0.0050	<0.0050	0.0050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2278223-5	L1746315-24	TRAVEL BLANK	DUP	455716	Boron (B)-Total	<0.0050	<0.0050	0.0050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2278223-3	L1746315-5	BIRCH BANK L-1M D	DUP	455716	Cadmium (Cd)-Total	0.0000118	0.0000145	0.0000050	mg/L	-		0.0000027	0.00001		✓	Water	Total Metals (Undigested)
WG2278223-5	L1746315-24	TRAVEL BLANK	DUP	455716	Cadmium (Cd)-Total	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2278223-3	L1746315-5	BIRCH BANK L-1M D	DUP	455716	Calcium (Ca)-Total	21.1	20.7	0.030	mg/L	1.8	20	-			✓	Water	Total Metals (Undigested)
WG2278223-5	L1746315-24	TRAVEL BLANK	DUP	455716	Calcium (Ca)-Total	<0.030	<0.030	0.030	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2278223-3	L1746315-5	BIRCH BANK L-1M D	DUP	455716	Chromium (Cr)-Total	<0.00010	<0.00010	0.00010	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2278223-5	L1746315-24	TRAVEL BLANK	DUP	455716	Chromium (Cr)-Total	<0.00010	<0.00010	0.00010	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2278223-3	L1746315-5	BIRCH BANK L-1M D	DUP	455716	Cobalt (Co)-Total	0.0000107	0.0000116	0.0000050	mg/L	8.6	20	-			✓	Water	Total Metals (Undigested)
WG2278223-5	L1746315-24	TRAVEL BLANK	DUP	455716	Cobalt (Co)-Total	<0.0000050	<0.0000050	0.0000050	mg/L	-			0.00001		✓	Water	Total Metals (Undigested)
WG2278223-3	L1746315-5	BIRCH BANK L-1M D	DUP	455716	Copper (Cu)-Total	0.00035	0.00035	0.00010	mg/L	1.6	20	-			✓	Water	Total Metals (Undigested)
WG2278223-5	L1746315-24	TRAVEL BLANK	DUP	455716	Copper (Cu)-Total	<0.00010	<0.00010	0.00010	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2278223-3	L1746315-5	BIRCH BANK L-1M D	DUP	455716	Iron (Fe)-Total	0.0129	0.0130	0.0010	mg/L	0.4	20	-			✓	Water	Total Metals (Undigested)
WG2278223-5	L1746315-24	TRAVEL BLANK	DUP	455716	Iron (Fe)-Total	<0.0010	<0.0010	0.0010	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2278223-3	L1746315-5	BIRCH BANK L-1M D	DUP	455716	Lead (Pb)-Total	0.000066	0.000066	0.000010	mg/L	1.2	20	-			✓	Water	Total Metals (Undigested)
WG2278223-5	L1746315-24	TRAVEL BLANK	DUP	455716	Lead (Pb)-Total	<0.000010	<0.000010	0.000010	mg/L	-			0.00002		✓	Water	Total Metals (Undigested)
WG2278223-3	L1746315-5	BIRCH BANK L-1M D	DUP	455716	Lithium (Li)-Total	0.00150	0.00155	0.00050	mg/L	3.1	20	-			✓	Water	Total Metals (Undigested)
WG2278223-5	L1746315-24	TRAVEL BLANK	DUP	455716	Lithium (Li)-Total	<0.00050	<0.00050	0.00050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2278223-3	L1746315-5	BIRCH BANK L-1M D	DUP	455716	Magnesium (Mg)-Total	4.96	4.91	0.030	mg/L	1.1	20	-			✓	Water	Total Metals (Undigested)
WG2278223-5	L1746315-24	TRAVEL BLANK	DUP	455716	Magnesium (Mg)-Total	<0.030	<0.030	0.030	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2278223-3	L1746315-5	BIRCH BANK L-1M D	DUP	455716	Manganese (Mn)-Total	0.00193	0.00181	0.000050	mg/L	6.7	20	-			✓	Water	Total Metals (Undigested)
WG2278223-5	L1746315-24	TRAVEL BLANK	DUP	455716	Manganese (Mn)-Total	<0.000050	<0.000050	0.000050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2278223-3	L1746315-5	BIRCH BANK L-1M D	DUP	455716	Molybdenum (Mo)-Total	0.000586	0.000583	0.000050	mg/L	0.5	20	-			✓	Water	Total Metals (Undigested)
WG2278223-5	L1746315-24	TRAVEL BLANK	DUP	455716	Molybdenum (Mo)-Total	<0.000050	<0.000050	0.000050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2278223-3	L1746315-5	BIRCH BANK L-1M D	DUP	455716	Nickel (Ni)-Total	0.000246	0.000264	0.000050	mg/L	6.8	20	-			✓	Water	Total Metals (Undigested)
WG2278223-5	L1746315-24	TRAVEL BLANK	DUP	455716	Nickel (Ni)-Total	<0.000050	<0.000050	0.000050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2278223-3	L1746315-5	BIRCH BANK L-1M D	DUP	455716	Phosphorus (P)-Total	<0.050	<0.050	0.050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2278223-5	L1746315-24	TRAVEL BLANK	DUP	455716	Phosphorus (P)-Total	<0.050	<0.050	0.050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2278223-3	L1746315-5	BIRCH BANK L-1M D	DUP	455716	Potassium (K)-Total	0.651	0.655	0.050	mg/L	0.6	20	-			✓	Water	Total Metals (Undigested)
WG2278223-5	L1746315-24	TRAVEL BLANK	DUP	455716	Potassium (K)-Total	<0.050	<0.050	0.050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2278223-3	L1746315-5	BIRCH BANK L-1M D	DUP	455716	Selenium (Se)-Total	0.000323	0.000341	0.000040	mg/L	5.3	20	-			✓	Water	Total Metals (Undigested)
WG2278223-5	L1746315-24	TRAVEL BLANK	DUP	455716	Selenium (Se)-Total	<0.000040	<0.000040	0.000040	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2278223-3	L1746315-5	BIRCH BANK L-1M D	DUP	455716	Silicon (Si)-Total	2.38	2.36	0.050	mg/L	1.2	20	-			✓	Water	Total Metals (Undigested)
WG2278223-5	L1746315-24	TRAVEL BLANK	DUP	455716	Silicon (Si)-Total	<0.050	<0.050	0.050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2278223-3	L1746315-5	BIRCH BANK L-1M D	DUP	455716	Silver (Ag)-Total	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2278223-5	L1746315-24	TRAVEL BLANK	DUP	455716	Silver (Ag)-Total	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2278223-3	L1746315-5	BIRCH BANK L-1M D	DUP	455716	Sodium (Na)-Total	2.02	1.97	0.010	mg/L	2.4	20	-			✓	Water	Total Metals (Undigested)
WG2278223-5	L1746315-24	TRAVEL BLANK	DUP	455716	Sodium (Na)-Total	<0.010	<0.010	0.010	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2278223-3	L1746315-5	BIRCH BANK L-1M D	DUP	455716	Strontium (Sr)-Total	0.107	0.108	0.000050	mg/L	0.7	20	-			✓	Water	Total Metals (Undigested)
WG2278223-5	L1746315-24	TRAVEL BLANK	DUP	455716	Strontium (Sr)-Total	<0.000050	<0.000050	0.000050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2278223-3	L1746315-5	BIRCH BANK L-1M D	DUP	455716	Thallium (Tl)-Total	0.0000020	<0.0000020	0.0000020	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2278223-5	L1746315-24	TRAVEL BLANK	DUP	455716	Thallium (Tl)-Total	<0.0000020	<0.0000020	0.0000020	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2278223-3	L1746315-5	BIRCH BANK L-1M D	DUP	455716	Tin (Sn)-Total	<0.000020	<0.000020	0.000020	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2278223-5	L1746315-24	TRAVEL BLANK	DUP	455716	Tin (Sn)-Total	<0.000020	<0.000020	0.000020	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2278223-3	L1746315-5	BIRCH BANK L-1M D	DUP	455716	Titanium (Ti)-Total	<0.00050	<0.00050	0.00050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2278223-5	L1746315-24	TRAVEL BLANK	DUP	455716	Titanium (Ti)-Total	<0.00050	<0.00050	0.00050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2278223-3	L1746315-5	BIRCH BANK L-1M D	DUP	455716	Uranium (U)-Total	0.000603	0.000604	0.0000020	mg/L	0.2	20	-			✓	Water	Total Metals (Undigested)
WG2278223-5	L1746315-24	TRAVEL BLANK	DUP	455716	Uranium (U)-Total	<0.0000020	<0.0000020	0.0000020	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2278223-3	L1746315-5	BIRCH BANK L-1M D	DUP	455716	Vanadium (V)-Total	0.000172	0.000157	0.000050	mg/L	8.9	20	-			✓	Water	Total Metals (Undigested)
WG2278223-5	L1746315-24	TRAVEL BLANK	DUP	455716	Vanadium (V)-Total	<0.000050	<0.000050	0.000050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2278223-3	L1746315-5	BIRCH BANK L-1M D	DUP	455716	Zinc (Zn)-Total	0.00173	0.00150	0.00050	mg/L	15	20	-			✓	Water	Total Metals (Undigested)
WG2278223-5	L1746315-24	TRAVEL BLANK	DUP	455716	Zinc (Zn)-Total	<0.00050	<0.00050	0.00050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2278223-3	L1746315-5	BIRCH BANK L-1M D	DUP	455716	Zirconium (Zr)-Total	<0.00010	<0.00010	0.00010	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)

WG2278223-5	L1746315-24	TRAVEL BLANK	DUP	455716	Zirconium (Zr)-Total	<0.00010	<0.00010	0.00010	mg/L	N/A	20	-		✓	Water	Total Metals (Undigested)
Dissolved Metals (Water)																
WG2278217-9	L1746315-2	BIRCH BANK R-1M D	DUP	455711	Aluminum (Al)-Dissolved	0.00562	0.00575	0.00050	mg/L	2.3	20	-		✓	Water	Dissolved Metals
WG2278217-11	L1746315-32	NEW BRIDGE R-1MD	DUP	455711	Aluminum (Al)-Dissolved	0.00527	0.00490	0.00050	mg/L	7.2	20	-		✓	Water	Dissolved Metals
WG2278217-9	L1746315-2	BIRCH BANK R-1M D	DUP	455711	Antimony (Sb)-Dissolved	0.000046	0.000046	0.000020	mg/L	0.6	20	-		✓	Water	Dissolved Metals
WG2278217-11	L1746315-32	NEW BRIDGE R-1MD	DUP	455711	Antimony (Sb)-Dissolved	0.000066	0.000055	0.000020	mg/L	18	20	-		✓	Water	Dissolved Metals
WG2278217-9	L1746315-2	BIRCH BANK R-1M D	DUP	455711	Arsenic (As)-Dissolved	0.000282	0.000279	0.000020	mg/L	1	20	-		✓	Water	Dissolved Metals
WG2278217-11	L1746315-32	NEW BRIDGE R-1MD	DUP	455711	Arsenic (As)-Dissolved	0.000289	0.000286	0.000020	mg/L	1.1	20	-		✓	Water	Dissolved Metals
WG2278217-9	L1746315-2	BIRCH BANK R-1M D	DUP	455711	Barium (Ba)-Dissolved	0.0242	0.0240	0.000020	mg/L	0.7	20	-		✓	Water	Dissolved Metals
WG2278217-11	L1746315-32	NEW BRIDGE R-1MD	DUP	455711	Barium (Ba)-Dissolved	0.0240	0.0238	0.000020	mg/L	0.8	20	-		✓	Water	Dissolved Metals
WG2278217-9	L1746315-2	BIRCH BANK R-1M D	DUP	455711	Beryllium (Be)-Dissolved	<0.000010	<0.000010	0.000010	mg/L	N/A	20	-		✓	Water	Dissolved Metals
WG2278217-11	L1746315-32	NEW BRIDGE R-1MD	DUP	455711	Beryllium (Be)-Dissolved	<0.000010	<0.000010	0.000010	mg/L	-			0.00002	✓	Water	Dissolved Metals
WG2278217-9	L1746315-2	BIRCH BANK R-1M D	DUP	455711	Bismuth (Bi)-Dissolved	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-		✓	Water	Dissolved Metals
WG2278217-11	L1746315-32	NEW BRIDGE R-1MD	DUP	455711	Bismuth (Bi)-Dissolved	<0.0000050	<0.0000050	0.0000050	mg/L	-			0.00001	✓	Water	Dissolved Metals
WG2278217-9	L1746315-2	BIRCH BANK R-1M D	DUP	455711	Boron (B)-Dissolved	<0.010	<0.010	0.010	mg/L	N/A	20	-		✓	Water	Dissolved Metals
WG2278217-11	L1746315-32	NEW BRIDGE R-1MD	DUP	455711	Boron (B)-Dissolved	<0.010	<0.010	0.010	mg/L	N/A	20	-		✓	Water	Dissolved Metals
WG2278217-9	L1746315-2	BIRCH BANK R-1M D	DUP	455711	Cadmium (Cd)-Dissolved	0.0000142	0.0000124	0.0000050	mg/L	14	20	-		✓	Water	Dissolved Metals
WG2278217-11	L1746315-32	NEW BRIDGE R-1MD	DUP	455711	Cadmium (Cd)-Dissolved	0.0000182	0.0000163	0.0000050	mg/L	11	20	-		✓	Water	Dissolved Metals
WG2278217-9	L1746315-2	BIRCH BANK R-1M D	DUP	455711	Calcium (Ca)-Dissolved	20.9	21.0	0.030	mg/L	0.1	20	-		✓	Water	Dissolved Metals
WG2278217-11	L1746315-32	NEW BRIDGE R-1MD	DUP	455711	Calcium (Ca)-Dissolved	20.9	20.6	0.030	mg/L	1.1	20	-		✓	Water	Dissolved Metals
WG2278217-9	L1746315-2	BIRCH BANK R-1M D	DUP	455711	Chromium (Cr)-Dissolved	<0.00010	<0.00010	0.00010	mg/L	N/A	20	-		✓	Water	Dissolved Metals
WG2278217-11	L1746315-32	NEW BRIDGE R-1MD	DUP	455711	Chromium (Cr)-Dissolved	<0.00010	<0.00010	0.00010	mg/L	N/A	20	-		✓	Water	Dissolved Metals
WG2278217-9	L1746315-2	BIRCH BANK R-1M D	DUP	455711	Cobalt (Co)-Dissolved	0.0000074	0.0000094	0.0000050	mg/L	-		0.0000020	0.00001	✓	Water	Dissolved Metals
WG2278217-11	L1746315-32	NEW BRIDGE R-1MD	DUP	455711	Cobalt (Co)-Dissolved	0.0000115	0.0000100	0.0000050	mg/L	14	20	-		✓	Water	Dissolved Metals
WG2278217-9	L1746315-2	BIRCH BANK R-1M D	DUP	455711	Copper (Cu)-Dissolved	0.00033	0.00033	0.00010	mg/L	0.2	20	-		✓	Water	Dissolved Metals
WG2278217-11	L1746315-32	NEW BRIDGE R-1MD	DUP	455711	Copper (Cu)-Dissolved	0.00030	0.00030	0.00010	mg/L	1.4	20	-		✓	Water	Dissolved Metals
WG2278217-9	L1746315-2	BIRCH BANK R-1M D	DUP	455711	Iron (Fe)-Dissolved	0.0043	0.0042	0.0010	mg/L	2.5	20	-		✓	Water	Dissolved Metals
WG2278217-11	L1746315-32	NEW BRIDGE R-1MD	DUP	455711	Iron (Fe)-Dissolved	0.0047	0.0042	0.0010	mg/L	10	20	-		✓	Water	Dissolved Metals
WG2278217-9	L1746315-2	BIRCH BANK R-1M D	DUP	455711	Lead (Pb)-Dissolved	0.0000193	0.0000195	0.0000050	mg/L	0.7	20	-		✓	Water	Dissolved Metals
WG2278217-11	L1746315-32	NEW BRIDGE R-1MD	DUP	455711	Lead (Pb)-Dissolved	0.0000325	0.0000278	0.0000050	mg/L	16	20	-		✓	Water	Dissolved Metals
WG2278217-9	L1746315-2	BIRCH BANK R-1M D	DUP	455711	Lithium (Li)-Dissolved	0.00128	0.00121	0.00050	mg/L	5.9	20	-		✓	Water	Dissolved Metals
WG2278217-11	L1746315-32	NEW BRIDGE R-1MD	DUP	455711	Lithium (Li)-Dissolved	0.00124	0.00126	0.00050	mg/L	1.2	20	-		✓	Water	Dissolved Metals
WG2278217-9	L1746315-2	BIRCH BANK R-1M D	DUP	455711	Magnesium (Mg)-Dissolved	4.93	4.93	0.030	mg/L	0	20	-		✓	Water	Dissolved Metals
WG2278217-11	L1746315-32	NEW BRIDGE R-1MD	DUP	455711	Magnesium (Mg)-Dissolved	4.94	4.91	0.030	mg/L	0.6	20	-		✓	Water	Dissolved Metals
WG2278217-9	L1746315-2	BIRCH BANK R-1M D	DUP	455711	Manganese (Mn)-Dissolved	0.00108	0.000955	0.000050	mg/L	12	20	-		✓	Water	Dissolved Metals
WG2278217-11	L1746315-32	NEW BRIDGE R-1MD	DUP	455711	Manganese (Mn)-Dissolved	0.00124	0.00126	0.000050	mg/L	1.4	20	-		✓	Water	Dissolved Metals
WG2280547-5	L1746315-20	DUPLICATE 1	DUP	457538	Mercury (Hg)-Dissolved	<0.00050	<0.00050	0.00050	ug/L	N/A	20	-		✓	Water	Dissolved Metals
WG2280547-6	L1746315-31	NEW BRIDGE R-SH	DUP	457538	Mercury (Hg)-Dissolved	<0.00050	<0.00050	0.00050	ug/L	N/A	20	-		✓	Water	Dissolved Metals
WG2278217-9	L1746315-2	BIRCH BANK R-1M D	DUP	455711	Molybdenum (Mo)-Dissolved	0.000571	0.000564	0.000050	mg/L	1.3	20	-		✓	Water	Dissolved Metals
WG2278217-11	L1746315-32	NEW BRIDGE R-1MD	DUP	455711	Molybdenum (Mo)-Dissolved	0.000592	0.000577	0.000050	mg/L	2.5	20	-		✓	Water	Dissolved Metals
WG2278217-9	L1746315-2	BIRCH BANK R-1M D	DUP	455711	Nickel (Ni)-Dissolved	0.000230	0.000259	0.000050	mg/L	12	20	-		✓	Water	Dissolved Metals
WG2278217-11	L1746315-32	NEW BRIDGE R-1MD	DUP	455711	Nickel (Ni)-Dissolved	0.000232	0.000211	0.000050	mg/L	9.4	20	-		✓	Water	Dissolved Metals
WG2278217-9	L1746315-2	BIRCH BANK R-1M D	DUP	455711	Phosphorus (P)-Dissolved	<0.050	<0.050	0.050	mg/L	N/A	20	-		✓	Water	Dissolved Metals
WG2278217-11	L1746315-32	NEW BRIDGE R-1MD	DUP	455711	Phosphorus (P)-Dissolved	<0.050	<0.050	0.050	mg/L	N/A	20	-		✓	Water	Dissolved Metals
WG2278217-9	L1746315-2	BIRCH BANK R-1M D	DUP	455711	Potassium (K)-Dissolved	0.674	0.665	0.050	mg/L	1.3	20	-		✓	Water	Dissolved Metals
WG2278217-11	L1746315-32	NEW BRIDGE R-1MD	DUP	455711	Potassium (K)-Dissolved	0.659	0.651	0.050	mg/L	1.3	20	-		✓	Water	Dissolved Metals
WG2278217-9	L1746315-2	BIRCH BANK R-1M D	DUP	455711	Selenium (Se)-Dissolved	0.000333	0.000338	0.000040	mg/L	1.6	20	-		✓	Water	Dissolved Metals
WG2278217-11	L1746315-32	NEW BRIDGE R-1MD	DUP	455711	Selenium (Se)-Dissolved	0.000365	0.000369	0.000040	mg/L	1.1	20	-		✓	Water	Dissolved Metals
WG2278217-9	L1746315-2	BIRCH BANK R-1M D	DUP	455711	Silicon (Si)-Dissolved	2.36	2.37	0.050	mg/L	0.3	20	-		✓	Water	Dissolved Metals
WG2278217-11	L1746315-32	NEW BRIDGE R-1MD	DUP	455711	Silicon (Si)-Dissolved	2.38	2.37	0.050	mg/L	0.4	20	-		✓	Water	Dissolved Metals
WG2278217-9	L1746315-2	BIRCH BANK R-1M D	DUP	455711	Silver (Ag)-Dissolved	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-		✓	Water	Dissolved Metals
WG2278217-11	L1746315-32	NEW BRIDGE R-1MD	DUP	455711	Silver (Ag)-Dissolved	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-		✓	Water	Dissolved Metals
WG2278217-9	L1746315-2	BIRCH BANK R-1M D	DUP	455711	Sodium (Na)-Dissolved	1.96	1.97	0.010	mg/L	0.5	20	-		✓	Water	Dissolved Metals
WG2278217-11	L1746315-32	NEW BRIDGE R-1MD	DUP	455711	Sodium (Na)-Dissolved	1.96	1.98	0.010	mg/L	1.1	20	-		✓	Water	Dissolved Metals
WG2278217-9	L1746315-2	BIRCH BANK R-1M D	DUP	455711	Strontium (Sr)-Dissolved	0.108	0.107	0.00010	mg/L	0.6	20	-		✓	Water	Dissolved Metals
WG2278217-11	L1746315-32	NEW BRIDGE R-1MD	DUP	455711	Strontium (Sr)-Dissolved	0.107	0.107	0.00010	mg/L	0.2	20	-		✓	Water	Dissolved Metals
WG2278217-9	L1746315-2	BIRCH BANK R-1M D	DUP	455711	Thallium (Tl)-Dissolved	0.0000031	0.0000030	0.0000020	mg/L	4.3	20	-		✓	Water	Dissolved Metals
WG2278217-11	L1746315-32	NEW BRIDGE R-1MD	DUP	455711	Thallium (Tl)-Dissolved	0.0000054	0.0000035	0.0000020	mg/L	-		0.0000019	0.000004	✓	Water	Dissolved Metals
WG2278217-9	L1746315-2	BIRCH BANK R-1M D	DUP	455711	Tin (Sn)-Dissolved	<0.000010	<0.000010	0.000010	mg/L	N/A	20	-		✓	Water	Dissolved Metals
WG2278217-11	L1746315-32	NEW BRIDGE R-1MD	DUP	455711	Tin (Sn)-Dissolved	<0.000010	<0.000010	0.000010	mg/L	N/A	20	-		✓	Water	Dissolved Metals
WG2278217-9	L1746315-2	BIRCH BANK R-1M D	DUP	455711	Titanium (Ti)-Dissolved	<0.00030	<0.00030	0.00030	mg/L	N/A	20	-		✓	Water	Dissolved Metals
WG2278217-11	L1746315-32	NEW BRIDGE R-1MD	DUP	455711	Titanium (Ti)-Dissolved	<0.00030	<0.00030	0.00030	mg/L	N/A	20	-		✓	Water	Dissolved Metals
WG2278217-9	L1746315-2	BIRCH BANK R-1M D	DUP	455711	Uranium (U)-Dissolved	0.000604	0.000602	0.0000020	mg/L	0.5	20	-		✓	Water	Dissolved Metals
WG2278217-11	L1746315-32	NEW BRIDGE R-1MD	DUP	455711	Uranium (U)-Dissolved	0.000591	0.000594	0.0000020	mg/L	0.6	20	-		✓	Water	Dissolved Metals
WG2278217-9	L1746315-2	BIRCH BANK R-1M D	DUP	455711	Vanadium (V)-Dissolved	0.000132	0.000127	0.000050	mg/L	3.4	20	-		✓	Water	Dissolved Metals
WG2278217-11	L1746315-32	NEW BRIDGE R-1MD	DUP	455711	Vanadium (V)-Dissolved	0.000134	0.000129	0.000050	mg/L	4	20	-		✓	Water	Dissolved Metals
WG2278217-9	L1746315-2	BIRCH BANK R-1M D	DUP	455711	Zinc (Zn)-Dissolved	0.00167	0.00143	0.00050	mg/L	15	20	-		✓	Water	Dissolved Metals
WG2278217-11	L1746315-32	NEW BRIDGE R-1MD	DUP	455711	Zinc (Zn)-Dissolved	0.00149	0.00141	0.00050	mg/L	5.9	20	-		✓	Water	Dissolved Metals
WG2278217-9	L1746315-2	BIRCH BANK R-1M D	DUP	455711	Zirconium (Zr)-Dissolved	<0.00010	<0.00010	0.00010	mg/L	N/A	20	-		✓	Water	Dissolved Metals
WG2278217-11	L1746315-32	NEW BRIDGE R-1MD	DUP	455711	Zirconium (Zr)-Dissolved	<0.00010	<0.00010	0.00010	mg/L	N/A	20	-		✓	Water	Dissolved Metals
Aggregate Organics (Water)																
WG2278395-3	L1746315-28	OLD BRIDGE L-1MAB	DUP	455836	BOD	<2.0	<2.0	2.0	mg/L	N/A	20	-		✓	Water	Aggregate Organics
WG2280741-7	L1746315-15	MAGLIOS R-1MD	DUP	457677	COD	<20	<20	20	mg/L	N/A	20	-		✓	Water	Aggregate Organics
WG2282618-2	L1746315-25	OLD BRIDGE R-SH	DUP	459163	COD	<20	<20	20	mg/L	N/A	20	-		✓	Water	Aggregate Organics

Evaluation Legend

✓ QC Lot met ALS Data Quality Objectives

Quality Control L1746315

Job Reference TML-AREMP
Report To Kyle Hawes, ECOSCAPE ENVIRONMENTAL CONSULTANTS LTD.
Date Received 18-Mar-2016 9:00
Report Date 6-Apr-2016 17:51
Report Version 1

QC Type	Analyte	QC Lot #	ALS QC ID	Result	Target	Units	%	Limit	Units	Qual	Eval	Matrix	Class
Physical Tests (Water)													
CRM	Conductivity	456140	WG2278454-9	150	147	uS/cm	102.0	90-110	%		✓	Water	Physical Tests
CRM	Conductivity	456141	WG2278454-14	151	147	uS/cm	103.0	90-110	%		✓	Water	Physical Tests
CRM	Conductivity	456142	WG2278454-19	152	147	uS/cm	103.7	90-110	%		✓	Water	Physical Tests
CRM	Conductivity	456143	WG2278454-24	154	147	uS/cm	104.6	90-110	%		✓	Water	Physical Tests
CRM	Conductivity	456144	WG2278454-29	152	147	uS/cm	103.7	90-110	%		✓	Water	Physical Tests
CRM	pH	456140	WG2278454-7	6.99	7	pH	6.99	6.9-7.1	pH		✓	Water	Physical Tests
CRM	pH	456141	WG2278454-12	6.99	7	pH	6.99	6.9-7.1	pH		✓	Water	Physical Tests
CRM	pH	456142	WG2278454-17	6.99	7	pH	6.99	6.9-7.1	pH		✓	Water	Physical Tests
CRM	pH	456143	WG2278454-22	6.98	7	pH	6.98	6.9-7.1	pH		✓	Water	Physical Tests
CRM	pH	456144	WG2278454-27	6.98	7	pH	6.98	6.9-7.1	pH		✓	Water	Physical Tests
CRM	Turbidity	455638	WG2278142-2	39.8	40	NTU	99.5	85-115	%		✓	Water	Physical Tests
CRM	Turbidity	455638	WG2278142-5	39.6	40	NTU	99.0	85-115	%		✓	Water	Physical Tests
CRM	Turbidity	455638	WG2278142-8	40.3	40	NTU	100.8	85-115	%		✓	Water	Physical Tests
CRM	Turbidity	455638	WG2278142-11	39.9	40	NTU	99.8	85-115	%		✓	Water	Physical Tests
Anions and Nutrients (Water)													
CRM	Alkalinity, Total (as CaCO3)	456140	WG2278454-8	476	500	mg/L	95.3	85-115	%		✓	Water	Anions and Nutrients
CRM	Alkalinity, Total (as CaCO3)	456141	WG2278454-13	484	500	mg/L	96.8	85-115	%		✓	Water	Anions and Nutrients
CRM	Alkalinity, Total (as CaCO3)	456142	WG2278454-18	482	500	mg/L	96.3	85-115	%		✓	Water	Anions and Nutrients
CRM	Alkalinity, Total (as CaCO3)	456143	WG2278454-23	483	500	mg/L	96.7	85-115	%		✓	Water	Anions and Nutrients
CRM	Alkalinity, Total (as CaCO3)	456144	WG2278454-28	506	500	mg/L	101.2	85-115	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total Dissolved	455779	WG2278242-2	7.69	7.17	mg/L	107.3	80-120	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total Dissolved	455906	WG2278366-2	7.67	7.17	mg/L	107.0	80-120	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total Dissolved	455907	WG2278366-6	7.86	7.17	mg/L	109.6	80-120	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total	455781	WG2278232-6	7.22	7.17	mg/L	100.7	80-120	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total	455773	WG2278233-2	7.43	7.17	mg/L	103.7	80-120	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total	455886	WG2278371-2	7.46	7.17	mg/L	104.1	80-120	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total	455883	WG2278393-2	7.32	7.17	mg/L	102.0	80-120	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total	455782	WG2278232-10	7.48	7.17	mg/L	104.4	80-120	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total	455783	WG2278232-14	7.54	7.17	mg/L	105.2	80-120	%		✓	Water	Anions and Nutrients
Physical Tests (Water)													
LCS	Total Suspended Solids	456471	WG2279166-2	70.9	75	mg/L	94.5	85-115	%		✓	Water	Physical Tests
LCS	Total Suspended Solids	456472	WG2279166-5	73.5	75	mg/L	98.0	85-115	%		✓	Water	Physical Tests
LCS	Total Dissolved Solids	455708	WG2278181-2	436	425	mg/L	102.6	85-115	%		✓	Water	Physical Tests
LCS	Total Dissolved Solids	455709	WG2278181-5	413	425	mg/L	97.1	85-115	%		✓	Water	Physical Tests
LCS	Total Dissolved Solids	455710	WG2278181-8	419	425	mg/L	98.5	85-115	%		✓	Water	Physical Tests
Anions and Nutrients (Water)													
LCS	Ammonia, Total (as N)	459051	WG2282372-6	0.127	0.12	mg/L	106.0	85-115	%		✓	Water	Anions and Nutrients
LCS	Ammonia, Total (as N)	459268	WG2282714-2	0.117	0.12	mg/L	97.3	85-115	%		✓	Water	Anions and Nutrients
LCS	Ammonia, Total (as N)	459269	WG2282714-6	0.115	0.12	mg/L	96.2	85-115	%		✓	Water	Anions and Nutrients
LCS	Ammonia, Total (as N)	459052	WG2282372-10	0.117	0.12	mg/L	97.3	85-115	%		✓	Water	Anions and Nutrients
LCS	Bromide (Br)	459167	WG2277971-2	0.513	0.5	mg/L	102.6	85-115	%		✓	Water	Anions and Nutrients
LCS	Bromide (Br)	459167	WG2277971-6	0.507	0.5	mg/L	101.4	85-115	%		✓	Water	Anions and Nutrients
LCS	Bromide (Br)	456679	WG2278300-2	0.509	0.5	mg/L	101.8	85-115	%		✓	Water	Anions and Nutrients
LCS	Bromide (Br)	456679	WG2278300-21	0.514	0.5	mg/L	102.9	85-115	%		✓	Water	Anions and Nutrients
LCS	Chloride (Cl)	459167	WG2277971-2	101	100	mg/L	100.7	90-110	%		✓	Water	Anions and Nutrients
LCS	Chloride (Cl)	459167	WG2277971-6	101	100	mg/L	100.6	90-110	%		✓	Water	Anions and Nutrients
LCS	Chloride (Cl)	456679	WG2278300-2	101	100	mg/L	100.6	90-110	%		✓	Water	Anions and Nutrients
LCS	Chloride (Cl)	456679	WG2278300-21	101	100	mg/L	101.0	90-110	%		✓	Water	Anions and Nutrients
LCS	Fluoride (F)	459167	WG2277971-2	1.00	1	mg/L	99.97	90-110	%		✓	Water	Anions and Nutrients
LCS	Fluoride (F)	459167	WG2277971-6	0.999	1	mg/L	99.9	90-110	%		✓	Water	Anions and Nutrients
LCS	Fluoride (F)	456679	WG2278300-2	1.00	1	mg/L	100.3	90-110	%		✓	Water	Anions and Nutrients
LCS	Fluoride (F)	456679	WG2278300-21	1.01	1	mg/L	101.0	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrate (as N)	459167	WG2277971-2	2.52	2.5	mg/L	100.8	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrate (as N)	459167	WG2277971-6	2.52	2.5	mg/L	100.6	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrate (as N)	456679	WG2278300-2	2.51	2.5	mg/L	100.2	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrate (as N)	456679	WG2278300-21	2.51	2.5	mg/L	100.5	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrite (as N)	459167	WG2277971-2	0.501	0.5	mg/L	100.1	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrite (as N)	459167	WG2277971-6	0.499	0.5	mg/L	99.8	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrite (as N)	456679	WG2278300-2	0.499	0.5	mg/L	99.8	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrite (as N)	456679	WG2278300-21	0.501	0.5	mg/L	100.2	90-110	%		✓	Water	Anions and Nutrients
LCS	Total Kjeldahl Nitrogen	456923	WG2279761-2	1.01	1	mg/L	101.5	75-125	%		✓	Water	Anions and Nutrients
LCS	Total Kjeldahl Nitrogen	456923	WG2279761-6	1.00	1	mg/L	100.3	75-125	%		✓	Water	Anions and Nutrients
LCS	Total Kjeldahl Nitrogen	456923	WG2279761-10	0.992	1	mg/L	99.2	75-125	%		✓	Water	Anions and Nutrients
LCS	Total Kjeldahl Nitrogen	456923	WG2279761-14	0.996	1	mg/L	99.6	75-125	%		✓	Water	Anions and Nutrients
LCS	Sulfate (SO4)	459167	WG2277971-2	101	100	mg/L	101.1	90-110	%		✓	Water	Anions and Nutrients
LCS	Sulfate (SO4)	459167	WG2277971-6	101	100	mg/L	101.1	90-110	%		✓	Water	Anions and Nutrients
LCS	Sulfate (SO4)	456679	WG2278300-2	101	100	mg/L	101.0	90-110	%		✓	Water	Anions and Nutrients
LCS	Sulfate (SO4)	456679	WG2278300-21	101	100	mg/L	101.3	90-110	%		✓	Water	Anions and Nutrients
Organic / Inorganic Carbon (Water)													
LCS	Total Organic Carbon	459642	WG2282280-1	8.48	8.57	mg/L	99.0	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	459642	WG2282280-5	8.56	8.57	mg/L	99.9	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	459642	WG2282280-9	8.33	8.57	mg/L	97.2	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	459642	WG2282280-13	8.29	8.57	mg/L	96.8	80-120	%		✓	Water	Organic / Inorganic Carbon
Total Metals (Water)													
LCS	Mercury (Hg)-Total	457239	WG2280095-2	0.00509	0.005	ug/L	101.7	80-120	%		✓	Water	Total Metals
Total Metals (Undigested) (Water)													
LCS	Aluminum (Al)-Total	455716	WG2278223-2	1.89	2	mg/L	94.4	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Antimony (Sb)-Total	455716	WG2278223-2	0.958	1	mg/L	95.8	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Arsenic (As)-Total	455716	WG2278223-2	0.965	1	mg/L	96.5	80-120	%		✓	Water	Total Metals (Undigested)

LCS	Barium (Ba)-Total	455716	WG2278223-2	0.249	0.25	mg/L	99.7	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Beryllium (Be)-Total	455716	WG2278223-2	0.0966	0.1	mg/L	96.6	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Bismuth (Bi)-Total	455716	WG2278223-2	0.976	1	mg/L	97.6	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Boron (B)-Total	455716	WG2278223-2	0.893	1	mg/L	89.3	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Cadmium (Cd)-Total	455716	WG2278223-2	0.0956	0.1	mg/L	95.6	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Calcium (Ca)-Total	455716	WG2278223-2	52.9	50	mg/L	105.9	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Chromium (Cr)-Total	455716	WG2278223-2	0.240	0.25	mg/L	95.8	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Cobalt (Co)-Total	455716	WG2278223-2	0.243	0.25	mg/L	97.1	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Copper (Cu)-Total	455716	WG2278223-2	0.236	0.25	mg/L	94.4	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Iron (Fe)-Total	455716	WG2278223-2	0.947	1	mg/L	94.7	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Lead (Pb)-Total	455716	WG2278223-2	0.493	0.5	mg/L	98.7	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Lithium (Li)-Total	455716	WG2278223-2	0.252	0.25	mg/L	100.6	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Magnesium (Mg)-Total	455716	WG2278223-2	50.6	50	mg/L	101.1	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Manganese (Mn)-Total	455716	WG2278223-2	0.246	0.25	mg/L	98.3	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Molybdenum (Mo)-Total	455716	WG2278223-2	0.245	0.25	mg/L	97.9	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Nickel (Ni)-Total	455716	WG2278223-2	0.475	0.5	mg/L	95.1	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Phosphorus (P)-Total	455716	WG2278223-2	2.49	2.5	mg/L	99.6	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Potassium (K)-Total	455716	WG2278223-2	50.7	50	mg/L	101.3	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Selenium (Se)-Total	455716	WG2278223-2	0.966	1	mg/L	96.6	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Silicon (Si)-Total	455716	WG2278223-2	1.10	1	mg/L	110.2	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Silver (Ag)-Total	455716	WG2278223-2	0.0964	0.1	mg/L	96.4	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Sodium (Na)-Total	455716	WG2278223-2	49.2	50	mg/L	98.4	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Strontium (Sr)-Total	455716	WG2278223-2	0.238	0.25	mg/L	95.3	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Thallium (Tl)-Total	455716	WG2278223-2	0.994	1	mg/L	99.4	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Tin (Sn)-Total	455716	WG2278223-2	0.481	0.5	mg/L	96.2	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Titanium (Ti)-Total	455716	WG2278223-2	0.225	0.25	mg/L	90.0	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Uranium (U)-Total	455716	WG2278223-2	0.00476	0.005	mg/L	95.2	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Vanadium (V)-Total	455716	WG2278223-2	0.475	0.5	mg/L	95.1	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Zinc (Zn)-Total	455716	WG2278223-2	0.453	0.5	mg/L	90.6	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Zirconium (Zr)-Total	455716	WG2278223-2	0.0922	0.1	mg/L	92.2	80-120	%	✓	Water	Total Metals (Undigested)
Dissolved Metals (Water)												
LCS	Aluminum (Al)-Dissolved	455711	WG2278217-2	1.96	2	mg/L	97.9	80-120	%	✓	Water	Dissolved Metals
LCS	Aluminum (Al)-Dissolved	456324	WG2278998-2	2.01	2	mg/L	100.6	80-120	%	✓	Water	Dissolved Metals
LCS	Antimony (Sb)-Dissolved	455711	WG2278217-2	0.960	1	mg/L	96.0	80-120	%	✓	Water	Dissolved Metals
LCS	Antimony (Sb)-Dissolved	456324	WG2278998-2	0.966	1	mg/L	96.6	80-120	%	✓	Water	Dissolved Metals
LCS	Arsenic (As)-Dissolved	455711	WG2278217-2	0.977	1	mg/L	97.7	80-120	%	✓	Water	Dissolved Metals
LCS	Arsenic (As)-Dissolved	456324	WG2278998-2	0.970	1	mg/L	97.0	80-120	%	✓	Water	Dissolved Metals
LCS	Barium (Ba)-Dissolved	455711	WG2278217-2	0.246	0.25	mg/L	98.4	80-120	%	✓	Water	Dissolved Metals
LCS	Barium (Ba)-Dissolved	456324	WG2278998-2	0.249	0.25	mg/L	99.7	80-120	%	✓	Water	Dissolved Metals
LCS	Beryllium (Be)-Dissolved	455711	WG2278217-2	0.0993	0.1	mg/L	99.3	80-120	%	✓	Water	Dissolved Metals
LCS	Beryllium (Be)-Dissolved	456324	WG2278998-2	0.0977	0.1	mg/L	97.7	80-120	%	✓	Water	Dissolved Metals
LCS	Bismuth (Bi)-Dissolved	455711	WG2278217-2	0.979	1	mg/L	97.9	80-120	%	✓	Water	Dissolved Metals
LCS	Bismuth (Bi)-Dissolved	456324	WG2278998-2	0.983	1	mg/L	98.3	80-120	%	✓	Water	Dissolved Metals
LCS	Boron (B)-Dissolved	455711	WG2278217-2	0.916	1	mg/L	91.6	80-120	%	✓	Water	Dissolved Metals
LCS	Boron (B)-Dissolved	456324	WG2278998-2	0.899	1	mg/L	89.9	80-120	%	✓	Water	Dissolved Metals
LCS	Cadmium (Cd)-Dissolved	455711	WG2278217-2	0.0966	0.1	mg/L	96.6	80-120	%	✓	Water	Dissolved Metals
LCS	Cadmium (Cd)-Dissolved	456324	WG2278998-2	0.0957	0.1	mg/L	95.7	80-120	%	✓	Water	Dissolved Metals
LCS	Calcium (Ca)-Dissolved	455711	WG2278217-2	51.7	50	mg/L	103.4	80-120	%	✓	Water	Dissolved Metals
LCS	Calcium (Ca)-Dissolved	456324	WG2278998-2	51.8	50	mg/L	103.6	80-120	%	✓	Water	Dissolved Metals
LCS	Chromium (Cr)-Dissolved	455711	WG2278217-2	0.248	0.25	mg/L	99.2	80-120	%	✓	Water	Dissolved Metals
LCS	Chromium (Cr)-Dissolved	456324	WG2278998-2	0.240	0.25	mg/L	96.1	80-120	%	✓	Water	Dissolved Metals
LCS	Cobalt (Co)-Dissolved	455711	WG2278217-2	0.248	0.25	mg/L	99.1	80-120	%	✓	Water	Dissolved Metals
LCS	Cobalt (Co)-Dissolved	456324	WG2278998-2	0.241	0.25	mg/L	96.3	80-120	%	✓	Water	Dissolved Metals
LCS	Copper (Cu)-Dissolved	455711	WG2278217-2	0.238	0.25	mg/L	95.3	80-120	%	✓	Water	Dissolved Metals
LCS	Copper (Cu)-Dissolved	456324	WG2278998-2	0.236	0.25	mg/L	94.2	80-120	%	✓	Water	Dissolved Metals
LCS	Iron (Fe)-Dissolved	455711	WG2278217-2	0.942	1	mg/L	94.2	80-120	%	✓	Water	Dissolved Metals
LCS	Iron (Fe)-Dissolved	456324	WG2278998-2	0.938	1	mg/L	93.8	80-120	%	✓	Water	Dissolved Metals
LCS	Lead (Pb)-Dissolved	455711	WG2278217-2	0.491	0.5	mg/L	98.2	80-120	%	✓	Water	Dissolved Metals
LCS	Lead (Pb)-Dissolved	456324	WG2278998-2	0.488	0.5	mg/L	97.5	80-120	%	✓	Water	Dissolved Metals
LCS	Lithium (Li)-Dissolved	455711	WG2278217-2	0.257	0.25	mg/L	102.9	80-120	%	✓	Water	Dissolved Metals
LCS	Lithium (Li)-Dissolved	456324	WG2278998-2	0.260	0.25	mg/L	104.1	80-120	%	✓	Water	Dissolved Metals
LCS	Magnesium (Mg)-Dissolved	455711	WG2278217-2	49.7	50	mg/L	99.5	80-120	%	✓	Water	Dissolved Metals
LCS	Magnesium (Mg)-Dissolved	456324	WG2278998-2	49.9	50	mg/L	99.7	80-120	%	✓	Water	Dissolved Metals
LCS	Manganese (Mn)-Dissolved	455711	WG2278217-2	0.257	0.25	mg/L	102.7	80-120	%	✓	Water	Dissolved Metals
LCS	Manganese (Mn)-Dissolved	456324	WG2278998-2	0.246	0.25	mg/L	98.3	80-120	%	✓	Water	Dissolved Metals
LCS	Mercury (Hg)-Dissolved	457538	WG2280547-3	0.00506	0.005	ug/L	101.1	80-120	%	✓	Water	Dissolved Metals
LCS	Molybdenum (Mo)-Dissolved	455711	WG2278217-2	0.248	0.25	mg/L	99.2	80-120	%	✓	Water	Dissolved Metals
LCS	Molybdenum (Mo)-Dissolved	456324	WG2278998-2	0.242	0.25	mg/L	96.6	80-120	%	✓	Water	Dissolved Metals
LCS	Nickel (Ni)-Dissolved	455711	WG2278217-2	0.490	0.5	mg/L	97.9	80-120	%	✓	Water	Dissolved Metals
LCS	Nickel (Ni)-Dissolved	456324	WG2278998-2	0.483	0.5	mg/L	96.5	80-120	%	✓	Water	Dissolved Metals
LCS	Phosphorus (P)-Dissolved	455711	WG2278217-2	2.56	2.5	mg/L	102.2	80-120	%	✓	Water	Dissolved Metals
LCS	Phosphorus (P)-Dissolved	456324	WG2278998-2	2.55	2.5	mg/L	102.1	80-120	%	✓	Water	Dissolved Metals
LCS	Potassium (K)-Dissolved	455711	WG2278217-2	50.4	50	mg/L	100.8	80-120	%	✓	Water	Dissolved Metals
LCS	Potassium (K)-Dissolved	456324	WG2278998-2	50.0	50	mg/L	100.1	80-120	%	✓	Water	Dissolved Metals
LCS	Selenium (Se)-Dissolved	455711	WG2278217-2	0.947	1	mg/L	94.7	80-120	%	✓	Water	Dissolved Metals
LCS	Selenium (Se)-Dissolved	456324	WG2278998-2	0.995	1	mg/L	99.5	80-120	%	✓	Water	Dissolved Metals
LCS	Silicon (Si)-Dissolved	455711	WG2278217-2	1.09	1	mg/L	108.8	80-120	%	✓	Water	Dissolved Metals
LCS	Silicon (Si)-Dissolved	456324	WG2278998-2	1.04	1	mg/L	104.0	80-120	%	✓	Water	Dissolved Metals
LCS	Silver (Ag)-Dissolved	455711	WG2278217-2	0.0974	0.1	mg/L	97.4	80-120	%	✓	Water	Dissolved Metals
LCS	Silver (Ag)-Dissolved	456324	WG2278998-2	0.0951	0.1	mg/L	95.1	80-120	%	✓	Water	Dissolved Metals
LCS	Sodium (Na)-Dissolved	455711	WG2278217-2	50.5	50	mg/L	101.0	80-120	%	✓	Water	Dissolved Metals
LCS	Sodium (Na)-Dissolved	456324	WG2278998-2	48.4	50	mg/L	96.8	80-120	%	✓	Water	Dissolved Metals
LCS	Strontium (Sr)-Dissolved	455711	WG2278217-2	0.241	0.25	mg/L	96.5	80-120	%	✓	Water	Dissolved Metals
LCS	Strontium (Sr)-Dissolved	456324	WG2278998-2	0.235	0.25	mg/L	93.9	80-120	%	✓	Water	Dissolved Metals
LCS	Thallium (Tl)-Dissolved	455711	WG2278217-2	0.997	1	mg/L	99.7	80-120	%	✓	Water	Dissolved Metals
LCS	Thallium (Tl)-Dissolved	456324	WG2278998-2	0.978	1	mg/L	97.8	80-120	%	✓	Water	Dissolved Metals
LCS	Tin (Sn)-Dissolved	455711	WG2278217-2	0.485	0.5	mg/L	96.9	80-120	%	✓	Water	Dissolved Metals
LCS	Tin (Sn)-Dissolved	456324	WG2278998-2	0.488	0.5	mg/L	97.6	80-120	%	✓	Water	Dissolved Metals
LCS	Titanium (Ti)-Dissolved	455711	WG2278217-2	0.230	0.25	mg/L	92.1	80-120	%	✓	Water	Dissolved Metals
LCS	Titanium (Ti)-Dissolved	456324	WG2278998-2	0.233	0.25	mg/L	93.4	80-120	%	✓	Water	Dissolved Metals
LCS	Uranium (U)-Dissolved	455711	WG2278217-2	0.00483	0.005	mg/L	96.6	80-120	%	✓	Water	Dissolved Metals
LCS	Uranium (U)-Dissolved	456324	WG2278998-2	0.00482	0.005	mg/L	96.4	80-120	%	✓	Water	Dissolved Metals
LCS	Vanadium (V)-Dissolved	455711	WG2278217-2	0.484	0.5	mg/L	96.9	80-120	%	✓	Water	Dissolved Metals
LCS	Vanadium (V)-Dissolved	456324	WG2278998-2	0.492	0.5	mg/L	98.5	80-120	%	✓	Water	Dissolved Metals
LCS	Zinc (Zn)-Dissolved	455711	WG2278217-2	0.458	0.5	mg/L	91.6	80-120	%	✓	Water	Dissolved Metals
LCS	Zinc (Zn)-Dissolved	456324	WG2278998-2	0.444	0.5	mg/L	88.9	80-120	%	✓	Water	Dissolved Metals
LCS	Zirconium (Zr)-Dissolved	455711	WG2278217-2	0.0946	0.1	mg/L	94.6	80-120	%	✓	Water	Dissolved Metals

LCS	Zirconium (Zr)-Dissolved	456324	WG2278998-2	0.0913	0.1	mg/L	91.3	80-120	%	✓	Water	Dissolved Metals
Aggregate Organics (Water)												
LCS	BOD	455497	WG2277953-2	211	198	mg/L	106.5	85-115	%	✓	Water	Aggregate Organics
LCS	BOD	455497	WG2277953-6	209	198	mg/L	105.5	85-115	%	✓	Water	Aggregate Organics
LCS	BOD	455836	WG2278395-2	210	198	mg/L	106.2	85-115	%	✓	Water	Aggregate Organics
LCS	BOD	455836	WG2278395-6	204	198	mg/L	103.2	85-115	%	✓	Water	Aggregate Organics
LCS	COD	457677	WG2280741-3	742	750	mg/L	99.0	85-115	%	✓	Water	Aggregate Organics
LCS	COD	457677	WG2280741-6	739	750	mg/L	98.5	85-115	%	✓	Water	Aggregate Organics
LCS	COD	459163	WG2282618-3	756	750	mg/L	100.8	85-115	%	✓	Water	Aggregate Organics
LCS	COD	459163	WG2282618-6	729	750	mg/L	97.2	85-115	%	✓	Water	Aggregate Organics
LCS	COD	457677	WG2280741-10	749	750	mg/L	99.9	85-115	%	✓	Water	Aggregate Organics
LCS	COD	459163	WG2282618-10	760	750	mg/L	101.3	85-115	%	✓	Water	Aggregate Organics
Physical Tests (Water)												
MB	Conductivity	456140	WG2278454-6	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Conductivity	456141	WG2278454-11	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Conductivity	456142	WG2278454-16	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Conductivity	456143	WG2278454-21	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Conductivity	456144	WG2278454-26	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Total Suspended Solids	456471	WG2279166-1	<3.0		mg/L	-	<3.0	mg/L	✓	Water	Physical Tests
MB	Total Suspended Solids	456472	WG2279166-4	<3.0		mg/L	-	<3.0	mg/L	✓	Water	Physical Tests
MB	Total Dissolved Solids	455708	WG2278181-1	<10		mg/L	-	<10	mg/L	✓	Water	Physical Tests
MB	Total Dissolved Solids	455709	WG2278181-4	<10		mg/L	-	<10	mg/L	✓	Water	Physical Tests
MB	Total Dissolved Solids	455710	WG2278181-7	<10		mg/L	-	<10	mg/L	✓	Water	Physical Tests
MB	Turbidity	455638	WG2278142-1	<0.10		NTU	-	<0.10	NTU	✓	Water	Physical Tests
MB	Turbidity	455638	WG2278142-4	<0.10		NTU	-	<0.10	NTU	✓	Water	Physical Tests
MB	Turbidity	455638	WG2278142-7	<0.10		NTU	-	<0.10	NTU	✓	Water	Physical Tests
MB	Turbidity	455638	WG2278142-10	<0.10		NTU	-	<0.10	NTU	✓	Water	Physical Tests
Anions and Nutrients (Water)												
MB	Alkalinity, Total (as CaCO3)	456140	WG2278454-6	<1.0		mg/L	-	<1.0	mg/L	✓	Water	Anions and Nutrients
MB	Alkalinity, Total (as CaCO3)	456141	WG2278454-11	1.0		mg/L	-	<1.0	mg/L	×	Water	Anions and Nutrients
MB	Alkalinity, Total (as CaCO3)	456142	WG2278454-16	<1.0		mg/L	-	<1.0	mg/L	✓	Water	Anions and Nutrients
MB	Alkalinity, Total (as CaCO3)	456143	WG2278454-21	<1.0		mg/L	-	<1.0	mg/L	✓	Water	Anions and Nutrients
MB	Alkalinity, Total (as CaCO3)	456144	WG2278454-26	<1.0		mg/L	-	<1.0	mg/L	✓	Water	Anions and Nutrients
MB	Ammonia, Total (as N)	459051	WG2282372-5	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Ammonia, Total (as N)	459052	WG2282372-9	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Ammonia, Total (as N)	459268	WG2282714-1	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Ammonia, Total (as N)	459269	WG2282714-5	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	459167	WG2277971-1	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	459167	WG2277971-4	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	456679	WG2278300-1	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	456679	WG2278300-4	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	456679	WG2278300-7	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	456679	WG2278300-10	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	456679	WG2278300-13	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	456679	WG2278300-16	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	456679	WG2278300-19	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	459167	WG2277971-1	<0.10		mg/L	-	<0.10	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	459167	WG2277971-4	<0.10		mg/L	-	<0.10	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	456679	WG2278300-1	<0.10		mg/L	-	<0.10	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	456679	WG2278300-4	<0.10		mg/L	-	<0.10	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	456679	WG2278300-7	<0.10		mg/L	-	<0.10	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	456679	WG2278300-10	<0.10		mg/L	-	<0.10	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	456679	WG2278300-13	<0.10		mg/L	-	<0.10	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	456679	WG2278300-16	<0.10		mg/L	-	<0.10	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	456679	WG2278300-19	<0.10		mg/L	-	<0.10	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	459167	WG2277971-1	<0.020		mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	459167	WG2277971-4	<0.020		mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	456679	WG2278300-1	<0.020		mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	456679	WG2278300-4	<0.020		mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	456679	WG2278300-7	<0.020		mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	456679	WG2278300-10	<0.020		mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	456679	WG2278300-13	<0.020		mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	456679	WG2278300-16	<0.020		mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	456679	WG2278300-19	<0.020		mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	459167	WG2277971-1	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	459167	WG2277971-4	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	456679	WG2278300-1	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	456679	WG2278300-4	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	456679	WG2278300-7	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	456679	WG2278300-10	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	456679	WG2278300-13	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	456679	WG2278300-16	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	456679	WG2278300-19	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	459167	WG2277971-1	<0.0010		mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	459167	WG2277971-4	<0.0010		mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	456679	WG2278300-1	<0.0010		mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	456679	WG2278300-4	<0.0010		mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	456679	WG2278300-7	<0.0010		mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	456679	WG2278300-10	<0.0010		mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	456679	WG2278300-13	<0.0010		mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	456679	WG2278300-16	<0.0010		mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	456679	WG2278300-19	<0.0010		mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Total Kjeldahl Nitrogen	456923	WG2279761-1	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Total Kjeldahl Nitrogen	456923	WG2279761-5	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Total Kjeldahl Nitrogen	456923	WG2279761-9	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Total Kjeldahl Nitrogen	456923	WG2279761-13	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total Dissolved	455779	WG2278242-1	<0.0020		mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total Dissolved	455906	WG2278366-1	<0.0020		mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total Dissolved	455907	WG2278366-5	<0.0020		mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total	455781	WG2278232-5	<0.0020		mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total	455782	WG2278232-9	<0.0020		mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total	455773	WG2278233-1	<0.0020		mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total	455886	WG2278371-1	<0.0020		mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total	455883	WG2278393-1	<0.0020		mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total	455783	WG2278232-13	<0.0020		mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients

MB	Sulfate (SO4)	459167	WG2277971-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	459167	WG2277971-4	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	456679	WG2278300-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	456679	WG2278300-4	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	456679	WG2278300-7	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	456679	WG2278300-10	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	456679	WG2278300-13	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	456679	WG2278300-16	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	456679	WG2278300-19	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
Organic / Inorganic Carbon (Water)											
MB	Total Organic Carbon	459642	WG2282280-4	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	459642	WG2282280-8	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	459642	WG2282280-12	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
Total Metals (Water)											
MB	Mercury (Hg)-Total	457239	WG2280095-1	<0.00050	ug/L	-	<0.00050	ug/L	✓	Water	Total Metals
MB	Mercury (Hg)-Total	457239	WG2280095-5	<0.00050	ug/L	-	<0.00050	ug/L	✓	Water	Total Metals
Total Metals (Undigested) (Water)											
MB	Aluminum (Al)-Total	455716	WG2278223-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Total Metals (Undigested)
MB	Antimony (Sb)-Total	455716	WG2278223-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Arsenic (As)-Total	455716	WG2278223-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Barium (Ba)-Total	455716	WG2278223-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Beryllium (Be)-Total	455716	WG2278223-1	<0.000010	mg/L	-	<0.000010	mg/L	✓	Water	Total Metals (Undigested)
MB	Bismuth (Bi)-Total	455716	WG2278223-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Boron (B)-Total	455716	WG2278223-1	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Total Metals (Undigested)
MB	Cadmium (Cd)-Total	455716	WG2278223-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Calcium (Ca)-Total	455716	WG2278223-1	<0.030	mg/L	-	<0.030	mg/L	✓	Water	Total Metals (Undigested)
MB	Chromium (Cr)-Total	455716	WG2278223-1	<0.00010	mg/L	-	<0.00010	mg/L	✓	Water	Total Metals (Undigested)
MB	Cobalt (Co)-Total	455716	WG2278223-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Copper (Cu)-Total	455716	WG2278223-1	<0.00010	mg/L	-	<0.00010	mg/L	✓	Water	Total Metals (Undigested)
MB	Iron (Fe)-Total	455716	WG2278223-1	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Total Metals (Undigested)
MB	Lead (Pb)-Total	455716	WG2278223-1	<0.000010	mg/L	-	<0.000010	mg/L	✓	Water	Total Metals (Undigested)
MB	Lithium (Li)-Total	455716	WG2278223-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Total Metals (Undigested)
MB	Magnesium (Mg)-Total	455716	WG2278223-1	<0.030	mg/L	-	<0.030	mg/L	✓	Water	Total Metals (Undigested)
MB	Manganese (Mn)-Total	455716	WG2278223-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Molybdenum (Mo)-Total	455716	WG2278223-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Nickel (Ni)-Total	455716	WG2278223-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Phosphorus (P)-Total	455716	WG2278223-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Total Metals (Undigested)
MB	Potassium (K)-Total	455716	WG2278223-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Total Metals (Undigested)
MB	Selenium (Se)-Total	455716	WG2278223-1	<0.000040	mg/L	-	<0.000040	mg/L	✓	Water	Total Metals (Undigested)
MB	Silicon (Si)-Total	455716	WG2278223-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Total Metals (Undigested)
MB	Silver (Ag)-Total	455716	WG2278223-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Sodium (Na)-Total	455716	WG2278223-1	<0.010	mg/L	-	<0.010	mg/L	✓	Water	Total Metals (Undigested)
MB	Strontium (Sr)-Total	455716	WG2278223-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Thallium (Tl)-Total	455716	WG2278223-1	<0.0000020	mg/L	-	<0.0000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Tin (Sn)-Total	455716	WG2278223-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Titanium (Ti)-Total	455716	WG2278223-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Total Metals (Undigested)
MB	Uranium (U)-Total	455716	WG2278223-1	<0.0000020	mg/L	-	<0.0000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Vanadium (V)-Total	455716	WG2278223-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Zinc (Zn)-Total	455716	WG2278223-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Total Metals (Undigested)
MB	Zirconium (Zr)-Total	455716	WG2278223-1	<0.00010	mg/L	-	<0.00010	mg/L	✓	Water	Total Metals (Undigested)
Dissolved Metals (Water)											
MB	Aluminum (Al)-Dissolved	455711	WG2278217-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Dissolved Metals
MB	Aluminum (Al)-Dissolved	456324	WG2278998-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Dissolved Metals
MB	Antimony (Sb)-Dissolved	455711	WG2278217-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Dissolved Metals
MB	Antimony (Sb)-Dissolved	456324	WG2278998-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Dissolved Metals
MB	Arsenic (As)-Dissolved	455711	WG2278217-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Dissolved Metals
MB	Arsenic (As)-Dissolved	456324	WG2278998-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Dissolved Metals
MB	Barium (Ba)-Dissolved	455711	WG2278217-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Dissolved Metals
MB	Barium (Ba)-Dissolved	456324	WG2278998-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Dissolved Metals
MB	Beryllium (Be)-Dissolved	455711	WG2278217-1	<0.000010	mg/L	-	<0.000010	mg/L	✓	Water	Dissolved Metals
MB	Beryllium (Be)-Dissolved	456324	WG2278998-1	<0.000010	mg/L	-	<0.000010	mg/L	✓	Water	Dissolved Metals
MB	Bismuth (Bi)-Dissolved	455711	WG2278217-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals
MB	Bismuth (Bi)-Dissolved	456324	WG2278998-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals
MB	Boron (B)-Dissolved	455711	WG2278217-1	<0.010	mg/L	-	<0.010	mg/L	✓	Water	Dissolved Metals
MB	Boron (B)-Dissolved	456324	WG2278998-1	<0.010	mg/L	-	<0.010	mg/L	✓	Water	Dissolved Metals
MB	Cadmium (Cd)-Dissolved	455711	WG2278217-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals
MB	Cadmium (Cd)-Dissolved	456324	WG2278998-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals
MB	Calcium (Ca)-Dissolved	455711	WG2278217-1	<0.030	mg/L	-	<0.030	mg/L	✓	Water	Dissolved Metals
MB	Calcium (Ca)-Dissolved	456324	WG2278998-1	<0.030	mg/L	-	<0.030	mg/L	✓	Water	Dissolved Metals
MB	Chromium (Cr)-Dissolved	455711	WG2278217-1	<0.00010	mg/L	-	<0.00010	mg/L	✓	Water	Dissolved Metals
MB	Chromium (Cr)-Dissolved	456324	WG2278998-1	<0.00010	mg/L	-	<0.00010	mg/L	✓	Water	Dissolved Metals
MB	Cobalt (Co)-Dissolved	455711	WG2278217-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals
MB	Cobalt (Co)-Dissolved	456324	WG2278998-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals
MB	Copper (Cu)-Dissolved	455711	WG2278217-1	<0.00010	mg/L	-	<0.00010	mg/L	✓	Water	Dissolved Metals
MB	Copper (Cu)-Dissolved	456324	WG2278998-1	<0.00010	mg/L	-	<0.00010	mg/L	✓	Water	Dissolved Metals
MB	Iron (Fe)-Dissolved	455711	WG2278217-1	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Dissolved Metals
MB	Iron (Fe)-Dissolved	456324	WG2278998-1	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Dissolved Metals
MB	Lead (Pb)-Dissolved	455711	WG2278217-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals
MB	Lead (Pb)-Dissolved	456324	WG2278998-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals
MB	Lithium (Li)-Dissolved	455711	WG2278217-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Dissolved Metals
MB	Lithium (Li)-Dissolved	456324	WG2278998-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Dissolved Metals
MB	Magnesium (Mg)-Dissolved	455711	WG2278217-1	<0.030	mg/L	-	<0.030	mg/L	✓	Water	Dissolved Metals
MB	Magnesium (Mg)-Dissolved	456324	WG2278998-1	<0.030	mg/L	-	<0.030	mg/L	✓	Water	Dissolved Metals
MB	Manganese (Mn)-Dissolved	455711	WG2278217-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Dissolved Metals
MB	Manganese (Mn)-Dissolved	456324	WG2278998-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Dissolved Metals
MB	Mercury (Hg)-Dissolved	457538	WG2280547-1	<0.00050	ug/L	-	<0.00050	ug/L	✓	Water	Dissolved Metals
MB	Mercury (Hg)-Dissolved	457538	WG2280547-2	<0.00050	ug/L	-	<0.00050	ug/L	✓	Water	Dissolved Metals
MB	Molybdenum (Mo)-Dissolved	455711	WG2278217-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Dissolved Metals
MB	Molybdenum (Mo)-Dissolved	456324	WG2278998-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Dissolved Metals
MB	Nickel (Ni)-Dissolved	455711	WG2278217-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Dissolved Metals
MB	Nickel (Ni)-Dissolved	456324	WG2278998-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Dissolved Metals
MB	Phosphorus (P)-Dissolved	455711	WG2278217-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Dissolved Metals
MB	Phosphorus (P)-Dissolved	456324	WG2278998-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Dissolved Metals
MB	Potassium (K)-Dissolved	455711	WG2278217-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Dissolved Metals

MB	Potassium (K)-Dissolved	456324	WG2278998-1	<0.050	mg/L	-	<0.050	mg/L		✓	Water	Dissolved Metals
MB	Selenium (Se)-Dissolved	455711	WG2278217-1	<0.000040	mg/L	-	<0.000040	mg/L		✓	Water	Dissolved Metals
MB	Selenium (Se)-Dissolved	456324	WG2278998-1	<0.000040	mg/L	-	<0.000040	mg/L		✓	Water	Dissolved Metals
MB	Silicon (Si)-Dissolved	455711	WG2278217-1	<0.050	mg/L	-	<0.050	mg/L		✓	Water	Dissolved Metals
MB	Silicon (Si)-Dissolved	456324	WG2278998-1	<0.050	mg/L	-	<0.050	mg/L		✓	Water	Dissolved Metals
MB	Silver (Ag)-Dissolved	455711	WG2278217-1	<0.0000050	mg/L	-	<0.0000050	mg/L		✓	Water	Dissolved Metals
MB	Silver (Ag)-Dissolved	456324	WG2278998-1	<0.0000050	mg/L	-	<0.0000050	mg/L		✓	Water	Dissolved Metals
MB	Sodium (Na)-Dissolved	455711	WG2278217-1	<0.010	mg/L	-	<0.010	mg/L		✓	Water	Dissolved Metals
MB	Sodium (Na)-Dissolved	456324	WG2278998-1	0.024	mg/L	-	<0.010	mg/L	MB-LOR	×	Water	Dissolved Metals
MB	Strontium (Sr)-Dissolved	455711	WG2278217-1	<0.00010	mg/L	-	<0.00010	mg/L		✓	Water	Dissolved Metals
MB	Strontium (Sr)-Dissolved	456324	WG2278998-1	<0.00010	mg/L	-	<0.00010	mg/L		✓	Water	Dissolved Metals
MB	Thallium (Tl)-Dissolved	455711	WG2278217-1	<0.0000020	mg/L	-	<0.0000020	mg/L		✓	Water	Dissolved Metals
MB	Thallium (Tl)-Dissolved	456324	WG2278998-1	<0.0000020	mg/L	-	<0.0000020	mg/L		✓	Water	Dissolved Metals
MB	Tin (Sn)-Dissolved	455711	WG2278217-1	<0.000010	mg/L	-	<0.000010	mg/L		✓	Water	Dissolved Metals
MB	Tin (Sn)-Dissolved	456324	WG2278998-1	<0.000010	mg/L	-	<0.000010	mg/L		✓	Water	Dissolved Metals
MB	Titanium (Ti)-Dissolved	455711	WG2278217-1	<0.00030	mg/L	-	<0.00030	mg/L		✓	Water	Dissolved Metals
MB	Titanium (Ti)-Dissolved	456324	WG2278998-1	<0.00030	mg/L	-	<0.00030	mg/L		✓	Water	Dissolved Metals
MB	Uranium (U)-Dissolved	455711	WG2278217-1	<0.0000020	mg/L	-	<0.0000020	mg/L		✓	Water	Dissolved Metals
MB	Uranium (U)-Dissolved	456324	WG2278998-1	<0.0000020	mg/L	-	<0.0000020	mg/L		✓	Water	Dissolved Metals
MB	Vanadium (V)-Dissolved	455711	WG2278217-1	<0.000050	mg/L	-	<0.000050	mg/L		✓	Water	Dissolved Metals
MB	Vanadium (V)-Dissolved	456324	WG2278998-1	<0.000050	mg/L	-	<0.000050	mg/L		✓	Water	Dissolved Metals
MB	Zinc (Zn)-Dissolved	455711	WG2278217-1	<0.00050	mg/L	-	<0.00050	mg/L		✓	Water	Dissolved Metals
MB	Zinc (Zn)-Dissolved	456324	WG2278998-1	<0.00050	mg/L	-	<0.00050	mg/L		✓	Water	Dissolved Metals
MB	Zirconium (Zr)-Dissolved	455711	WG2278217-1	<0.00010	mg/L	-	<0.00010	mg/L		✓	Water	Dissolved Metals
MB	Zirconium (Zr)-Dissolved	456324	WG2278998-1	<0.00010	mg/L	-	<0.00010	mg/L		✓	Water	Dissolved Metals
Aggregate Organics (Water)												
MB	BOD	455497	WG2277953-1	<2.0	mg/L	-	<2.0	mg/L		✓	Water	Aggregate Organics
MB	BOD	455497	WG2277953-5	<2.0	mg/L	-	<2.0	mg/L		✓	Water	Aggregate Organics
MB	BOD	455836	WG2278395-1	<2.0	mg/L	-	<2.0	mg/L		✓	Water	Aggregate Organics
MB	BOD	455836	WG2278395-5	<2.0	mg/L	-	<2.0	mg/L		✓	Water	Aggregate Organics
MB	COD	457677	WG2280741-1	<20	mg/L	-	<20	mg/L		✓	Water	Aggregate Organics
MB	COD	457677	WG2280741-5	<20	mg/L	-	<20	mg/L		✓	Water	Aggregate Organics
MB	COD	457677	WG2280741-9	<20	mg/L	-	<20	mg/L		✓	Water	Aggregate Organics
MB	COD	459163	WG2282618-1	<20	mg/L	-	<20	mg/L		✓	Water	Aggregate Organics
MB	COD	459163	WG2282618-5	<20	mg/L	-	<20	mg/L		✓	Water	Aggregate Organics
MB	COD	459163	WG2282618-9	<20	mg/L	-	<20	mg/L		✓	Water	Aggregate Organics
Anions and Nutrients (Water)												
MS	Ammonia, Total (as N)	459268	MAGLIOS R-1MAB	0.215	0.211	mg/L	102.0	75-125	%	✓	Water	Anions and Nutrients
MS	Ammonia, Total (as N)	459051	STONEY CK L-1MD	0.209	0.2	mg/L	104.5	75-125	%	✓	Water	Anions and Nutrients
MS	Ammonia, Total (as N)	459269	NEW BRIDGE R-1MAB	0.204	0.206	mg/L	98.9	75-125	%	✓	Water	Anions and Nutrients
MS	Bromide (Br)	459167	DUPLICATE 2	0.553	0.5	mg/L	110.6	75-125	%	✓	Water	Anions and Nutrients
MS	Bromide (Br)	456679	NEW BRIDGE L-1MD	0.501	0.5	mg/L	100.1	75-125	%	✓	Water	Anions and Nutrients
MS	Chloride (Cl)	459167	DUPLICATE 2	110	101	mg/L	108.7	75-125	%	✓	Water	Anions and Nutrients
MS	Chloride (Cl)	456679	NEW BRIDGE L-1MD	99.3	101	mg/L	98.1	75-125	%	✓	Water	Anions and Nutrients
MS	Fluoride (F)	459167	DUPLICATE 2	1.15	1.07	mg/L	108.0	75-125	%	✓	Water	Anions and Nutrients
MS	Fluoride (F)	456679	NEW BRIDGE L-1MD	1.05	1.07	mg/L	97.9	75-125	%	✓	Water	Anions and Nutrients
MS	Nitrate (as N)	459167	DUPLICATE 2	2.85	2.65	mg/L	107.9	75-125	%	✓	Water	Anions and Nutrients
MS	Nitrate (as N)	456679	NEW BRIDGE L-1MD	2.58	2.65	mg/L	97.0	75-125	%	✓	Water	Anions and Nutrients
MS	Nitrite (as N)	459167	DUPLICATE 2	0.534	0.5	mg/L	106.7	75-125	%	✓	Water	Anions and Nutrients
MS	Nitrite (as N)	456679	NEW BRIDGE L-1MD	0.484	0.5	mg/L	96.7	75-125	%	✓	Water	Anions and Nutrients
MS	Total Kjeldahl Nitrogen	456923	MAGLIOS L-1MD	1.06	1.06	mg/L	100.1	70-130	%	✓	Water	Anions and Nutrients
MS	Total Kjeldahl Nitrogen	456923	NEW BRIDGE L-1MD	1.29	1.06	mg/L	123.1	70-130	%	✓	Water	Anions and Nutrients
MS	Total Kjeldahl Nitrogen	456923	BIRCH BANK R-1M AB	1.08	1.06	mg/L	101.6	70-130	%	✓	Water	Anions and Nutrients
MS	Phosphorus (P)-Total Dissolved	455906	MAGLIOS R-SH	0.0518	0.05	mg/L	103.6	70-130	%	✓	Water	Anions and Nutrients
MS	Phosphorus (P)-Total Dissolved	455779	BIRCH BANK R-1M D	0.0551	0.05	mg/L	110.3	70-130	%	✓	Water	Anions and Nutrients
MS	Phosphorus (P)-Total Dissolved	455907	NEW BRIDGE L-1MAB	0.0522	0.05	mg/L	104.4	70-130	%	✓	Water	Anions and Nutrients
MS	Phosphorus (P)-Total	455783	DUPLICATE 1	0.0516	0.0545	mg/L	94.2	70-130	%	✓	Water	Anions and Nutrients
MS	Phosphorus (P)-Total	455883	FIELD BLANK	0.0522	0.0549	mg/L	94.4	70-130	%	✓	Water	Anions and Nutrients
MS	Phosphorus (P)-Total	455782	STONEY CK R-1MD	0.0561	0.0536	mg/L	105.1	70-130	%	✓	Water	Anions and Nutrients
MS	Phosphorus (P)-Total	455773	OLD BRIDGE R-1MAB	0.0545	0.0546	mg/L	99.8	70-130	%	✓	Water	Anions and Nutrients
MS	Sulfate (SO4)	459167	DUPLICATE 2	119	112	mg/L	107.3	75-125	%	✓	Water	Anions and Nutrients
MS	Sulfate (SO4)	456679	NEW BRIDGE L-1MD	109	112	mg/L	96.6	75-125	%	✓	Water	Anions and Nutrients
Organic / Inorganic Carbon (Water)												
MS	Total Organic Carbon	459642	DUPLICATE 2	6.15	6.1	mg/L	101.1	70-130	%	✓	Water	Organic / Inorganic Carbon
MS	Total Organic Carbon	459642	BIRCH BANK R-1M AB	5.81	6.24	mg/L	91.4	70-130	%	✓	Water	Organic / Inorganic Carbon
Total Metals (Water)												
MS	Mercury (Hg)-Total	457239	STONEY CK L-1MAB	0.00525	0.005	ug/L	105.0	70-130	%	✓	Water	Total Metals
MS	Mercury (Hg)-Total	457239	OLD BRIDGE R-1MAB	0.00461	0.005	ug/L	92.1	70-130	%	✓	Water	Total Metals
Total Metals (Undigested) (Water)												
MS	Aluminum (Al)-Total	455716	MAGLIOS R-1MD	0.217	0.214	mg/L	101.7	70-130	%	✓	Water	Total Metals (Undigested)
MS	Aluminum (Al)-Total	455716	NEW BRIDGE R-1MD	0.211	0.212	mg/L	99.3	70-130	%	✓	Water	Total Metals (Undigested)
MS	Antimony (Sb)-Total	455716	MAGLIOS R-1MD	0.0198	0.0201	mg/L	98.7	70-130	%	✓	Water	Total Metals (Undigested)

MS	Antimony (Sb)-Total	455716	NEW BRIDGE R-1MD	0.0198	0.0201	mg/L	98.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Arsenic (As)-Total	455716	MAGLIOS R-1MD	0.0214	0.0203	mg/L	105.3	70-130	%	✓	Water	Total Metals (Undigested)
MS	Arsenic (As)-Total	455716	NEW BRIDGE R-1MD	0.0202	0.0203	mg/L	99.3	70-130	%	✓	Water	Total Metals (Undigested)
MS	Beryllium (Be)-Total	455716	MAGLIOS R-1MD	0.0400	0.04	mg/L	100.1	70-130	%	✓	Water	Total Metals (Undigested)
MS	Beryllium (Be)-Total	455716	NEW BRIDGE R-1MD	0.0398	0.04	mg/L	99.6	70-130	%	✓	Water	Total Metals (Undigested)
MS	Bismuth (Bi)-Total	455716	MAGLIOS R-1MD	0.00933	0.01	mg/L	93.3	70-130	%	✓	Water	Total Metals (Undigested)
MS	Bismuth (Bi)-Total	455716	NEW BRIDGE R-1MD	0.00917	0.01	mg/L	91.7	70-130	%	✓	Water	Total Metals (Undigested)
MS	Boron (B)-Total	455716	MAGLIOS R-1MD	0.0984	0.1	mg/L	98.4	70-130	%	✓	Water	Total Metals (Undigested)
MS	Boron (B)-Total	455716	NEW BRIDGE R-1MD	0.0949	0.1	mg/L	94.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Cadmium (Cd)-Total	455716	MAGLIOS R-1MD	0.00412	0.00403	mg/L	102.2	70-130	%	✓	Water	Total Metals (Undigested)
MS	Cadmium (Cd)-Total	455716	NEW BRIDGE R-1MD	0.00382	0.00402	mg/L	95.0	70-130	%	✓	Water	Total Metals (Undigested)
MS	Calcium (Ca)-Total	455716	MAGLIOS R-1MD	73.2	71.1	mg/L	104.2	70-130	%	✓	Water	Total Metals (Undigested)
MS	Calcium (Ca)-Total	455716	NEW BRIDGE R-1MD	74.5	71.1	mg/L	106.7	70-130	%	✓	Water	Total Metals (Undigested)
MS	Chromium (Cr)-Total	455716	MAGLIOS R-1MD	0.0392	0.04	mg/L	98.0	70-130	%	✓	Water	Total Metals (Undigested)
MS	Chromium (Cr)-Total	455716	NEW BRIDGE R-1MD	0.0380	0.04	mg/L	94.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Cobalt (Co)-Total	455716	MAGLIOS R-1MD	0.0203	0.02	mg/L	101.3	70-130	%	✓	Water	Total Metals (Undigested)
MS	Cobalt (Co)-Total	455716	NEW BRIDGE R-1MD	0.0194	0.02	mg/L	96.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Copper (Cu)-Total	455716	MAGLIOS R-1MD	0.0208	0.0204	mg/L	102.3	70-130	%	✓	Water	Total Metals (Undigested)
MS	Copper (Cu)-Total	455716	NEW BRIDGE R-1MD	0.0199	0.0203	mg/L	98.1	70-130	%	✓	Water	Total Metals (Undigested)
MS	Iron (Fe)-Total	455716	MAGLIOS R-1MD	1.99	2.02	mg/L	98.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Iron (Fe)-Total	455716	NEW BRIDGE R-1MD	1.93	2.01	mg/L	95.5	70-130	%	✓	Water	Total Metals (Undigested)
MS	Lead (Pb)-Total	455716	MAGLIOS R-1MD	0.0198	0.0201	mg/L	98.3	70-130	%	✓	Water	Total Metals (Undigested)
MS	Lead (Pb)-Total	455716	NEW BRIDGE R-1MD	0.0196	0.0201	mg/L	97.3	70-130	%	✓	Water	Total Metals (Undigested)
MS	Lithium (Li)-Total	455716	MAGLIOS R-1MD	0.100	0.101	mg/L	99.0	70-130	%	✓	Water	Total Metals (Undigested)
MS	Lithium (Li)-Total	455716	NEW BRIDGE R-1MD	0.101	0.101	mg/L	99.8	70-130	%	✓	Water	Total Metals (Undigested)
MS	Magnesium (Mg)-Total	455716	MAGLIOS R-1MD	53.7	54.9	mg/L	97.6	70-130	%	✓	Water	Total Metals (Undigested)
MS	Magnesium (Mg)-Total	455716	NEW BRIDGE R-1MD	54.6	54.9	mg/L	99.4	70-130	%	✓	Water	Total Metals (Undigested)
MS	Manganese (Mn)-Total	455716	MAGLIOS R-1MD	0.0224	0.0224	mg/L	99.8	70-130	%	✓	Water	Total Metals (Undigested)
MS	Manganese (Mn)-Total	455716	NEW BRIDGE R-1MD	0.0217	0.022	mg/L	98.3	70-130	%	✓	Water	Total Metals (Undigested)
MS	Molybdenum (Mo)-Total	455716	MAGLIOS R-1MD	0.0201	0.0206	mg/L	97.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Molybdenum (Mo)-Total	455716	NEW BRIDGE R-1MD	0.0200	0.0206	mg/L	97.1	70-130	%	✓	Water	Total Metals (Undigested)
MS	Nickel (Ni)-Total	455716	MAGLIOS R-1MD	0.0400	0.0402	mg/L	99.5	70-130	%	✓	Water	Total Metals (Undigested)
MS	Nickel (Ni)-Total	455716	NEW BRIDGE R-1MD	0.0390	0.0402	mg/L	97.0	70-130	%	✓	Water	Total Metals (Undigested)
MS	Phosphorus (P)-Total	455716	MAGLIOS R-1MD	2.45	2.5	mg/L	98.0	70-130	%	✓	Water	Total Metals (Undigested)
MS	Phosphorus (P)-Total	455716	NEW BRIDGE R-1MD	2.52	2.5	mg/L	100.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Potassium (K)-Total	455716	MAGLIOS R-1MD	52.1	50.7	mg/L	102.8	70-130	%	✓	Water	Total Metals (Undigested)
MS	Potassium (K)-Total	455716	NEW BRIDGE R-1MD	51.8	50.6	mg/L	102.3	70-130	%	✓	Water	Total Metals (Undigested)
MS	Selenium (Se)-Total	455716	MAGLIOS R-1MD	0.0419	0.0403	mg/L	104.0	70-130	%	✓	Water	Total Metals (Undigested)
MS	Selenium (Se)-Total	455716	NEW BRIDGE R-1MD	0.0398	0.0403	mg/L	98.5	70-130	%	✓	Water	Total Metals (Undigested)
MS	Silver (Ag)-Total	455716	MAGLIOS R-1MD	0.00388	0.004	mg/L	97.0	70-130	%	✓	Water	Total Metals (Undigested)
MS	Silver (Ag)-Total	455716	NEW BRIDGE R-1MD	0.00386	0.004	mg/L	96.5	70-130	%	✓	Water	Total Metals (Undigested)
MS	Sodium (Na)-Total	455716	NEW BRIDGE R-1MD	3.90	3.99	mg/L	95.5	70-130	%	✓	Water	Total Metals (Undigested)
MS	Thallium (Tl)-Total	455716	MAGLIOS R-1MD	0.00395	0.00405	mg/L	97.6	70-130	%	✓	Water	Total Metals (Undigested)
MS	Thallium (Tl)-Total	455716	NEW BRIDGE R-1MD	0.00388	0.004	mg/L	96.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Tin (Sn)-Total	455716	MAGLIOS R-1MD	0.0199	0.02	mg/L	99.3	70-130	%	✓	Water	Total Metals (Undigested)
MS	Tin (Sn)-Total	455716	NEW BRIDGE R-1MD	0.0193	0.02	mg/L	96.6	70-130	%	✓	Water	Total Metals (Undigested)
MS	Titanium (Ti)-Total	455716	MAGLIOS R-1MD	0.0416	0.04	mg/L	104.1	70-130	%	✓	Water	Total Metals (Undigested)
MS	Titanium (Ti)-Total	455716	NEW BRIDGE R-1MD	0.0386	0.04	mg/L	96.4	70-130	%	✓	Water	Total Metals (Undigested)
MS	Uranium (U)-Total	455716	MAGLIOS R-1MD	0.00459	0.00461	mg/L	99.6	70-130	%	✓	Water	Total Metals (Undigested)

MS	Uranium (U)-Total	455716	NEW BRIDGE R-1MD	0.00455	0.0046	mg/L	99.0	70-130	%	✓	Water	Total Metals (Undigested)
MS	Vanadium (V)-Total	455716	MAGLIOS R-1MD	0.102	0.1	mg/L	102.1	70-130	%	✓	Water	Total Metals (Undigested)
MS	Vanadium (V)-Total	455716	NEW BRIDGE R-1MD	0.0990	0.1	mg/L	98.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Zinc (Zn)-Total	455716	MAGLIOS R-1MD	0.387	0.402	mg/L	96.2	70-130	%	✓	Water	Total Metals (Undigested)
MS	Zinc (Zn)-Total	455716	NEW BRIDGE R-1MD	0.366	0.401	mg/L	91.2	70-130	%	✓	Water	Total Metals (Undigested)
MS	Zirconium (Zr)-Total	455716	MAGLIOS R-1MD	0.0392	0.04	mg/L	98.1	70-130	%	✓	Water	Total Metals (Undigested)
MS	Zirconium (Zr)-Total	455716	NEW BRIDGE R-1MD	0.0389	0.04	mg/L	97.3	70-130	%	✓	Water	Total Metals (Undigested)
Dissolved Metals (Water)												
MS	Aluminum (Al)-Dissolved	455711	MAGLIOS L-1MD	0.200	0.205	mg/L	97.4	70-130	%	✓	Water	Dissolved Metals
MS	Antimony (Sb)-Dissolved	455711	MAGLIOS L-1MD	0.0196	0.0201	mg/L	97.4	70-130	%	✓	Water	Dissolved Metals
MS	Arsenic (As)-Dissolved	455711	MAGLIOS L-1MD	0.0208	0.0203	mg/L	102.3	70-130	%	✓	Water	Dissolved Metals
MS	Beryllium (Be)-Dissolved	455711	MAGLIOS L-1MD	0.0391	0.04	mg/L	97.7	70-130	%	✓	Water	Dissolved Metals
MS	Bismuth (Bi)-Dissolved	455711	MAGLIOS L-1MD	0.00906	0.01	mg/L	90.6	70-130	%	✓	Water	Dissolved Metals
MS	Boron (B)-Dissolved	455711	MAGLIOS L-1MD	0.0932	0.1	mg/L	93.2	70-130	%	✓	Water	Dissolved Metals
MS	Cadmium (Cd)-Dissolved	455711	MAGLIOS L-1MD	0.00395	0.00403	mg/L	98.0	70-130	%	✓	Water	Dissolved Metals
MS	Calcium (Ca)-Dissolved	455711	MAGLIOS L-1MD	72.8	71	mg/L	103.6	70-130	%	✓	Water	Dissolved Metals
MS	Chromium (Cr)-Dissolved	455711	MAGLIOS L-1MD	0.0376	0.04	mg/L	94.1	70-130	%	✓	Water	Dissolved Metals
MS	Cobalt (Co)-Dissolved	455711	MAGLIOS L-1MD	0.0197	0.02	mg/L	98.4	70-130	%	✓	Water	Dissolved Metals
MS	Copper (Cu)-Dissolved	455711	MAGLIOS L-1MD	0.0200	0.0204	mg/L	98.3	70-130	%	✓	Water	Dissolved Metals
MS	Iron (Fe)-Dissolved	455711	MAGLIOS L-1MD	1.94	2	mg/L	96.8	70-130	%	✓	Water	Dissolved Metals
MS	Lead (Pb)-Dissolved	455711	MAGLIOS L-1MD	0.0193	0.02	mg/L	96.4	70-130	%	✓	Water	Dissolved Metals
MS	Lithium (Li)-Dissolved	455711	MAGLIOS L-1MD	0.0967	0.101	mg/L	95.4	70-130	%	✓	Water	Dissolved Metals
MS	Magnesium (Mg)-Dissolved	455711	MAGLIOS L-1MD	53.7	54.9	mg/L	97.6	70-130	%	✓	Water	Dissolved Metals
MS	Manganese (Mn)-Dissolved	455711	MAGLIOS L-1MD	0.0209	0.0215	mg/L	96.8	70-130	%	✓	Water	Dissolved Metals
MS	Mercury (Hg)-Dissolved	457538	BIRCH BANK R-SH	0.00466	0.005	ug/L	93.2	70-130	%	✓	Water	Dissolved Metals
MS	Mercury (Hg)-Dissolved	457538	NEW BRIDGE L-SH	0.00420	0.005	ug/L	84.0	70-130	%	✓	Water	Dissolved Metals
MS	Molybdenum (Mo)-Dissolved	455711	MAGLIOS L-1MD	0.0197	0.0206	mg/L	95.5	70-130	%	✓	Water	Dissolved Metals
MS	Nickel (Ni)-Dissolved	455711	MAGLIOS L-1MD	0.0389	0.0402	mg/L	96.7	70-130	%	✓	Water	Dissolved Metals
MS	Phosphorus (P)-Dissolved	455711	MAGLIOS L-1MD	2.44	2.5	mg/L	97.5	70-130	%	✓	Water	Dissolved Metals
MS	Potassium (K)-Dissolved	455711	MAGLIOS L-1MD	51.5	50.7	mg/L	101.8	70-130	%	✓	Water	Dissolved Metals
MS	Selenium (Se)-Dissolved	455711	MAGLIOS L-1MD	0.0411	0.0403	mg/L	101.9	70-130	%	✓	Water	Dissolved Metals
MS	Silver (Ag)-Dissolved	455711	MAGLIOS L-1MD	0.00389	0.004	mg/L	97.3	70-130	%	✓	Water	Dissolved Metals
MS	Thallium (Tl)-Dissolved	455711	MAGLIOS L-1MD	0.00390	0.00403	mg/L	96.7	70-130	%	✓	Water	Dissolved Metals
MS	Tin (Sn)-Dissolved	455711	MAGLIOS L-1MD	0.0197	0.02	mg/L	98.5	70-130	%	✓	Water	Dissolved Metals
MS	Titanium (Ti)-Dissolved	455711	MAGLIOS L-1MD	0.0395	0.04	mg/L	98.9	70-130	%	✓	Water	Dissolved Metals
MS	Uranium (U)-Dissolved	455711	MAGLIOS L-1MD	0.00448	0.00459	mg/L	97.1	70-130	%	✓	Water	Dissolved Metals
MS	Vanadium (V)-Dissolved	455711	MAGLIOS L-1MD	0.0996	0.1	mg/L	99.5	70-130	%	✓	Water	Dissolved Metals
MS	Zinc (Zn)-Dissolved	455711	MAGLIOS L-1MD	0.371	0.402	mg/L	92.4	70-130	%	✓	Water	Dissolved Metals
MS	Zirconium (Zr)-Dissolved	455711	MAGLIOS L-1MD	0.0384	0.04	mg/L	96.0	70-130	%	✓	Water	Dissolved Metals
Aggregate Organics (Water)												
MS	COD	457677	MAGLIOS R-SH	545	500	mg/L	109.0	75-125	%	✓	Water	Aggregate Organics
MS	COD	459163	OLD BRIDGE R-1MD	522	500	mg/L	104.5	75-125	%	✓	Water	Aggregate Organics

Qualifier Legend

MB-LOR	Method Blank exceeds ALS DQO. Limits of Reporting have been adjusted for samples with positive hits below 5x blank level.

Evaluation Legend

✓	QC Lot met ALS Data Quality Objectives
✘	QC Lot did not meet ALS Data Quality Objectives

Duplicates L1748512

Job Reference 15-1438
Report To Kyle Hawes, ECOSCAPE ENVIRONMENTAL CONSULTANTS LTD.
Date Received 24-Mar-2016 10:00
Report Date 18-Apr-2016 15:58
Report Version 1

ALS ID	Reference	Client Sample ID	QC Type	QC Lot #	Analyte	Sample Result	Duplicate Result	Detection Limit	Units	RPD	RPD Limit	Diff	Diff Limit	Qual	Eval	Matrix	Class
Physical Tests (Water)																	
WG2282525-25	L1748512-7	DUPLICATE	DUP	459585	Conductivity	188	187	2.0	uS/cm	0.3	10	-			✓	Water	Physical Tests
WG2282525-25	L1748512-7	DUPLICATE	DUP	459585	pH	8.03	8.03	0.10	pH	-		0.00	0.3		✓	Water	Physical Tests
Anions and Nutrients (Water)																	
WG2282525-25	L1748512-7	DUPLICATE	DUP	459585	Alkalinity, Total (as CaCO3)	68.5	68.4	1.0	mg/L	0.1	20	-			✓	Water	Anions and Nutrients
WG2281290-12	L1748512-1	BIRCHBANK R-SH	DUP	459511	Bromide (Br)	<0.050	<0.050	0.050	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2281290-12	L1748512-1	BIRCHBANK R-SH	DUP	459511	Chloride (Cl)	1.22	1.22	0.10	mg/L	0.3	20	-			✓	Water	Anions and Nutrients
WG2281290-12	L1748512-1	BIRCHBANK R-SH	DUP	459511	Fluoride (F)	0.075	0.075	0.020	mg/L	0.6	20	-			✓	Water	Anions and Nutrients
WG2281290-12	L1748512-1	BIRCHBANK R-SH	DUP	459511	Nitrate (as N)	0.157	0.158	0.0050	mg/L	0.2	20	-			✓	Water	Anions and Nutrients
WG2281290-12	L1748512-1	BIRCHBANK R-SH	DUP	459511	Nitrite (as N)	<0.0010	<0.0010	0.0010	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2284131-3	L1748512-2	STONEY CK R-SH	DUP	460354	Total Kjeldahl Nitrogen	0.067	0.067	0.050	mg/L	0.5	20	-			✓	Water	Anions and Nutrients
WG2281266-11	L1748512-2	STONEY CK R-SH	DUP	458314	Phosphorus (P)-Total Dissolved	<0.0020	<0.0020	0.0020	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2282362-3	L1748512-1	BIRCHBANK R-SH	DUP	459055	Phosphorus (P)-Total	0.0022	<0.0020	0.0020	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2281290-12	L1748512-1	BIRCHBANK R-SH	DUP	459511	Sulfate (SO4)	12.8	12.8	0.050	mg/L	0	20	-			✓	Water	Anions and Nutrients
Total Metals (Water)																	
WG2282784-9	L1748512-4	MAGLIOS R-SH	DUP	459283	Mercury (Hg)-Total	<0.00050	<0.00050	0.00050	ug/L	N/A	20	-			✓	Water	Total Metals
Dissolved Metals (Water)																	
WG2282156-7	L1748512-8	FIELD BLANK	DUP	458774	Aluminum (Al)-Dissolved	<0.00050	<0.00050	0.00050	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2282156-7	L1748512-8	FIELD BLANK	DUP	458774	Antimony (Sb)-Dissolved	<0.000020	<0.000020	0.000020	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2282156-7	L1748512-8	FIELD BLANK	DUP	458774	Arsenic (As)-Dissolved	<0.000020	<0.000020	0.000020	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2282156-7	L1748512-8	FIELD BLANK	DUP	458774	Barium (Ba)-Dissolved	<0.000020	<0.000020	0.000020	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2282156-7	L1748512-8	FIELD BLANK	DUP	458774	Beryllium (Be)-Dissolved	<0.000010	<0.000010	0.000010	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2282156-7	L1748512-8	FIELD BLANK	DUP	458774	Bismuth (Bi)-Dissolved	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2282156-7	L1748512-8	FIELD BLANK	DUP	458774	Boron (B)-Dissolved	<0.010	<0.010	0.010	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2282156-7	L1748512-8	FIELD BLANK	DUP	458774	Cadmium (Cd)-Dissolved	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2282156-7	L1748512-8	FIELD BLANK	DUP	458774	Calcium (Ca)-Dissolved	<0.030	<0.030	0.030	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2282156-7	L1748512-8	FIELD BLANK	DUP	458774	Chromium (Cr)-Dissolved	<0.00010	<0.00010	0.00010	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2282156-7	L1748512-8	FIELD BLANK	DUP	458774	Cobalt (Co)-Dissolved	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2282156-7	L1748512-8	FIELD BLANK	DUP	458774	Copper (Cu)-Dissolved	<0.00010	<0.00010	0.00010	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2282156-7	L1748512-8	FIELD BLANK	DUP	458774	Iron (Fe)-Dissolved	<0.0010	<0.0010	0.0010	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2282156-7	L1748512-8	FIELD BLANK	DUP	458774	Lead (Pb)-Dissolved	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2282156-7	L1748512-8	FIELD BLANK	DUP	458774	Lithium (Li)-Dissolved	<0.00050	<0.00050	0.00050	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2282156-7	L1748512-8	FIELD BLANK	DUP	458774	Magnesium (Mg)-Dissolved	<0.030	<0.030	0.030	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2282156-7	L1748512-8	FIELD BLANK	DUP	458774	Manganese (Mn)-Dissolved	<0.000050	<0.000050	0.000050	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2282156-7	L1748512-8	FIELD BLANK	DUP	458774	Molybdenum (Mo)-Dissolved	<0.000050	<0.000050	0.000050	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2282156-7	L1748512-8	FIELD BLANK	DUP	458774	Nickel (Ni)-Dissolved	<0.000050	<0.000050	0.000050	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2282156-7	L1748512-8	FIELD BLANK	DUP	458774	Phosphorus (P)-Dissolved	<0.050	<0.050	0.050	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2282156-7	L1748512-8	FIELD BLANK	DUP	458774	Potassium (K)-Dissolved	<0.050	<0.050	0.050	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2282156-7	L1748512-8	FIELD BLANK	DUP	458774	Selenium (Se)-Dissolved	<0.000040	<0.000040	0.000040	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2282156-7	L1748512-8	FIELD BLANK	DUP	458774	Silicon (Si)-Dissolved	<0.050	<0.050	0.050	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2282156-7	L1748512-8	FIELD BLANK	DUP	458774	Silver (Ag)-Dissolved	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2282156-7	L1748512-8	FIELD BLANK	DUP	458774	Sodium (Na)-Dissolved	<0.010	<0.010	0.010	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2282156-7	L1748512-8	FIELD BLANK	DUP	458774	Strontium (Sr)-Dissolved	<0.00010	<0.00010	0.00010	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2282156-7	L1748512-8	FIELD BLANK	DUP	458774	Thallium (Tl)-Dissolved	<0.0000020	<0.0000020	0.0000020	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2282156-7	L1748512-8	FIELD BLANK	DUP	458774	Tin (Sn)-Dissolved	<0.000010	<0.000010	0.000010	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2282156-7	L1748512-8	FIELD BLANK	DUP	458774	Titanium (Ti)-Dissolved	<0.00030	<0.00030	0.00030	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2282156-7	L1748512-8	FIELD BLANK	DUP	458774	Uranium (U)-Dissolved	<0.0000020	<0.0000020	0.0000020	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2282156-7	L1748512-8	FIELD BLANK	DUP	458774	Vanadium (V)-Dissolved	<0.000050	<0.000050	0.000050	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2282156-7	L1748512-8	FIELD BLANK	DUP	458774	Zinc (Zn)-Dissolved	<0.00050	<0.00050	0.00050	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2282156-7	L1748512-8	FIELD BLANK	DUP	458774	Zirconium (Zr)-Dissolved	<0.00010	<0.00010	0.00010	mg/L	N/A	20	-			✓	Water	Dissolved Metals
Aggregate Organics (Water)																	
WG2281235-3	L1748512-1	BIRCHBANK R-SH	DUP	458019	BOD	<2.0	<2.0	2.0	mg/L	N/A	20	-			✓	Water	Aggregate Organics
WG2285452-2	L1748512-2	STONEY CK R-SH	DUP	461423	COD	<20	<20	20	mg/L	N/A	20	-			✓	Water	Aggregate Organics

Evaluation Legend
✓ QC Lot met ALS Data Quality Objectives

Quality Control L1748512

Job Reference 15-1438
Report To Kyle Hawes, ECOSCAPE ENVIRONMENTAL CONSULTANTS LTD.
Date Received 24-Mar-2016 10:00
Report Date 18-Apr-2016 15:58
Report Version 1

QC Type	Analyte	QC Lot #	ALS QC ID	Result	Target	Units	%	Limit	Units	Qual	Eval	Matrix	Class
Physical Tests (Water)													
CRM	Conductivity	459582	WG2282525-9	151	147	uS/cm	102.5	90-110	%		✓	Water	Physical Tests
CRM	Conductivity	459585	WG2282525-24	152	147	uS/cm	103.7	90-110	%		✓	Water	Physical Tests
CRM	pH	459582	WG2282525-7	6.99	7	pH	6.99	6.9-7.1	pH		✓	Water	Physical Tests
CRM	pH	459585	WG2282525-22	6.99	7	pH	6.99	6.9-7.1	pH		✓	Water	Physical Tests
CRM	Turbidity	458130	WG2281375-2	39.6	40	NTU	99.0	85-115	%		✓	Water	Physical Tests
CRM	Turbidity	458130	WG2281375-5	40.3	40	NTU	100.8	85-115	%		✓	Water	Physical Tests
CRM	Turbidity	458130	WG2281375-8	39.6	40	NTU	99.0	85-115	%		✓	Water	Physical Tests
CRM	Turbidity	458130	WG2281375-11	39.8	40	NTU	99.5	85-115	%		✓	Water	Physical Tests
CRM	Turbidity	458130	WG2281375-14	39.5	40	NTU	98.8	85-115	%		✓	Water	Physical Tests
Anions and Nutrients (Water)													
CRM	Alkalinity, Total (as CaCO3)	459582	WG2282525-8	485	500	mg/L	97.0	85-115	%		✓	Water	Anions and Nutrients
CRM	Alkalinity, Total (as CaCO3)	459585	WG2282525-23	493	500	mg/L	98.6	85-115	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total Dissolved	458313	WG2281266-6	6.86	7.17	mg/L	95.6	80-120	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total Dissolved	458314	WG2281266-10	7.35	7.17	mg/L	102.6	80-120	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total	459055	WG2282362-2	7.29	7.17	mg/L	101.6	80-120	%		✓	Water	Anions and Nutrients
Physical Tests (Water)													
LCS	Total Suspended Solids	458046	WG2281246-2	79.1	75	mg/L	105.5	85-115	%		✓	Water	Physical Tests
LCS	Total Suspended Solids	458047	WG2281246-5	75.6	75	mg/L	100.8	85-115	%		✓	Water	Physical Tests
LCS	Total Dissolved Solids	459136	WG2282293-2	435	425	mg/L	102.4	85-115	%		✓	Water	Physical Tests
Anions and Nutrients (Water)													
LCS	Ammonia, Total (as N)	461252	WG2285087-6	0.128	0.12	mg/L	106.3	85-115	%		✓	Water	Anions and Nutrients
LCS	Ammonia, Total (as N)	461660	WG2285213-2	0.120	0.12	mg/L	99.9	85-115	%		✓	Water	Anions and Nutrients
LCS	Bromide (Br)	459511	WG2281290-2	0.531	0.5	mg/L	106.1	85-115	%		✓	Water	Anions and Nutrients
LCS	Bromide (Br)	459511	WG2281290-18	0.523	0.5	mg/L	104.7	85-115	%		✓	Water	Anions and Nutrients
LCS	Chloride (Cl)	459511	WG2281290-2	102	100	mg/L	102.3	90-110	%		✓	Water	Anions and Nutrients
LCS	Chloride (Cl)	459511	WG2281290-18	102	100	mg/L	102.4	90-110	%		✓	Water	Anions and Nutrients
LCS	Fluoride (F)	459511	WG2281290-2	1.02	1	mg/L	101.9	90-110	%		✓	Water	Anions and Nutrients
LCS	Fluoride (F)	459511	WG2281290-18	1.03	1	mg/L	102.6	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrate (as N)	459511	WG2281290-2	2.56	2.5	mg/L	102.4	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrate (as N)	459511	WG2281290-18	2.57	2.5	mg/L	102.6	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrite (as N)	459511	WG2281290-2	0.506	0.5	mg/L	101.2	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrite (as N)	459511	WG2281290-18	0.508	0.5	mg/L	101.6	90-110	%		✓	Water	Anions and Nutrients
LCS	Total Kjeldahl Nitrogen	460354	WG2284131-2	0.989	1	mg/L	98.9	75-125	%		✓	Water	Anions and Nutrients
LCS	Total Kjeldahl Nitrogen	460354	WG2284131-6	0.996	1	mg/L	99.6	75-125	%		✓	Water	Anions and Nutrients
LCS	Total Kjeldahl Nitrogen	460354	WG2284131-12	0.992	1	mg/L	99.2	75-125	%		✓	Water	Anions and Nutrients
LCS	Total Kjeldahl Nitrogen	460354	WG2284131-16	0.974	1	mg/L	97.4	75-125	%		✓	Water	Anions and Nutrients
LCS	Total Kjeldahl Nitrogen	460354	WG2284131-20	0.991	1	mg/L	99.1	75-125	%		✓	Water	Anions and Nutrients
LCS	Sulfate (SO4)	459511	WG2281290-2	103	100	mg/L	102.6	90-110	%		✓	Water	Anions and Nutrients
LCS	Sulfate (SO4)	459511	WG2281290-18	103	100	mg/L	102.7	90-110	%		✓	Water	Anions and Nutrients
Organic / Inorganic Carbon (Water)													
LCS	Total Organic Carbon	461073	WG2284047-1	8.64	8.57	mg/L	100.9	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	461073	WG2284047-5	8.27	8.57	mg/L	96.5	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	461073	WG2284047-9	8.56	8.57	mg/L	99.9	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	461212	WG2285030-1	8.65	8.57	mg/L	101.0	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	461212	WG2285030-5	8.66	8.57	mg/L	101.0	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	461073	WG2284047-13	8.81	8.57	mg/L	102.8	80-120	%		✓	Water	Organic / Inorganic Carbon
Total Metals (Water)													
LCS	Mercury (Hg)-Total	459283	WG2282784-3	0.00497	0.005	ug/L	99.4	80-120	%		✓	Water	Total Metals
LCS	Mercury (Hg)-Total	459283	WG2282784-4	0.00501	0.005	ug/L	100.2	80-120	%		✓	Water	Total Metals
Total Metals (Undigested) (Water)													
LCS	Aluminum (Al)-Total	457587	WG2280604-2	1.96	2	mg/L	98.2	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Antimony (Sb)-Total	457587	WG2280604-2	1.01	1	mg/L	101.2	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Arsenic (As)-Total	457587	WG2280604-2	0.961	1	mg/L	96.1	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Barium (Ba)-Total	457587	WG2280604-2	0.245	0.25	mg/L	98.0	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Beryllium (Be)-Total	457587	WG2280604-2	0.0961	0.1	mg/L	96.1	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Bismuth (Bi)-Total	457587	WG2280604-2	1.00	1	mg/L	100.1	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Boron (B)-Total	457587	WG2280604-2	0.869	1	mg/L	86.9	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Cadmium (Cd)-Total	457587	WG2280604-2	0.0961	0.1	mg/L	96.1	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Calcium (Ca)-Total	457587	WG2280604-2	52.7	50	mg/L	105.4	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Chromium (Cr)-Total	457587	WG2280604-2	0.249	0.25	mg/L	99.8	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Cobalt (Co)-Total	457587	WG2280604-2	0.247	0.25	mg/L	98.9	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Copper (Cu)-Total	457587	WG2280604-2	0.243	0.25	mg/L	97.3	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Iron (Fe)-Total	457587	WG2280604-2	0.950	1	mg/L	95.0	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Lead (Pb)-Total	457587	WG2280604-2	0.493	0.5	mg/L	98.5	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Lithium (Li)-Total	457587	WG2280604-2	0.238	0.25	mg/L	95.2	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Magnesium (Mg)-Total	457587	WG2280604-2	51.1	50	mg/L	102.1	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Manganese (Mn)-Total	457587	WG2280604-2	0.261	0.25	mg/L	104.6	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Molybdenum (Mo)-Total	457587	WG2280604-2	0.243	0.25	mg/L	97.2	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Nickel (Ni)-Total	457587	WG2280604-2	0.493	0.5	mg/L	98.5	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Phosphorus (P)-Total	457587	WG2280604-2	2.55	2.5	mg/L	101.9	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Potassium (K)-Total	457587	WG2280604-2	50.4	50	mg/L	100.8	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Selenium (Se)-Total	457587	WG2280604-2	1.01	1	mg/L	101.0	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Silicon (Si)-Total	457587	WG2280604-2	1.06	1	mg/L	105.9	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Silver (Ag)-Total	457587	WG2280604-2	0.0965	0.1	mg/L	96.5	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Sodium (Na)-Total	457587	WG2280604-2	49.7	50	mg/L	99.4	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Strontium (Sr)-Total	457587	WG2280604-2	0.237	0.25	mg/L	94.7	80-120	%		✓	Water	Total Metals (Undigested)

LCS	Thallium (Tl)-Total	457587	WG2280604-2	1.00	1	mg/L	100.2	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Tin (Sn)-Total	457587	WG2280604-2	0.489	0.5	mg/L	97.7	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Titanium (Ti)-Total	457587	WG2280604-2	0.228	0.25	mg/L	91.1	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Uranium (U)-Total	457587	WG2280604-2	0.00486	0.005	mg/L	97.2	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Vanadium (V)-Total	457587	WG2280604-2	0.498	0.5	mg/L	99.6	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Zinc (Zn)-Total	457587	WG2280604-2	0.474	0.5	mg/L	94.8	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Zirconium (Zr)-Total	457587	WG2280604-2	0.0907	0.1	mg/L	90.7	80-120	%	✓	Water	Total Metals (Undigested)
Dissolved Metals (Water)												
LCS	Aluminum (Al)-Dissolved	458774	WG2282156-6	1.96	2	mg/L	98.1	80-120	%	✓	Water	Dissolved Metals
LCS	Antimony (Sb)-Dissolved	458774	WG2282156-6	0.987	1	mg/L	98.7	80-120	%	✓	Water	Dissolved Metals
LCS	Arsenic (As)-Dissolved	458774	WG2282156-6	1.01	1	mg/L	100.9	80-120	%	✓	Water	Dissolved Metals
LCS	Barium (Ba)-Dissolved	458774	WG2282156-6	0.261	0.25	mg/L	104.3	80-120	%	✓	Water	Dissolved Metals
LCS	Beryllium (Be)-Dissolved	458774	WG2282156-6	0.0973	0.1	mg/L	97.3	80-120	%	✓	Water	Dissolved Metals
LCS	Bismuth (Bi)-Dissolved	458774	WG2282156-6	0.979	1	mg/L	97.9	80-120	%	✓	Water	Dissolved Metals
LCS	Boron (B)-Dissolved	458774	WG2282156-6	0.888	1	mg/L	88.8	80-120	%	✓	Water	Dissolved Metals
LCS	Cadmium (Cd)-Dissolved	458774	WG2282156-6	0.0971	0.1	mg/L	97.1	80-120	%	✓	Water	Dissolved Metals
LCS	Calcium (Ca)-Dissolved	457588	WG2280607-2	52.4	50	mg/L	104.9	80-120	%	✓	Water	Dissolved Metals
LCS	Chromium (Cr)-Dissolved	458774	WG2282156-6	0.246	0.25	mg/L	98.5	80-120	%	✓	Water	Dissolved Metals
LCS	Cobalt (Co)-Dissolved	458774	WG2282156-6	0.245	0.25	mg/L	98.0	80-120	%	✓	Water	Dissolved Metals
LCS	Copper (Cu)-Dissolved	458774	WG2282156-6	0.243	0.25	mg/L	97.2	80-120	%	✓	Water	Dissolved Metals
LCS	Iron (Fe)-Dissolved	458774	WG2282156-6	0.977	1	mg/L	97.7	80-120	%	✓	Water	Dissolved Metals
LCS	Lead (Pb)-Dissolved	458774	WG2282156-6	0.481	0.5	mg/L	96.2	80-120	%	✓	Water	Dissolved Metals
LCS	Lithium (Li)-Dissolved	458774	WG2282156-6	0.247	0.25	mg/L	98.7	80-120	%	✓	Water	Dissolved Metals
LCS	Magnesium (Mg)-Dissolved	457588	WG2280607-2	50.9	50	mg/L	101.7	80-120	%	✓	Water	Dissolved Metals
LCS	Manganese (Mn)-Dissolved	458774	WG2282156-6	0.247	0.25	mg/L	98.7	80-120	%	✓	Water	Dissolved Metals
LCS	Mercury (Hg)-Dissolved	458040	WG2281253-2	0.00497	0.005	ug/L	99.4	80-120	%	✓	Water	Dissolved Metals
LCS	Molybdenum (Mo)-Dissolved	458774	WG2282156-6	0.246	0.25	mg/L	98.4	80-120	%	✓	Water	Dissolved Metals
LCS	Nickel (Ni)-Dissolved	458774	WG2282156-6	0.490	0.5	mg/L	98.0	80-120	%	✓	Water	Dissolved Metals
LCS	Phosphorus (P)-Dissolved	457588	WG2280607-2	2.56	2.5	mg/L	102.2	80-120	%	✓	Water	Dissolved Metals
LCS	Potassium (K)-Dissolved	457588	WG2280607-2	50.2	50	mg/L	100.3	80-120	%	✓	Water	Dissolved Metals
LCS	Selenium (Se)-Dissolved	458774	WG2282156-6	0.996	1	mg/L	99.6	80-120	%	✓	Water	Dissolved Metals
LCS	Silicon (Si)-Dissolved	457588	WG2280607-2	1.05	1	mg/L	105.4	80-120	%	✓	Water	Dissolved Metals
LCS	Silver (Ag)-Dissolved	458774	WG2282156-6	0.0962	0.1	mg/L	96.2	80-120	%	✓	Water	Dissolved Metals
LCS	Sodium (Na)-Dissolved	458774	WG2282156-6	49.0	50	mg/L	98.0	80-120	%	✓	Water	Dissolved Metals
LCS	Strontium (Sr)-Dissolved	458774	WG2282156-6	0.242	0.25	mg/L	96.8	80-120	%	✓	Water	Dissolved Metals
LCS	Thallium (Tl)-Dissolved	458774	WG2282156-6	0.955	1	mg/L	95.5	80-120	%	✓	Water	Dissolved Metals
LCS	Tin (Sn)-Dissolved	458774	WG2282156-6	0.490	0.5	mg/L	98.0	80-120	%	✓	Water	Dissolved Metals
LCS	Titanium (Ti)-Dissolved	458774	WG2282156-6	0.243	0.25	mg/L	97.1	80-120	%	✓	Water	Dissolved Metals
LCS	Uranium (U)-Dissolved	458774	WG2282156-6	0.00489	0.005	mg/L	97.8	80-120	%	✓	Water	Dissolved Metals
LCS	Vanadium (V)-Dissolved	458774	WG2282156-6	0.493	0.5	mg/L	98.5	80-120	%	✓	Water	Dissolved Metals
LCS	Zinc (Zn)-Dissolved	458774	WG2282156-6	0.461	0.5	mg/L	92.1	80-120	%	✓	Water	Dissolved Metals
LCS	Zirconium (Zr)-Dissolved	458774	WG2282156-6	0.0947	0.1	mg/L	94.7	80-120	%	✓	Water	Dissolved Metals
Aggregate Organics (Water)												
LCS	BOD	458019	WG2281235-2	193	198	mg/L	97.6	85-115	%	✓	Water	Aggregate Organics
LCS	BOD	458019	WG2281235-6	209	198	mg/L	105.8	85-115	%	✓	Water	Aggregate Organics
LCS	COD	461423	WG2285452-3	736	750	mg/L	98.1	85-115	%	✓	Water	Aggregate Organics
LCS	COD	461423	WG2285452-6	739	750	mg/L	98.5	85-115	%	✓	Water	Aggregate Organics
Physical Tests (Water)												
MB	Conductivity	459582	WG2282525-6	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Conductivity	459585	WG2282525-21	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Total Suspended Solids	458046	WG2281246-1	<3.0		mg/L	-	<3.0	mg/L	✓	Water	Physical Tests
MB	Total Suspended Solids	458047	WG2281246-4	<3.0		mg/L	-	<3.0	mg/L	✓	Water	Physical Tests
MB	Total Dissolved Solids	459136	WG2282293-1	<10		mg/L	-	<10	mg/L	✓	Water	Physical Tests
MB	Turbidity	458130	WG2281375-1	<0.10		NTU	-	<0.10	NTU	✓	Water	Physical Tests
MB	Turbidity	458130	WG2281375-4	<0.10		NTU	-	<0.10	NTU	✓	Water	Physical Tests
MB	Turbidity	458130	WG2281375-7	<0.10		NTU	-	<0.10	NTU	✓	Water	Physical Tests
MB	Turbidity	458130	WG2281375-10	<0.10		NTU	-	<0.10	NTU	✓	Water	Physical Tests
MB	Turbidity	458130	WG2281375-13	<0.10		NTU	-	<0.10	NTU	✓	Water	Physical Tests
Anions and Nutrients (Water)												
MB	Alkalinity, Total (as CaCO3)	459585	WG2282525-21	<1.0		mg/L	-	<1.0	mg/L	✓	Water	Anions and Nutrients
MB	Ammonia, Total (as N)	461252	WG2285087-5	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Ammonia, Total (as N)	461660	WG2285213-1	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	459511	WG2281290-1	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	459511	WG2281290-4	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	459511	WG2281290-7	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	459511	WG2281290-10	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	459511	WG2281290-13	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	459511	WG2281290-16	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	459511	WG2281290-1	<0.10		mg/L	-	<0.10	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	459511	WG2281290-4	<0.10		mg/L	-	<0.10	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	459511	WG2281290-7	<0.10		mg/L	-	<0.10	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	459511	WG2281290-10	<0.10		mg/L	-	<0.10	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	459511	WG2281290-13	<0.10		mg/L	-	<0.10	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	459511	WG2281290-16	<0.10		mg/L	-	<0.10	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	459511	WG2281290-1	<0.020		mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	459511	WG2281290-4	<0.020		mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	459511	WG2281290-7	<0.020		mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	459511	WG2281290-10	<0.020		mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	459511	WG2281290-13	<0.020		mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	459511	WG2281290-16	<0.020		mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	459511	WG2281290-1	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	459511	WG2281290-4	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	459511	WG2281290-7	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	459511	WG2281290-10	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	459511	WG2281290-13	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	459511	WG2281290-16	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	459511	WG2281290-1	<0.0010		mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	459511	WG2281290-4	<0.0010		mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	459511	WG2281290-7	<0.0010		mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	459511	WG2281290-10	<0.0010		mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	459511	WG2281290-13	<0.0010		mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients

MB	Nitrite (as N)	459511	WG2281290-16	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Total Kjeldahl Nitrogen	460354	WG2284131-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Total Kjeldahl Nitrogen	460354	WG2284131-5	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Total Kjeldahl Nitrogen	460354	WG2284131-11	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Total Kjeldahl Nitrogen	460354	WG2284131-15	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Total Kjeldahl Nitrogen	460354	WG2284131-19	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total Dissolved	458313	WG2281266-5	<0.0020	mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total Dissolved	458314	WG2281266-9	<0.0020	mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total	459055	WG2282362-1	<0.0020	mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	459511	WG2281290-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	459511	WG2281290-4	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	459511	WG2281290-7	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	459511	WG2281290-10	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	459511	WG2281290-13	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	459511	WG2281290-16	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
Organic / Inorganic Carbon (Water)											
MB	Total Organic Carbon	461073	WG2284047-4	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	461073	WG2284047-8	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	461212	WG2285030-4	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	461073	WG2284047-12	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
Total Metals (Water)											
MB	Mercury (Hg)-Total	459283	WG2282784-1	<0.00050	ug/L	-	<0.00050	ug/L	✓	Water	Total Metals
MB	Mercury (Hg)-Total	459283	WG2282784-2	<0.00050	ug/L	-	<0.00050	ug/L	✓	Water	Total Metals
Total Metals (Undigested) (Water)											
MB	Aluminum (Al)-Total	457587	WG2280604-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Total Metals (Undigested)
MB	Antimony (Sb)-Total	457587	WG2280604-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Arsenic (As)-Total	457587	WG2280604-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Barium (Ba)-Total	457587	WG2280604-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Beryllium (Be)-Total	457587	WG2280604-1	<0.000010	mg/L	-	<0.000010	mg/L	✓	Water	Total Metals (Undigested)
MB	Bismuth (Bi)-Total	457587	WG2280604-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Boron (B)-Total	457587	WG2280604-1	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Total Metals (Undigested)
MB	Cadmium (Cd)-Total	457587	WG2280604-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Calcium (Ca)-Total	457587	WG2280604-1	<0.030	mg/L	-	<0.030	mg/L	✓	Water	Total Metals (Undigested)
MB	Chromium (Cr)-Total	457587	WG2280604-1	<0.00010	mg/L	-	<0.00010	mg/L	✓	Water	Total Metals (Undigested)
MB	Cobalt (Co)-Total	457587	WG2280604-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Copper (Cu)-Total	457587	WG2280604-1	<0.00010	mg/L	-	<0.00010	mg/L	✓	Water	Total Metals (Undigested)
MB	Iron (Fe)-Total	457587	WG2280604-1	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Total Metals (Undigested)
MB	Lead (Pb)-Total	457587	WG2280604-1	<0.000010	mg/L	-	<0.000010	mg/L	✓	Water	Total Metals (Undigested)
MB	Lithium (Li)-Total	457587	WG2280604-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Total Metals (Undigested)
MB	Magnesium (Mg)-Total	457587	WG2280604-1	<0.030	mg/L	-	<0.030	mg/L	✓	Water	Total Metals (Undigested)
MB	Manganese (Mn)-Total	457587	WG2280604-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Molybdenum (Mo)-Total	457587	WG2280604-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Nickel (Ni)-Total	457587	WG2280604-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Phosphorus (P)-Total	457587	WG2280604-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Total Metals (Undigested)
MB	Potassium (K)-Total	457587	WG2280604-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Total Metals (Undigested)
MB	Selenium (Se)-Total	457587	WG2280604-1	<0.000040	mg/L	-	<0.000040	mg/L	✓	Water	Total Metals (Undigested)
MB	Silicon (Si)-Total	457587	WG2280604-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Total Metals (Undigested)
MB	Silver (Ag)-Total	457587	WG2280604-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Sodium (Na)-Total	457587	WG2280604-1	<0.010	mg/L	-	<0.010	mg/L	✓	Water	Total Metals (Undigested)
MB	Strontium (Sr)-Total	457587	WG2280604-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Thallium (Tl)-Total	457587	WG2280604-1	<0.0000020	mg/L	-	<0.0000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Tin (Sn)-Total	457587	WG2280604-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Titanium (Ti)-Total	457587	WG2280604-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Total Metals (Undigested)
MB	Uranium (U)-Total	457587	WG2280604-1	<0.0000020	mg/L	-	<0.0000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Vanadium (V)-Total	457587	WG2280604-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Zinc (Zn)-Total	457587	WG2280604-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Total Metals (Undigested)
MB	Zirconium (Zr)-Total	457587	WG2280604-1	<0.00010	mg/L	-	<0.00010	mg/L	✓	Water	Total Metals (Undigested)
Dissolved Metals (Water)											
MB	Aluminum (Al)-Dissolved	458774	WG2282156-5	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Dissolved Metals
MB	Antimony (Sb)-Dissolved	458774	WG2282156-5	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Dissolved Metals
MB	Arsenic (As)-Dissolved	458774	WG2282156-5	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Dissolved Metals
MB	Barium (Ba)-Dissolved	458774	WG2282156-5	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Dissolved Metals
MB	Beryllium (Be)-Dissolved	458774	WG2282156-5	<0.000010	mg/L	-	<0.000010	mg/L	✓	Water	Dissolved Metals
MB	Bismuth (Bi)-Dissolved	458774	WG2282156-5	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals
MB	Boron (B)-Dissolved	458774	WG2282156-5	<0.010	mg/L	-	<0.010	mg/L	✓	Water	Dissolved Metals
MB	Cadmium (Cd)-Dissolved	458774	WG2282156-5	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals
MB	Calcium (Ca)-Dissolved	457588	WG2280607-1	<0.030	mg/L	-	<0.030	mg/L	✓	Water	Dissolved Metals
MB	Chromium (Cr)-Dissolved	458774	WG2282156-5	<0.00010	mg/L	-	<0.00010	mg/L	✓	Water	Dissolved Metals
MB	Cobalt (Co)-Dissolved	458774	WG2282156-5	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals
MB	Copper (Cu)-Dissolved	458774	WG2282156-5	<0.00010	mg/L	-	<0.00010	mg/L	✓	Water	Dissolved Metals
MB	Iron (Fe)-Dissolved	458774	WG2282156-5	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Dissolved Metals
MB	Lead (Pb)-Dissolved	458774	WG2282156-5	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals
MB	Lithium (Li)-Dissolved	458774	WG2282156-5	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Dissolved Metals
MB	Magnesium (Mg)-Dissolved	457588	WG2280607-1	<0.030	mg/L	-	<0.030	mg/L	✓	Water	Dissolved Metals
MB	Manganese (Mn)-Dissolved	458774	WG2282156-5	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Dissolved Metals
MB	Mercury (Hg)-Dissolved	458040	WG2281253-1	<0.00050	ug/L	-	<0.00050	ug/L	✓	Water	Dissolved Metals
MB	Molybdenum (Mo)-Dissolved	458774	WG2282156-5	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Dissolved Metals
MB	Nickel (Ni)-Dissolved	458774	WG2282156-5	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Dissolved Metals
MB	Phosphorus (P)-Dissolved	457588	WG2280607-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Dissolved Metals
MB	Potassium (K)-Dissolved	457588	WG2280607-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Dissolved Metals
MB	Selenium (Se)-Dissolved	458774	WG2282156-5	<0.000040	mg/L	-	<0.000040	mg/L	✓	Water	Dissolved Metals
MB	Silicon (Si)-Dissolved	457588	WG2280607-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Dissolved Metals
MB	Silver (Ag)-Dissolved	458774	WG2282156-5	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals
MB	Sodium (Na)-Dissolved	458774	WG2282156-5	<0.010	mg/L	-	<0.010	mg/L	✓	Water	Dissolved Metals
MB	Strontium (Sr)-Dissolved	458774	WG2282156-5	<0.00010	mg/L	-	<0.00010	mg/L	✓	Water	Dissolved Metals
MB	Thallium (Tl)-Dissolved	458774	WG2282156-5	<0.0000020	mg/L	-	<0.0000020	mg/L	✓	Water	Dissolved Metals
MB	Tin (Sn)-Dissolved	458774	WG2282156-5	<0.000010	mg/L	-	<0.000010	mg/L	✓	Water	Dissolved Metals
MB	Titanium (Ti)-Dissolved	458774	WG2282156-5	<0.00030	mg/L	-	<0.00030	mg/L	✓	Water	Dissolved Metals
MB	Uranium (U)-Dissolved	458774	WG2282156-5	<0.0000020	mg/L	-	<0.0000020	mg/L	✓	Water	Dissolved Metals
MB	Vanadium (V)-Dissolved	458774	WG2282156-5	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Dissolved Metals
MB	Zinc (Zn)-Dissolved	458774	WG2282156-5	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Dissolved Metals

MB	Zirconium (Zr)-Dissolved	458774	WG2282156-5	<0.00010		mg/L	-	<0.00010	mg/L		✓	Water	Dissolved Metals
Aggregate Organics (Water)													
MB	BOD	458019	WG2281235-1	<2.0		mg/L	-	<2.0	mg/L		✓	Water	Aggregate Organics
MB	BOD	458019	WG2281235-5	<2.0		mg/L	-	<2.0	mg/L		✓	Water	Aggregate Organics
MB	COD	461423	WG2285452-1	<20		mg/L	-	<20	mg/L		✓	Water	Aggregate Organics
MB	COD	461423	WG2285452-5	<20		mg/L	-	<20	mg/L		✓	Water	Aggregate Organics
Anions and Nutrients (Water)													
MS	Total Kjeldahl Nitrogen	460354	WANETA R-SH	1.10	1.07	mg/L	103.6	70-130	%		✓	Water	Anions and Nutrients
MS	Phosphorus (P)-Total Dissolved	458314	WANETA R-SH	0.0489	0.05	mg/L	97.9	70-130	%		✓	Water	Anions and Nutrients
MS	Phosphorus (P)-Total	459055	STONEY CK R-SH	0.0535	0.0576	mg/L	91.9	70-130	%		✓	Water	Anions and Nutrients
Dissolved Metals (Water)													
MS	Aluminum (Al)-Dissolved	457588	OLD BRIDGE R-SH	0.193	0.204	mg/L	94.3	70-130	%		✓	Water	Dissolved Metals
MS	Antimony (Sb)-Dissolved	457588	OLD BRIDGE R-SH	0.0205	0.0202	mg/L	101.3	70-130	%		✓	Water	Dissolved Metals
MS	Arsenic (As)-Dissolved	457588	OLD BRIDGE R-SH	0.0199	0.0206	mg/L	96.5	70-130	%		✓	Water	Dissolved Metals
MS	Barium (Ba)-Dissolved	457588	OLD BRIDGE R-SH	0.0439	0.0443	mg/L	N/A	-	%	MS-B	✓	Water	Dissolved Metals
MS	Beryllium (Be)-Dissolved	457588	OLD BRIDGE R-SH	0.0397	0.04	mg/L	99.2	70-130	%		✓	Water	Dissolved Metals
MS	Bismuth (Bi)-Dissolved	457588	OLD BRIDGE R-SH	0.00933	0.01	mg/L	93.3	70-130	%		✓	Water	Dissolved Metals
MS	Boron (B)-Dissolved	457588	OLD BRIDGE R-SH	0.0950	0.1	mg/L	95.0	70-130	%		✓	Water	Dissolved Metals
MS	Cadmium (Cd)-Dissolved	457588	OLD BRIDGE R-SH	0.00410	0.00409	mg/L	100.1	70-130	%		✓	Water	Dissolved Metals
MS	Calcium (Ca)-Dissolved	457588	OLD BRIDGE R-SH	72.8	71.4	mg/L	102.8	70-130	%		✓	Water	Dissolved Metals
MS	Chromium (Cr)-Dissolved	457588	OLD BRIDGE R-SH	0.0368	0.04	mg/L	92.0	70-130	%		✓	Water	Dissolved Metals
MS	Cobalt (Co)-Dissolved	457588	OLD BRIDGE R-SH	0.0186	0.02	mg/L	92.9	70-130	%		✓	Water	Dissolved Metals
MS	Copper (Cu)-Dissolved	457588	OLD BRIDGE R-SH	0.0191	0.0204	mg/L	93.7	70-130	%		✓	Water	Dissolved Metals
MS	Iron (Fe)-Dissolved	457588	OLD BRIDGE R-SH	1.88	2	mg/L	93.6	70-130	%		✓	Water	Dissolved Metals
MS	Lead (Pb)-Dissolved	457588	OLD BRIDGE R-SH	0.0200	0.0201	mg/L	99.6	70-130	%		✓	Water	Dissolved Metals
MS	Lithium (Li)-Dissolved	457588	OLD BRIDGE R-SH	0.101	0.101	mg/L	100.0	70-130	%		✓	Water	Dissolved Metals
MS	Magnesium (Mg)-Dissolved	457588	OLD BRIDGE R-SH	54.5	55.1	mg/L	98.8	70-130	%		✓	Water	Dissolved Metals
MS	Manganese (Mn)-Dissolved	457588	OLD BRIDGE R-SH	0.0205	0.0217	mg/L	94.2	70-130	%		✓	Water	Dissolved Metals
MS	Mercury (Hg)-Dissolved	458040	DUPLICATE	0.00515	0.00569	ug/L	89.2	70-130	%		✓	Water	Dissolved Metals
MS	Molybdenum (Mo)-Dissolved	457588	OLD BRIDGE R-SH	0.0204	0.0206	mg/L	99.0	70-130	%		✓	Water	Dissolved Metals
MS	Nickel (Ni)-Dissolved	457588	OLD BRIDGE R-SH	0.0385	0.0402	mg/L	95.8	70-130	%		✓	Water	Dissolved Metals
MS	Phosphorus (P)-Dissolved	457588	OLD BRIDGE R-SH	2.45	2.5	mg/L	97.9	70-130	%		✓	Water	Dissolved Metals
MS	Potassium (K)-Dissolved	457588	OLD BRIDGE R-SH	50.0	50.6	mg/L	98.7	70-130	%		✓	Water	Dissolved Metals
MS	Selenium (Se)-Dissolved	457588	OLD BRIDGE R-SH	0.0401	0.0407	mg/L	98.6	70-130	%		✓	Water	Dissolved Metals
MS	Silicon (Si)-Dissolved	457588	OLD BRIDGE R-SH	3.27	3.35	mg/L	N/A	-	%	MS-B	✓	Water	Dissolved Metals
MS	Silver (Ag)-Dissolved	457588	OLD BRIDGE R-SH	0.00388	0.004	mg/L	97.0	70-130	%		✓	Water	Dissolved Metals
MS	Sodium (Na)-Dissolved	457588	OLD BRIDGE R-SH	4.18	4.38	mg/L	N/A	-	%	MS-B	✓	Water	Dissolved Metals
MS	Strontium (Sr)-Dissolved	457588	OLD BRIDGE R-SH	0.125	0.127	mg/L	N/A	-	%	MS-B	✓	Water	Dissolved Metals
MS	Thallium (Tl)-Dissolved	457588	OLD BRIDGE R-SH	0.00406	0.00407	mg/L	99.8	70-130	%		✓	Water	Dissolved Metals
MS	Tin (Sn)-Dissolved	457588	OLD BRIDGE R-SH	0.0198	0.02	mg/L	99.2	70-130	%		✓	Water	Dissolved Metals
MS	Titanium (Ti)-Dissolved	457588	OLD BRIDGE R-SH	0.0378	0.04	mg/L	94.5	70-130	%		✓	Water	Dissolved Metals
MS	Uranium (U)-Dissolved	457588	OLD BRIDGE R-SH	0.00457	0.00461	mg/L	99.2	70-130	%		✓	Water	Dissolved Metals
MS	Vanadium (V)-Dissolved	457588	OLD BRIDGE R-SH	0.0946	0.1	mg/L	94.4	70-130	%		✓	Water	Dissolved Metals
MS	Zinc (Zn)-Dissolved	457588	OLD BRIDGE R-SH	0.369	0.404	mg/L	91.2	70-130	%		✓	Water	Dissolved Metals
MS	Zirconium (Zr)-Dissolved	457588	OLD BRIDGE R-SH	0.0397	0.04	mg/L	99.4	70-130	%		✓	Water	Dissolved Metals
Aggregate Organics (Water)													
MS	COD	461423	BIRCHBANK R-SH	493	500	mg/L	98.6	75-125	%		✓	Water	Aggregate Organics

Qualifier Legend

MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Evaluation Legend

✓	QC Lot met ALS Data Quality Objectives

Duplicates L1750991

Job Reference TML-AREMP
Report To Kyle Hawes, ECOSCAPE ENVIRONMENTAL CONSULTANTS LTD.
Date Received 1-Apr-2016 8:50
Report Date 18-Apr-2016 16:04
Report Version 1

ALS ID	Reference	Client Sample ID	QC Type	QC Lot #	Analyte	Sample Result	Duplicate Result	Detection Limit	Units	RPD	RPD Limit	Diff	Diff Limit	Qual	Eval	Matrix	Class
Physical Tests (Water)																	
WG2284948-6	L1750991-3	WANETA COMP	DUP	461011	Turbidity	0.32	0.33	0.10	NTU	2.5	15	-			✓	Water	Physical Tests
Anions and Nutrients (Water)																	
WG2286806-3	L1750991-2	STONEY CK R-SH	DUP	462439	Total Kjeldahl Nitrogen	0.105	0.074	0.050	mg/L	-		0.031	0.1		✓	Water	Anions and Nutrients
WG2284860-7	L1750991-7	DUPLICATE 1	DUP	460995	Phosphorus (P)-Total Dissolved	<0.0020	<0.0020	0.0020	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
Dissolved Metals (Water)																	
WG2285748-3	L1750991-8	FIELD BLANK	DUP	461654	Aluminum (Al)-Dissolved	<0.00050	<0.00050	0.00050	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2285748-3	L1750991-8	FIELD BLANK	DUP	461654	Antimony (Sb)-Dissolved	<0.000020	<0.000020	0.000020	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2285748-3	L1750991-8	FIELD BLANK	DUP	461654	Arsenic (As)-Dissolved	<0.000020	<0.000020	0.000020	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2285748-3	L1750991-8	FIELD BLANK	DUP	461654	Barium (Ba)-Dissolved	<0.000020	<0.000020	0.000020	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2285748-3	L1750991-8	FIELD BLANK	DUP	461654	Beryllium (Be)-Dissolved	<0.000010	<0.000010	0.000010	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2285748-3	L1750991-8	FIELD BLANK	DUP	461654	Bismuth (Bi)-Dissolved	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2285748-3	L1750991-8	FIELD BLANK	DUP	461654	Boron (B)-Dissolved	<0.010	<0.010	0.010	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2285748-3	L1750991-8	FIELD BLANK	DUP	461654	Cadmium (Cd)-Dissolved	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2285748-3	L1750991-8	FIELD BLANK	DUP	461654	Calcium (Ca)-Dissolved	<0.030	<0.030	0.030	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2285748-3	L1750991-8	FIELD BLANK	DUP	461654	Chromium (Cr)-Dissolved	<0.00010	<0.00010	0.00010	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2285748-3	L1750991-8	FIELD BLANK	DUP	461654	Cobalt (Co)-Dissolved	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2285748-3	L1750991-8	FIELD BLANK	DUP	461654	Copper (Cu)-Dissolved	<0.00010	<0.00010	0.00010	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2285748-3	L1750991-8	FIELD BLANK	DUP	461654	Iron (Fe)-Dissolved	<0.0010	<0.0010	0.0010	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2285748-3	L1750991-8	FIELD BLANK	DUP	461654	Lead (Pb)-Dissolved	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2285748-3	L1750991-8	FIELD BLANK	DUP	461654	Lithium (Li)-Dissolved	<0.00050	<0.00050	0.00050	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2285748-3	L1750991-8	FIELD BLANK	DUP	461654	Magnesium (Mg)-Dissolved	<0.030	<0.030	0.030	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2285748-3	L1750991-8	FIELD BLANK	DUP	461654	Manganese (Mn)-Dissolved	<0.000050	<0.000050	0.000050	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2284868-3	L1750991-2	STONEY CK R-SH	DUP	460954	Mercury (Hg)-Dissolved	<0.00050	<0.00050	0.00050	ug/L	N/A	20	-			✓	Water	Dissolved Metals
WG2285748-3	L1750991-8	FIELD BLANK	DUP	461654	Molybdenum (Mo)-Dissolved	<0.000050	<0.000050	0.000050	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2285748-3	L1750991-8	FIELD BLANK	DUP	461654	Nickel (Ni)-Dissolved	<0.000050	<0.000050	0.000050	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2285748-3	L1750991-8	FIELD BLANK	DUP	461654	Phosphorus (P)-Dissolved	<0.050	<0.050	0.050	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2285748-3	L1750991-8	FIELD BLANK	DUP	461654	Potassium (K)-Dissolved	<0.050	<0.050	0.050	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2285748-3	L1750991-8	FIELD BLANK	DUP	461654	Selenium (Se)-Dissolved	<0.000040	<0.000040	0.000040	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2285748-3	L1750991-8	FIELD BLANK	DUP	461654	Silicon (Si)-Dissolved	<0.050	<0.050	0.050	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2285748-3	L1750991-8	FIELD BLANK	DUP	461654	Silver (Ag)-Dissolved	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2285748-3	L1750991-8	FIELD BLANK	DUP	461654	Sodium (Na)-Dissolved	<0.010	<0.010	0.010	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2285748-3	L1750991-8	FIELD BLANK	DUP	461654	Strontium (Sr)-Dissolved	<0.00010	<0.00010	0.00010	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2285748-3	L1750991-8	FIELD BLANK	DUP	461654	Thallium (Tl)-Dissolved	<0.0000020	<0.0000020	0.0000020	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2285748-3	L1750991-8	FIELD BLANK	DUP	461654	Tin (Sn)-Dissolved	<0.000010	<0.000010	0.000010	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2285748-3	L1750991-8	FIELD BLANK	DUP	461654	Titanium (Ti)-Dissolved	<0.00030	<0.00030	0.00030	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2285748-3	L1750991-8	FIELD BLANK	DUP	461654	Uranium (U)-Dissolved	<0.0000020	<0.0000020	0.0000020	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2285748-3	L1750991-8	FIELD BLANK	DUP	461654	Vanadium (V)-Dissolved	<0.000050	<0.000050	0.000050	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2285748-3	L1750991-8	FIELD BLANK	DUP	461654	Zinc (Zn)-Dissolved	0.00059	<0.00050	0.00050	mg/L	N/A	20	-			✓	Water	Dissolved Metals
WG2285748-3	L1750991-8	FIELD BLANK	DUP	461654	Zirconium (Zr)-Dissolved	<0.00010	<0.00010	0.00010	mg/L	N/A	20	-			✓	Water	Dissolved Metals
Aggregate Organics (Water)																	
WG2285006-3	L1750991-1	BIRCHBANK R-SH	DUP	461061	BOD	<2.0	<2.0	2.0	mg/L	N/A	20	-			✓	Water	Aggregate Organics
WG2288175-2	L1750991-2	STONEY CK R-SH	DUP	463552	COD	<20	<20	20	mg/L	N/A	20	-			✓	Water	Aggregate Organics

Evaluation Legend
✓ QC Lot met ALS Data Quality Objectives

Quality Control L1750991

Job Reference TML-AREMP
Report To Kyle Hawes, ECOSCAPE ENVIRONMENTAL CONSULTANTS LTD.
Date Received 1-Apr-2016 8:50
Report Date 18-Apr-2016 16:04
Report Version 1

QC Type	Analyte	QC Lot #	ALS QC ID	Result	Target	Units	%	Limit	Units	Qual	Eval	Matrix	Class
Physical Tests (Water)													
CRM	Conductivity	461189	WG2285078-14	152	147	uS/cm	103.5	90-110	%		✓	Water	Physical Tests
CRM	pH	461189	WG2285078-12	7.00	7	pH	7.00	6.9-7.1	pH		✓	Water	Physical Tests
CRM	Turbidity	461011	WG2284948-2	40.1	40	NTU	100.3	85-115	%		✓	Water	Physical Tests
CRM	Turbidity	461011	WG2284948-5	39.4	40	NTU	98.5	85-115	%		✓	Water	Physical Tests
CRM	Turbidity	461011	WG2284948-8	39.7	40	NTU	99.3	85-115	%		✓	Water	Physical Tests
CRM	Turbidity	461011	WG2284948-11	39.8	40	NTU	99.5	85-115	%		✓	Water	Physical Tests
Anions and Nutrients (Water)													
CRM	Alkalinity, Total (as CaCO3)	461189	WG2285078-13	488	500	mg/L	97.6	85-115	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total Dissolved	460994	WG2284860-2	7.54	7.17	mg/L	105.2	80-120	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total Dissolved	460995	WG2284860-6	7.63	7.17	mg/L	106.5	80-120	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total	460999	WG2284857-6	7.37	7.17	mg/L	102.7	80-120	%		✓	Water	Anions and Nutrients
Physical Tests (Water)													
LCS	Total Suspended Solids	461778	WG2285560-8	74.7	75	mg/L	99.6	85-115	%		✓	Water	Physical Tests
LCS	Total Dissolved Solids	460939	WG2284836-5	419	425	mg/L	98.6	85-115	%		✓	Water	Physical Tests
Anions and Nutrients (Water)													
LCS	Ammonia, Total (as N)	463816	WG2287538-2	0.115	0.12	mg/L	95.6	85-115	%		✓	Water	Anions and Nutrients
LCS	Ammonia, Total (as N)	463817	WG2287538-6	0.113	0.12	mg/L	94.0	85-115	%		✓	Water	Anions and Nutrients
LCS	Ammonia, Total (as N)	464017	WG2287869-2	0.126	0.12	mg/L	104.8	85-115	%		✓	Water	Anions and Nutrients
LCS	Bromide (Br)	461247	WG2284907-2	0.515	0.5	mg/L	103.1	85-115	%		✓	Water	Anions and Nutrients
LCS	Bromide (Br)	461247	WG2284907-21	0.522	0.5	mg/L	104.4	85-115	%		✓	Water	Anions and Nutrients
LCS	Chloride (Cl)	461247	WG2284907-2	102	100	mg/L	102.4	90-110	%		✓	Water	Anions and Nutrients
LCS	Chloride (Cl)	461247	WG2284907-21	103	100	mg/L	102.7	90-110	%		✓	Water	Anions and Nutrients
LCS	Fluoride (F)	461247	WG2284907-2	1.03	1	mg/L	103.2	90-110	%		✓	Water	Anions and Nutrients
LCS	Fluoride (F)	461247	WG2284907-21	1.04	1	mg/L	104.4	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrate (as N)	461247	WG2284907-2	2.56	2.5	mg/L	102.3	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrate (as N)	461247	WG2284907-21	2.56	2.5	mg/L	102.5	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrite (as N)	461247	WG2284907-2	0.512	0.5	mg/L	102.4	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrite (as N)	461247	WG2284907-21	0.512	0.5	mg/L	102.5	90-110	%		✓	Water	Anions and Nutrients
LCS	Total Kjeldahl Nitrogen	462439	WG2286806-2	1.03	1	mg/L	102.7	75-125	%		✓	Water	Anions and Nutrients
LCS	Total Kjeldahl Nitrogen	462439	WG2286806-6	1.03	1	mg/L	103.3	75-125	%		✓	Water	Anions and Nutrients
LCS	Total Kjeldahl Nitrogen	462439	WG2286806-10	1.02	1	mg/L	101.8	75-125	%		✓	Water	Anions and Nutrients
LCS	Sulfate (SO4)	461247	WG2284907-2	103	100	mg/L	102.7	90-110	%		✓	Water	Anions and Nutrients
LCS	Sulfate (SO4)	461247	WG2284907-21	103	100	mg/L	103.0	90-110	%		✓	Water	Anions and Nutrients
Organic / Inorganic Carbon (Water)													
LCS	Total Organic Carbon	462085	WG2285717-1	8.24	8.57	mg/L	96.2	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	462085	WG2285717-5	8.54	8.57	mg/L	99.7	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	462085	WG2285717-9	8.37	8.57	mg/L	97.7	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	462085	WG2285717-13	8.43	8.57	mg/L	98.4	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	462085	WG2285717-17	8.46	8.57	mg/L	98.7	80-120	%		✓	Water	Organic / Inorganic Carbon
Total Metals (Water)													
LCS	Mercury (Hg)-Total	461706	WG2285813-3	0.00491	0.005	ug/L	98.1	80-120	%		✓	Water	Total Metals
Total Metals (Undigested) (Water)													
LCS	Aluminum (Al)-Total	460944	WG2284851-2	1.87	2	mg/L	93.6	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Antimony (Sb)-Total	460944	WG2284851-2	0.975	1	mg/L	97.5	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Arsenic (As)-Total	460944	WG2284851-2	0.968	1	mg/L	96.8	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Barium (Ba)-Total	460944	WG2284851-2	0.247	0.25	mg/L	98.9	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Beryllium (Be)-Total	460944	WG2284851-2	0.100	0.1	mg/L	100.2	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Bismuth (Bi)-Total	460944	WG2284851-2	0.897	1	mg/L	89.7	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Boron (B)-Total	460944	WG2284851-2	0.876	1	mg/L	87.6	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Cadmium (Cd)-Total	460944	WG2284851-2	0.0955	0.1	mg/L	95.5	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Chromium (Cr)-Total	460944	WG2284851-2	0.233	0.25	mg/L	93.1	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Cobalt (Co)-Total	460944	WG2284851-2	0.235	0.25	mg/L	93.9	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Copper (Cu)-Total	460944	WG2284851-2	0.228	0.25	mg/L	91.4	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Iron (Fe)-Total	460944	WG2284851-2	0.919	1	mg/L	91.9	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Lead (Pb)-Total	460944	WG2284851-2	0.486	0.5	mg/L	97.1	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Lithium (Li)-Total	460944	WG2284851-2	0.248	0.25	mg/L	99.1	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Manganese (Mn)-Total	460944	WG2284851-2	0.238	0.25	mg/L	95.2	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Molybdenum (Mo)-Total	460944	WG2284851-2	0.234	0.25	mg/L	93.5	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Nickel (Ni)-Total	460944	WG2284851-2	0.464	0.5	mg/L	92.7	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Selenium (Se)-Total	460944	WG2284851-2	0.964	1	mg/L	96.4	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Silver (Ag)-Total	460944	WG2284851-2	0.0967	0.1	mg/L	96.7	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Sodium (Na)-Total	460944	WG2284851-2	46.3	50	mg/L	92.7	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Strontium (Sr)-Total	460944	WG2284851-2	0.237	0.25	mg/L	94.8	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Thallium (Tl)-Total	460944	WG2284851-2	0.991	1	mg/L	99.1	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Tin (Sn)-Total	460944	WG2284851-2	0.468	0.5	mg/L	93.6	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Titanium (Ti)-Total	460944	WG2284851-2	0.227	0.25	mg/L	90.7	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Uranium (U)-Total	460944	WG2284851-2	0.00479	0.005	mg/L	95.8	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Vanadium (V)-Total	460944	WG2284851-2	0.473	0.5	mg/L	94.7	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Zinc (Zn)-Total	460944	WG2284851-2	0.438	0.5	mg/L	87.6	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Zirconium (Zr)-Total	460944	WG2284851-2	0.0884	0.1	mg/L	88.4	80-120	%		✓	Water	Total Metals (Undigested)
Dissolved Metals (Water)													
LCS	Aluminum (Al)-Dissolved	460440	WG2284229-2	1.97	2	mg/L	98.6	80-120	%		✓	Water	Dissolved Metals
LCS	Aluminum (Al)-Dissolved	461654	WG2285748-2	2.01	2	mg/L	100.6	80-120	%		✓	Water	Dissolved Metals
LCS	Antimony (Sb)-Dissolved	460440	WG2284229-2	0.974	1	mg/L	97.4	80-120	%		✓	Water	Dissolved Metals
LCS	Antimony (Sb)-Dissolved	461654	WG2285748-2	0.962	1	mg/L	96.2	80-120	%		✓	Water	Dissolved Metals

LCS	Arsenic (As)-Dissolved	460440	WG2284229-2	0.968	1	mg/L	96.8	80-120	%	✓	Water	Dissolved Metals
LCS	Arsenic (As)-Dissolved	461654	WG2285748-2	1.02	1	mg/L	101.9	80-120	%	✓	Water	Dissolved Metals
LCS	Barium (Ba)-Dissolved	460440	WG2284229-2	0.256	0.25	mg/L	102.4	80-120	%	✓	Water	Dissolved Metals
LCS	Barium (Ba)-Dissolved	461654	WG2285748-2	0.256	0.25	mg/L	102.4	80-120	%	✓	Water	Dissolved Metals
LCS	Beryllium (Be)-Dissolved	460440	WG2284229-2	0.0987	0.1	mg/L	98.7	80-120	%	✓	Water	Dissolved Metals
LCS	Beryllium (Be)-Dissolved	461654	WG2285748-2	0.0982	0.1	mg/L	98.2	80-120	%	✓	Water	Dissolved Metals
LCS	Bismuth (Bi)-Dissolved	460440	WG2284229-2	0.940	1	mg/L	94.0	80-120	%	✓	Water	Dissolved Metals
LCS	Bismuth (Bi)-Dissolved	461654	WG2285748-2	0.978	1	mg/L	97.8	80-120	%	✓	Water	Dissolved Metals
LCS	Boron (B)-Dissolved	460440	WG2284229-2	0.870	1	mg/L	87.0	80-120	%	✓	Water	Dissolved Metals
LCS	Boron (B)-Dissolved	461654	WG2285748-2	0.829	1	mg/L	82.9	80-120	%	✓	Water	Dissolved Metals
LCS	Cadmium (Cd)-Dissolved	460440	WG2284229-2	0.0956	0.1	mg/L	95.6	80-120	%	✓	Water	Dissolved Metals
LCS	Cadmium (Cd)-Dissolved	461654	WG2285748-2	0.101	0.1	mg/L	100.7	80-120	%	✓	Water	Dissolved Metals
LCS	Calcium (Ca)-Dissolved	460440	WG2284229-2	51.3	50	mg/L	102.6	80-120	%	✓	Water	Dissolved Metals
LCS	Calcium (Ca)-Dissolved	461654	WG2285748-2	51.3	50	mg/L	102.7	80-120	%	✓	Water	Dissolved Metals
LCS	Chromium (Cr)-Dissolved	460440	WG2284229-2	0.239	0.25	mg/L	95.5	80-120	%	✓	Water	Dissolved Metals
LCS	Chromium (Cr)-Dissolved	461654	WG2285748-2	0.252	0.25	mg/L	100.8	80-120	%	✓	Water	Dissolved Metals
LCS	Cobalt (Co)-Dissolved	460440	WG2284229-2	0.240	0.25	mg/L	96.0	80-120	%	✓	Water	Dissolved Metals
LCS	Cobalt (Co)-Dissolved	461654	WG2285748-2	0.256	0.25	mg/L	102.4	80-120	%	✓	Water	Dissolved Metals
LCS	Copper (Cu)-Dissolved	460440	WG2284229-2	0.233	0.25	mg/L	93.3	80-120	%	✓	Water	Dissolved Metals
LCS	Copper (Cu)-Dissolved	461654	WG2285748-2	0.249	0.25	mg/L	99.7	80-120	%	✓	Water	Dissolved Metals
LCS	Iron (Fe)-Dissolved	460440	WG2284229-2	0.996	1	mg/L	99.6	80-120	%	✓	Water	Dissolved Metals
LCS	Iron (Fe)-Dissolved	461654	WG2285748-2	0.925	1	mg/L	92.5	80-120	%	✓	Water	Dissolved Metals
LCS	Lead (Pb)-Dissolved	460440	WG2284229-2	0.471	0.5	mg/L	94.1	80-120	%	✓	Water	Dissolved Metals
LCS	Lead (Pb)-Dissolved	461654	WG2285748-2	0.497	0.5	mg/L	99.5	80-120	%	✓	Water	Dissolved Metals
LCS	Lithium (Li)-Dissolved	460440	WG2284229-2	0.235	0.25	mg/L	94.1	80-120	%	✓	Water	Dissolved Metals
LCS	Lithium (Li)-Dissolved	461654	WG2285748-2	0.240	0.25	mg/L	96.0	80-120	%	✓	Water	Dissolved Metals
LCS	Magnesium (Mg)-Dissolved	460440	WG2284229-2	48.6	50	mg/L	97.2	80-120	%	✓	Water	Dissolved Metals
LCS	Magnesium (Mg)-Dissolved	461654	WG2285748-2	48.7	50	mg/L	97.4	80-120	%	✓	Water	Dissolved Metals
LCS	Manganese (Mn)-Dissolved	460440	WG2284229-2	0.246	0.25	mg/L	98.5	80-120	%	✓	Water	Dissolved Metals
LCS	Manganese (Mn)-Dissolved	461654	WG2285748-2	0.255	0.25	mg/L	101.9	80-120	%	✓	Water	Dissolved Metals
LCS	Mercury (Hg)-Dissolved	460954	WG2284868-2	0.00491	0.005	ug/L	98.1	80-120	%	✓	Water	Dissolved Metals
LCS	Molybdenum (Mo)-Dissolved	460440	WG2284229-2	0.246	0.25	mg/L	98.5	80-120	%	✓	Water	Dissolved Metals
LCS	Molybdenum (Mo)-Dissolved	461654	WG2285748-2	0.244	0.25	mg/L	97.8	80-120	%	✓	Water	Dissolved Metals
LCS	Nickel (Ni)-Dissolved	460440	WG2284229-2	0.476	0.5	mg/L	95.1	80-120	%	✓	Water	Dissolved Metals
LCS	Nickel (Ni)-Dissolved	461654	WG2285748-2	0.523	0.5	mg/L	104.5	80-120	%	✓	Water	Dissolved Metals
LCS	Phosphorus (P)-Dissolved	460440	WG2284229-2	2.42	2.5	mg/L	96.8	80-120	%	✓	Water	Dissolved Metals
LCS	Phosphorus (P)-Dissolved	461654	WG2285748-2	2.44	2.5	mg/L	97.6	80-120	%	✓	Water	Dissolved Metals
LCS	Potassium (K)-Dissolved	460440	WG2284229-2	47.4	50	mg/L	94.9	80-120	%	✓	Water	Dissolved Metals
LCS	Potassium (K)-Dissolved	461654	WG2285748-2	48.5	50	mg/L	96.9	80-120	%	✓	Water	Dissolved Metals
LCS	Selenium (Se)-Dissolved	460440	WG2284229-2	1.01	1	mg/L	100.7	80-120	%	✓	Water	Dissolved Metals
LCS	Selenium (Se)-Dissolved	461654	WG2285748-2	0.984	1	mg/L	98.4	80-120	%	✓	Water	Dissolved Metals
LCS	Silicon (Si)-Dissolved	460440	WG2284229-2	1.00	1	mg/L	100.1	80-120	%	✓	Water	Dissolved Metals
LCS	Silicon (Si)-Dissolved	461654	WG2285748-2	1.03	1	mg/L	102.6	80-120	%	✓	Water	Dissolved Metals
LCS	Silver (Ag)-Dissolved	460440	WG2284229-2	0.0966	0.1	mg/L	96.6	80-120	%	✓	Water	Dissolved Metals
LCS	Silver (Ag)-Dissolved	461654	WG2285748-2	0.0981	0.1	mg/L	98.1	80-120	%	✓	Water	Dissolved Metals
LCS	Sodium (Na)-Dissolved	460440	WG2284229-2	48.8	50	mg/L	97.7	80-120	%	✓	Water	Dissolved Metals
LCS	Sodium (Na)-Dissolved	461654	WG2285748-2	51.1	50	mg/L	102.2	80-120	%	✓	Water	Dissolved Metals
LCS	Strontium (Sr)-Dissolved	460440	WG2284229-2	0.243	0.25	mg/L	97.3	80-120	%	✓	Water	Dissolved Metals
LCS	Strontium (Sr)-Dissolved	461654	WG2285748-2	0.237	0.25	mg/L	94.9	80-120	%	✓	Water	Dissolved Metals
LCS	Thallium (Tl)-Dissolved	460440	WG2284229-2	0.950	1	mg/L	95.0	80-120	%	✓	Water	Dissolved Metals
LCS	Thallium (Tl)-Dissolved	461654	WG2285748-2	0.987	1	mg/L	98.7	80-120	%	✓	Water	Dissolved Metals
LCS	Tin (Sn)-Dissolved	460440	WG2284229-2	0.485	0.5	mg/L	97.0	80-120	%	✓	Water	Dissolved Metals
LCS	Tin (Sn)-Dissolved	461654	WG2285748-2	0.493	0.5	mg/L	98.6	80-120	%	✓	Water	Dissolved Metals
LCS	Titanium (Ti)-Dissolved	460440	WG2284229-2	0.246	0.25	mg/L	98.4	80-120	%	✓	Water	Dissolved Metals
LCS	Titanium (Ti)-Dissolved	461654	WG2285748-2	0.247	0.25	mg/L	98.8	80-120	%	✓	Water	Dissolved Metals
LCS	Uranium (U)-Dissolved	460440	WG2284229-2	0.00462	0.005	mg/L	92.5	80-120	%	✓	Water	Dissolved Metals
LCS	Uranium (U)-Dissolved	461654	WG2285748-2	0.00488	0.005	mg/L	97.5	80-120	%	✓	Water	Dissolved Metals
LCS	Vanadium (V)-Dissolved	460440	WG2284229-2	0.487	0.5	mg/L	97.3	80-120	%	✓	Water	Dissolved Metals
LCS	Vanadium (V)-Dissolved	461654	WG2285748-2	0.509	0.5	mg/L	101.8	80-120	%	✓	Water	Dissolved Metals
LCS	Zinc (Zn)-Dissolved	460440	WG2284229-2	0.446	0.5	mg/L	89.2	80-120	%	✓	Water	Dissolved Metals
LCS	Zinc (Zn)-Dissolved	461654	WG2285748-2	0.488	0.5	mg/L	97.6	80-120	%	✓	Water	Dissolved Metals
LCS	Zirconium (Zr)-Dissolved	460440	WG2284229-2	0.0978	0.1	mg/L	97.8	80-120	%	✓	Water	Dissolved Metals
LCS	Zirconium (Zr)-Dissolved	461654	WG2285748-2	0.0869	0.1	mg/L	86.9	80-120	%	✓	Water	Dissolved Metals
Aggregate Organics (Water)												
LCS	BOD	461061	WG2285006-2	209	198	mg/L	105.4	85-115	%	✓	Water	Aggregate Organics
LCS	COD	463552	WG2288175-3	765	750	mg/L	102.0	85-115	%	✓	Water	Aggregate Organics
LCS	COD	463552	WG2288175-6	761	750	mg/L	101.5	85-115	%	✓	Water	Aggregate Organics
LCS	COD	463552	WG2288175-10	752	750	mg/L	100.2	85-115	%	✓	Water	Aggregate Organics
Physical Tests (Water)												
MB	Conductivity	461189	WG2285078-11	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Total Suspended Solids	461778	WG2285560-7	<3.0		mg/L	-	<3.0	mg/L	✓	Water	Physical Tests
MB	Total Dissolved Solids	460939	WG2284836-4	<10		mg/L	-	<10	mg/L	✓	Water	Physical Tests
MB	Turbidity	461011	WG2284948-1	<0.10		NTU	-	<0.10	NTU	✓	Water	Physical Tests
MB	Turbidity	461011	WG2284948-4	<0.10		NTU	-	<0.10	NTU	✓	Water	Physical Tests
MB	Turbidity	461011	WG2284948-7	<0.10		NTU	-	<0.10	NTU	✓	Water	Physical Tests
MB	Turbidity	461011	WG2284948-10	<0.10		NTU	-	<0.10	NTU	✓	Water	Physical Tests
Anions and Nutrients (Water)												
MB	Alkalinity, Total (as CaCO3)	461189	WG2285078-11	<1.0		mg/L	-	<1.0	mg/L	✓	Water	Anions and Nutrients
MB	Ammonia, Total (as N)	463816	WG2287538-1	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Ammonia, Total (as N)	463817	WG2287538-5	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Ammonia, Total (as N)	464017	WG2287869-1	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	461247	WG2284907-1	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	461247	WG2284907-4	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	461247	WG2284907-7	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	461247	WG2284907-10	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	461247	WG2284907-13	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	461247	WG2284907-16	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	461247	WG2284907-19	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	461247	WG2284907-1	<0.50		mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	461247	WG2284907-4	<0.50		mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	461247	WG2284907-7	<0.50		mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	461247	WG2284907-10	<0.50		mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients

MB	Chloride (Cl)	461247	WG2284907-13	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	461247	WG2284907-16	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	461247	WG2284907-19	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	461247	WG2284907-1	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	461247	WG2284907-4	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	461247	WG2284907-7	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	461247	WG2284907-10	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	461247	WG2284907-13	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	461247	WG2284907-16	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	461247	WG2284907-19	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	461247	WG2284907-1	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	461247	WG2284907-4	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	461247	WG2284907-7	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	461247	WG2284907-10	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	461247	WG2284907-13	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	461247	WG2284907-16	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	461247	WG2284907-19	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	461247	WG2284907-1	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	461247	WG2284907-4	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	461247	WG2284907-7	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	461247	WG2284907-10	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	461247	WG2284907-13	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	461247	WG2284907-16	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	461247	WG2284907-19	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Total Kjeldahl Nitrogen	462439	WG2286806-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Total Kjeldahl Nitrogen	462439	WG2286806-5	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Total Kjeldahl Nitrogen	462439	WG2286806-9	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total Dissolved	460994	WG2284860-1	<0.0020	mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total Dissolved	460995	WG2284860-5	<0.0020	mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total	460999	WG2284857-5	<0.0020	mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	461247	WG2284907-1	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	461247	WG2284907-4	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	461247	WG2284907-7	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	461247	WG2284907-10	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	461247	WG2284907-13	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	461247	WG2284907-16	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	461247	WG2284907-19	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
Organic / Inorganic Carbon (Water)											
MB	Total Organic Carbon	462085	WG2285717-4	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	462085	WG2285717-8	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	462085	WG2285717-12	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	462085	WG2285717-16	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
Total Metals (Water)											
MB	Mercury (Hg)-Total	461706	WG2285813-1	<0.00050	ug/L	-	<0.00050	ug/L	✓	Water	Total Metals
MB	Mercury (Hg)-Total	461706	WG2285813-2	<0.00050	ug/L	-	<0.00050	ug/L	✓	Water	Total Metals
Total Metals (Undigested) (Water)											
MB	Aluminum (Al)-Total	460944	WG2284851-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Total Metals (Undigested)
MB	Antimony (Sb)-Total	460944	WG2284851-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Arsenic (As)-Total	460944	WG2284851-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Barium (Ba)-Total	460944	WG2284851-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Beryllium (Be)-Total	460944	WG2284851-1	<0.000010	mg/L	-	<0.000010	mg/L	✓	Water	Total Metals (Undigested)
MB	Bismuth (Bi)-Total	460944	WG2284851-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Boron (B)-Total	460944	WG2284851-1	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Total Metals (Undigested)
MB	Cadmium (Cd)-Total	460944	WG2284851-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Chromium (Cr)-Total	460944	WG2284851-1	<0.00010	mg/L	-	<0.00010	mg/L	✓	Water	Total Metals (Undigested)
MB	Cobalt (Co)-Total	460944	WG2284851-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Copper (Cu)-Total	460944	WG2284851-1	<0.00010	mg/L	-	<0.00010	mg/L	✓	Water	Total Metals (Undigested)
MB	Iron (Fe)-Total	460944	WG2284851-1	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Total Metals (Undigested)
MB	Lead (Pb)-Total	460944	WG2284851-1	<0.000010	mg/L	-	<0.000010	mg/L	✓	Water	Total Metals (Undigested)
MB	Lithium (Li)-Total	460944	WG2284851-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Total Metals (Undigested)
MB	Manganese (Mn)-Total	460944	WG2284851-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Molybdenum (Mo)-Total	460944	WG2284851-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Nickel (Ni)-Total	460944	WG2284851-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Selenium (Se)-Total	460944	WG2284851-1	<0.000040	mg/L	-	<0.000040	mg/L	✓	Water	Total Metals (Undigested)
MB	Silver (Ag)-Total	460944	WG2284851-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Sodium (Na)-Total	460944	WG2284851-1	<0.010	mg/L	-	<0.010	mg/L	✓	Water	Total Metals (Undigested)
MB	Strontium (Sr)-Total	460944	WG2284851-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Thallium (Tl)-Total	460944	WG2284851-1	<0.0000020	mg/L	-	<0.0000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Tin (Sn)-Total	460944	WG2284851-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Titanium (Ti)-Total	460944	WG2284851-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Total Metals (Undigested)
MB	Uranium (U)-Total	460944	WG2284851-1	<0.0000020	mg/L	-	<0.0000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Vanadium (V)-Total	460944	WG2284851-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Zinc (Zn)-Total	460944	WG2284851-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Total Metals (Undigested)
MB	Zirconium (Zr)-Total	460944	WG2284851-1	<0.00010	mg/L	-	<0.00010	mg/L	✓	Water	Total Metals (Undigested)
Dissolved Metals (Water)											
MB	Aluminum (Al)-Dissolved	460440	WG2284229-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Dissolved Metals
MB	Aluminum (Al)-Dissolved	461654	WG2285748-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Dissolved Metals
MB	Antimony (Sb)-Dissolved	460440	WG2284229-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Dissolved Metals
MB	Antimony (Sb)-Dissolved	461654	WG2285748-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Dissolved Metals
MB	Arsenic (As)-Dissolved	460440	WG2284229-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Dissolved Metals
MB	Arsenic (As)-Dissolved	461654	WG2285748-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Dissolved Metals
MB	Barium (Ba)-Dissolved	460440	WG2284229-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Dissolved Metals
MB	Barium (Ba)-Dissolved	461654	WG2285748-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Dissolved Metals
MB	Beryllium (Be)-Dissolved	460440	WG2284229-1	<0.000010	mg/L	-	<0.000010	mg/L	✓	Water	Dissolved Metals
MB	Beryllium (Be)-Dissolved	461654	WG2285748-1	<0.000010	mg/L	-	<0.000010	mg/L	✓	Water	Dissolved Metals
MB	Bismuth (Bi)-Dissolved	460440	WG2284229-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals
MB	Bismuth (Bi)-Dissolved	461654	WG2285748-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals
MB	Boron (B)-Dissolved	460440	WG2284229-1	<0.010	mg/L	-	<0.010	mg/L	✓	Water	Dissolved Metals
MB	Boron (B)-Dissolved	461654	WG2285748-1	<0.010	mg/L	-	<0.010	mg/L	✓	Water	Dissolved Metals
MB	Cadmium (Cd)-Dissolved	460440	WG2284229-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals
MB	Cadmium (Cd)-Dissolved	461654	WG2285748-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals

MB	Calcium (Ca)-Dissolved	460440	WG2284229-1	<0.030		mg/L	-	<0.030	mg/L	✓	Water	Dissolved Metals
MB	Calcium (Ca)-Dissolved	461654	WG2285748-1	<0.030		mg/L	-	<0.030	mg/L	✓	Water	Dissolved Metals
MB	Chromium (Cr)-Dissolved	460440	WG2284229-1	<0.00010		mg/L	-	<0.00010	mg/L	✓	Water	Dissolved Metals
MB	Chromium (Cr)-Dissolved	461654	WG2285748-1	<0.00010		mg/L	-	<0.00010	mg/L	✓	Water	Dissolved Metals
MB	Cobalt (Co)-Dissolved	460440	WG2284229-1	<0.0000050		mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals
MB	Cobalt (Co)-Dissolved	461654	WG2285748-1	<0.0000050		mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals
MB	Copper (Cu)-Dissolved	460440	WG2284229-1	<0.00010		mg/L	-	<0.00010	mg/L	✓	Water	Dissolved Metals
MB	Copper (Cu)-Dissolved	461654	WG2285748-1	<0.00010		mg/L	-	<0.00010	mg/L	✓	Water	Dissolved Metals
MB	Iron (Fe)-Dissolved	460440	WG2284229-1	<0.0010		mg/L	-	<0.0010	mg/L	✓	Water	Dissolved Metals
MB	Iron (Fe)-Dissolved	461654	WG2285748-1	<0.0010		mg/L	-	<0.0010	mg/L	✓	Water	Dissolved Metals
MB	Lead (Pb)-Dissolved	460440	WG2284229-1	<0.0000050		mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals
MB	Lead (Pb)-Dissolved	461654	WG2285748-1	<0.0000050		mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals
MB	Lithium (Li)-Dissolved	460440	WG2284229-1	<0.00050		mg/L	-	<0.00050	mg/L	✓	Water	Dissolved Metals
MB	Lithium (Li)-Dissolved	461654	WG2285748-1	<0.00050		mg/L	-	<0.00050	mg/L	✓	Water	Dissolved Metals
MB	Magnesium (Mg)-Dissolved	460440	WG2284229-1	<0.030		mg/L	-	<0.030	mg/L	✓	Water	Dissolved Metals
MB	Magnesium (Mg)-Dissolved	461654	WG2285748-1	<0.030		mg/L	-	<0.030	mg/L	✓	Water	Dissolved Metals
MB	Manganese (Mn)-Dissolved	460440	WG2284229-1	<0.000050		mg/L	-	<0.000050	mg/L	✓	Water	Dissolved Metals
MB	Manganese (Mn)-Dissolved	461654	WG2285748-1	<0.000050		mg/L	-	<0.000050	mg/L	✓	Water	Dissolved Metals
MB	Mercury (Hg)-Dissolved	460954	WG2284868-1	<0.00050		ug/L	-	<0.00050	ug/L	✓	Water	Dissolved Metals
MB	Molybdenum (Mo)-Dissolved	460440	WG2284229-1	<0.000050		mg/L	-	<0.000050	mg/L	✓	Water	Dissolved Metals
MB	Molybdenum (Mo)-Dissolved	461654	WG2285748-1	<0.000050		mg/L	-	<0.000050	mg/L	✓	Water	Dissolved Metals
MB	Nickel (Ni)-Dissolved	460440	WG2284229-1	<0.000050		mg/L	-	<0.000050	mg/L	✓	Water	Dissolved Metals
MB	Nickel (Ni)-Dissolved	461654	WG2285748-1	<0.000050		mg/L	-	<0.000050	mg/L	✓	Water	Dissolved Metals
MB	Phosphorus (P)-Dissolved	460440	WG2284229-1	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Dissolved Metals
MB	Phosphorus (P)-Dissolved	461654	WG2285748-1	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Dissolved Metals
MB	Potassium (K)-Dissolved	460440	WG2284229-1	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Dissolved Metals
MB	Potassium (K)-Dissolved	461654	WG2285748-1	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Dissolved Metals
MB	Selenium (Se)-Dissolved	460440	WG2284229-1	<0.000040		mg/L	-	<0.000040	mg/L	✓	Water	Dissolved Metals
MB	Selenium (Se)-Dissolved	461654	WG2285748-1	<0.000040		mg/L	-	<0.000040	mg/L	✓	Water	Dissolved Metals
MB	Silicon (Si)-Dissolved	460440	WG2284229-1	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Dissolved Metals
MB	Silicon (Si)-Dissolved	461654	WG2285748-1	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Dissolved Metals
MB	Silver (Ag)-Dissolved	460440	WG2284229-1	<0.0000050		mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals
MB	Silver (Ag)-Dissolved	461654	WG2285748-1	<0.0000050		mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals
MB	Sodium (Na)-Dissolved	460440	WG2284229-1	<0.010		mg/L	-	<0.010	mg/L	✓	Water	Dissolved Metals
MB	Sodium (Na)-Dissolved	461654	WG2285748-1	<0.010		mg/L	-	<0.010	mg/L	✓	Water	Dissolved Metals
MB	Strontium (Sr)-Dissolved	460440	WG2284229-1	<0.00010		mg/L	-	<0.00010	mg/L	✓	Water	Dissolved Metals
MB	Strontium (Sr)-Dissolved	461654	WG2285748-1	<0.00010		mg/L	-	<0.00010	mg/L	✓	Water	Dissolved Metals
MB	Thallium (Tl)-Dissolved	460440	WG2284229-1	<0.0000020		mg/L	-	<0.0000020	mg/L	✓	Water	Dissolved Metals
MB	Thallium (Tl)-Dissolved	461654	WG2285748-1	<0.0000020		mg/L	-	<0.0000020	mg/L	✓	Water	Dissolved Metals
MB	Tin (Sn)-Dissolved	460440	WG2284229-1	<0.000010		mg/L	-	<0.000010	mg/L	✓	Water	Dissolved Metals
MB	Tin (Sn)-Dissolved	461654	WG2285748-1	<0.000010		mg/L	-	<0.000010	mg/L	✓	Water	Dissolved Metals
MB	Titanium (Ti)-Dissolved	460440	WG2284229-1	<0.00030		mg/L	-	<0.00030	mg/L	✓	Water	Dissolved Metals
MB	Titanium (Ti)-Dissolved	461654	WG2285748-1	<0.00030		mg/L	-	<0.00030	mg/L	✓	Water	Dissolved Metals
MB	Uranium (U)-Dissolved	460440	WG2284229-1	<0.0000020		mg/L	-	<0.0000020	mg/L	✓	Water	Dissolved Metals
MB	Uranium (U)-Dissolved	461654	WG2285748-1	<0.0000020		mg/L	-	<0.0000020	mg/L	✓	Water	Dissolved Metals
MB	Vanadium (V)-Dissolved	460440	WG2284229-1	<0.000050		mg/L	-	<0.000050	mg/L	✓	Water	Dissolved Metals
MB	Vanadium (V)-Dissolved	461654	WG2285748-1	<0.000050		mg/L	-	<0.000050	mg/L	✓	Water	Dissolved Metals
MB	Zinc (Zn)-Dissolved	460440	WG2284229-1	<0.00050		mg/L	-	<0.00050	mg/L	✓	Water	Dissolved Metals
MB	Zinc (Zn)-Dissolved	461654	WG2285748-1	<0.00050		mg/L	-	<0.00050	mg/L	✓	Water	Dissolved Metals
MB	Zirconium (Zr)-Dissolved	460440	WG2284229-1	<0.00010		mg/L	-	<0.00010	mg/L	✓	Water	Dissolved Metals
MB	Zirconium (Zr)-Dissolved	461654	WG2285748-1	<0.00010		mg/L	-	<0.00010	mg/L	✓	Water	Dissolved Metals
Aggregate Organics (Water)												
MB	BOD	461061	WG2285006-1	<2.0		mg/L	-	<2.0	mg/L	✓	Water	Aggregate Organics
MB	COD	463552	WG2288175-1	<20		mg/L	-	<20	mg/L	✓	Water	Aggregate Organics
MB	COD	463552	WG2288175-5	<20		mg/L	-	<20	mg/L	✓	Water	Aggregate Organics
MB	COD	463552	WG2288175-9	<20		mg/L	-	<20	mg/L	✓	Water	Aggregate Organics
Anions and Nutrients (Water)												
MS	Bromide (Br)	461247	DUPLICATE 1	0.540	0.5	mg/L	108.0	75-125	%	✓	Water	Anions and Nutrients
MS	Chloride (Cl)	461247	DUPLICATE 1	107	102	mg/L	105.0	75-125	%	✓	Water	Anions and Nutrients
MS	Fluoride (F)	461247	DUPLICATE 1	1.21	1.16	mg/L	104.8	75-125	%	✓	Water	Anions and Nutrients
MS	Nitrate (as N)	461247	DUPLICATE 1	2.77	2.67	mg/L	104.1	75-125	%	✓	Water	Anions and Nutrients
MS	Nitrite (as N)	461247	DUPLICATE 1	0.523	0.5	mg/L	104.7	75-125	%	✓	Water	Anions and Nutrients
MS	Total Kjeldahl Nitrogen	462439	WANETA COMP	1.17	1.09	mg/L	107.6	70-130	%	✓	Water	Anions and Nutrients
MS	Phosphorus (P)-Total Dissolved	460995	FIELD BLANK	0.0509	0.05	mg/L	101.7	70-130	%	✓	Water	Anions and Nutrients
MS	Sulfate (SO4)	461247	DUPLICATE 1	122	119	mg/L	102.7	75-125	%	✓	Water	Anions and Nutrients
Total Metals (Water)												
MS	Mercury (Hg)-Total	461706	OLD BRIDGE R-SH	0.00512	0.005	ug/L	102.3	70-130	%	✓	Water	Total Metals
Total Metals (Undigested) (Water)												
MS	Aluminum (Al)-Total	460944	STONEY CK R-SH	0.199	0.21	mg/L	94.5	70-130	%	✓	Water	Total Metals (Undigested)
MS	Antimony (Sb)-Total	460944	STONEY CK R-SH	0.0197	0.0201	mg/L	98.0	70-130	%	✓	Water	Total Metals (Undigested)
MS	Arsenic (As)-Total	460944	STONEY CK R-SH	0.0208	0.0206	mg/L	101.0	70-130	%	✓	Water	Total Metals (Undigested)
MS	Barium (Ba)-Total	460944	STONEY CK R-SH	0.0442	0.045	mg/L	N/A	-	%	MS-B	✓	Water	Total Metals (Undigested)
MS	Beryllium (Be)-Total	460944	STONEY CK R-SH	0.0388	0.04	mg/L	96.8	70-130	%	✓	Water	Total Metals (Undigested)
MS	Bismuth (Bi)-Total	460944	STONEY CK R-SH	0.00900	0.01	mg/L	89.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Boron (B)-Total	460944	STONEY CK R-SH	0.0902	0.1	mg/L	90.2	70-130	%	✓	Water	Total Metals (Undigested)
MS	Cadmium (Cd)-Total	460944	STONEY CK R-SH	0.00398	0.00405	mg/L	98.4	70-130	%	✓	Water	Total Metals (Undigested)
MS	Calcium (Ca)-Total	460944	STONEY CK R-SH	72.8	70.8	mg/L	104.1	70-130	%	✓	Water	Total Metals (Undigested)
MS	Chromium (Cr)-Total	460944	STONEY CK R-SH	0.0392	0.0401	mg/L	97.7	70-130	%	✓	Water	Total Metals (Undigested)

MS	Cobalt (Co)-Total	460944	STONEY CK R-SH	0.0192	0.02	mg/L	95.9	70-130	%		✓	Water	Total Metals (Undigested)
MS	Copper (Cu)-Total	460944	STONEY CK R-SH	0.0202	0.0204	mg/L	98.8	70-130	%		✓	Water	Total Metals (Undigested)
MS	Iron (Fe)-Total	460944	STONEY CK R-SH	1.95	2.01	mg/L	96.8	70-130	%		✓	Water	Total Metals (Undigested)
MS	Lead (Pb)-Total	460944	STONEY CK R-SH	0.0196	0.0201	mg/L	97.4	70-130	%		✓	Water	Total Metals (Undigested)
MS	Lithium (Li)-Total	460944	STONEY CK R-SH	0.0984	0.101	mg/L	97.2	70-130	%		✓	Water	Total Metals (Undigested)
MS	Magnesium (Mg)-Total	460944	STONEY CK R-SH	55.8	55	mg/L	101.6	70-130	%		✓	Water	Total Metals (Undigested)
MS	Manganese (Mn)-Total	460944	STONEY CK R-SH	0.0212	0.0218	mg/L	97.2	70-130	%		✓	Water	Total Metals (Undigested)
MS	Molybdenum (Mo)-Total	460944	STONEY CK R-SH	0.0200	0.0206	mg/L	96.9	70-130	%		✓	Water	Total Metals (Undigested)
MS	Nickel (Ni)-Total	460944	STONEY CK R-SH	0.0385	0.0404	mg/L	95.2	70-130	%		✓	Water	Total Metals (Undigested)
MS	Phosphorus (P)-Total	460944	STONEY CK R-SH	2.62	2.5	mg/L	104.7	70-130	%		✓	Water	Total Metals (Undigested)
MS	Potassium (K)-Total	460944	STONEY CK R-SH	52.9	50.6	mg/L	104.4	70-130	%		✓	Water	Total Metals (Undigested)
MS	Selenium (Se)-Total	460944	STONEY CK R-SH	0.0420	0.0404	mg/L	103.9	70-130	%		✓	Water	Total Metals (Undigested)
MS	Silicon (Si)-Total	460944	STONEY CK R-SH	3.39	3.35	mg/L	N/A	-	%	MS-B	✓	Water	Total Metals (Undigested)
MS	Silver (Ag)-Total	460944	STONEY CK R-SH	0.00399	0.004	mg/L	99.7	70-130	%		✓	Water	Total Metals (Undigested)
MS	Sodium (Na)-Total	460944	STONEY CK R-SH	4.02	4.18	mg/L	N/A	-	%	MS-B	✓	Water	Total Metals (Undigested)
MS	Strontium (Sr)-Total	460944	STONEY CK R-SH	0.123	0.124	mg/L	N/A	-	%	MS-B	✓	Water	Total Metals (Undigested)
MS	Thallium (Tl)-Total	460944	STONEY CK R-SH	0.00391	0.00401	mg/L	97.7	70-130	%		✓	Water	Total Metals (Undigested)
MS	Tin (Sn)-Total	460944	STONEY CK R-SH	0.0191	0.02	mg/L	95.2	70-130	%		✓	Water	Total Metals (Undigested)
MS	Titanium (Ti)-Total	460944	STONEY CK R-SH	0.0407	0.04	mg/L	101.7	70-130	%		✓	Water	Total Metals (Undigested)
MS	Uranium (U)-Total	460944	STONEY CK R-SH	0.00446	0.00457	mg/L	97.2	70-130	%		✓	Water	Total Metals (Undigested)
MS	Vanadium (V)-Total	460944	STONEY CK R-SH	0.0996	0.1	mg/L	99.4	70-130	%		✓	Water	Total Metals (Undigested)
MS	Zinc (Zn)-Total	460944	STONEY CK R-SH	0.370	0.403	mg/L	91.8	70-130	%		✓	Water	Total Metals (Undigested)
MS	Zirconium (Zr)-Total	460944	STONEY CK R-SH	0.0388	0.04	mg/L	97.0	70-130	%		✓	Water	Total Metals (Undigested)
Dissolved Metals (Water)													
MS	Mercury (Hg)-Dissolved	460954	DUPLICATE 1	0.00530	0.00559	ug/L	94.3	70-130	%		✓	Water	Dissolved Metals
Aggregate Organics (Water)													
MS	COD	463552	BIRCHBANK R-SH	514	500	mg/L	102.9	75-125	%		✓	Water	Aggregate Organics

Qualifier Legend

MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Evaluation Legend

✓	QC Lot met ALS Data Quality Objectives

Duplicates L1753653

Job Reference 15-1438.1 ECOSCAPE
Report To Kyle Hawes, ECOSCAPE ENVIRONMENTAL CONSULTANTS LTD.
Date Received 8-Apr-2016 9:10
Report Date 10-May-2016 18:04
Report Version 1

ALS ID	Reference	Client Sample ID	QC Type	QC Lot #	Analyte	Sample Result	Duplicate Result	Detection Limit	Units	RPD	RPD Limit	Diff	Diff Limit	Qual	Eval	Matrix	Class
Physical Tests (Water)																	
WG2288736-35	L1753653-8	STONEY CK R-1MD	DUP	464542	Conductivity	150	148	2.0	uS/cm	0.9	10	-			✓	Water	Physical Tests
WG2289383-10	L1753653-21	OLD BRIDGE R-1MAB	DUP	465074	Conductivity	144	147	2.0	uS/cm	2.2	10	-			✓	Water	Physical Tests
WG2288736-35	L1753653-8	STONEY CK R-1MD	DUP	464542	pH	8.04	8.06	0.10	pH	-		0.02	0.3		✓	Water	Physical Tests
WG2289383-10	L1753653-21	OLD BRIDGE R-1MAB	DUP	465074	pH	7.93	7.94	0.10	pH	-		0.01	0.3		✓	Water	Physical Tests
WG2288533-3	L1753653-1	BIRCHBANK R-SH	DUP	463870	Total Suspended Solids	<3.0	<3.0	3.0	mg/L	N/A	20	-			✓	Water	Physical Tests
WG2288533-6	L1753653-17	MAGLIOS L-1MD	DUP	463871	Total Suspended Solids	<3.0	<3.0	3.0	mg/L	N/A	20	-			✓	Water	Physical Tests
WG2289520-6	L1753653-2	BIRCHBANK R-1MD	DUP	465380	Total Dissolved Solids	91	89	13	mg/L	1.5	20	-			✓	Water	Physical Tests
WG2289520-9	L1753653-18	MAGLIOS L-SH	DUP	465381	Total Dissolved Solids	90	86	13	mg/L	5.3	20	-			✓	Water	Physical Tests
WG2288534-6	L1753653-15	MAGLIOS R-1MAB	DUP	463863	Turbidity	0.47	0.43	0.10	NTU	8.9	15	-			✓	Water	Physical Tests
Anions and Nutrients (Water)																	
WG2288736-35	L1753653-8	STONEY CK R-1MD	DUP	464542	Alkalinity, Total (as CaCO3)	62.8	62.0	1.0	mg/L	1.3	20	-			✓	Water	Anions and Nutrients
WG2289383-10	L1753653-21	OLD BRIDGE R-1MAB	DUP	465074	Alkalinity, Total (as CaCO3)	60.0	59.1	1.0	mg/L	1.5	20	-			✓	Water	Anions and Nutrients
WG2291510-7	L1753653-7	STONEY CK R-SH	DUP	466248	Ammonia, Total (as N)	<0.0050	<0.0050	0.0050	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2291510-11	L1753653-23	OLD BRIDGE L-1MD	DUP	466249	Ammonia, Total (as N)	0.0075	0.0075	0.0050	mg/L	0.4	20	-			✓	Water	Anions and Nutrients
WG2288601-6	L1753653-29	NEW BRIDGE L-1MD	DUP	464211	Bromide (Br)	<0.050	<0.050	0.050	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2288075-10	L1753653-2	BIRCHBANK R-1MD	DUP	464201	Bromide (Br)	<0.050	<0.050	0.050	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2288075-13	L1753653-12	STONEY CK L-SH	DUP	464201	Bromide (Br)	<0.050	<0.050	0.050	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2288601-6	L1753653-29	NEW BRIDGE L-1MD	DUP	464211	Chloride (Cl)	0.92	0.92	0.50	mg/L	0.1	20	-			✓	Water	Anions and Nutrients
WG2288075-10	L1753653-2	BIRCHBANK R-1MD	DUP	464201	Chloride (Cl)	0.88	0.88	0.50	mg/L	0.1	20	-			✓	Water	Anions and Nutrients
WG2288075-13	L1753653-12	STONEY CK L-SH	DUP	464201	Chloride (Cl)	0.89	0.89	0.50	mg/L	0.1	20	-			✓	Water	Anions and Nutrients
WG2288601-6	L1753653-29	NEW BRIDGE L-1MD	DUP	464211	Fluoride (F)	0.074	0.074	0.020	mg/L	0.4	20	-			✓	Water	Anions and Nutrients
WG2288075-10	L1753653-2	BIRCHBANK R-1MD	DUP	464201	Fluoride (F)	0.073	0.073	0.020	mg/L	0.5	20	-			✓	Water	Anions and Nutrients
WG2288075-13	L1753653-12	STONEY CK L-SH	DUP	464201	Fluoride (F)	0.073	0.074	0.020	mg/L	0.4	20	-			✓	Water	Anions and Nutrients
WG2288601-6	L1753653-29	NEW BRIDGE L-1MD	DUP	464211	Nitrate (as N)	0.140	0.140	0.0050	mg/L	0.2	20	-			✓	Water	Anions and Nutrients
WG2288075-10	L1753653-2	BIRCHBANK R-1MD	DUP	464201	Nitrate (as N)	0.141	0.141	0.0050	mg/L	0.4	20	-			✓	Water	Anions and Nutrients
WG2288075-13	L1753653-12	STONEY CK L-SH	DUP	464201	Nitrate (as N)	0.141	0.141	0.0050	mg/L	0.3	20	-			✓	Water	Anions and Nutrients
WG2288601-6	L1753653-29	NEW BRIDGE L-1MD	DUP	464211	Nitrite (as N)	<0.0010	<0.0010	0.0010	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2288075-10	L1753653-2	BIRCHBANK R-1MD	DUP	464201	Nitrite (as N)	<0.0010	<0.0010	0.0010	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2288075-13	L1753653-12	STONEY CK L-SH	DUP	464201	Nitrite (as N)	<0.0010	<0.0010	0.0010	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2291388-3	L1753653-16	MAGLIOS L-1MAB	DUP	466391	Total Kjeldahl Nitrogen	0.078	0.103	0.050	mg/L	-		0.025	0.1		✓	Water	Anions and Nutrients
WG2291388-7	L1753653-29	NEW BRIDGE L-1MD	DUP	466391	Total Kjeldahl Nitrogen	0.063	0.064	0.050	mg/L	2.7	20	-			✓	Water	Anions and Nutrients
WG2291388-19	L1753653-2	BIRCHBANK R-1MD	DUP	466391	Total Kjeldahl Nitrogen	0.061	<0.050	0.050	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2288558-3	L1753653-19	OLD BRIDGE R-SH	DUP	463911	Phosphorus (P)-Total Dissolved	<0.0020	<0.0020	0.0020	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2288363-11	L1753653-1	BIRCHBANK R-SH	DUP	463915	Phosphorus (P)-Total Dissolved	<0.0020	<0.0020	0.0020	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2289561-3	L1753653-13	MAGLIOS R-SH	DUP	464769	Phosphorus (P)-Total	0.0039	0.0046	0.0020	mg/L	15	20	-			✓	Water	Anions and Nutrients
WG2289561-7	L1753653-33	DUP 2	DUP	464770	Phosphorus (P)-Total	0.0027	0.0027	0.0020	mg/L	1.1	20	-			✓	Water	Anions and Nutrients
WG2288691-11	L1753653-11	STONEY CK L-1MD	DUP	464034	Phosphorus (P)-Total	0.0030	0.0036	0.0020	mg/L	18	20	-			✓	Water	Anions and Nutrients
WG2288601-6	L1753653-29	NEW BRIDGE L-1MD	DUP	464211	Sulfate (SO4)	11.4	11.4	0.30	mg/L	0.1	20	-			✓	Water	Anions and Nutrients
WG2288075-10	L1753653-2	BIRCHBANK R-1MD	DUP	464201	Sulfate (SO4)	11.2	11.2	0.30	mg/L	0.2	20	-			✓	Water	Anions and Nutrients
WG2288075-13	L1753653-12	STONEY CK L-SH	DUP	464201	Sulfate (SO4)	11.2	11.2	0.30	mg/L	0	20	-			✓	Water	Anions and Nutrients
Total Metals (Water)																	
WG2291257-3	L1753653-18	MAGLIOS L-SH	DUP	466007	Mercury (Hg)-Total	<0.00050	<0.00050	0.00050	ug/L	N/A	20	-			✓	Water	Total Metals
WG2291586-8	L1753653-36	FIELD BLANK	DUP	466261	Mercury (Hg)-Total	<0.00050	<0.00050	0.00050	ug/L	N/A	20	-			✓	Water	Total Metals
Total Metals (Undigested) (Water)																	
WG2288536-5	L1753653-9	STONEY CK R-1MAB	DUP	463866	Aluminum (Al)-Total	0.0152	0.0155	0.00050	mg/L	1.7	20	-			✓	Water	Total Metals (Undigested)
WG2288536-7	L1753653-25	NEW BRIDGE R-SH	DUP	463866	Aluminum (Al)-Total	0.0171	0.0148	0.00050	mg/L	15	20	-			✓	Water	Total Metals (Undigested)
WG2288536-5	L1753653-9	STONEY CK R-1MAB	DUP	463866	Antimony (Sb)-Total	0.000056	0.000066	0.000020	mg/L	16	20	-			✓	Water	Total Metals (Undigested)
WG2288536-7	L1753653-25	NEW BRIDGE R-SH	DUP	463866	Antimony (Sb)-Total	0.00105	0.00107	0.000020	mg/L	2.1	20	-			✓	Water	Total Metals (Undigested)
WG2288536-5	L1753653-9	STONEY CK R-1MAB	DUP	463866	Arsenic (As)-Total	0.000259	0.000265	0.000020	mg/L	2.1	20	-			✓	Water	Total Metals (Undigested)
WG2288536-7	L1753653-25	NEW BRIDGE R-SH	DUP	463866	Arsenic (As)-Total	0.000747	0.000744	0.000020	mg/L	0.4	20	-			✓	Water	Total Metals (Undigested)
WG2288536-5	L1753653-9	STONEY CK R-1MAB	DUP	463866	Barium (Ba)-Total	0.0226	0.0224	0.000020	mg/L	1.1	20	-			✓	Water	Total Metals (Undigested)
WG2288536-7	L1753653-25	NEW BRIDGE R-SH	DUP	463866	Barium (Ba)-Total	0.0229	0.0225	0.000020	mg/L	1.5	20	-			✓	Water	Total Metals (Undigested)
WG2288536-5	L1753653-9	STONEY CK R-1MAB	DUP	463866	Beryllium (Be)-Total	<0.000010	<0.000010	0.000010	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2288536-7	L1753653-25	NEW BRIDGE R-SH	DUP	463866	Beryllium (Be)-Total	<0.000010	<0.000010	0.000010	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2288536-5	L1753653-9	STONEY CK R-1MAB	DUP	463866	Bismuth (Bi)-Total	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2288536-7	L1753653-25	NEW BRIDGE R-SH	DUP	463866	Bismuth (Bi)-Total	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2288536-5	L1753653-9	STONEY CK R-1MAB	DUP	463866	Boron (B)-Total	<0.0050	<0.0050	0.0050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2288536-7	L1753653-25	NEW BRIDGE R-SH	DUP	463866	Boron (B)-Total	<0.0050	<0.0050	0.0050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2288536-5	L1753653-9	STONEY CK R-1MAB	DUP	463866	Cadmium (Cd)-Total	0.0000117	0.0000124	0.0000050	mg/L	5.4	20	-			✓	Water	Total Metals (Undigested)
WG2288536-7	L1753653-25	NEW BRIDGE R-SH	DUP	463866	Cadmium (Cd)-Total	0.000524	0.000515	0.0000050	mg/L	1.8	20	-			✓	Water	Total Metals (Undigested)
WG2288536-5	L1753653-9	STONEY CK R-1MAB	DUP	463866	Calcium (Ca)-Total	19.7	19.9	0.030	mg/L	1	20	-			✓	Water	Total Metals (Undigested)
WG2288536-7	L1753653-25	NEW BRIDGE R-SH	DUP	463866	Calcium (Ca)-Total	22.3	22.2	0.030	mg/L	0.2	20	-			✓	Water	Total Metals (Undigested)
WG2288536-5	L1753653-9	STONEY CK R-1MAB	DUP	463866	Chromium (Cr)-Total	<0.00010	<0.00010	0.00010	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2288536-7	L1753653-25	NEW BRIDGE R-SH	DUP	463866	Chromium (Cr)-Total	<0.00010	0.00011	0.00010	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2288536-5	L1753653-9	STONEY CK R-1MAB	DUP	463866	Cobalt (Co)-Total	0.0000166	0.0000147	0.0000050	mg/L	12	20	-			✓	Water	Total Metals (Undigested)
WG2288536-7	L1753653-25	NEW BRIDGE R-SH	DUP	463866	Cobalt (Co)-Total	0.0000244	0.0000303	0.0000050	mg/L	-		0.0000058	0.00001		✓	Water	Total Metals (Undigested)
WG2288536-5	L1753653-9	STONEY CK R-1MAB	DUP	463866	Copper (Cu)-Total	0.00035	0.00034	0.00010	mg/L	1.7	20	-			✓	Water	Total Metals (Undigested)
WG2288536-7	L1753653-25	NEW BRIDGE R-SH	DUP	463866	Copper (Cu)-Total	0.00092	0.00092	0.00010	mg/L	0.3	20	-			✓	Water	Total Metals (Undigested)
WG2288536-5	L1753653-9	STONEY CK R-1MAB	DUP	463866	Iron (Fe)-Total	0.0172	0.0176	0.0010	mg/L	1.9	20	-			✓	Water	Total Metals (Undigested)
WG2288536-7	L1753653-25	NEW BRIDGE R-SH	DUP	463866	Iron (Fe)-Total	0.0147	0.0135	0.0010	mg/L	8.6	20	-			✓	Water	Total Metals (Undigested)
WG2288536-5	L1753653-9	STONEY CK R-1MAB	DUP	463866	Lead (Pb)-Total	0.000069	0.000068	0.000010	mg/L	1.9	20	-			✓	Water	Total Metals (Undigested)
WG2288536-7	L1753653-25	NEW BRIDGE R-SH	DUP	463866	Lead (Pb)-Total	0.000907	0.000897	0.000010	mg/L	1.2	20	-			✓	Water	Total Metals (Undigested)
WG2288536-5	L1753653-9	STONEY CK R-1MAB	DUP	463866	Lithium (Li)-Total	0.00089	0.00096	0.00050	mg/L	7.1	20	-			✓	Water	Total Metals (Undigested)
WG2288536-7	L1753653-25	NEW BRIDGE R-SH	DUP	463866	Lithium (Li)-Total	0.00095	0.00091	0.00050	mg/L	4	20	-			✓	Water	Total Metals (Undigested)
WG2288536-5	L1753653-9	STONEY CK R-1MAB	DUP	463866	Magnesium (Mg)-Total	4.73	4.74	0.030	mg/L	0.1	20	-			✓	Water	Total Metals (Undigested)
WG2288536-7	L1753653-25	NEW BRIDGE R-SH	DUP	463866	Magnesium (Mg)-Total	4.70	4.70	0.030	mg/L	0	20	-			✓	Water	Total Metals (Undigested)
WG2288536-5	L1753653-9	STONEY CK R-1MAB	DUP	463866	Manganese (Mn)-Total	0.00195	0.00201	0.000050	mg/L	3.3	20	-			✓	Water	Total Metals (Undigested)
WG2288536-7	L1753653-25	NEW BRIDGE R-SH	DUP	463866	Manganese (Mn)-Total	0.00419	0.00425	0.000050	mg/L	1.4	20	-			✓	Water	Total Metals (Undigested)
WG2288536-5	L1753653-9	STONEY CK R-1MAB	DUP	463866	Molybdenum (Mo)-Total	0.000539	0.000549	0.000050	mg/L	1.8	20	-			✓	Water	Total Metals (Undigested)
WG2288536-7	L1753653-25	NEW BRIDGE R-SH	DUP	463866	Molybdenum (Mo)-Total	0.000667	0.000680	0.000050	mg/L	1.9	20	-			✓	Water	Total Metals (Undigested)
WG2288536-5	L1753653-9	STONEY CK R-1MAB	DUP	463866	Nickel (Ni)-Total	0.000291	0.000269	0.000050	mg/L	8	20	-			✓	Water	Total Metals (Undigested)
WG2288536-7	L1753653-25	NEW BRIDGE R-SH	DUP	463866	Nickel (Ni)-Total	0.000279	0.000256	0.000050	mg/L	8.8	20	-			✓	Water	Total Metals (Undigested)
WG2288536-5	L1753653-9	STONEY CK R-1MAB	DUP	463866	Phosphorus (P)-Total	<0.050	<0.050	0.050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2288536-7	L1753653-25	NEW BRIDGE R-SH	DUP	463866	Phosphorus (P)-Total	<0.050	<0.050	0.050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2288536-5	L1753653-9	STONEY CK R-1MAB	DUP	463866	Potassium (K)-Total	0.673	0.682	0.050	mg/L	1.4	20	-			✓	Water	Total Metals (Undigested)
WG2288536-7	L1753653-25	NEW BRIDGE R-SH	DUP	463866	Potassium (K)-Total	0.735	0.731	0.050	mg/L	0.6	20	-			✓	Water	Total Metals (Undigested)
WG2288536-5	L1753653-9	STONEY CK R-1MAB	DUP	463866	Selenium (Se)-Total	0.000291	0.000283	0.000040	mg/L	2.7	20	-			✓	Water	Total Metals (Undigested)
WG2288536-7	L1753653-25	NEW BRIDGE R-SH	DUP	463866	Selenium (Se)-Total	0.00238	0.00236	0.000040	mg/L	0.9	20	-			✓	Water	Total Metals (Undigested)
WG2288536-5	L1753653-9	STONEY CK R-1MAB	DUP	463866	Silicon (Si)-Total	2.45	2.47	0.050	mg/L	0.7	20	-			✓	Water	Total Metals (Undigested)
WG2288536-7	L1753653-25	NEW BRIDGE R-SH	DUP	463866	Silicon (Si)-Total	2.49	2.48	0.050	mg/L	0	20	-			✓	Water	Total Metals (Undigested)
WG2288536-5	L1753653-9	STONEY CK R-1MAB	DUP	463866	Silver (Ag)-Total	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2288536-7	L1753653-25	NEW BRIDGE R-SH	DUP	463866	Silver (Ag)-Total	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2288536-5	L1753653-9	STONEY CK R-1MAB	DUP	463866	Sodium (Na)-Total	1.52	1.54	0.010	mg/L	1.5	20	-			✓	Water	Total Metals (Undigested)
WG2288536-7	L1753653-25	NEW BRIDGE R-SH	DUP	463866	Sodium (Na)-Total	2.74	2.71	0.010	mg/L	1.1	20	-			✓	Water	Total Metals (Undigested)
WG2288536-5	L1753653-9	STONEY CK R-1MAB	DUP	463866	Strontium (Sr)-Total	0.107	0.107	0.000050	mg/L	0.3	20	-			✓	Water	Total Metals (Undigested)
WG2288536-7	L1753653-25	NEW BRIDGE R-SH	DUP	463866	Strontium (Sr)-Total	0.106	0.108	0.000050	mg/L	2.2	20	-			✓	Water	Total Metals (Undigested)
WG2288536-5	L1753653-9	STONEY CK R-1MAB	DUP	463866	Thallium (Tl)-Total	0.0000044	0.0000041	0.0000020	mg/L	7.6	20	-			✓	Water	Total Metals (Undigested)
WG2288536-7	L1753653-25	NEW BRIDGE R-SH	DUP	463866	Thallium (Tl)-Total	0.000392	0.000392	0.0000020	mg/L	0.2	20	-			✓	Water	Total Metals (Undigested)
WG2288536-5	L1753653-9	STONEY CK R-1MAB	DUP	463866	Tin (Sn)-Total	<0.000020	<0.000020	0.000020	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2288536-7	L1753653-25	NEW BRIDGE R-SH	DUP	463866	Tin (Sn)-Total	<0.000020	<0.000020	0.000020	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2288536-5	L1753653-9	STONEY CK R-1MAB	DUP	463866	Titanium (Ti)-Total	0.00057	0.00057	0.00050	mg/L	0.4	20	-			✓	Water	Total Metals (Undigested)
WG2288536-7	L1753653-25	NEW BRIDGE R-SH	DUP	463866	Titanium (Ti)-Total	0.00059	<0.00050	0.00050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2288536-5	L1753653-9	STONEY CK R-1MAB	DUP	463866	Uranium (U)-Total	0.000571	0.000568	0.0000020	mg/L	0.5	20	-			✓	Water	Total Metals (Undigested)
WG2288536-7	L1753653-25	NEW BRIDGE R-SH	DUP	463866	Uranium (U)-Total	0.000559	0.000564	0.0000020	mg/L	0.9	20	-			✓	Water	Total Metals (Undigested)
WG2288536-5	L1753653-9	STONEY CK R-1MAB	DUP	463866	Vanadium (V)-Total	0.000161	0.000166	0.000050	mg/L	3.2	20	-			✓	Water	Total Metals (Undigested)
WG2288536-7	L1753653-25	NEW BRIDGE R-SH	DUP	463866	Vanadium (V)-Total	0.000160	0.000164	0.000050	mg/L	2.5	20	-			✓	Water	Total Metals (Undigested)
WG2288536-5	L1753653-9	STONEY CK R-1MAB	DUP	463866	Zinc (Zn)-Total	0.00274	0.00240	0.00050	mg/L	13	20	-			✓	Water	Total Metals (Undigested)

WG2288536-7	L1753653-25	NEW BRIDGE R-SH	DUP	463866	Zinc (Zn)-Total	0.00852	0.00799	0.00050	mg/L	6.4	20	-	✓	Water	Total Metals (Undigested)
WG2288536-5	L1753653-9	STONEY CK R-1MAB	DUP	463866	Zirconium (Zr)-Total	<0.00010	<0.00010	0.00010	mg/L	N/A	20	-	✓	Water	Total Metals (Undigested)
WG2288536-7	L1753653-25	NEW BRIDGE R-SH	DUP	463866	Zirconium (Zr)-Total	<0.00010	<0.00010	0.00010	mg/L	N/A	20	-	✓	Water	Total Metals (Undigested)
Dissolved Metals (Water)															
WG2287903-9	L1753653-7	STONEY CK R-SH	DUP	463324	Aluminum (Al)-Dissolved	0.00863	0.00850	0.00050	mg/L	1.5	20	-	✓	Water	Dissolved Metals
WG2287903-11	L1753653-23	OLD BRIDGE L-1MD	DUP	463324	Aluminum (Al)-Dissolved	0.00792	0.00714	0.00050	mg/L	10	20	-	✓	Water	Dissolved Metals
WG2287903-9	L1753653-7	STONEY CK R-SH	DUP	463324	Antimony (Sb)-Dissolved	0.000081	0.000084	0.000020	mg/L	3.5	20	-	✓	Water	Dissolved Metals
WG2287903-11	L1753653-23	OLD BRIDGE L-1MD	DUP	463324	Antimony (Sb)-Dissolved	0.000048	0.000048	0.000020	mg/L	0.1	20	-	✓	Water	Dissolved Metals
WG2287903-9	L1753653-7	STONEY CK R-SH	DUP	463324	Arsenic (As)-Dissolved	0.000454	0.000441	0.000020	mg/L	3	20	-	✓	Water	Dissolved Metals
WG2287903-11	L1753653-23	OLD BRIDGE L-1MD	DUP	463324	Arsenic (As)-Dissolved	0.000250	0.000266	0.000020	mg/L	6.4	20	-	✓	Water	Dissolved Metals
WG2287903-9	L1753653-7	STONEY CK R-SH	DUP	463324	Barium (Ba)-Dissolved	0.0247	0.0247	0.000020	mg/L	0	20	-	✓	Water	Dissolved Metals
WG2287903-11	L1753653-23	OLD BRIDGE L-1MD	DUP	463324	Barium (Ba)-Dissolved	0.0220	0.0220	0.000020	mg/L	0.2	20	-	✓	Water	Dissolved Metals
WG2287903-9	L1753653-7	STONEY CK R-SH	DUP	463324	Beryllium (Be)-Dissolved	<0.000010	<0.000010	0.000010	mg/L	N/A	20	-	✓	Water	Dissolved Metals
WG2287903-11	L1753653-23	OLD BRIDGE L-1MD	DUP	463324	Beryllium (Be)-Dissolved	<0.000010	<0.000010	0.000010	mg/L	N/A	20	-	✓	Water	Dissolved Metals
WG2287903-9	L1753653-7	STONEY CK R-SH	DUP	463324	Bismuth (Bi)-Dissolved	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-	✓	Water	Dissolved Metals
WG2287903-11	L1753653-23	OLD BRIDGE L-1MD	DUP	463324	Bismuth (Bi)-Dissolved	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-	✓	Water	Dissolved Metals
WG2287903-9	L1753653-7	STONEY CK R-SH	DUP	463324	Boron (B)-Dissolved	<0.010	<0.010	0.010	mg/L	N/A	20	-	✓	Water	Dissolved Metals
WG2287903-11	L1753653-23	OLD BRIDGE L-1MD	DUP	463324	Boron (B)-Dissolved	<0.010	<0.010	0.010	mg/L	N/A	20	-	✓	Water	Dissolved Metals
WG2287903-9	L1753653-7	STONEY CK R-SH	DUP	463324	Cadmium (Cd)-Dissolved	0.0000282	0.0000319	0.0000050	mg/L	12	20	-	✓	Water	Dissolved Metals
WG2287903-11	L1753653-23	OLD BRIDGE L-1MD	DUP	463324	Cadmium (Cd)-Dissolved	0.0000112	0.0000099	0.0000050	mg/L	12	20	-	✓	Water	Dissolved Metals
WG2287903-9	L1753653-7	STONEY CK R-SH	DUP	463324	Calcium (Ca)-Dissolved	19.3	19.3	0.030	mg/L	0.3	20	-	✓	Water	Dissolved Metals
WG2287903-11	L1753653-23	OLD BRIDGE L-1MD	DUP	463324	Calcium (Ca)-Dissolved	19.9	19.8	0.030	mg/L	0.4	20	-	✓	Water	Dissolved Metals
WG2287903-9	L1753653-7	STONEY CK R-SH	DUP	463324	Chromium (Cr)-Dissolved	<0.00010	<0.00010	0.00010	mg/L	N/A	20	-	✓	Water	Dissolved Metals
WG2287903-11	L1753653-23	OLD BRIDGE L-1MD	DUP	463324	Chromium (Cr)-Dissolved	<0.00010	<0.00010	0.00010	mg/L	N/A	20	-	✓	Water	Dissolved Metals
WG2287903-9	L1753653-7	STONEY CK R-SH	DUP	463324	Cobalt (Co)-Dissolved	0.0000096	0.0000094	0.0000050	mg/L	2.6	20	-	✓	Water	Dissolved Metals
WG2287903-11	L1753653-23	OLD BRIDGE L-1MD	DUP	463324	Cobalt (Co)-Dissolved	0.0000090	0.0000087	0.0000050	mg/L	3.5	20	-	✓	Water	Dissolved Metals
WG2287903-9	L1753653-7	STONEY CK R-SH	DUP	463324	Copper (Cu)-Dissolved	0.00035	0.00038	0.00010	mg/L	9	20	-	✓	Water	Dissolved Metals
WG2287903-11	L1753653-23	OLD BRIDGE L-1MD	DUP	463324	Copper (Cu)-Dissolved	0.00031	0.00030	0.00010	mg/L	3.7	20	-	✓	Water	Dissolved Metals
WG2287903-9	L1753653-7	STONEY CK R-SH	DUP	463324	Iron (Fe)-Dissolved	0.0054	0.0053	0.0010	mg/L	0.5	20	-	✓	Water	Dissolved Metals
WG2287903-11	L1753653-23	OLD BRIDGE L-1MD	DUP	463324	Iron (Fe)-Dissolved	0.0042	0.0042	0.0010	mg/L	0.6	20	-	✓	Water	Dissolved Metals
WG2287903-9	L1753653-7	STONEY CK R-SH	DUP	463324	Lead (Pb)-Dissolved	0.0000340	0.0000379	0.0000050	mg/L	11	20	-	✓	Water	Dissolved Metals
WG2287903-11	L1753653-23	OLD BRIDGE L-1MD	DUP	463324	Lead (Pb)-Dissolved	0.0000131	0.0000127	0.0000050	mg/L	3.3	20	-	✓	Water	Dissolved Metals
WG2287903-9	L1753653-7	STONEY CK R-SH	DUP	463324	Lithium (Li)-Dissolved	0.00163	0.00149	0.00050	mg/L	9	20	-	✓	Water	Dissolved Metals
WG2287903-11	L1753653-23	OLD BRIDGE L-1MD	DUP	463324	Lithium (Li)-Dissolved	0.00092	0.00092	0.00050	mg/L	0.7	20	-	✓	Water	Dissolved Metals
WG2287903-9	L1753653-7	STONEY CK R-SH	DUP	463324	Magnesium (Mg)-Dissolved	4.59	4.58	0.030	mg/L	0.1	20	-	✓	Water	Dissolved Metals
WG2287903-11	L1753653-23	OLD BRIDGE L-1MD	DUP	463324	Magnesium (Mg)-Dissolved	4.72	4.67	0.030	mg/L	1	20	-	✓	Water	Dissolved Metals
WG2287903-9	L1753653-7	STONEY CK R-SH	DUP	463324	Manganese (Mn)-Dissolved	0.00103	0.00108	0.000050	mg/L	4.5	20	-	✓	Water	Dissolved Metals
WG2287903-11	L1753653-23	OLD BRIDGE L-1MD	DUP	463324	Manganese (Mn)-Dissolved	0.00116	0.00118	0.000050	mg/L	1.6	20	-	✓	Water	Dissolved Metals
WG2288537-3	L1753653-1	BIRCHBANK R-SH	DUP	463867	Mercury (Hg)-Dissolved	<0.00050	<0.00050	0.00050	ug/L	N/A	20	-	✓	Water	Dissolved Metals
WG2288537-5	L1753653-22	OLD BRIDGE L-1MAB	DUP	463867	Mercury (Hg)-Dissolved	<0.00050	<0.00050	0.00050	ug/L	N/A	20	-	✓	Water	Dissolved Metals
WG2287903-9	L1753653-7	STONEY CK R-SH	DUP	463324	Molybdenum (Mo)-Dissolved	0.000515	0.000524	0.000050	mg/L	1.8	20	-	✓	Water	Dissolved Metals
WG2287903-11	L1753653-23	OLD BRIDGE L-1MD	DUP	463324	Molybdenum (Mo)-Dissolved	0.000533	0.000549	0.000050	mg/L	3.1	20	-	✓	Water	Dissolved Metals
WG2287903-9	L1753653-7	STONEY CK R-SH	DUP	463324	Nickel (Ni)-Dissolved	0.000235	0.000257	0.000050	mg/L	9.2	20	-	✓	Water	Dissolved Metals
WG2287903-11	L1753653-23	OLD BRIDGE L-1MD	DUP	463324	Nickel (Ni)-Dissolved	0.000261	0.000255	0.000050	mg/L	2.2	20	-	✓	Water	Dissolved Metals
WG2287903-9	L1753653-7	STONEY CK R-SH	DUP	463324	Phosphorus (P)-Dissolved	<0.050	<0.050	0.050	mg/L	N/A	20	-	✓	Water	Dissolved Metals
WG2287903-11	L1753653-23	OLD BRIDGE L-1MD	DUP	463324	Phosphorus (P)-Dissolved	<0.050	<0.050	0.050	mg/L	N/A	20	-	✓	Water	Dissolved Metals
WG2287903-9	L1753653-7	STONEY CK R-SH	DUP	463324	Potassium (K)-Dissolved	0.667	0.679	0.050	mg/L	1.7	20	-	✓	Water	Dissolved Metals
WG2287903-11	L1753653-23	OLD BRIDGE L-1MD	DUP	463324	Potassium (K)-Dissolved	0.668	0.665	0.050	mg/L	0.5	20	-	✓	Water	Dissolved Metals
WG2287903-9	L1753653-7	STONEY CK R-SH	DUP	463324	Selenium (Se)-Dissolved	0.000281	0.000289	0.000040	mg/L	2.8	20	-	✓	Water	Dissolved Metals
WG2287903-11	L1753653-23	OLD BRIDGE L-1MD	DUP	463324	Selenium (Se)-Dissolved	0.000278	0.000286	0.000040	mg/L	2.6	20	-	✓	Water	Dissolved Metals
WG2287903-9	L1753653-7	STONEY CK R-SH	DUP	463324	Silicon (Si)-Dissolved	2.55	2.55	0.050	mg/L	0.2	20	-	✓	Water	Dissolved Metals
WG2287903-11	L1753653-23	OLD BRIDGE L-1MD	DUP	463324	Silicon (Si)-Dissolved	2.42	2.38	0.050	mg/L	1.6	20	-	✓	Water	Dissolved Metals
WG2287903-9	L1753653-7	STONEY CK R-SH	DUP	463324	Silver (Ag)-Dissolved	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-	✓	Water	Dissolved Metals
WG2287903-11	L1753653-23	OLD BRIDGE L-1MD	DUP	463324	Silver (Ag)-Dissolved	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-	✓	Water	Dissolved Metals
WG2287903-9	L1753653-7	STONEY CK R-SH	DUP	463324	Sodium (Na)-Dissolved	1.78	1.72	0.010	mg/L	3.7	20	-	✓	Water	Dissolved Metals
WG2287903-11	L1753653-23	OLD BRIDGE L-1MD	DUP	463324	Sodium (Na)-Dissolved	1.61	1.60	0.010	mg/L	0.5	20	-	✓	Water	Dissolved Metals
WG2287903-9	L1753653-7	STONEY CK R-SH	DUP	463324	Strontium (Sr)-Dissolved	0.0955	0.0971	0.00010	mg/L	1.7	20	-	✓	Water	Dissolved Metals
WG2287903-11	L1753653-23	OLD BRIDGE L-1MD	DUP	463324	Strontium (Sr)-Dissolved	0.107	0.106	0.00010	mg/L	0.5	20	-	✓	Water	Dissolved Metals
WG2287903-9	L1753653-7	STONEY CK R-SH	DUP	463324	Thallium (Tl)-Dissolved	0.0000024	0.0000026	0.0000020	mg/L	5.6	20	-	✓	Water	Dissolved Metals
WG2287903-11	L1753653-23	OLD BRIDGE L-1MD	DUP	463324	Thallium (Tl)-Dissolved	0.0000020	0.0000022	0.0000020	mg/L	7.6	20	-	✓	Water	Dissolved Metals
WG2287903-9	L1753653-7	STONEY CK R-SH	DUP	463324	Tin (Sn)-Dissolved	<0.000010	<0.000010	0.000010	mg/L	N/A	20	-	✓	Water	Dissolved Metals
WG2287903-11	L1753653-23	OLD BRIDGE L-1MD	DUP	463324	Tin (Sn)-Dissolved	<0.000010	<0.000010	0.000010	mg/L	N/A	20	-	✓	Water	Dissolved Metals
WG2287903-9	L1753653-7	STONEY CK R-SH	DUP	463324	Titanium (Ti)-Dissolved	<0.00030	<0.00030	0.00030	mg/L	N/A	20	-	✓	Water	Dissolved Metals
WG2287903-11	L1753653-23	OLD BRIDGE L-1MD	DUP	463324	Titanium (Ti)-Dissolved	<0.00030	<0.00030	0.00030	mg/L	N/A	20	-	✓	Water	Dissolved Metals
WG2287903-9	L1753653-7	STONEY CK R-SH	DUP	463324	Uranium (U)-Dissolved	0.000531	0.000532	0.0000020	mg/L	0.1	20	-	✓	Water	Dissolved Metals
WG2287903-11	L1753653-23	OLD BRIDGE L-1MD	DUP	463324	Uranium (U)-Dissolved	0.000555	0.000560	0.0000020	mg/L	0.8	20	-	✓	Water	Dissolved Metals
WG2287903-9	L1753653-7	STONEY CK R-SH	DUP	463324	Vanadium (V)-Dissolved	0.000207	0.000195	0.000050	mg/L	5.6	20	-	✓	Water	Dissolved Metals
WG2287903-11	L1753653-23	OLD BRIDGE L-1MD	DUP	463324	Vanadium (V)-Dissolved	0.000147	0.000132	0.000050	mg/L	11	20	-	✓	Water	Dissolved Metals
WG2287903-9	L1753653-7	STONEY CK R-SH	DUP	463324	Zinc (Zn)-Dissolved	0.00253	0.00223	0.00050	mg/L	13	20	-	✓	Water	Dissolved Metals
WG2287903-11	L1753653-23	OLD BRIDGE L-1MD	DUP	463324	Zinc (Zn)-Dissolved	0.00092	0.00105	0.00050	mg/L	13	20	-	✓	Water	Dissolved Metals
WG2287903-9	L1753653-7	STONEY CK R-SH	DUP	463324	Zirconium (Zr)-Dissolved	<0.00010	<0.00010	0.00010	mg/L	N/A	20	-	✓	Water	Dissolved Metals
WG2287903-11	L1753653-23	OLD BRIDGE L-1MD	DUP	463324	Zirconium (Zr)-Dissolved	<0.00010	<0.00010	0.00010	mg/L	N/A	20	-	✓	Water	Dissolved Metals
Aggregate Organics (Water)															
WG2288648-3	L1753653-28	NEW BRIDGE L-1MAB	DUP	463975	BOD	<2.0	<2.0	2.0	mg/L	N/A	20	-	✓	Water	Aggregate Organics
WG2288324-11	L1753653-27	NEW BRIDGE R-1MAB	DUP	463758	BOD	<2.0	<2.0	2.0	mg/L	N/A	20	-	✓	Water	Aggregate Organics
WG2289102-7	L1753653-20	OLD BRIDGE R-1MD	DUP	464329	COD	<20	<20	20	mg/L	N/A	20	-	✓	Water	Aggregate Organics
WG2291252-7	L1753653-32	DUPLICATE 1	DUP	465992	COD	<20	<20	20	mg/L	N/A	20	-	✓	Water	Aggregate Organics

Evaluation Legend

✓ QC Lot met ALS Data Quality Objectives

Quality Control L1753653

Job Reference 15-1438.1 ECOSCAPE
Report To Kyle Hawes, ECOSCAPE ENVIRONMENTAL CONSULTANTS LTD.
Date Received 8-Apr-2016 9:10
Report Date 10-May-2016 18:04
Report Version 1

QC Type	Analyte	QC Lot #	ALS QC ID	Result	Target	Units	%	Limit	Units	Qual	Eval	Matrix	Class
Physical Tests (Water)													
CRM	Conductivity	465073	WG2289383-4	150	147	uS/cm	102.1	90-110	%		✓	Water	Physical Tests
CRM	Conductivity	465074	WG2289383-9	147	147	uS/cm	99.8	90-110	%		✓	Water	Physical Tests
CRM	Conductivity	464538	WG2288736-14	151	147	uS/cm	103.1	90-110	%		✓	Water	Physical Tests
CRM	Conductivity	464539	WG2288736-19	151	147	uS/cm	102.7	90-110	%		✓	Water	Physical Tests
CRM	Conductivity	464542	WG2288736-34	154	147	uS/cm	105.0	90-110	%		✓	Water	Physical Tests
CRM	pH	465073	WG2289383-2	6.98	7	pH	6.98	6.9-7.1	pH		✓	Water	Physical Tests
CRM	pH	465074	WG2289383-7	6.98	7	pH	6.98	6.9-7.1	pH		✓	Water	Physical Tests
CRM	pH	464538	WG2288736-12	7.00	7	pH	7.00	6.9-7.1	pH		✓	Water	Physical Tests
CRM	pH	464539	WG2288736-17	7.00	7	pH	7.00	6.9-7.1	pH		✓	Water	Physical Tests
CRM	pH	464542	WG2288736-32	6.99	7	pH	6.99	6.9-7.1	pH		✓	Water	Physical Tests
CRM	Turbidity	463862	WG2288534-2	40.6	40	NTU	101.5	85-115	%		✓	Water	Physical Tests
CRM	Turbidity	463863	WG2288534-5	41.0	40	NTU	102.5	85-115	%		✓	Water	Physical Tests
CRM	Turbidity	463864	WG2288534-8	40.0	40	NTU	100.0	85-115	%		✓	Water	Physical Tests
Anions and Nutrients (Water)													
CRM	Alkalinity, Total (as CaCO3)	465073	WG2289383-3	493	500	mg/L	98.6	85-115	%		✓	Water	Anions and Nutrients
CRM	Alkalinity, Total (as CaCO3)	465074	WG2289383-8	469	500	mg/L	93.8	85-115	%		✓	Water	Anions and Nutrients
CRM	Alkalinity, Total (as CaCO3)	464538	WG2288736-13	481	500	mg/L	96.1	85-115	%		✓	Water	Anions and Nutrients
CRM	Alkalinity, Total (as CaCO3)	464539	WG2288736-18	495	500	mg/L	99.0	85-115	%		✓	Water	Anions and Nutrients
CRM	Alkalinity, Total (as CaCO3)	464542	WG2288736-33	501	500	mg/L	100.1	85-115	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total Dissolved	463914	WG2288363-6	7.31	7.17	mg/L	101.9	80-120	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total Dissolved	463911	WG2288558-2	7.75	7.17	mg/L	108.1	80-120	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total Dissolved	463912	WG2288558-6	7.63	7.17	mg/L	106.5	80-120	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total Dissolved	463915	WG2288363-10	7.91	7.17	mg/L	110.4	80-120	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total	464033	WG2288691-6	7.47	7.17	mg/L	104.1	80-120	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total	464769	WG2289561-2	7.15	7.17	mg/L	99.7	80-120	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total	464770	WG2289561-6	7.22	7.17	mg/L	100.7	80-120	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total	464034	WG2288691-10	7.68	7.17	mg/L	107.1	80-120	%		✓	Water	Anions and Nutrients
Physical Tests (Water)													
LCS	Total Suspended Solids	463870	WG2288533-2	70.0	75	mg/L	93.3	85-115	%		✓	Water	Physical Tests
LCS	Total Suspended Solids	463871	WG2288533-5	72.7	75	mg/L	96.9	85-115	%		✓	Water	Physical Tests
LCS	Total Dissolved Solids	465380	WG2289520-5	426	425	mg/L	100.1	85-115	%		✓	Water	Physical Tests
LCS	Total Dissolved Solids	465381	WG2289520-8	435	425	mg/L	102.2	85-115	%		✓	Water	Physical Tests
Anions and Nutrients (Water)													
LCS	Ammonia, Total (as N)	466247	WG2291510-2	0.126	0.12	mg/L	104.6	85-115	%		✓	Water	Anions and Nutrients
LCS	Ammonia, Total (as N)	466248	WG2291510-6	0.130	0.12	mg/L	108.6	85-115	%		✓	Water	Anions and Nutrients
LCS	Ammonia, Total (as N)	466249	WG2291510-10	0.133	0.12	mg/L	110.6	85-115	%		✓	Water	Anions and Nutrients
LCS	Bromide (Br)	464201	WG2288075-2	0.525	0.5	mg/L	105.0	85-115	%		✓	Water	Anions and Nutrients
LCS	Bromide (Br)	464211	WG2288601-2	0.521	0.5	mg/L	104.2	85-115	%		✓	Water	Anions and Nutrients
LCS	Bromide (Br)	464201	WG2288075-16	0.524	0.5	mg/L	104.7	85-115	%		✓	Water	Anions and Nutrients
LCS	Bromide (Br)	464211	WG2288601-21	0.528	0.5	mg/L	105.5	85-115	%		✓	Water	Anions and Nutrients
LCS	Chloride (Cl)	464201	WG2288075-2	103	100	mg/L	103.1	90-110	%		✓	Water	Anions and Nutrients
LCS	Chloride (Cl)	464211	WG2288601-2	103	100	mg/L	102.6	90-110	%		✓	Water	Anions and Nutrients
LCS	Chloride (Cl)	464201	WG2288075-16	103	100	mg/L	102.5	90-110	%		✓	Water	Anions and Nutrients
LCS	Chloride (Cl)	464211	WG2288601-21	103	100	mg/L	102.6	90-110	%		✓	Water	Anions and Nutrients
LCS	Fluoride (F)	464201	WG2288075-2	1.03	1	mg/L	102.7	90-110	%		✓	Water	Anions and Nutrients
LCS	Fluoride (F)	464211	WG2288601-2	1.02	1	mg/L	102.5	90-110	%		✓	Water	Anions and Nutrients
LCS	Fluoride (F)	464201	WG2288075-16	1.03	1	mg/L	102.8	90-110	%		✓	Water	Anions and Nutrients
LCS	Fluoride (F)	464211	WG2288601-21	1.03	1	mg/L	103.0	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrate (as N)	464201	WG2288075-2	2.58	2.5	mg/L	103.2	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrate (as N)	464211	WG2288601-2	2.55	2.5	mg/L	101.9	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrate (as N)	464201	WG2288075-16	2.57	2.5	mg/L	102.6	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrate (as N)	464211	WG2288601-21	2.55	2.5	mg/L	102.1	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrite (as N)	464201	WG2288075-2	0.514	0.5	mg/L	102.7	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrite (as N)	464211	WG2288601-2	0.508	0.5	mg/L	101.6	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrite (as N)	464201	WG2288075-16	0.514	0.5	mg/L	102.9	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrite (as N)	464211	WG2288601-21	0.510	0.5	mg/L	102.0	90-110	%		✓	Water	Anions and Nutrients
LCS	Total Kjeldahl Nitrogen	466391	WG2291388-2	0.966	1	mg/L	96.6	75-125	%		✓	Water	Anions and Nutrients
LCS	Total Kjeldahl Nitrogen	466391	WG2291388-6	0.955	1	mg/L	95.5	75-125	%		✓	Water	Anions and Nutrients
LCS	Total Kjeldahl Nitrogen	466660	WG2292089-2	0.999	1	mg/L	99.9	75-125	%		✓	Water	Anions and Nutrients
LCS	Total Kjeldahl Nitrogen	466660	WG2292089-6	1.02	1	mg/L	101.9	75-125	%		✓	Water	Anions and Nutrients
LCS	Total Kjeldahl Nitrogen	466391	WG2291388-10	0.963	1	mg/L	96.3	75-125	%		✓	Water	Anions and Nutrients
LCS	Total Kjeldahl Nitrogen	466391	WG2291388-14	0.984	1	mg/L	98.4	75-125	%		✓	Water	Anions and Nutrients
LCS	Total Kjeldahl Nitrogen	466391	WG2291388-18	1.06	1	mg/L	106.1	75-125	%		✓	Water	Anions and Nutrients
LCS	Total Kjeldahl Nitrogen	466660	WG2292089-10	0.951	1	mg/L	95.1	75-125	%		✓	Water	Anions and Nutrients
LCS	Total Kjeldahl Nitrogen	466660	WG2292089-14	1.03	1	mg/L	102.6	75-125	%		✓	Water	Anions and Nutrients
LCS	Sulfate (SO4)	464201	WG2288075-2	103	100	mg/L	103.3	90-110	%		✓	Water	Anions and Nutrients
LCS	Sulfate (SO4)	464211	WG2288601-2	103	100	mg/L	102.8	90-110	%		✓	Water	Anions and Nutrients
LCS	Sulfate (SO4)	464201	WG2288075-16	103	100	mg/L	102.9	90-110	%		✓	Water	Anions and Nutrients
LCS	Sulfate (SO4)	464211	WG2288601-21	103	100	mg/L	103.1	90-110	%		✓	Water	Anions and Nutrients
Organic / Inorganic Carbon (Water)													
LCS	Total Organic Carbon	467095	WG2291771-1	8.49	8.57	mg/L	99.1	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	467095	WG2291771-5	8.64	8.57	mg/L	100.8	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	467095	WG2291771-9	8.65	8.57	mg/L	100.9	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	467079	WG2292046-1	8.48	8.57	mg/L	98.9	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	467079	WG2292046-5	8.51	8.57	mg/L	99.3	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	467079	WG2292046-9	8.68	8.57	mg/L	101.2	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	467328	WG2292544-1	8.33	8.57	mg/L	97.2	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	467328	WG2292544-5	8.05	8.57	mg/L	93.9	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	467328	WG2292544-9	8.65	8.57	mg/L	100.9	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	467095	WG2291771-13	8.49	8.57	mg/L	99.1	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	467079	WG2292046-13	8.55	8.57	mg/L	99.7	80-120	%		✓	Water	Organic / Inorganic Carbon

LCS	Total Organic Carbon	467328	WG2292544-13	8.71	8.57	mg/L	101.6	80-120	%	✓	Water	Organic / Inorganic Carbon
Total Metals (Water)												
LCS	Mercury (Hg)-Total	466007	WG2291257-2	0.00472	0.005	ug/L	94.4	80-120	%	✓	Water	Total Metals
LCS	Mercury (Hg)-Total	466261	WG2291586-5	0.00489	0.005	ug/L	97.8	80-120	%	✓	Water	Total Metals
Total Metals (Undigested) (Water)												
LCS	Aluminum (Al)-Total	463866	WG2288536-2	2.01	2	mg/L	100.5	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Antimony (Sb)-Total	463866	WG2288536-2	1.00	1	mg/L	100.1	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Arsenic (As)-Total	463866	WG2288536-2	0.981	1	mg/L	98.1	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Barium (Ba)-Total	463866	WG2288536-2	0.247	0.25	mg/L	98.9	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Beryllium (Be)-Total	463866	WG2288536-2	0.100	0.1	mg/L	100.4	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Bismuth (Bi)-Total	463866	WG2288536-2	0.945	1	mg/L	94.5	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Boron (B)-Total	463866	WG2288536-2	0.917	1	mg/L	91.7	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Cadmium (Cd)-Total	463866	WG2288536-2	0.0962	0.1	mg/L	96.2	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Calcium (Ca)-Total	463866	WG2288536-2	50.8	50	mg/L	101.5	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Chromium (Cr)-Total	463866	WG2288536-2	0.251	0.25	mg/L	100.2	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Cobalt (Co)-Total	463866	WG2288536-2	0.251	0.25	mg/L	100.5	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Copper (Cu)-Total	463866	WG2288536-2	0.243	0.25	mg/L	97.1	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Iron (Fe)-Total	463866	WG2288536-2	0.969	1	mg/L	96.9	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Lead (Pb)-Total	463866	WG2288536-2	0.483	0.5	mg/L	96.7	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Lithium (Li)-Total	463866	WG2288536-2	0.265	0.25	mg/L	106.1	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Magnesium (Mg)-Total	463866	WG2288536-2	49.0	50	mg/L	97.9	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Manganese (Mn)-Total	463866	WG2288536-2	0.248	0.25	mg/L	99.2	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Molybdenum (Mo)-Total	463866	WG2288536-2	0.248	0.25	mg/L	99.0	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Nickel (Ni)-Total	463866	WG2288536-2	0.508	0.5	mg/L	101.7	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Phosphorus (P)-Total	463866	WG2288536-2	2.55	2.5	mg/L	101.8	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Potassium (K)-Total	463866	WG2288536-2	48.1	50	mg/L	96.2	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Selenium (Se)-Total	463866	WG2288536-2	0.941	1	mg/L	94.1	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Silicon (Si)-Total	463866	WG2288536-2	1.04	1	mg/L	104.4	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Silver (Ag)-Total	463866	WG2288536-2	0.0982	0.1	mg/L	98.2	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Sodium (Na)-Total	463866	WG2288536-2	50.9	50	mg/L	101.7	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Strontium (Sr)-Total	463866	WG2288536-2	0.244	0.25	mg/L	97.6	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Thallium (Tl)-Total	463866	WG2288536-2	0.964	1	mg/L	96.4	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Tin (Sn)-Total	463866	WG2288536-2	0.485	0.5	mg/L	97.0	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Titanium (Ti)-Total	463866	WG2288536-2	0.259	0.25	mg/L	103.5	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Uranium (U)-Total	463866	WG2288536-2	0.00492	0.005	mg/L	98.5	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Vanadium (V)-Total	463866	WG2288536-2	0.504	0.5	mg/L	100.9	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Zinc (Zn)-Total	463866	WG2288536-2	0.428	0.5	mg/L	85.7	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Zirconium (Zr)-Total	463866	WG2288536-2	0.0931	0.1	mg/L	93.1	80-120	%	✓	Water	Total Metals (Undigested)
Dissolved Metals (Water)												
LCS	Calcium (Ca)-Dissolved	463324	WG2287903-2	50.9	50	mg/L	101.7	80-120	%	✓	Water	Dissolved Metals
LCS	Magnesium (Mg)-Dissolved	463324	WG2287903-2	50.8	50	mg/L	101.6	80-120	%	✓	Water	Dissolved Metals
LCS	Mercury (Hg)-Dissolved	463867	WG2288537-2	0.00472	0.005	ug/L	94.4	80-120	%	✓	Water	Dissolved Metals
LCS	Phosphorus (P)-Dissolved	463324	WG2287903-2	2.58	2.5	mg/L	103.4	80-120	%	✓	Water	Dissolved Metals
LCS	Potassium (K)-Dissolved	463324	WG2287903-2	51.6	50	mg/L	103.2	80-120	%	✓	Water	Dissolved Metals
LCS	Silicon (Si)-Dissolved	463324	WG2287903-2	1.07	1	mg/L	107.2	80-120	%	✓	Water	Dissolved Metals
Aggregate Organics (Water)												
LCS	BOD	463758	WG2288324-6	170	198	mg/L	85.6	85-115	%	✓	Water	Aggregate Organics
LCS	BOD	463975	WG2288648-2	198	198	mg/L	99.8	85-115	%	✓	Water	Aggregate Organics
LCS	BOD	463758	WG2288324-10	179	198	mg/L	90.3	85-115	%	✓	Water	Aggregate Organics
LCS	COD	464329	WG2289102-3	746	750	mg/L	99.5	85-115	%	✓	Water	Aggregate Organics
LCS	COD	464329	WG2289102-6	752	750	mg/L	100.3	85-115	%	✓	Water	Aggregate Organics
LCS	COD	465992	WG2291252-3	740	750	mg/L	98.7	85-115	%	✓	Water	Aggregate Organics
LCS	COD	465992	WG2291252-6	756	750	mg/L	100.7	85-115	%	✓	Water	Aggregate Organics
LCS	COD	465992	WG2291252-10	777	750	mg/L	103.6	85-115	%	✓	Water	Aggregate Organics
Physical Tests (Water)												
MB	Conductivity	465073	WG2289383-1	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Conductivity	465074	WG2289383-6	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Conductivity	464538	WG2288736-11	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Conductivity	464539	WG2288736-16	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Conductivity	464542	WG2288736-31	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Total Suspended Solids	463870	WG2288533-1	<3.0		mg/L	-	<3.0	mg/L	✓	Water	Physical Tests
MB	Total Suspended Solids	463871	WG2288533-4	<3.0		mg/L	-	<3.0	mg/L	✓	Water	Physical Tests
MB	Total Dissolved Solids	465380	WG2289520-4	<10		mg/L	-	<10	mg/L	✓	Water	Physical Tests
MB	Total Dissolved Solids	465381	WG2289520-7	<10		mg/L	-	<10	mg/L	✓	Water	Physical Tests
MB	Turbidity	463862	WG2288534-1	<0.10		NTU	-	<0.10	NTU	✓	Water	Physical Tests
MB	Turbidity	463863	WG2288534-4	<0.10		NTU	-	<0.10	NTU	✓	Water	Physical Tests
MB	Turbidity	463864	WG2288534-7	<0.10		NTU	-	<0.10	NTU	✓	Water	Physical Tests
Anions and Nutrients (Water)												
MB	Alkalinity, Total (as CaCO3)	465073	WG2289383-1	<1.0		mg/L	-	<1.0	mg/L	✓	Water	Anions and Nutrients
MB	Alkalinity, Total (as CaCO3)	465074	WG2289383-6	<1.0		mg/L	-	<1.0	mg/L	✓	Water	Anions and Nutrients
MB	Alkalinity, Total (as CaCO3)	464538	WG2288736-11	<1.0		mg/L	-	<1.0	mg/L	✓	Water	Anions and Nutrients
MB	Alkalinity, Total (as CaCO3)	464539	WG2288736-16	<1.0		mg/L	-	<1.0	mg/L	✓	Water	Anions and Nutrients
MB	Alkalinity, Total (as CaCO3)	464542	WG2288736-31	<1.0		mg/L	-	<1.0	mg/L	✓	Water	Anions and Nutrients
MB	Ammonia, Total (as N)	466247	WG2291510-1	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Ammonia, Total (as N)	466248	WG2291510-5	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Ammonia, Total (as N)	466249	WG2291510-9	<0.0050		mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	464201	WG2288075-1	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	464201	WG2288075-3	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	464201	WG2288075-5	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	464201	WG2288075-8	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	464211	WG2288601-1	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	464211	WG2288601-4	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	464211	WG2288601-7	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	464201	WG2288075-11	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	464201	WG2288075-14	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	464211	WG2288601-10	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	464211	WG2288601-13	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	464211	WG2288601-16	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	464211	WG2288601-19	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	464201	WG2288075-1	<0.50		mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	464201	WG2288075-3	<0.50		mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	464201	WG2288075-5	<0.50		mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients

MB	Chloride (Cl)	464201	WG2288075-8	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	464211	WG2288601-1	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	464211	WG2288601-4	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	464211	WG2288601-7	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	464201	WG2288075-11	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	464201	WG2288075-14	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	464211	WG2288601-10	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	464211	WG2288601-13	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	464211	WG2288601-16	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	464211	WG2288601-19	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	464201	WG2288075-1	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	464201	WG2288075-3	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	464201	WG2288075-5	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	464201	WG2288075-8	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	464211	WG2288601-1	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	464211	WG2288601-4	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	464211	WG2288601-7	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	464201	WG2288075-11	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	464201	WG2288075-14	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	464211	WG2288601-10	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	464211	WG2288601-13	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	464211	WG2288601-16	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	464211	WG2288601-19	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	464201	WG2288075-1	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	464201	WG2288075-3	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	464201	WG2288075-5	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	464201	WG2288075-8	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	464211	WG2288601-1	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	464211	WG2288601-4	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	464211	WG2288601-7	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	464201	WG2288075-11	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	464201	WG2288075-14	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	464211	WG2288601-10	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	464211	WG2288601-13	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	464211	WG2288601-16	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	464211	WG2288601-19	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	464201	WG2288075-1	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	464201	WG2288075-3	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	464201	WG2288075-5	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	464201	WG2288075-8	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	464211	WG2288601-1	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	464211	WG2288601-4	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	464211	WG2288601-7	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	464201	WG2288075-11	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	464201	WG2288075-14	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	464211	WG2288601-10	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	464211	WG2288601-13	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	464211	WG2288601-16	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	464211	WG2288601-19	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Total Kjeldahl Nitrogen	466391	WG2291388-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Total Kjeldahl Nitrogen	466391	WG2291388-5	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Total Kjeldahl Nitrogen	466391	WG2291388-9	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Total Kjeldahl Nitrogen	466660	WG2292089-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Total Kjeldahl Nitrogen	466660	WG2292089-5	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Total Kjeldahl Nitrogen	466660	WG2292089-9	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Total Kjeldahl Nitrogen	466391	WG2291388-13	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Total Kjeldahl Nitrogen	466391	WG2291388-17	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Total Kjeldahl Nitrogen	466660	WG2292089-13	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total Dissolved	463914	WG2288363-5	<0.0020	mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total Dissolved	463915	WG2288363-9	<0.0020	mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total Dissolved	463911	WG2288558-1	<0.0020	mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total Dissolved	463912	WG2288558-5	<0.0020	mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total	464033	WG2288691-5	<0.0020	mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total	464034	WG2288691-9	<0.0020	mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total	464769	WG2289561-1	<0.0020	mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total	464770	WG2289561-5	<0.0020	mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	464201	WG2288075-1	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	464201	WG2288075-3	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	464201	WG2288075-5	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	464201	WG2288075-8	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	464211	WG2288601-1	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	464211	WG2288601-4	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	464211	WG2288601-7	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	464201	WG2288075-11	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	464201	WG2288075-14	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	464211	WG2288601-10	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	464211	WG2288601-13	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	464211	WG2288601-16	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	464211	WG2288601-19	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
Organic / Inorganic Carbon (Water)											
MB	Total Organic Carbon	467095	WG2291771-4	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	467095	WG2291771-8	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	467079	WG2292046-4	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	467079	WG2292046-8	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	467328	WG2292544-4	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	467328	WG2292544-8	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	467095	WG2291771-12	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	467079	WG2292046-12	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	467328	WG2292544-12	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
Total Metals (Water)											
MB	Mercury (Hg)-Total	466007	WG2291257-1	<0.00050	ug/L	-	<0.00050	ug/L	✓	Water	Total Metals
MB	Mercury (Hg)-Total	466261	WG2291586-1	<0.00050	ug/L	-	<0.00050	ug/L	✓	Water	Total Metals
MB	Mercury (Hg)-Total	466261	WG2291586-2	<0.00050	ug/L	-	<0.00050	ug/L	✓	Water	Total Metals
MB	Mercury (Hg)-Total	466261	WG2291586-3	<0.00050	ug/L	-	<0.00050	ug/L	✓	Water	Total Metals
MB	Mercury (Hg)-Total	466261	WG2291586-4	<0.00050	ug/L	-	<0.00050	ug/L	✓	Water	Total Metals

Total Metals (Undigested) (Water)											
MB	Aluminum (Al)-Total	463866	WG2288536-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Total Metals (Undigested)
MB	Antimony (Sb)-Total	463866	WG2288536-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Arsenic (As)-Total	463866	WG2288536-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Barium (Ba)-Total	463866	WG2288536-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Beryllium (Be)-Total	463866	WG2288536-1	<0.000010	mg/L	-	<0.000010	mg/L	✓	Water	Total Metals (Undigested)
MB	Bismuth (Bi)-Total	463866	WG2288536-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Boron (B)-Total	463866	WG2288536-1	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Total Metals (Undigested)
MB	Cadmium (Cd)-Total	463866	WG2288536-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Calcium (Ca)-Total	463866	WG2288536-1	<0.030	mg/L	-	<0.030	mg/L	✓	Water	Total Metals (Undigested)
MB	Chromium (Cr)-Total	463866	WG2288536-1	<0.00010	mg/L	-	<0.00010	mg/L	✓	Water	Total Metals (Undigested)
MB	Cobalt (Co)-Total	463866	WG2288536-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Copper (Cu)-Total	463866	WG2288536-1	<0.00010	mg/L	-	<0.00010	mg/L	✓	Water	Total Metals (Undigested)
MB	Iron (Fe)-Total	463866	WG2288536-1	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Total Metals (Undigested)
MB	Lead (Pb)-Total	463866	WG2288536-1	<0.000010	mg/L	-	<0.000010	mg/L	✓	Water	Total Metals (Undigested)
MB	Lithium (Li)-Total	463866	WG2288536-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Total Metals (Undigested)
MB	Magnesium (Mg)-Total	463866	WG2288536-1	<0.030	mg/L	-	<0.030	mg/L	✓	Water	Total Metals (Undigested)
MB	Manganese (Mn)-Total	463866	WG2288536-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Molybdenum (Mo)-Total	463866	WG2288536-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Nickel (Ni)-Total	463866	WG2288536-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Phosphorus (P)-Total	463866	WG2288536-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Total Metals (Undigested)
MB	Potassium (K)-Total	463866	WG2288536-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Total Metals (Undigested)
MB	Selenium (Se)-Total	463866	WG2288536-1	<0.000040	mg/L	-	<0.000040	mg/L	✓	Water	Total Metals (Undigested)
MB	Silicon (Si)-Total	463866	WG2288536-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Total Metals (Undigested)
MB	Silver (Ag)-Total	463866	WG2288536-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Sodium (Na)-Total	463866	WG2288536-1	<0.010	mg/L	-	<0.010	mg/L	✓	Water	Total Metals (Undigested)
MB	Strontium (Sr)-Total	463866	WG2288536-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Thallium (Tl)-Total	463866	WG2288536-1	<0.0000020	mg/L	-	<0.0000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Tin (Sn)-Total	463866	WG2288536-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Titanium (Ti)-Total	463866	WG2288536-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Total Metals (Undigested)
MB	Uranium (U)-Total	463866	WG2288536-1	<0.0000020	mg/L	-	<0.0000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Vanadium (V)-Total	463866	WG2288536-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Zinc (Zn)-Total	463866	WG2288536-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Total Metals (Undigested)
MB	Zirconium (Zr)-Total	463866	WG2288536-1	<0.00010	mg/L	-	<0.00010	mg/L	✓	Water	Total Metals (Undigested)
Dissolved Metals (Water)											
MB	Calcium (Ca)-Dissolved	463324	WG2287903-1	<0.030	mg/L	-	<0.030	mg/L	✓	Water	Dissolved Metals
MB	Magnesium (Mg)-Dissolved	463324	WG2287903-1	<0.030	mg/L	-	<0.030	mg/L	✓	Water	Dissolved Metals
MB	Mercury (Hg)-Dissolved	463867	WG2288537-1	<0.00050	ug/L	-	<0.00050	ug/L	✓	Water	Dissolved Metals
MB	Phosphorus (P)-Dissolved	463324	WG2287903-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Dissolved Metals
MB	Potassium (K)-Dissolved	463324	WG2287903-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Dissolved Metals
MB	Silicon (Si)-Dissolved	463324	WG2287903-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Dissolved Metals
Aggregate Organics (Water)											
MB	BOD	463758	WG2288324-5	<2.0	mg/L	-	<2.0	mg/L	✓	Water	Aggregate Organics
MB	BOD	463758	WG2288324-9	<2.0	mg/L	-	<2.0	mg/L	✓	Water	Aggregate Organics
MB	BOD	463975	WG2288648-1	<2.0	mg/L	-	<2.0	mg/L	✓	Water	Aggregate Organics
MB	COD	464329	WG2289102-1	<20	mg/L	-	<20	mg/L	✓	Water	Aggregate Organics
MB	COD	464329	WG2289102-5	<20	mg/L	-	<20	mg/L	✓	Water	Aggregate Organics
MB	COD	465992	WG2291252-1	<20	mg/L	-	<20	mg/L	✓	Water	Aggregate Organics
MB	COD	465992	WG2291252-5	<20	mg/L	-	<20	mg/L	✓	Water	Aggregate Organics
MB	COD	465992	WG2291252-9	<20	mg/L	-	<20	mg/L	✓	Water	Aggregate Organics
Anions and Nutrients (Water)											
MS	Ammonia, Total (as N)	466248	STONEY CK R-SH	0.211	0.2	mg/L	105.5	75-125	%	✓	Water	Anions and Nutrients
MS	Ammonia, Total (as N)	466249	OLD BRIDGE L-1MD	0.216	0.208	mg/L	104.4	75-125	%	✓	Water	Anions and Nutrients
MS	Bromide (Br)	464201	BIRCHBANK R-SH	0.520	0.5	mg/L	104.1	75-125	%	✓	Water	Anions and Nutrients
MS	Bromide (Br)	464201	STONEY CK L-1MAB	0.511	0.5	mg/L	102.3	75-125	%	✓	Water	Anions and Nutrients
MS	Bromide (Br)	464211	NEW BRIDGE L-1MAB	0.527	0.5	mg/L	105.4	75-125	%	✓	Water	Anions and Nutrients
MS	Chloride (Cl)	464201	BIRCHBANK R-SH	102	101	mg/L	101.5	75-125	%	✓	Water	Anions and Nutrients
MS	Chloride (Cl)	464201	STONEY CK L-1MAB	102	101	mg/L	100.6	75-125	%	✓	Water	Anions and Nutrients
MS	Chloride (Cl)	464211	NEW BRIDGE L-1MAB	103	101	mg/L	101.8	75-125	%	✓	Water	Anions and Nutrients
MS	Fluoride (F)	464201	BIRCHBANK R-SH	1.08	1.07	mg/L	100.6	75-125	%	✓	Water	Anions and Nutrients
MS	Fluoride (F)	464201	STONEY CK L-1MAB	1.07	1.07	mg/L	99.8	75-125	%	✓	Water	Anions and Nutrients
MS	Fluoride (F)	464211	NEW BRIDGE L-1MAB	1.09	1.07	mg/L	101.1	75-125	%	✓	Water	Anions and Nutrients
MS	Nitrate (as N)	464201	BIRCHBANK R-SH	2.67	2.64	mg/L	101.2	75-125	%	✓	Water	Anions and Nutrients
MS	Nitrate (as N)	464201	STONEY CK L-1MAB	2.65	2.64	mg/L	100.2	75-125	%	✓	Water	Anions and Nutrients
MS	Nitrate (as N)	464211	NEW BRIDGE L-1MAB	2.66	2.64	mg/L	100.8	75-125	%	✓	Water	Anions and Nutrients
MS	Nitrite (as N)	464201	BIRCHBANK R-SH	0.505	0.5	mg/L	100.9	75-125	%	✓	Water	Anions and Nutrients
MS	Nitrite (as N)	464201	STONEY CK L-1MAB	0.497	0.5	mg/L	99.4	75-125	%	✓	Water	Anions and Nutrients
MS	Nitrite (as N)	464211	NEW BRIDGE L-1MAB	0.503	0.5	mg/L	100.7	75-125	%	✓	Water	Anions and Nutrients
MS	Total Kjeldahl Nitrogen	466391	MAGLIOS L-1MD	1.08	1.09	mg/L	99.8	70-130	%	✓	Water	Anions and Nutrients
MS	Total Kjeldahl Nitrogen	466391	NEW BRIDGE L-SH	1.11	1.1	mg/L	101.3	70-130	%	✓	Water	Anions and Nutrients
MS	Total Kjeldahl Nitrogen	466391	BIRCHBANK R-1MAB	1.03	1.06	mg/L	97.3	70-130	%	✓	Water	Anions and Nutrients
MS	Phosphorus (P)-Total Dissolved	463915	BIRCHBANK R-1MD	0.0548	0.0529	mg/L	103.9	70-130	%	✓	Water	Anions and Nutrients
MS	Phosphorus (P)-Total Dissolved	463911	OLD BRIDGE R-1MD	0.0558	0.0534	mg/L	104.8	70-130	%	✓	Water	Anions and Nutrients
MS	Phosphorus (P)-Total	464770	DUP 3	0.0519	0.0538	mg/L	96.3	70-130	%	✓	Water	Anions and Nutrients

MS	Phosphorus (P)-Total	464769	MAGLIOS R-1MD	0.0442	0.0536	mg/L	81.0	70-130	%	✓	Water	Anions and Nutrients
MS	Phosphorus (P)-Total	464034	STONEY CK L-SH	0.0543	0.0527	mg/L	103.1	70-130	%	✓	Water	Anions and Nutrients
MS	Sulfate (SO4)	464201	BIRCHBANK R-SH	111	111	mg/L	100.2	75-125	%	✓	Water	Anions and Nutrients
MS	Sulfate (SO4)	464201	STONEY CK L-1MAB	111	111	mg/L	99.4	75-125	%	✓	Water	Anions and Nutrients
MS	Sulfate (SO4)	464211	NEW BRIDGE L-1MAB	112	111	mg/L	100.6	75-125	%	✓	Water	Anions and Nutrients
Organic / Inorganic Carbon (Water)												
MS	Total Organic Carbon	467079	MAGLIOS R-SH	6.38	6.64	mg/L	94.7	70-130	%	✓	Water	Organic / Inorganic Carbon
Total Metals (Water)												
MS	Mercury (Hg)-Total	466007	BIRCHBANK L-1MD	0.00481	0.005	ug/L	96.3	70-130	%	✓	Water	Total Metals
MS	Mercury (Hg)-Total	466261	OLD BRIDGE R-SH	0.00515	0.00586	ug/L	85.7	70-130	%	✓	Water	Total Metals
Total Metals (Undigested) (Water)												
MS	Aluminum (Al)-Total	463866	MAGLIOS R-1MD	0.209	0.217	mg/L	95.6	70-130	%	✓	Water	Total Metals (Undigested)
MS	Aluminum (Al)-Total	463866	NEW BRIDGE L-SH	0.235	0.228	mg/L	103.8	70-130	%	✓	Water	Total Metals (Undigested)
MS	Antimony (Sb)-Total	463866	MAGLIOS R-1MD	0.0198	0.0201	mg/L	98.3	70-130	%	✓	Water	Total Metals (Undigested)
MS	Antimony (Sb)-Total	463866	NEW BRIDGE L-SH	0.0199	0.0201	mg/L	99.1	70-130	%	✓	Water	Total Metals (Undigested)
MS	Arsenic (As)-Total	463866	MAGLIOS R-1MD	0.0199	0.0203	mg/L	97.6	70-130	%	✓	Water	Total Metals (Undigested)
MS	Arsenic (As)-Total	463866	NEW BRIDGE L-SH	0.0200	0.0203	mg/L	98.7	70-130	%	✓	Water	Total Metals (Undigested)
MS	Barium (Ba)-Total	463866	MAGLIOS R-1MD	0.0415	0.0425	mg/L	N/A	-	%	MS-B ✓	Water	Total Metals (Undigested)
MS	Barium (Ba)-Total	463866	NEW BRIDGE L-SH	0.0429	0.0438	mg/L	N/A	-	%	MS-B ✓	Water	Total Metals (Undigested)
MS	Beryllium (Be)-Total	463866	MAGLIOS R-1MD	0.0405	0.04	mg/L	101.3	70-130	%	✓	Water	Total Metals (Undigested)
MS	Beryllium (Be)-Total	463866	NEW BRIDGE L-SH	0.0406	0.04	mg/L	101.5	70-130	%	✓	Water	Total Metals (Undigested)
MS	Bismuth (Bi)-Total	463866	MAGLIOS R-1MD	0.00926	0.01	mg/L	92.6	70-130	%	✓	Water	Total Metals (Undigested)
MS	Bismuth (Bi)-Total	463866	NEW BRIDGE L-SH	0.00906	0.01	mg/L	90.6	70-130	%	✓	Water	Total Metals (Undigested)
MS	Boron (B)-Total	463866	MAGLIOS R-1MD	0.0928	0.1	mg/L	92.8	70-130	%	✓	Water	Total Metals (Undigested)
MS	Boron (B)-Total	463866	NEW BRIDGE L-SH	0.0925	0.1	mg/L	92.5	70-130	%	✓	Water	Total Metals (Undigested)
MS	Cadmium (Cd)-Total	463866	MAGLIOS R-1MD	0.00392	0.00403	mg/L	97.2	70-130	%	✓	Water	Total Metals (Undigested)
MS	Cadmium (Cd)-Total	463866	NEW BRIDGE L-SH	0.00395	0.00404	mg/L	97.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Calcium (Ca)-Total	463866	MAGLIOS R-1MD	70.7	69.7	mg/L	101.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Calcium (Ca)-Total	463866	NEW BRIDGE L-SH	71.8	70.1	mg/L	103.4	70-130	%	✓	Water	Total Metals (Undigested)
MS	Chromium (Cr)-Total	463866	MAGLIOS R-1MD	0.0384	0.04	mg/L	96.0	70-130	%	✓	Water	Total Metals (Undigested)
MS	Chromium (Cr)-Total	463866	NEW BRIDGE L-SH	0.0379	0.0401	mg/L	94.5	70-130	%	✓	Water	Total Metals (Undigested)
MS	Cobalt (Co)-Total	463866	MAGLIOS R-1MD	0.0193	0.02	mg/L	96.2	70-130	%	✓	Water	Total Metals (Undigested)
MS	Cobalt (Co)-Total	463866	NEW BRIDGE L-SH	0.0194	0.02	mg/L	96.7	70-130	%	✓	Water	Total Metals (Undigested)
MS	Copper (Cu)-Total	463866	MAGLIOS R-1MD	0.0192	0.0204	mg/L	94.1	70-130	%	✓	Water	Total Metals (Undigested)
MS	Copper (Cu)-Total	463866	NEW BRIDGE L-SH	0.0197	0.0205	mg/L	96.2	70-130	%	✓	Water	Total Metals (Undigested)
MS	Iron (Fe)-Total	463866	MAGLIOS R-1MD	1.90	2.02	mg/L	93.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Iron (Fe)-Total	463866	NEW BRIDGE L-SH	1.90	2.03	mg/L	93.4	70-130	%	✓	Water	Total Metals (Undigested)
MS	Lead (Pb)-Total	463866	MAGLIOS R-1MD	0.0197	0.0201	mg/L	97.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Lead (Pb)-Total	463866	NEW BRIDGE L-SH	0.0208	0.0214	mg/L	96.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Lithium (Li)-Total	463866	MAGLIOS R-1MD	0.102	0.101	mg/L	101.1	70-130	%	✓	Water	Total Metals (Undigested)
MS	Lithium (Li)-Total	463866	NEW BRIDGE L-SH	0.104	0.101	mg/L	103.2	70-130	%	✓	Water	Total Metals (Undigested)
MS	Magnesium (Mg)-Total	463866	MAGLIOS R-1MD	53.7	54.6	mg/L	98.1	70-130	%	✓	Water	Total Metals (Undigested)
MS	Magnesium (Mg)-Total	463866	NEW BRIDGE L-SH	54.9	54.8	mg/L	100.1	70-130	%	✓	Water	Total Metals (Undigested)
MS	Manganese (Mn)-Total	463866	MAGLIOS R-1MD	0.0217	0.0222	mg/L	97.7	70-130	%	✓	Water	Total Metals (Undigested)
MS	Manganese (Mn)-Total	463866	NEW BRIDGE L-SH	0.0243	0.0247	mg/L	98.0	70-130	%	✓	Water	Total Metals (Undigested)
MS	Molybdenum (Mo)-Total	463866	MAGLIOS R-1MD	0.0195	0.0206	mg/L	94.6	70-130	%	✓	Water	Total Metals (Undigested)
MS	Molybdenum (Mo)-Total	463866	NEW BRIDGE L-SH	0.0201	0.0206	mg/L	97.8	70-130	%	✓	Water	Total Metals (Undigested)
MS	Nickel (Ni)-Total	463866	MAGLIOS R-1MD	0.0386	0.0402	mg/L	95.8	70-130	%	✓	Water	Total Metals (Undigested)
MS	Nickel (Ni)-Total	463866	NEW BRIDGE L-SH	0.0386	0.0403	mg/L	95.8	70-130	%	✓	Water	Total Metals (Undigested)

MS	Phosphorus (P)-Total	463866	MAGLIOS R-1MD	2.41	2.5	mg/L	96.6	70-130	%		✓	Water	Total Metals (Undigested)
MS	Phosphorus (P)-Total	463866	NEW BRIDGE L-SH	2.53	2.5	mg/L	101.1	70-130	%		✓	Water	Total Metals (Undigested)
MS	Potassium (K)-Total	463866	MAGLIOS R-1MD	51.0	50.7	mg/L	100.6	70-130	%		✓	Water	Total Metals (Undigested)
MS	Potassium (K)-Total	463866	NEW BRIDGE L-SH	52.0	50.7	mg/L	102.5	70-130	%		✓	Water	Total Metals (Undigested)
MS	Selenium (Se)-Total	463866	MAGLIOS R-1MD	0.0395	0.0404	mg/L	97.6	70-130	%		✓	Water	Total Metals (Undigested)
MS	Selenium (Se)-Total	463866	NEW BRIDGE L-SH	0.0382	0.0403	mg/L	94.8	70-130	%		✓	Water	Total Metals (Undigested)
MS	Silicon (Si)-Total	463866	MAGLIOS R-1MD	3.37	3.45	mg/L	N/A	-	%	MS-B	✓	Water	Total Metals (Undigested)
MS	Silicon (Si)-Total	463866	NEW BRIDGE L-SH	3.64	3.69	mg/L	N/A	-	%	MS-B	✓	Water	Total Metals (Undigested)
MS	Silver (Ag)-Total	463866	MAGLIOS R-1MD	0.00402	0.004	mg/L	100.4	70-130	%		✓	Water	Total Metals (Undigested)
MS	Silver (Ag)-Total	463866	NEW BRIDGE L-SH	0.00395	0.004	mg/L	98.7	70-130	%		✓	Water	Total Metals (Undigested)
MS	Sodium (Na)-Total	463866	MAGLIOS R-1MD	3.56	3.69	mg/L	93.4	70-130	%		✓	Water	Total Metals (Undigested)
MS	Sodium (Na)-Total	463866	NEW BRIDGE L-SH	3.91	4.07	mg/L	N/A	-	%	MS-B	✓	Water	Total Metals (Undigested)
MS	Strontium (Sr)-Total	463866	MAGLIOS R-1MD	0.124	0.128	mg/L	N/A	-	%	MS-B	✓	Water	Total Metals (Undigested)
MS	Strontium (Sr)-Total	463866	NEW BRIDGE L-SH	0.130	0.131	mg/L	N/A	-	%	MS-B	✓	Water	Total Metals (Undigested)
MS	Thallium (Tl)-Total	463866	MAGLIOS R-1MD	0.00391	0.00402	mg/L	97.3	70-130	%		✓	Water	Total Metals (Undigested)
MS	Thallium (Tl)-Total	463866	NEW BRIDGE L-SH	0.00387	0.00401	mg/L	96.6	70-130	%		✓	Water	Total Metals (Undigested)
MS	Tin (Sn)-Total	463866	MAGLIOS R-1MD	0.0196	0.02	mg/L	98.1	70-130	%		✓	Water	Total Metals (Undigested)
MS	Tin (Sn)-Total	463866	NEW BRIDGE L-SH	0.0194	0.02	mg/L	96.9	70-130	%		✓	Water	Total Metals (Undigested)
MS	Titanium (Ti)-Total	463866	MAGLIOS R-1MD	0.0398	0.0405	mg/L	98.1	70-130	%		✓	Water	Total Metals (Undigested)
MS	Titanium (Ti)-Total	463866	NEW BRIDGE L-SH	0.0406	0.0414	mg/L	97.9	70-130	%		✓	Water	Total Metals (Undigested)
MS	Uranium (U)-Total	463866	MAGLIOS R-1MD	0.00442	0.00457	mg/L	96.3	70-130	%		✓	Water	Total Metals (Undigested)
MS	Uranium (U)-Total	463866	NEW BRIDGE L-SH	0.00443	0.00456	mg/L	96.6	70-130	%		✓	Water	Total Metals (Undigested)
MS	Vanadium (V)-Total	463866	MAGLIOS R-1MD	0.0980	0.1	mg/L	97.8	70-130	%		✓	Water	Total Metals (Undigested)
MS	Vanadium (V)-Total	463866	NEW BRIDGE L-SH	0.0978	0.1	mg/L	97.6	70-130	%		✓	Water	Total Metals (Undigested)
MS	Zinc (Zn)-Total	463866	MAGLIOS R-1MD	0.340	0.402	mg/L	84.7	70-130	%		✓	Water	Total Metals (Undigested)
MS	Zinc (Zn)-Total	463866	NEW BRIDGE L-SH	0.346	0.403	mg/L	85.5	70-130	%		✓	Water	Total Metals (Undigested)
MS	Zirconium (Zr)-Total	463866	MAGLIOS R-1MD	0.0387	0.04	mg/L	96.7	70-130	%		✓	Water	Total Metals (Undigested)
MS	Zirconium (Zr)-Total	463866	NEW BRIDGE L-SH	0.0394	0.04	mg/L	98.6	70-130	%		✓	Water	Total Metals (Undigested)
Dissolved Metals (Water)													
MS	Aluminum (Al)-Dissolved	463324	DUPLICATE 1	0.199	0.207	mg/L	96.0	70-130	%		✓	Water	Dissolved Metals
MS	Aluminum (Al)-Dissolved	463324	STONEY CK L-1MD	0.203	0.206	mg/L	98.4	70-130	%		✓	Water	Dissolved Metals
MS	Antimony (Sb)-Dissolved	463324	DUPLICATE 1	0.0207	0.0211	mg/L	98.1	70-130	%		✓	Water	Dissolved Metals
MS	Antimony (Sb)-Dissolved	463324	STONEY CK L-1MD	0.0194	0.0201	mg/L	96.9	70-130	%		✓	Water	Dissolved Metals
MS	Arsenic (As)-Dissolved	463324	DUPLICATE 1	0.0218	0.0207	mg/L	105.6	70-130	%		✓	Water	Dissolved Metals
MS	Arsenic (As)-Dissolved	463324	STONEY CK L-1MD	0.0214	0.0203	mg/L	105.7	70-130	%		✓	Water	Dissolved Metals
MS	Barium (Ba)-Dissolved	463324	DUPLICATE 1	0.0447	0.0434	mg/L	N/A	-	%	MS-B	✓	Water	Dissolved Metals
MS	Barium (Ba)-Dissolved	463324	STONEY CK L-1MD	0.0447	0.045	mg/L	N/A	-	%	MS-B	✓	Water	Dissolved Metals
MS	Beryllium (Be)-Dissolved	463324	DUPLICATE 1	0.0412	0.04	mg/L	103.1	70-130	%		✓	Water	Dissolved Metals
MS	Beryllium (Be)-Dissolved	463324	STONEY CK L-1MD	0.0420	0.04	mg/L	104.9	70-130	%		✓	Water	Dissolved Metals
MS	Bismuth (Bi)-Dissolved	463324	DUPLICATE 1	0.00948	0.01	mg/L	94.8	70-130	%		✓	Water	Dissolved Metals
MS	Bismuth (Bi)-Dissolved	463324	STONEY CK L-1MD	0.00934	0.01	mg/L	93.4	70-130	%		✓	Water	Dissolved Metals
MS	Boron (B)-Dissolved	463324	DUPLICATE 1	0.102	0.1	mg/L	101.9	70-130	%		✓	Water	Dissolved Metals
MS	Boron (B)-Dissolved	463324	STONEY CK L-1MD	0.102	0.1	mg/L	102.4	70-130	%		✓	Water	Dissolved Metals
MS	Cadmium (Cd)-Dissolved	463324	DUPLICATE 1	0.00449	0.00452	mg/L	99.1	70-130	%		✓	Water	Dissolved Metals
MS	Cadmium (Cd)-Dissolved	463324	STONEY CK L-1MD	0.00427	0.00401	mg/L	106.6	70-130	%		✓	Water	Dissolved Metals
MS	Calcium (Ca)-Dissolved	463324	DUPLICATE 1	73.7	72.1	mg/L	103.2	70-130	%		✓	Water	Dissolved Metals
MS	Calcium (Ca)-Dissolved	463324	STONEY CK L-1MD	70.8	69.9	mg/L	101.9	70-130	%		✓	Water	Dissolved Metals
MS	Chromium (Cr)-Dissolved	463324	DUPLICATE 1	0.0392	0.04	mg/L	97.9	70-130	%		✓	Water	Dissolved Metals
MS	Chromium (Cr)-Dissolved	463324	STONEY CK L-1MD	0.0387	0.04	mg/L	96.8	70-130	%		✓	Water	Dissolved Metals
MS	Cobalt (Co)-Dissolved	463324	DUPLICATE 1	0.0196	0.02	mg/L	97.9	70-130	%		✓	Water	Dissolved Metals
MS	Cobalt (Co)-Dissolved	463324	STONEY CK L-1MD	0.0194	0.02	mg/L	97.0	70-130	%		✓	Water	Dissolved Metals
MS	Copper (Cu)-Dissolved	463324	DUPLICATE 1	0.0201	0.0208	mg/L	96.6	70-130	%		✓	Water	Dissolved Metals
MS	Copper (Cu)-Dissolved	463324	STONEY CK L-1MD	0.0196	0.0203	mg/L	96.4	70-130	%		✓	Water	Dissolved Metals
MS	Iron (Fe)-Dissolved	463324	DUPLICATE 1	1.94	2	mg/L	96.8	70-130	%		✓	Water	Dissolved Metals
MS	Iron (Fe)-Dissolved	463324	STONEY CK L-1MD	1.96	2	mg/L	97.7	70-130	%		✓	Water	Dissolved Metals
MS	Lead (Pb)-Dissolved	463324	DUPLICATE 1	0.0206	0.0205	mg/L	100.6	70-130	%		✓	Water	Dissolved Metals

MS	Lead (Pb)-Dissolved	463324	STONEY CK L-1MD	0.0197	0.02	mg/L	98.5	70-130	%	✓	Water	Dissolved Metals
MS	Lithium (Li)-Dissolved	463324	DUPLICATE 1	0.105	0.102	mg/L	103.2	70-130	%	✓	Water	Dissolved Metals
MS	Lithium (Li)-Dissolved	463324	STONEY CK L-1MD	0.106	0.102	mg/L	104.9	70-130	%	✓	Water	Dissolved Metals
MS	Magnesium (Mg)-Dissolved	463324	DUPLICATE 1	54.5	54.7	mg/L	99.6	70-130	%	✓	Water	Dissolved Metals
MS	Magnesium (Mg)-Dissolved	463324	STONEY CK L-1MD	53.5	54.8	mg/L	97.4	70-130	%	✓	Water	Dissolved Metals
MS	Manganese (Mn)-Dissolved	463324	DUPLICATE 1	0.0234	0.0234	mg/L	99.9	70-130	%	✓	Water	Dissolved Metals
MS	Manganese (Mn)-Dissolved	463324	STONEY CK L-1MD	0.0210	0.0209	mg/L	100.6	70-130	%	✓	Water	Dissolved Metals
MS	Mercury (Hg)-Dissolved	463867	DUP 3	0.00505	0.005	ug/L	101.1	70-130	%	✓	Water	Dissolved Metals
MS	Mercury (Hg)-Dissolved	463867	MAGLIOS L-1MD	0.00445	0.005	ug/L	89.0	70-130	%	✓	Water	Dissolved Metals
MS	Molybdenum (Mo)-Dissolved	463324	DUPLICATE 1	0.0187	0.0206	mg/L	90.4	70-130	%	✓	Water	Dissolved Metals
MS	Molybdenum (Mo)-Dissolved	463324	STONEY CK L-1MD	0.0184	0.0205	mg/L	89.5	70-130	%	✓	Water	Dissolved Metals
MS	Nickel (Ni)-Dissolved	463324	DUPLICATE 1	0.0395	0.0403	mg/L	98.1	70-130	%	✓	Water	Dissolved Metals
MS	Nickel (Ni)-Dissolved	463324	STONEY CK L-1MD	0.0388	0.0403	mg/L	96.4	70-130	%	✓	Water	Dissolved Metals
MS	Phosphorus (P)-Dissolved	463324	DUPLICATE 1	2.48	2.5	mg/L	99.2	70-130	%	✓	Water	Dissolved Metals
MS	Phosphorus (P)-Dissolved	463324	STONEY CK L-1MD	2.42	2.5	mg/L	96.9	70-130	%	✓	Water	Dissolved Metals
MS	Potassium (K)-Dissolved	463324	DUPLICATE 1	52.5	50.7	mg/L	103.7	70-130	%	✓	Water	Dissolved Metals
MS	Potassium (K)-Dissolved	463324	STONEY CK L-1MD	52.1	50.7	mg/L	102.9	70-130	%	✓	Water	Dissolved Metals
MS	Selenium (Se)-Dissolved	463324	DUPLICATE 1	0.0460	0.0425	mg/L	108.8	70-130	%	✓	Water	Dissolved Metals
MS	Selenium (Se)-Dissolved	463324	STONEY CK L-1MD	0.0423	0.0403	mg/L	105.0	70-130	%	✓	Water	Dissolved Metals
MS	Silicon (Si)-Dissolved	463324	DUPLICATE 1	3.38	3.46	mg/L	N/A	-	%	MS-B ✓	Water	Dissolved Metals
MS	Silicon (Si)-Dissolved	463324	STONEY CK L-1MD	3.35	3.43	mg/L	N/A	-	%	MS-B ✓	Water	Dissolved Metals
MS	Silver (Ag)-Dissolved	463324	DUPLICATE 1	0.00414	0.004	mg/L	103.5	70-130	%	✓	Water	Dissolved Metals
MS	Silver (Ag)-Dissolved	463324	STONEY CK L-1MD	0.00404	0.004	mg/L	101.0	70-130	%	✓	Water	Dissolved Metals
MS	Sodium (Na)-Dissolved	463324	DUPLICATE 1	4.99	4.9	mg/L	N/A	-	%	MS-B ✓	Water	Dissolved Metals
MS	Sodium (Na)-Dissolved	463324	STONEY CK L-1MD	3.74	3.73	mg/L	100.4	70-130	%	✓	Water	Dissolved Metals
MS	Strontium (Sr)-Dissolved	463324	DUPLICATE 1	0.119	0.12	mg/L	N/A	-	%	MS-B ✓	Water	Dissolved Metals
MS	Strontium (Sr)-Dissolved	463324	STONEY CK L-1MD	0.115	0.117	mg/L	N/A	-	%	MS-B ✓	Water	Dissolved Metals
MS	Thallium (Tl)-Dissolved	463324	DUPLICATE 1	0.00444	0.00441	mg/L	100.6	70-130	%	✓	Water	Dissolved Metals
MS	Thallium (Tl)-Dissolved	463324	STONEY CK L-1MD	0.00393	0.004	mg/L	98.1	70-130	%	✓	Water	Dissolved Metals
MS	Tin (Sn)-Dissolved	463324	DUPLICATE 1	0.0199	0.02	mg/L	99.4	70-130	%	✓	Water	Dissolved Metals
MS	Tin (Sn)-Dissolved	463324	STONEY CK L-1MD	0.0194	0.02	mg/L	97.1	70-130	%	✓	Water	Dissolved Metals
MS	Titanium (Ti)-Dissolved	463324	DUPLICATE 1	0.0415	0.04	mg/L	103.7	70-130	%	✓	Water	Dissolved Metals
MS	Titanium (Ti)-Dissolved	463324	STONEY CK L-1MD	0.0411	0.04	mg/L	102.8	70-130	%	✓	Water	Dissolved Metals
MS	Uranium (U)-Dissolved	463324	DUPLICATE 1	0.00449	0.00458	mg/L	97.7	70-130	%	✓	Water	Dissolved Metals
MS	Uranium (U)-Dissolved	463324	STONEY CK L-1MD	0.00439	0.00454	mg/L	96.0	70-130	%	✓	Water	Dissolved Metals
MS	Vanadium (V)-Dissolved	463324	DUPLICATE 1	0.112	0.1	mg/L	111.5	70-130	%	✓	Water	Dissolved Metals
MS	Vanadium (V)-Dissolved	463324	STONEY CK L-1MD	0.111	0.1	mg/L	110.4	70-130	%	✓	Water	Dissolved Metals
MS	Zinc (Zn)-Dissolved	463324	DUPLICATE 1	0.398	0.408	mg/L	97.5	70-130	%	✓	Water	Dissolved Metals
MS	Zinc (Zn)-Dissolved	463324	STONEY CK L-1MD	0.393	0.402	mg/L	97.8	70-130	%	✓	Water	Dissolved Metals
MS	Zirconium (Zr)-Dissolved	463324	DUPLICATE 1	0.0369	0.04	mg/L	92.3	70-130	%	✓	Water	Dissolved Metals
MS	Zirconium (Zr)-Dissolved	463324	STONEY CK L-1MD	0.0364	0.04	mg/L	91.0	70-130	%	✓	Water	Dissolved Metals
Aggregate Organics (Water)												
MS	COD	465992	WANETA COMP	512	500	mg/L	102.3	75-125	%	✓	Water	Aggregate Organics
MS	COD	464329	MAGLIOS R-SH	514	500	mg/L	102.8	75-125	%	✓	Water	Aggregate Organics

Qualifier Legend

MS-B Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Evaluation Legend

✓ QC Lot met ALS Data Quality Objectives

Duplicates L1805254

Job Reference TECK AREMP
Report To Kyle Hawes, ECOSCAPE ENVIRONMENTAL CONSULTANTS LTD.
Date Received 28-Jul-2016 9:00
Report Date 22-Aug-2016 13:16
Report Version 1

ALS ID	Reference	Client Sample ID	QC Type	QC Lot #	Analyte	Sample Result	Duplicate Result	Detection Limit	Units	RPD	RPD Limit	Diff	Diff Limit	Qual	Eval	Matrix	Class
Physical Tests (Water)																	
WG2365630-25	L1805254-1	BIRCH-BANK R-SH	DUP	528364	Conductivity	119	120	2.0	uS/cm	0.9	10	-			✓	Water	Physical Tests
WG2365630-30	L1805254-12	STONEY CK L-SH	DUP	528365	Conductivity	118	121	2.0	uS/cm	2.9	10	-			✓	Water	Physical Tests
WG2365630-35	L1805254-32	DUPLICATE 1	DUP	528366	Conductivity	126	127	2.0	uS/cm	0.9	10	-			✓	Water	Physical Tests
WG2365630-25	L1805254-1	BIRCH-BANK R-SH	DUP	528364	pH	7.83	7.84	0.10	pH	-		0.01	0.3		✓	Water	Physical Tests
WG2365630-30	L1805254-12	STONEY CK L-SH	DUP	528365	pH	7.78	7.81	0.10	pH	-		0.03	0.3		✓	Water	Physical Tests
WG2365630-35	L1805254-32	DUPLICATE 1	DUP	528366	pH	7.85	7.86	0.10	pH	-		0.01	0.3		✓	Water	Physical Tests
WG2365912-3	L1805254-20	OLD BRIDGE R-1MD	DUP	527367	Total Suspended Solids	<3.0	<3.0	3.0	mg/L	N/A	20	-			✓	Water	Physical Tests
WG2365909-3	L1805254-1	BIRCH-BANK R-SH	DUP	527417	Total Dissolved Solids	72	69	13	mg/L	4.7	20	-			✓	Water	Physical Tests
WG2365909-6	L1805254-21	OLD BRIDGE R-1MAB	DUP	527418	Total Dissolved Solids	74	76	13	mg/L	1.8	20	-			✓	Water	Physical Tests
WG2357360-9	L1805254-17	MAGLIOS L-1MD	DUP	520102	Turbidity	0.66	0.67	0.10	NTU	0.6	15	-			✓	Water	Physical Tests
WG2357609-6	L1805254-25	OLD BRIDGE R-SH	DUP	520290	Turbidity	0.55	0.61	0.10	NTU	9.1	15	-			✓	Water	Physical Tests
Anions and Nutrients (Water)																	
WG2365630-25	L1805254-1	BIRCH-BANK R-SH	DUP	528364	Alkalinity, Total (as CaCO3)	52.5	52.1	1.0	mg/L	0.8	20	-			✓	Water	Anions and Nutrients
WG2365630-30	L1805254-12	STONEY CK L-SH	DUP	528365	Alkalinity, Total (as CaCO3)	51.6	52.4	1.0	mg/L	1.5	20	-			✓	Water	Anions and Nutrients
WG2365630-35	L1805254-32	DUPLICATE 1	DUP	528366	Alkalinity, Total (as CaCO3)	52.3	52.7	1.0	mg/L	0.8	20	-			✓	Water	Anions and Nutrients
WG2360290-3	L1805254-16	MAGLIOS R-1MAB	DUP	522762	Ammonia, Total (as N)	0.0084	0.0091	0.0050	mg/L	8.1	20	-			✓	Water	Anions and Nutrients
WG2357157-3	L1805254-17	MAGLIOS L-1MD	DUP	522570	Bromide (Br)	<0.050	<0.050	0.050	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2357157-6	L1805254-36	FIELD BLANK	DUP	522570	Bromide (Br)	<0.050	<0.050	0.050	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2357157-3	L1805254-17	MAGLIOS L-1MD	DUP	522570	Chloride (Cl)	<0.50	<0.50	0.50	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2357157-6	L1805254-36	FIELD BLANK	DUP	522570	Chloride (Cl)	<0.50	<0.50	0.50	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2357157-3	L1805254-17	MAGLIOS L-1MD	DUP	522570	Fluoride (F)	0.059	0.060	0.020	mg/L	1	20	-			✓	Water	Anions and Nutrients
WG2357157-6	L1805254-36	FIELD BLANK	DUP	522570	Fluoride (F)	<0.020	<0.020	0.020	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2357157-3	L1805254-17	MAGLIOS L-1MD	DUP	522570	Nitrate (as N)	0.0672	0.0685	0.0050	mg/L	1.9	20	-			✓	Water	Anions and Nutrients
WG2357157-6	L1805254-36	FIELD BLANK	DUP	522570	Nitrate (as N)	<0.0050	<0.0050	0.0050	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2357157-3	L1805254-17	MAGLIOS L-1MD	DUP	522570	Nitrite (as N)	<0.0010	0.0014	0.0010	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2357157-6	L1805254-36	FIELD BLANK	DUP	522570	Nitrite (as N)	<0.0010	<0.0010	0.0010	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2360666-3	L1805254-3	BIRCH-BANK R- 1M AB	DUP	522956	Total Kjeldahl Nitrogen	0.080	0.079	0.050	mg/L	2.1	20	-			✓	Water	Anions and Nutrients
WG2360666-7	L1805254-18	MAGLIOS L-SH	DUP	522957	Total Kjeldahl Nitrogen	0.100	0.097	0.050	mg/L	2.9	20	-			✓	Water	Anions and Nutrients
WG2357437-7	L1805254-13	WANETA COMP	DUP	520668	Phosphorus (P)-Total Dissolved	<0.0020	<0.0020	0.0020	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2357437-11	L1805254-33	DUPLICATE 2	DUP	520669	Phosphorus (P)-Total Dissolved	<0.0020	<0.0020	0.0020	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2357965-7	L1805254-10	STONEY CK L-1MAB	DUP	520972	Phosphorus (P)-Total	0.0039	0.0036	0.0020	mg/L	8.9	20	-			✓	Water	Anions and Nutrients
WG2357965-11	L1805254-30	NEW BRIDGE L-SH	DUP	520973	Phosphorus (P)-Total	0.0048	0.0033	0.0020	mg/L	-		0.0015	0.004		✓	Water	Anions and Nutrients
WG2357157-3	L1805254-17	MAGLIOS L-1MD	DUP	522570	Sulfate (SO4)	9.39	9.39	0.30	mg/L	0.1	20	-			✓	Water	Anions and Nutrients
WG2357157-6	L1805254-36	FIELD BLANK	DUP	522570	Sulfate (SO4)	<0.30	<0.30	0.30	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
Organic / Inorganic Carbon (Water)																	
WG2359629-10	L1805254-22	OLD BRIDGE L-1MAB	DUP	522856	Total Organic Carbon	1.27	1.23	0.50	mg/L	2.9	20	-			✓	Water	Organic / Inorganic Carbon
Total Metals (Water)																	
WG2357770-5	L1805254-5	BIRCH-BANK L-1M D	DUP	520422	Mercury (Hg)-Total	<0.00050	<0.00050	0.00050	ug/L	N/A	20	-			✓	Water	Total Metals
WG2357770-7	L1805254-23	OLD BRIDGE L-1MD	DUP	520422	Mercury (Hg)-Total	<0.00050	<0.00050	0.00050	ug/L	N/A	20	-			✓	Water	Total Metals
Total Metals (Undigested) (Water)																	
WG2361512-3	L1805254-2	BIRCH-BANK R-1M D	DUP	523516	Aluminum (Al)-Total	0.0198	0.0194	0.00070	mg/L	2.3	20	-			✓	Water	Total Metals (Undigested)
WG2361512-3	L1805254-2	BIRCH-BANK R-1M D	DUP	523516	Antimony (Sb)-Total	0.000033	0.000029	0.000020	mg/L	12	20	-			✓	Water	Total Metals (Undigested)
WG2361512-3	L1805254-2	BIRCH-BANK R-1M D	DUP	523516	Arsenic (As)-Total	0.000148	0.000139	0.000020	mg/L	6	20	-			✓	Water	Total Metals (Undigested)
WG2361512-3	L1805254-2	BIRCH-BANK R-1M D	DUP	523516	Barium (Ba)-Total	0.0168	0.0170	0.000020	mg/L	1	20	-			✓	Water	Total Metals (Undigested)
WG2361512-3	L1805254-2	BIRCH-BANK R-1M D	DUP	523516	Beryllium (Be)-Total	<0.000010	<0.000010	0.000010	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2361512-3	L1805254-2	BIRCH-BANK R-1M D	DUP	523516	Bismuth (Bi)-Total	0.0000203	0.0000180	0.0000050	mg/L	12	20	-			✓	Water	Total Metals (Undigested)
WG2361512-3	L1805254-2	BIRCH-BANK R-1M D	DUP	523516	Boron (B)-Total	<0.0050	<0.0050	0.0050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2361512-3	L1805254-2	BIRCH-BANK R-1M D	DUP	523516	Cadmium (Cd)-Total	0.0000088	0.0000065	0.0000050	mg/L	-		0.0000023	0.00001		✓	Water	Total Metals (Undigested)
WG2361512-3	L1805254-2	BIRCH-BANK R-1M D	DUP	523516	Calcium (Ca)-Total	16.4	16.8	0.030	mg/L	2.1	20	-			✓	Water	Total Metals (Undigested)
WG2361512-5	L1805254-22	OLD BRIDGE L-1MAB	DUP	523516	Calcium (Ca)-Total	16.9	17.1	0.030	mg/L	1.1	20	-			✓	Water	Total Metals (Undigested)
WG2361512-3	L1805254-2	BIRCH-BANK R-1M D	DUP	523516	Chromium (Cr)-Total	<0.00010	<0.00010	0.00010	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2361512-3	L1805254-2	BIRCH-BANK R-1M D	DUP	523516	Cobalt (Co)-Total	0.0000086	0.0000064	0.0000050	mg/L	-		0.0000022	0.00001		✓	Water	Total Metals (Undigested)
WG2361512-3	L1805254-2	BIRCH-BANK R-1M D	DUP	523516	Copper (Cu)-Total	0.00029	0.00030	0.00010	mg/L	3.8	20	-			✓	Water	Total Metals (Undigested)
WG2361512-3	L1805254-2	BIRCH-BANK R-1M D	DUP	523516	Iron (Fe)-Total	0.0097	0.0102	0.0010	mg/L	4.8	20	-			✓	Water	Total Metals (Undigested)
WG2361512-3	L1805254-2	BIRCH-BANK R-1M D	DUP	523516	Lead (Pb)-Total	0.000041	0.000041	0.000010	mg/L	2.3	20	-			✓	Water	Total Metals (Undigested)
WG2361512-3	L1805254-2	BIRCH-BANK R-1M D	DUP	523516	Lithium (Li)-Total	0.00092	0.00092	0.00050	mg/L	0.3	20	-			✓	Water	Total Metals (Undigested)
WG2361512-3	L1805254-2	BIRCH-BANK R-1M D	DUP	523516	Magnesium (Mg)-Total	3.48	3.55	0.030	mg/L	2	20	-			✓	Water	Total Metals (Undigested)
WG2361512-5	L1805254-22	OLD BRIDGE L-1MAB	DUP	523516	Magnesium (Mg)-Total	3.54	3.63	0.030	mg/L	2.7	20	-			✓	Water	Total Metals (Undigested)
WG2361512-3	L1805254-2	BIRCH-BANK R-1M D	DUP	523516	Manganese (Mn)-Total	0.00134	0.00144	0.000050	mg/L	7.2	20	-			✓	Water	Total Metals (Undigested)
WG2361512-3	L1805254-2	BIRCH-BANK R-1M D	DUP	523516	Molybdenum (Mo)-Total	0.000483	0.000467	0.000050	mg/L	3.5	20	-			✓	Water	Total Metals (Undigested)
WG2361512-3	L1805254-2	BIRCH-BANK R-1M D	DUP	523516	Nickel (Ni)-Total	0.000296	0.000301	0.000050	mg/L	1.6	20	-			✓	Water	Total Metals (Undigested)
WG2361512-3	L1805254-2	BIRCH-BANK R-1M D	DUP	523516	Phosphorus (P)-Total	<0.050	<0.050	0.050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2361512-5	L1805254-22	OLD BRIDGE L-1MAB	DUP	523516	Phosphorus (P)-Total	<0.050	<0.050	0.050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2361512-3	L1805254-2	BIRCH-BANK R-1M D	DUP	523516	Potassium (K)-Total	0.543	0.559	0.050	mg/L	2.8	20	-			✓	Water	Total Metals (Undigested)
WG2361512-5	L1805254-22	OLD BRIDGE L-1MAB	DUP	523516	Potassium (K)-Total	0.551	0.580	0.050	mg/L	5.2	20	-			✓	Water	Total Metals (Undigested)
WG2361512-3	L1805254-2	BIRCH-BANK R-1M D	DUP	523516	Selenium (Se)-Total	0.000119	0.000120	0.000040	mg/L	0.7	20	-			✓	Water	Total Metals (Undigested)
WG2361512-3	L1805254-2	BIRCH-BANK R-1M D	DUP	523516	Silicon (Si)-Total	1.67	1.68	0.050	mg/L	0.4	20	-			✓	Water	Total Metals (Undigested)
WG2361512-5	L1805254-22	OLD BRIDGE L-1MAB	DUP	523516	Silicon (Si)-Total	1.61	1.65	0.050	mg/L	1.9	20	-			✓	Water	Total Metals (Undigested)
WG2361512-3	L1805254-2	BIRCH-BANK R-1M D	DUP	523516	Silver (Ag)-Total	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2361512-3	L1805254-2	BIRCH-BANK R-1M D	DUP	523516	Sodium (Na)-Total	1.03	1.02	0.010	mg/L	1	20	-			✓	Water	Total Metals (Undigested)
WG2361512-3	L1805254-2	BIRCH-BANK R-1M D	DUP	523516	Strontium (Sr)-Total	0.108	0.109	0.000050	mg/L	0.2	20	-			✓	Water	Total Metals (Undigested)
WG2361512-3	L1805254-2	BIRCH-BANK R-1M D	DUP	523516	Thallium (Tl)-Total	0.0000039	0.0000029	0.0000020	mg/L	-		0.0000011	0.000004		✓	Water	Total Metals (Undigested)
WG2361512-3	L1805254-2	BIRCH-BANK R-1M D	DUP	523516	Tin (Sn)-Total	<0.000020	<0.000020	0.000020	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2361512-3	L1805254-2	BIRCH-BANK R-1M D	DUP	523516	Titanium (Ti)-Total	<0.00050	<0.00050	0.00050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2361512-3	L1805254-2	BIRCH-BANK R-1M D	DUP	523516	Uranium (U)-Total	0.000405	0.000393	0.0000030	mg/L	2.9	20	-			✓	Water	Total Metals (Undigested)
WG2361512-3	L1805254-2	BIRCH-BANK R-1M D	DUP	523516	Vanadium (V)-Total	0.000120	0.000137	0.000050	mg/L	13	20	-			✓	Water	Total Metals (Undigested)
WG2361512-3	L1805254-2	BIRCH-BANK R-1M D	DUP	523516	Zinc (Zn)-Total	0.00154	0.00207	0.00050	mg/L	-		0.00053	0.001		✓	Water	Total Metals (Undigested)
WG2361512-3	L1805254-2	BIRCH-BANK R-1M D	DUP	523516	Zirconium (Zr)-Total	<0.00010	<0.00010	0.00010	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
Dissolved Metals (Water)																	
WG2357947-5	L1805254-17	MAGLIOS L-1MD	DUP	520560	Mercury (Hg)-Dissolved	<0.00050	<0.00050	0.00050	ug/L	N/A	20	-			✓	Water	Dissolved Metals
WG2357947-7	L1805254-31	NEW BRIDGE R-SH	DUP	520560	Mercury (Hg)-Dissolved	0.00216	0.00194	0.00050	ug/L	11	20	-			✓	Water	Dissolved Metals
Aggregate Organics (Water)																	
WG2356892-7	L1805254-16	MAGLIOS R-1MAB	DUP	519712	BOD	<2.0	<2.0	2.0	mg/L	N/A	20	-			✓	Water	Aggregate Organics
WG2361442-2	L1805254-1	BIRCH-BANK R-SH	DUP	523445	COD	<20	<20	20	mg/L	N/A	20	-			✓	Water	Aggregate Organics
WG2361442-9	L1805254-22	OLD BRIDGE L-1MAB	DUP	523445	COD	<20	<20	20	mg/L	N/A	20	-			✓	Water	Aggregate Organics

Evaluation Legend
✓ QC Lot met ALS Data Quality Objectives

Quality Control L1805254

Job Reference TECK AREMP
Report To Kyle Hawes, ECOSCAPE ENVIRONMENTAL CONSULTANTS LTD.
Date Received 28-Jul-2016 9:00
Report Date 22-Aug-2016 13:16
Report Version 1

QC Type	Analyte	QC Lot #	ALS QC ID	Result	Target	Units	%	Limit	Units	Qual	Eval	Matrix	Class
Physical Tests (Water)													
CRM	Conductivity	528360	WG2365630-4	144	147	uS/cm	97.9	90-110	%		✓	Water	Physical Tests
CRM	Conductivity	528361	WG2365630-9	145	147	uS/cm	98.8	90-110	%		✓	Water	Physical Tests
CRM	Conductivity	528363	WG2365630-19	147	147	uS/cm	100.0	90-110	%		✓	Water	Physical Tests
CRM	Conductivity	528364	WG2365630-24	146	147	uS/cm	99.4	90-110	%		✓	Water	Physical Tests
CRM	Conductivity	528365	WG2365630-29	145	147	uS/cm	98.4	90-110	%		✓	Water	Physical Tests
CRM	Conductivity	528366	WG2365630-34	147	147	uS/cm	100.0	90-110	%		✓	Water	Physical Tests
CRM	pH	528360	WG2365630-2	7.00	7	pH	7.00	6.9-7.1	pH		✓	Water	Physical Tests
CRM	pH	528361	WG2365630-7	7.00	7	pH	7.00	6.9-7.1	pH		✓	Water	Physical Tests
CRM	pH	528363	WG2365630-17	7.00	7	pH	7.00	6.9-7.1	pH		✓	Water	Physical Tests
CRM	pH	528364	WG2365630-22	7.00	7	pH	7.00	6.9-7.1	pH		✓	Water	Physical Tests
CRM	pH	528365	WG2365630-27	7.00	7	pH	7.00	6.9-7.1	pH		✓	Water	Physical Tests
CRM	pH	528366	WG2365630-32	7.01	7	pH	7.01	6.9-7.1	pH		✓	Water	Physical Tests
CRM	Turbidity	520102	WG2357360-2	40.8	40	NTU	102.0	85-115	%		✓	Water	Physical Tests
CRM	Turbidity	520102	WG2357360-5	40.9	40	NTU	102.3	85-115	%		✓	Water	Physical Tests
CRM	Turbidity	520102	WG2357360-8	40.9	40	NTU	102.3	85-115	%		✓	Water	Physical Tests
CRM	Turbidity	520290	WG2357609-2	40.5	40	NTU	101.3	85-115	%		✓	Water	Physical Tests
CRM	Turbidity	520290	WG2357609-5	41.1	40	NTU	102.8	85-115	%		✓	Water	Physical Tests
CRM	Turbidity	520290	WG2357609-8	41.4	40	NTU	103.5	85-115	%		✓	Water	Physical Tests
Anions and Nutrients (Water)													
CRM	Alkalinity, Total (as CaCO3)	528360	WG2365630-3	477	500	mg/L	95.3	85-115	%		✓	Water	Anions and Nutrients
CRM	Alkalinity, Total (as CaCO3)	528361	WG2365630-8	474	500	mg/L	94.8	85-115	%		✓	Water	Anions and Nutrients
CRM	Alkalinity, Total (as CaCO3)	528363	WG2365630-18	475	500	mg/L	95.0	85-115	%		✓	Water	Anions and Nutrients
CRM	Alkalinity, Total (as CaCO3)	528364	WG2365630-23	484	500	mg/L	96.8	85-115	%		✓	Water	Anions and Nutrients
CRM	Alkalinity, Total (as CaCO3)	528365	WG2365630-28	484	500	mg/L	96.7	85-115	%		✓	Water	Anions and Nutrients
CRM	Alkalinity, Total (as CaCO3)	528366	WG2365630-33	497	500	mg/L	99.3	85-115	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total Dissolved	520667	WG2357437-2	8.03	7.17	mg/L	112.0	80-120	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total Dissolved	520668	WG2357437-6	8.03	7.17	mg/L	112.0	80-120	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total Dissolved	520669	WG2357437-10	8.38	7.17	mg/L	116.9	80-120	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total	520971	WG2357965-2	7.42	7.17	mg/L	103.5	80-120	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total	520972	WG2357965-6	7.65	7.17	mg/L	106.7	80-120	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total	520973	WG2357965-10	7.62	7.17	mg/L	106.3	80-120	%		✓	Water	Anions and Nutrients
Physical Tests (Water)													
LCS	Total Suspended Solids	527367	WG2365912-2	71.8	75	mg/L	95.7	85-115	%		✓	Water	Physical Tests
LCS	Total Suspended Solids	527368	WG2365912-5	74.1	75	mg/L	98.8	85-115	%		✓	Water	Physical Tests
LCS	Total Dissolved Solids	527417	WG2365909-2	408	425	mg/L	95.9	85-115	%		✓	Water	Physical Tests
LCS	Total Dissolved Solids	527418	WG2365909-5	401	425	mg/L	94.4	85-115	%		✓	Water	Physical Tests
Anions and Nutrients (Water)													
LCS	Ammonia, Total (as N)	522663	WG2359613-2	0.122	0.12	mg/L	101.8	85-115	%		✓	Water	Anions and Nutrients
LCS	Ammonia, Total (as N)	522664	WG2359613-6	0.118	0.12	mg/L	98.7	85-115	%		✓	Water	Anions and Nutrients
LCS	Ammonia, Total (as N)	522762	WG2360290-2	0.122	0.12	mg/L	102.0	85-115	%		✓	Water	Anions and Nutrients
LCS	Ammonia, Total (as N)	522763	WG2360290-6	0.120	0.12	mg/L	100.3	85-115	%		✓	Water	Anions and Nutrients
LCS	Bromide (Br)	522570	WG2357157-2	0.513	0.5	mg/L	102.7	85-115	%		✓	Water	Anions and Nutrients
LCS	Bromide (Br)	524583	WG2362213-2	0.494	0.5	mg/L	98.7	85-115	%		✓	Water	Anions and Nutrients
LCS	Bromide (Br)	522570	WG2357157-21	0.491	0.5	mg/L	98.1	85-115	%		✓	Water	Anions and Nutrients
LCS	Bromide (Br)	524583	WG2362213-18	0.501	0.5	mg/L	100.2	85-115	%		✓	Water	Anions and Nutrients
LCS	Chloride (Cl)	522570	WG2357157-2	101	100	mg/L	100.6	90-110	%		✓	Water	Anions and Nutrients
LCS	Chloride (Cl)	524583	WG2362213-2	100	100	mg/L	100.5	90-110	%		✓	Water	Anions and Nutrients
LCS	Chloride (Cl)	522570	WG2357157-21	101	100	mg/L	100.8	90-110	%		✓	Water	Anions and Nutrients
LCS	Chloride (Cl)	524583	WG2362213-18	101	100	mg/L	100.7	90-110	%		✓	Water	Anions and Nutrients
LCS	Fluoride (F)	522570	WG2357157-2	1.00	1	mg/L	100.1	90-110	%		✓	Water	Anions and Nutrients
LCS	Fluoride (F)	524583	WG2362213-2	0.997	1	mg/L	99.7	90-110	%		✓	Water	Anions and Nutrients
LCS	Fluoride (F)	522570	WG2357157-21	1.00	1	mg/L	100.4	90-110	%		✓	Water	Anions and Nutrients
LCS	Fluoride (F)	524583	WG2362213-18	1.00	1	mg/L	100.0	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrate (as N)	522570	WG2357157-2	2.51	2.5	mg/L	100.4	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrate (as N)	524583	WG2362213-2	2.52	2.5	mg/L	100.7	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrate (as N)	522570	WG2357157-21	2.52	2.5	mg/L	100.6	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrate (as N)	524583	WG2362213-18	2.52	2.5	mg/L	100.9	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrite (as N)	522570	WG2357157-2	0.487	0.5	mg/L	97.5	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrite (as N)	524583	WG2362213-2	0.480	0.5	mg/L	96.0	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrite (as N)	522570	WG2357157-21	0.478	0.5	mg/L	95.5	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrite (as N)	524583	WG2362213-18	0.490	0.5	mg/L	98.1	90-110	%		✓	Water	Anions and Nutrients
LCS	Total Kjeldahl Nitrogen	522956	WG2360666-2	1.01	1	mg/L	100.9	75-125	%		✓	Water	Anions and Nutrients
LCS	Total Kjeldahl Nitrogen	522957	WG2360666-6	1.06	1	mg/L	105.7	75-125	%		✓	Water	Anions and Nutrients
LCS	Sulfate (SO4)	522570	WG2357157-2	101	100	mg/L	100.7	90-110	%		✓	Water	Anions and Nutrients
LCS	Sulfate (SO4)	524583	WG2362213-2	98.0	100	mg/L	98.0	90-110	%		✓	Water	Anions and Nutrients
LCS	Sulfate (SO4)	522570	WG2357157-21	101	100	mg/L	100.9	90-110	%		✓	Water	Anions and Nutrients
LCS	Sulfate (SO4)	524583	WG2362213-18	98.3	100	mg/L	98.3	90-110	%		✓	Water	Anions and Nutrients
Organic / Inorganic Carbon (Water)													
LCS	Total Organic Carbon	522856	WG2359629-1	8.53	8.57	mg/L	99.5	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	522856	WG2359629-5	8.57	8.57	mg/L	99.98	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	522856	WG2359629-9	9.11	8.57	mg/L	106.3	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	524208	WG2359867-1	9.04	8.57	mg/L	105.5	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	524208	WG2359867-5	9.03	8.57	mg/L	105.4	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	524208	WG2359867-9	8.91	8.57	mg/L	103.9	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	524577	WG2361692-1	9.02	8.57	mg/L	105.3	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	524577	WG2361692-5	9.28	8.57	mg/L	108.3	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	524577	WG2361692-9	9.05	8.57	mg/L	105.7	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	522856	WG2359629-13	8.68	8.57	mg/L	101.2	80-120	%		✓	Water	Organic / Inorganic Carbon

LCS	Total Organic Carbon	524208	WG2359867-13	8.96	8.57	mg/L	104.6	80-120	%	✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	524208	WG2359867-15	9.12	8.57	mg/L	106.4	80-120	%	✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	524577	WG2361692-13	9.10	8.57	mg/L	106.1	80-120	%	✓	Water	Organic / Inorganic Carbon
Total Metals (Water)												
LCS	Mercury (Hg)-Total	520422	WG2357770-2	0.00492	0.005	ug/L	98.4	80-120	%	✓	Water	Total Metals
LCS	Mercury (Hg)-Total	520858	WG2358287-2	0.00514	0.005	ug/L	102.8	80-120	%	✓	Water	Total Metals
LCS	Mercury (Hg)-Total	527356	WG2366143-2	0.00518	0.005	ug/L	103.6	80-120	%	✓	Water	Total Metals
Total Metals (Undigested) (Water)												
LCS	Aluminum (Al)-Total	523516	WG2361512-2	2.00	2	mg/L	100.2	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Antimony (Sb)-Total	523516	WG2361512-2	0.918	1	mg/L	91.8	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Arsenic (As)-Total	523516	WG2361512-2	0.976	1	mg/L	97.6	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Barium (Ba)-Total	523516	WG2361512-2	0.245	0.25	mg/L	97.9	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Beryllium (Be)-Total	523516	WG2361512-2	0.0915	0.1	mg/L	91.5	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Bismuth (Bi)-Total	523516	WG2361512-2	0.952	1	mg/L	95.2	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Boron (B)-Total	523516	WG2361512-2	0.845	1	mg/L	84.5	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Cadmium (Cd)-Total	523516	WG2361512-2	0.0943	0.1	mg/L	94.3	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Calcium (Ca)-Total	523516	WG2361512-2	51.7	50	mg/L	103.3	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Chromium (Cr)-Total	523516	WG2361512-2	0.238	0.25	mg/L	95.3	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Cobalt (Co)-Total	523516	WG2361512-2	0.239	0.25	mg/L	95.7	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Copper (Cu)-Total	523516	WG2361512-2	0.241	0.25	mg/L	96.3	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Iron (Fe)-Total	523516	WG2361512-2	0.960	1	mg/L	96.0	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Lead (Pb)-Total	523516	WG2361512-2	0.488	0.5	mg/L	97.7	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Lithium (Li)-Total	523516	WG2361512-2	0.236	0.25	mg/L	94.3	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Magnesium (Mg)-Total	523516	WG2361512-2	48.8	50	mg/L	97.7	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Manganese (Mn)-Total	523516	WG2361512-2	0.245	0.25	mg/L	98.1	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Molybdenum (Mo)-Total	523516	WG2361512-2	0.249	0.25	mg/L	99.4	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Nickel (Ni)-Total	523516	WG2361512-2	0.472	0.5	mg/L	94.5	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Phosphorus (P)-Total	523516	WG2361512-2	2.38	2.5	mg/L	95.0	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Potassium (K)-Total	523516	WG2361512-2	46.4	50	mg/L	92.9	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Selenium (Se)-Total	523516	WG2361512-2	1.00	1	mg/L	100.0	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Silicon (Si)-Total	523516	WG2361512-2	1.10	1	mg/L	109.8	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Silver (Ag)-Total	523516	WG2361512-2	0.0966	0.1	mg/L	96.6	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Sodium (Na)-Total	523516	WG2361512-2	50.2	50	mg/L	100.4	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Strontium (Sr)-Total	523516	WG2361512-2	0.235	0.25	mg/L	94.0	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Thallium (Tl)-Total	523516	WG2361512-2	0.988	1	mg/L	98.8	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Tin (Sn)-Total	523516	WG2361512-2	0.476	0.5	mg/L	95.2	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Titanium (Ti)-Total	523516	WG2361512-2	0.242	0.25	mg/L	96.7	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Uranium (U)-Total	523516	WG2361512-2	0.00483	0.005	mg/L	96.6	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Vanadium (V)-Total	523516	WG2361512-2	0.481	0.5	mg/L	96.2	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Zinc (Zn)-Total	523516	WG2361512-2	0.470	0.5	mg/L	93.9	80-120	%	✓	Water	Total Metals (Undigested)
LCS	Zirconium (Zr)-Total	523516	WG2361512-2	0.0867	0.1	mg/L	86.7	80-120	%	✓	Water	Total Metals (Undigested)
Dissolved Metals (Water)												
LCS	Aluminum (Al)-Dissolved	520146	WG2357426-2	2.05	2	mg/L	102.3	80-120	%	✓	Water	Dissolved Metals
LCS	Antimony (Sb)-Dissolved	520146	WG2357426-2	0.964	1	mg/L	96.4	80-120	%	✓	Water	Dissolved Metals
LCS	Arsenic (As)-Dissolved	520146	WG2357426-2	0.996	1	mg/L	99.6	80-120	%	✓	Water	Dissolved Metals
LCS	Barium (Ba)-Dissolved	520146	WG2357426-2	0.256	0.25	mg/L	102.3	80-120	%	✓	Water	Dissolved Metals
LCS	Beryllium (Be)-Dissolved	520146	WG2357426-2	0.0994	0.1	mg/L	99.4	80-120	%	✓	Water	Dissolved Metals
LCS	Bismuth (Bi)-Dissolved	520146	WG2357426-2	1.01	1	mg/L	101.2	80-120	%	✓	Water	Dissolved Metals
LCS	Boron (B)-Dissolved	520146	WG2357426-2	0.927	1	mg/L	92.7	80-120	%	✓	Water	Dissolved Metals
LCS	Cadmium (Cd)-Dissolved	520146	WG2357426-2	0.104	0.1	mg/L	103.6	80-120	%	✓	Water	Dissolved Metals
LCS	Calcium (Ca)-Dissolved	520146	WG2357426-2	51.6	50	mg/L	103.2	80-120	%	✓	Water	Dissolved Metals
LCS	Chromium (Cr)-Dissolved	520146	WG2357426-2	0.258	0.25	mg/L	103.3	80-120	%	✓	Water	Dissolved Metals
LCS	Cobalt (Co)-Dissolved	520146	WG2357426-2	0.250	0.25	mg/L	99.8	80-120	%	✓	Water	Dissolved Metals
LCS	Copper (Cu)-Dissolved	520146	WG2357426-2	0.245	0.25	mg/L	98.0	80-120	%	✓	Water	Dissolved Metals
LCS	Iron (Fe)-Dissolved	520146	WG2357426-2	0.994	1	mg/L	99.4	80-120	%	✓	Water	Dissolved Metals
LCS	Lead (Pb)-Dissolved	520146	WG2357426-2	0.506	0.5	mg/L	101.2	80-120	%	✓	Water	Dissolved Metals
LCS	Lithium (Li)-Dissolved	520146	WG2357426-2	0.251	0.25	mg/L	100.3	80-120	%	✓	Water	Dissolved Metals
LCS	Magnesium (Mg)-Dissolved	520146	WG2357426-2	49.6	50	mg/L	99.2	80-120	%	✓	Water	Dissolved Metals
LCS	Manganese (Mn)-Dissolved	520146	WG2357426-2	0.236	0.25	mg/L	94.3	80-120	%	✓	Water	Dissolved Metals
LCS	Mercury (Hg)-Dissolved	520560	WG2357947-2	0.00498	0.005	ug/L	99.7	80-120	%	✓	Water	Dissolved Metals
LCS	Molybdenum (Mo)-Dissolved	520146	WG2357426-2	0.261	0.25	mg/L	104.6	80-120	%	✓	Water	Dissolved Metals
LCS	Nickel (Ni)-Dissolved	520146	WG2357426-2	0.499	0.5	mg/L	99.7	80-120	%	✓	Water	Dissolved Metals
LCS	Phosphorus (P)-Dissolved	520146	WG2357426-2	2.50	2.5	mg/L	100.1	80-120	%	✓	Water	Dissolved Metals
LCS	Potassium (K)-Dissolved	520146	WG2357426-2	49.2	50	mg/L	98.3	80-120	%	✓	Water	Dissolved Metals
LCS	Selenium (Se)-Dissolved	520146	WG2357426-2	1.01	1	mg/L	100.6	80-120	%	✓	Water	Dissolved Metals
LCS	Silicon (Si)-Dissolved	520146	WG2357426-2	1.05	1	mg/L	105.3	80-120	%	✓	Water	Dissolved Metals
LCS	Silver (Ag)-Dissolved	520146	WG2357426-2	0.102	0.1	mg/L	101.9	80-120	%	✓	Water	Dissolved Metals
LCS	Sodium (Na)-Dissolved	520146	WG2357426-2	50.2	50	mg/L	100.4	80-120	%	✓	Water	Dissolved Metals
LCS	Strontium (Sr)-Dissolved	520146	WG2357426-2	0.248	0.25	mg/L	99.2	80-120	%	✓	Water	Dissolved Metals
LCS	Thallium (Tl)-Dissolved	520146	WG2357426-2	1.03	1	mg/L	102.8	80-120	%	✓	Water	Dissolved Metals
LCS	Tin (Sn)-Dissolved	520146	WG2357426-2	0.503	0.5	mg/L	100.7	80-120	%	✓	Water	Dissolved Metals
LCS	Titanium (Ti)-Dissolved	520146	WG2357426-2	0.241	0.25	mg/L	96.5	80-120	%	✓	Water	Dissolved Metals
LCS	Uranium (U)-Dissolved	520146	WG2357426-2	0.00497	0.005	mg/L	99.5	80-120	%	✓	Water	Dissolved Metals
LCS	Vanadium (V)-Dissolved	520146	WG2357426-2	0.512	0.5	mg/L	102.5	80-120	%	✓	Water	Dissolved Metals
LCS	Zinc (Zn)-Dissolved	520146	WG2357426-2	0.476	0.5	mg/L	95.3	80-120	%	✓	Water	Dissolved Metals
LCS	Zirconium (Zr)-Dissolved	520146	WG2357426-2	0.0924	0.1	mg/L	92.4	80-120	%	✓	Water	Dissolved Metals
Aggregate Organics (Water)												
LCS	BOD	519712	WG2356892-2	212	198	mg/L	107.0	85-115	%	✓	Water	Aggregate Organics
LCS	BOD	519712	WG2356892-6	207	198	mg/L	104.7	85-115	%	✓	Water	Aggregate Organics
LCS	COD	523445	WG2361442-3	732	750	mg/L	97.6	85-115	%	✓	Water	Aggregate Organics
LCS	COD	523445	WG2361442-6	743	750	mg/L	99.0	85-115	%	✓	Water	Aggregate Organics
LCS	COD	523445	WG2361442-8	736	750	mg/L	98.1	85-115	%	✓	Water	Aggregate Organics
Physical Tests (Water)												
MB	Conductivity	528360	WG2365630-1	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Conductivity	528361	WG2365630-6	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Conductivity	528363	WG2365630-16	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Conductivity	528364	WG2365630-21	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Conductivity	528365	WG2365630-26	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Conductivity	528366	WG2365630-31	<2.0		uS/cm	-	<2.0	uS/cm	✓	Water	Physical Tests
MB	Total Suspended Solids	527367	WG2365912-1	<3.0		mg/L	-	<3.0	mg/L	✓	Water	Physical Tests

MB	Total Suspended Solids	527368	WG2365912-4	<3.0	mg/L	-	<3.0	mg/L	✓	Water	Physical Tests
MB	Total Dissolved Solids	527417	WG2365909-1	<10	mg/L	-	<10	mg/L	✓	Water	Physical Tests
MB	Total Dissolved Solids	527418	WG2365909-4	<10	mg/L	-	<10	mg/L	✓	Water	Physical Tests
MB	Turbidity	520102	WG2357360-1	<0.10	NTU	-	<0.10	NTU	✓	Water	Physical Tests
MB	Turbidity	520102	WG2357360-4	<0.10	NTU	-	<0.10	NTU	✓	Water	Physical Tests
MB	Turbidity	520102	WG2357360-7	<0.10	NTU	-	<0.10	NTU	✓	Water	Physical Tests
MB	Turbidity	520290	WG2357609-1	<0.10	NTU	-	<0.10	NTU	✓	Water	Physical Tests
MB	Turbidity	520290	WG2357609-4	<0.10	NTU	-	<0.10	NTU	✓	Water	Physical Tests
MB	Turbidity	520290	WG2357609-7	<0.10	NTU	-	<0.10	NTU	✓	Water	Physical Tests
Anions and Nutrients (Water)											
MB	Alkalinity, Total (as CaCO3)	528360	WG2365630-1	<1.0	mg/L	-	<1.0	mg/L	✓	Water	Anions and Nutrients
MB	Alkalinity, Total (as CaCO3)	528361	WG2365630-6	<1.0	mg/L	-	<1.0	mg/L	✓	Water	Anions and Nutrients
MB	Alkalinity, Total (as CaCO3)	528363	WG2365630-16	<1.0	mg/L	-	<1.0	mg/L	✓	Water	Anions and Nutrients
MB	Alkalinity, Total (as CaCO3)	528364	WG2365630-21	<1.0	mg/L	-	<1.0	mg/L	✓	Water	Anions and Nutrients
MB	Alkalinity, Total (as CaCO3)	528365	WG2365630-26	<1.0	mg/L	-	<1.0	mg/L	✓	Water	Anions and Nutrients
MB	Alkalinity, Total (as CaCO3)	528366	WG2365630-31	<1.0	mg/L	-	<1.0	mg/L	✓	Water	Anions and Nutrients
MB	Ammonia, Total (as N)	522663	WG2359613-1	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Ammonia, Total (as N)	522664	WG2359613-5	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Ammonia, Total (as N)	522762	WG2360290-1	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Ammonia, Total (as N)	522763	WG2360290-5	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	522570	WG2357157-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	522570	WG2357157-4	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	522570	WG2357157-7	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	524583	WG2362213-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	524583	WG2362213-4	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	524583	WG2362213-7	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	522570	WG2357157-10	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	522570	WG2357157-13	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	522570	WG2357157-16	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	522570	WG2357157-19	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	524583	WG2362213-10	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	524583	WG2362213-13	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Bromide (Br)	524583	WG2362213-16	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	522570	WG2357157-1	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	522570	WG2357157-4	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	522570	WG2357157-7	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	524583	WG2362213-1	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	524583	WG2362213-4	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	524583	WG2362213-7	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	522570	WG2357157-10	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	522570	WG2357157-13	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	522570	WG2357157-16	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	522570	WG2357157-19	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	524583	WG2362213-10	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	524583	WG2362213-13	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Chloride (Cl)	524583	WG2362213-16	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	522570	WG2357157-1	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	522570	WG2357157-4	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	522570	WG2357157-7	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	524583	WG2362213-1	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	524583	WG2362213-4	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	524583	WG2362213-7	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	522570	WG2357157-10	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	522570	WG2357157-13	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	522570	WG2357157-16	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	522570	WG2357157-19	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	524583	WG2362213-10	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	524583	WG2362213-13	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Fluoride (F)	524583	WG2362213-16	<0.020	mg/L	-	<0.020	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	522570	WG2357157-1	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	522570	WG2357157-4	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	522570	WG2357157-7	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	524583	WG2362213-1	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	524583	WG2362213-4	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	524583	WG2362213-7	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	522570	WG2357157-10	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	522570	WG2357157-13	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	522570	WG2357157-16	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	522570	WG2357157-19	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	524583	WG2362213-10	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	524583	WG2362213-13	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrate (as N)	524583	WG2362213-16	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	522570	WG2357157-1	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	522570	WG2357157-4	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	522570	WG2357157-7	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	524583	WG2362213-1	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	524583	WG2362213-4	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	524583	WG2362213-7	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	522570	WG2357157-10	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	522570	WG2357157-13	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	522570	WG2357157-16	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	522570	WG2357157-19	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	524583	WG2362213-10	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	524583	WG2362213-13	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Nitrite (as N)	524583	WG2362213-16	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Anions and Nutrients
MB	Total Kjeldahl Nitrogen	522956	WG2360666-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Total Kjeldahl Nitrogen	522957	WG2360666-5	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total Dissolved	520667	WG2357437-1	<0.0020	mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total Dissolved	520668	WG2357437-5	<0.0020	mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total Dissolved	520669	WG2357437-9	<0.0020	mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total	520971	WG2357965-1	<0.0020	mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total	520972	WG2357965-5	<0.0020	mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total	520973	WG2357965-9	<0.0020	mg/L	-	<0.0020	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	522570	WG2357157-1	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients

MB	Sulfate (SO4)	522570	WG2357157-4	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	522570	WG2357157-7	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	524583	WG2362213-1	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	524583	WG2362213-4	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	524583	WG2362213-7	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	522570	WG2357157-10	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	522570	WG2357157-13	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	522570	WG2357157-16	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	522570	WG2357157-19	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	524583	WG2362213-10	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	524583	WG2362213-13	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	524583	WG2362213-16	<0.30	mg/L	-	<0.30	mg/L	✓	Water	Anions and Nutrients
Organic / Inorganic Carbon (Water)											
MB	Total Organic Carbon	522856	WG2359629-4	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	522856	WG2359629-8	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	524208	WG2359867-4	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	524208	WG2359867-8	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	524577	WG2361692-4	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	524577	WG2361692-8	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	522856	WG2359629-12	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	524208	WG2359867-12	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	524208	WG2359867-14	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	524577	WG2361692-12	<0.50	mg/L	-	<0.50	mg/L	✓	Water	Organic / Inorganic Carbon
Total Metals (Water)											
MB	Mercury (Hg)-Total	520422	WG2357770-1	<0.00050	ug/L	-	<0.00050	ug/L	✓	Water	Total Metals
MB	Mercury (Hg)-Total	520858	WG2358287-1	<0.00050	ug/L	-	<0.00050	ug/L	✓	Water	Total Metals
MB	Mercury (Hg)-Total	527356	WG2366143-1	<0.00050	ug/L	-	<0.00050	ug/L	✓	Water	Total Metals
MB	Mercury (Hg)-Total	527356	WG2366143-3	<0.00050	ug/L	-	<0.00050	ug/L	✓	Water	Total Metals
MB	Mercury (Hg)-Total	527356	WG2366143-4	<0.00050	ug/L	-	<0.00050	ug/L	✓	Water	Total Metals
MB	Mercury (Hg)-Total	527356	WG2366143-5	<0.00050	ug/L	-	<0.00050	ug/L	✓	Water	Total Metals
MB	Mercury (Hg)-Total	527356	WG2366143-6	<0.00050	ug/L	-	<0.00050	ug/L	✓	Water	Total Metals
Total Metals (Undigested) (Water)											
MB	Aluminum (Al)-Total	523516	WG2361512-1	<0.00070	mg/L	-	<0.00070	mg/L	✓	Water	Total Metals (Undigested)
MB	Antimony (Sb)-Total	523516	WG2361512-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Arsenic (As)-Total	523516	WG2361512-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Barium (Ba)-Total	523516	WG2361512-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Beryllium (Be)-Total	523516	WG2361512-1	<0.000010	mg/L	-	<0.000010	mg/L	✓	Water	Total Metals (Undigested)
MB	Bismuth (Bi)-Total	523516	WG2361512-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Boron (B)-Total	523516	WG2361512-1	<0.0050	mg/L	-	<0.0050	mg/L	✓	Water	Total Metals (Undigested)
MB	Cadmium (Cd)-Total	523516	WG2361512-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Calcium (Ca)-Total	523516	WG2361512-1	<0.030	mg/L	-	<0.030	mg/L	✓	Water	Total Metals (Undigested)
MB	Chromium (Cr)-Total	523516	WG2361512-1	<0.00010	mg/L	-	<0.00010	mg/L	✓	Water	Total Metals (Undigested)
MB	Cobalt (Co)-Total	523516	WG2361512-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Copper (Cu)-Total	523516	WG2361512-1	<0.00010	mg/L	-	<0.00010	mg/L	✓	Water	Total Metals (Undigested)
MB	Iron (Fe)-Total	523516	WG2361512-1	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Total Metals (Undigested)
MB	Lead (Pb)-Total	523516	WG2361512-1	<0.000010	mg/L	-	<0.000010	mg/L	✓	Water	Total Metals (Undigested)
MB	Lithium (Li)-Total	523516	WG2361512-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Total Metals (Undigested)
MB	Magnesium (Mg)-Total	523516	WG2361512-1	<0.030	mg/L	-	<0.030	mg/L	✓	Water	Total Metals (Undigested)
MB	Manganese (Mn)-Total	523516	WG2361512-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Molybdenum (Mo)-Total	523516	WG2361512-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Nickel (Ni)-Total	523516	WG2361512-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Phosphorus (P)-Total	523516	WG2361512-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Total Metals (Undigested)
MB	Potassium (K)-Total	523516	WG2361512-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Total Metals (Undigested)
MB	Selenium (Se)-Total	523516	WG2361512-1	<0.000040	mg/L	-	<0.000040	mg/L	✓	Water	Total Metals (Undigested)
MB	Silicon (Si)-Total	523516	WG2361512-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Total Metals (Undigested)
MB	Silver (Ag)-Total	523516	WG2361512-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Sodium (Na)-Total	523516	WG2361512-1	<0.010	mg/L	-	<0.010	mg/L	✓	Water	Total Metals (Undigested)
MB	Strontium (Sr)-Total	523516	WG2361512-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Thallium (Tl)-Total	523516	WG2361512-1	<0.0000020	mg/L	-	<0.0000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Tin (Sn)-Total	523516	WG2361512-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Total Metals (Undigested)
MB	Titanium (Ti)-Total	523516	WG2361512-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Total Metals (Undigested)
MB	Uranium (U)-Total	523516	WG2361512-1	<0.0000030	mg/L	-	<0.0000030	mg/L	✓	Water	Total Metals (Undigested)
MB	Vanadium (V)-Total	523516	WG2361512-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Total Metals (Undigested)
MB	Zinc (Zn)-Total	523516	WG2361512-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Total Metals (Undigested)
MB	Zirconium (Zr)-Total	523516	WG2361512-1	<0.00010	mg/L	-	<0.00010	mg/L	✓	Water	Total Metals (Undigested)
Dissolved Metals (Water)											
MB	Aluminum (Al)-Dissolved	520146	WG2357426-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Dissolved Metals
MB	Antimony (Sb)-Dissolved	520146	WG2357426-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Dissolved Metals
MB	Arsenic (As)-Dissolved	520146	WG2357426-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Dissolved Metals
MB	Barium (Ba)-Dissolved	520146	WG2357426-1	<0.000020	mg/L	-	<0.000020	mg/L	✓	Water	Dissolved Metals
MB	Beryllium (Be)-Dissolved	520146	WG2357426-1	<0.000010	mg/L	-	<0.000010	mg/L	✓	Water	Dissolved Metals
MB	Bismuth (Bi)-Dissolved	520146	WG2357426-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals
MB	Boron (B)-Dissolved	520146	WG2357426-1	<0.010	mg/L	-	<0.010	mg/L	✓	Water	Dissolved Metals
MB	Cadmium (Cd)-Dissolved	520146	WG2357426-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals
MB	Calcium (Ca)-Dissolved	520146	WG2357426-1	<0.030	mg/L	-	<0.030	mg/L	✓	Water	Dissolved Metals
MB	Chromium (Cr)-Dissolved	520146	WG2357426-1	<0.00010	mg/L	-	<0.00010	mg/L	✓	Water	Dissolved Metals
MB	Cobalt (Co)-Dissolved	520146	WG2357426-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals
MB	Copper (Cu)-Dissolved	520146	WG2357426-1	<0.00010	mg/L	-	<0.00010	mg/L	✓	Water	Dissolved Metals
MB	Iron (Fe)-Dissolved	520146	WG2357426-1	<0.0010	mg/L	-	<0.0010	mg/L	✓	Water	Dissolved Metals
MB	Lead (Pb)-Dissolved	520146	WG2357426-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals
MB	Lithium (Li)-Dissolved	520146	WG2357426-1	<0.00050	mg/L	-	<0.00050	mg/L	✓	Water	Dissolved Metals
MB	Magnesium (Mg)-Dissolved	520146	WG2357426-1	<0.030	mg/L	-	<0.030	mg/L	✓	Water	Dissolved Metals
MB	Manganese (Mn)-Dissolved	520146	WG2357426-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Dissolved Metals
MB	Mercury (Hg)-Dissolved	520560	WG2357947-1	<0.00050	ug/L	-	<0.00050	ug/L	✓	Water	Dissolved Metals
MB	Molybdenum (Mo)-Dissolved	520146	WG2357426-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Dissolved Metals
MB	Nickel (Ni)-Dissolved	520146	WG2357426-1	<0.000050	mg/L	-	<0.000050	mg/L	✓	Water	Dissolved Metals
MB	Phosphorus (P)-Dissolved	520146	WG2357426-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Dissolved Metals
MB	Potassium (K)-Dissolved	520146	WG2357426-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Dissolved Metals
MB	Selenium (Se)-Dissolved	520146	WG2357426-1	<0.000040	mg/L	-	<0.000040	mg/L	✓	Water	Dissolved Metals
MB	Silicon (Si)-Dissolved	520146	WG2357426-1	<0.050	mg/L	-	<0.050	mg/L	✓	Water	Dissolved Metals
MB	Silver (Ag)-Dissolved	520146	WG2357426-1	<0.0000050	mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals

MB	Sodium (Na)-Dissolved	520146	WG2357426-1	<0.010		mg/L	-	<0.010	mg/L	✓	Water	Dissolved Metals
MB	Strontium (Sr)-Dissolved	520146	WG2357426-1	<0.00010		mg/L	-	<0.00010	mg/L	✓	Water	Dissolved Metals
MB	Thallium (Tl)-Dissolved	520146	WG2357426-1	<0.0000020		mg/L	-	<0.0000020	mg/L	✓	Water	Dissolved Metals
MB	Tin (Sn)-Dissolved	520146	WG2357426-1	<0.000010		mg/L	-	<0.000010	mg/L	✓	Water	Dissolved Metals
MB	Titanium (Ti)-Dissolved	520146	WG2357426-1	<0.00030		mg/L	-	<0.00030	mg/L	✓	Water	Dissolved Metals
MB	Uranium (U)-Dissolved	520146	WG2357426-1	<0.0000020		mg/L	-	<0.0000020	mg/L	✓	Water	Dissolved Metals
MB	Vanadium (V)-Dissolved	520146	WG2357426-1	<0.000050		mg/L	-	<0.000050	mg/L	✓	Water	Dissolved Metals
MB	Zinc (Zn)-Dissolved	520146	WG2357426-1	<0.00050		mg/L	-	<0.00050	mg/L	✓	Water	Dissolved Metals
MB	Zirconium (Zr)-Dissolved	520146	WG2357426-1	<0.00010		mg/L	-	<0.00010	mg/L	✓	Water	Dissolved Metals
Aggregate Organics (Water)												
MB	BOD	519712	WG2356892-1	<2.0		mg/L	-	<2.0	mg/L	✓	Water	Aggregate Organics
MB	BOD	519712	WG2356892-5	<2.0		mg/L	-	<2.0	mg/L	✓	Water	Aggregate Organics
MB	COD	523445	WG2361442-1	<20		mg/L	-	<20	mg/L	✓	Water	Aggregate Organics
MB	COD	523445	WG2361442-5	<20		mg/L	-	<20	mg/L	✓	Water	Aggregate Organics
MB	COD	523445	WG2361442-7	<20		mg/L	-	<20	mg/L	✓	Water	Aggregate Organics
Anions and Nutrients (Water)												
MS	Ammonia, Total (as N)	522762	MAGLIOS R-1MAB	0.209	0.208	mg/L	100.3	75-125	%	✓	Water	Anions and Nutrients
MS	Bromide (Br)	522570	WANETA COMP	0.502	0.5	mg/L	100.4	75-125	%	✓	Water	Anions and Nutrients
MS	Chloride (Cl)	522570	WANETA COMP	104	100	mg/L	103.7	75-125	%	✓	Water	Anions and Nutrients
MS	Fluoride (F)	522570	WANETA COMP	1.09	1.06	mg/L	103.3	75-125	%	✓	Water	Anions and Nutrients
MS	Nitrate (as N)	522570	WANETA COMP	2.65	2.57	mg/L	103.1	75-125	%	✓	Water	Anions and Nutrients
MS	Nitrite (as N)	522570	WANETA COMP	0.491	0.5	mg/L	98.1	75-125	%	✓	Water	Anions and Nutrients
MS	Total Kjeldahl Nitrogen	522957	OLD BRIDGE R-1MD	1.16	1.11	mg/L	104.8	70-130	%	✓	Water	Anions and Nutrients
MS	Total Kjeldahl Nitrogen	522956	BIRCH-BANK L-1M D	1.13	1.1	mg/L	103.2	70-130	%	✓	Water	Anions and Nutrients
MS	Phosphorus (P)-Total Dissolved	520669	DUPLICATE 3	0.0539	0.05	mg/L	107.8	70-130	%	✓	Water	Anions and Nutrients
MS	Phosphorus (P)-Total Dissolved	520668	MAGLIOS R-SH	0.0507	0.05	mg/L	101.3	70-130	%	✓	Water	Anions and Nutrients
MS	Phosphorus (P)-Total	520973	NEW BRIDGE R-SH	0.0505	0.0539	mg/L	93.1	70-130	%	✓	Water	Anions and Nutrients
MS	Phosphorus (P)-Total	520972	STONEY CK L-1MD	0.0505	0.0546	mg/L	91.8	70-130	%	✓	Water	Anions and Nutrients
MS	Sulfate (SO4)	522570	WANETA COMP	112	109	mg/L	102.5	75-125	%	✓	Water	Anions and Nutrients
Organic / Inorganic Carbon (Water)												
MS	Total Organic Carbon	522856	OLD BRIDGE L-1MD	6.39	6.2	mg/L	103.9	70-130	%	✓	Water	Organic / Inorganic Carbon
MS	Total Organic Carbon	522856	BIRCH-BANK L-1M D	6.50	6.41	mg/L	101.9	70-130	%	✓	Water	Organic / Inorganic Carbon
Total Metals (Water)												
MS	Mercury (Hg)-Total	520422	STONEY CK L-1MD	0.00506	0.005	ug/L	101.3	70-130	%	✓	Water	Total Metals
MS	Mercury (Hg)-Total	520422	NEW BRIDGE L-1MD	0.00479	0.005	ug/L	95.7	70-130	%	✓	Water	Total Metals
Total Metals (Undigested) (Water)												
MS	Aluminum (Al)-Total	523516	DUPLICATE 3	0.206	0.22	mg/L	93.3	70-130	%	✓	Water	Total Metals (Undigested)
MS	Aluminum (Al)-Total	523516	WANETA COMP	0.214	0.219	mg/L	97.6	70-130	%	✓	Water	Total Metals (Undigested)
MS	Antimony (Sb)-Total	523516	DUPLICATE 3	0.0188	0.0201	mg/L	93.7	70-130	%	✓	Water	Total Metals (Undigested)
MS	Antimony (Sb)-Total	523516	WANETA COMP	0.0195	0.0201	mg/L	97.4	70-130	%	✓	Water	Total Metals (Undigested)
MS	Arsenic (As)-Total	523516	DUPLICATE 3	0.0196	0.0202	mg/L	97.2	70-130	%	✓	Water	Total Metals (Undigested)
MS	Arsenic (As)-Total	523516	WANETA COMP	0.0196	0.0201	mg/L	97.3	70-130	%	✓	Water	Total Metals (Undigested)
MS	Barium (Ba)-Total	523516	DUPLICATE 3	0.0340	0.0366	mg/L	87.1	70-130	%	✓	Water	Total Metals (Undigested)
MS	Barium (Ba)-Total	523516	WANETA COMP	0.0365	0.0369	mg/L	97.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Beryllium (Be)-Total	523516	DUPLICATE 3	0.0390	0.04	mg/L	97.4	70-130	%	✓	Water	Total Metals (Undigested)
MS	Beryllium (Be)-Total	523516	WANETA COMP	0.0405	0.04	mg/L	101.2	70-130	%	✓	Water	Total Metals (Undigested)
MS	Bismuth (Bi)-Total	523516	DUPLICATE 3	0.00834	0.01	mg/L	83.4	70-130	%	✓	Water	Total Metals (Undigested)
MS	Bismuth (Bi)-Total	523516	WANETA COMP	0.00819	0.01	mg/L	81.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Boron (B)-Total	523516	DUPLICATE 3	0.0940	0.1	mg/L	94.0	70-130	%	✓	Water	Total Metals (Undigested)
MS	Boron (B)-Total	523516	WANETA COMP	0.0920	0.1	mg/L	92.0	70-130	%	✓	Water	Total Metals (Undigested)
MS	Cadmium (Cd)-Total	523516	DUPLICATE 3	0.00390	0.00403	mg/L	96.8	70-130	%	✓	Water	Total Metals (Undigested)
MS	Cadmium (Cd)-Total	523516	WANETA COMP	0.00394	0.00402	mg/L	98.1	70-130	%	✓	Water	Total Metals (Undigested)
MS	Calcium (Ca)-Total	523516	DUPLICATE 3	66.9	66.6	mg/L	100.6	70-130	%	✓	Water	Total Metals (Undigested)
MS	Calcium (Ca)-Total	523516	WANETA COMP	67.8	66.8	mg/L	102.0	70-130	%	✓	Water	Total Metals (Undigested)
MS	Chromium (Cr)-Total	523516	DUPLICATE 3	0.0381	0.04	mg/L	95.3	70-130	%	✓	Water	Total Metals (Undigested)
MS	Chromium (Cr)-Total	523516	WANETA COMP	0.0386	0.04	mg/L	96.4	70-130	%	✓	Water	Total Metals (Undigested)
MS	Cobalt (Co)-Total	523516	DUPLICATE 3	0.0191	0.02	mg/L	95.2	70-130	%	✓	Water	Total Metals (Undigested)
MS	Cobalt (Co)-Total	523516	WANETA COMP	0.0192	0.02	mg/L	95.7	70-130	%	✓	Water	Total Metals (Undigested)
MS	Copper (Cu)-Total	523516	DUPLICATE 3	0.0194	0.0203	mg/L	95.2	70-130	%	✓	Water	Total Metals (Undigested)
MS	Copper (Cu)-Total	523516	WANETA COMP	0.0197	0.0203	mg/L	96.8	70-130	%	✓	Water	Total Metals (Undigested)
MS	Iron (Fe)-Total	523516	DUPLICATE 3	1.90	2.01	mg/L	94.5	70-130	%	✓	Water	Total Metals (Undigested)
MS	Iron (Fe)-Total	523516	WANETA COMP	1.94	2.01	mg/L	96.5	70-130	%	✓	Water	Total Metals (Undigested)
MS	Lead (Pb)-Total	523516	DUPLICATE 3	0.0187	0.0206	mg/L	90.6	70-130	%	✓	Water	Total Metals (Undigested)
MS	Lead (Pb)-Total	523516	WANETA COMP	0.0196	0.0201	mg/L	97.4	70-130	%	✓	Water	Total Metals (Undigested)
MS	Lithium (Li)-Total	523516	DUPLICATE 3	0.0962	0.101	mg/L	95.2	70-130	%	✓	Water	Total Metals (Undigested)
MS	Lithium (Li)-Total	523516	WANETA COMP	0.0974	0.101	mg/L	96.4	70-130	%	✓	Water	Total Metals (Undigested)
MS	Magnesium (Mg)-Total	523516	DUPLICATE 3	53.0	53.5	mg/L	98.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Magnesium (Mg)-Total	523516	WANETA COMP	54.8	53.6	mg/L	102.4	70-130	%	✓	Water	Total Metals (Undigested)
MS	Manganese (Mn)-Total	523516	DUPLICATE 3	0.0201	0.0216	mg/L	92.7	70-130	%	✓	Water	Total Metals (Undigested)
MS	Manganese (Mn)-Total	523516	WANETA COMP	0.0205	0.0216	mg/L	94.8	70-130	%	✓	Water	Total Metals (Undigested)
MS	Molybdenum (Mo)-Total	523516	DUPLICATE 3	0.0188	0.0205	mg/L	91.5	70-130	%	✓	Water	Total Metals (Undigested)
MS	Molybdenum (Mo)-Total	523516	WANETA COMP	0.0193	0.0205	mg/L	93.8	70-130	%	✓	Water	Total Metals (Undigested)
MS	Nickel (Ni)-Total	523516	DUPLICATE 3	0.0390	0.0403	mg/L	96.7	70-130	%	✓	Water	Total Metals (Undigested)
MS	Nickel (Ni)-Total	523516	WANETA COMP	0.0385	0.0402	mg/L	95.8	70-130	%	✓	Water	Total Metals (Undigested)
MS	Phosphorus (P)-Total	523516	DUPLICATE 3	2.53	2.5	mg/L	101.4	70-130	%	✓	Water	Total Metals (Undigested)
MS	Phosphorus (P)-Total	523516	WANETA COMP	2.53	2.5	mg/L	101.2	70-130	%	✓	Water	Total Metals (Undigested)
MS	Potassium (K)-Total	523516	DUPLICATE 3	48.4	50.6	mg/L	95.7	70-130	%	✓	Water	Total Metals (Undigested)
MS	Potassium (K)-Total	523516	WANETA COMP	48.7	50.6	mg/L	96.2	70-130	%	✓	Water	Total Metals (Undigested)
MS	Selenium (Se)-Total	523516	DUPLICATE 3	0.0393	0.0402	mg/L	97.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Selenium (Se)-Total	523516	WANETA COMP	0.0390	0.0402	mg/L	97.0	70-130	%	✓	Water	Total Metals (Undigested)

MS	Silicon (Si)-Total	523516	DUPLICATE 3	2.54	2.6	mg/L	N/A	-	%	MS-B	✓	Water	Total Metals (Undigested)
MS	Silicon (Si)-Total	523516	WANETA COMP	2.58	2.65	mg/L	N/A	-	%	MS-B	✓	Water	Total Metals (Undigested)
MS	Silver (Ag)-Total	523516	DUPLICATE 3	0.00379	0.004	mg/L	94.7	70-130	%		✓	Water	Total Metals (Undigested)
MS	Silver (Ag)-Total	523516	WANETA COMP	0.00393	0.004	mg/L	98.2	70-130	%		✓	Water	Total Metals (Undigested)
MS	Sodium (Na)-Total	523516	DUPLICATE 3	2.97	3.08	mg/L	94.4	70-130	%		✓	Water	Total Metals (Undigested)
MS	Sodium (Na)-Total	523516	WANETA COMP	2.98	3.09	mg/L	94.5	70-130	%		✓	Water	Total Metals (Undigested)
MS	Strontium (Sr)-Total	523516	DUPLICATE 3	0.123	0.127	mg/L	N/A	-	%	MS-B	✓	Water	Total Metals (Undigested)
MS	Strontium (Sr)-Total	523516	WANETA COMP	0.126	0.129	mg/L	N/A	-	%	MS-B	✓	Water	Total Metals (Undigested)
MS	Thallium (Tl)-Total	523516	DUPLICATE 3	0.00358	0.00401	mg/L	89.2	70-130	%		✓	Water	Total Metals (Undigested)
MS	Thallium (Tl)-Total	523516	WANETA COMP	0.00392	0.00401	mg/L	97.8	70-130	%		✓	Water	Total Metals (Undigested)
MS	Tin (Sn)-Total	523516	DUPLICATE 3	0.0185	0.02	mg/L	92.4	70-130	%		✓	Water	Total Metals (Undigested)
MS	Tin (Sn)-Total	523516	WANETA COMP	0.0189	0.02	mg/L	94.6	70-130	%		✓	Water	Total Metals (Undigested)
MS	Titanium (Ti)-Total	523516	DUPLICATE 3	0.0374	0.04	mg/L	93.6	70-130	%		✓	Water	Total Metals (Undigested)
MS	Titanium (Ti)-Total	523516	WANETA COMP	0.0368	0.04	mg/L	92.0	70-130	%		✓	Water	Total Metals (Undigested)
MS	Uranium (U)-Total	523516	DUPLICATE 3	0.00404	0.00441	mg/L	90.9	70-130	%		✓	Water	Total Metals (Undigested)
MS	Uranium (U)-Total	523516	WANETA COMP	0.00427	0.00442	mg/L	96.5	70-130	%		✓	Water	Total Metals (Undigested)
MS	Vanadium (V)-Total	523516	DUPLICATE 3	0.0973	0.1	mg/L	97.1	70-130	%		✓	Water	Total Metals (Undigested)
MS	Vanadium (V)-Total	523516	WANETA COMP	0.0969	0.1	mg/L	96.8	70-130	%		✓	Water	Total Metals (Undigested)
MS	Zinc (Zn)-Total	523516	DUPLICATE 3	0.371	0.402	mg/L	92.4	70-130	%		✓	Water	Total Metals (Undigested)
MS	Zinc (Zn)-Total	523516	WANETA COMP	0.388	0.401	mg/L	96.9	70-130	%		✓	Water	Total Metals (Undigested)
MS	Zirconium (Zr)-Total	523516	DUPLICATE 3	0.0361	0.04	mg/L	90.2	70-130	%		✓	Water	Total Metals (Undigested)
MS	Zirconium (Zr)-Total	523516	WANETA COMP	0.0385	0.04	mg/L	96.3	70-130	%		✓	Water	Total Metals (Undigested)
Dissolved Metals (Water)													
MS	Mercury (Hg)-Dissolved	520560	DUPLICATE 3	0.00509	0.005	ug/L	101.8	70-130	%		✓	Water	Dissolved Metals
MS	Mercury (Hg)-Dissolved	520560	MAGLIOS R-SH	0.00506	0.005	ug/L	101.3	70-130	%		✓	Water	Dissolved Metals
MS	Mercury (Hg)-Dissolved	520560	OLD BRIDGE L-1MD	0.00508	0.005	ug/L	101.5	70-130	%		✓	Water	Dissolved Metals
Aggregate Organics (Water)													
MS	COD	523445	OLD BRIDGE L-1MD	529	500	mg/L	105.8	75-125	%		✓	Water	Aggregate Organics
MS	COD	523445	BIRCH-BANK R-1M D	525	500	mg/L	104.9	75-125	%		✓	Water	Aggregate Organics

Qualifier Legend

MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Evaluation Legend

✓	QC Lot met ALS Data Quality Objectives

Duplicates L1839891

Job Reference TECK AREMP
Report To Kyle Hawes, ECOSCAPE ENVIRONMENTAL CONSULTANTS LTD.
Date Received 6-Oct-2016 10:00
Report Date 30-Nov-2016 16:49
Report Version 2

ALS ID	Reference	Client Sample ID	QC Type	QC Lot #	Analyte	Sample Result	Duplicate Result	Detection Limit	Units	RPD	RPD Limit	Diff	Diff Limit	Qual	Eval	Matrix	Class
Physical Tests (Water)																	
WG2405785-3	L1839891-1	BIRCH BANK R-SH	DUP	560524	Turbidity	0.44	0.43	0.10	NTU	1.2	15	-			✓	Water	Physical Tests
WG2405785-6	L1839891-21	OLD BRIDGE R-1MAB	DUP	560524	Turbidity	0.39	0.38	0.10	NTU	1	15	-			✓	Water	Physical Tests
Anions and Nutrients (Water)																	
WG2411129-3	L1839891-22	OLD BRIDGE L-1MAB	DUP	565341	Ammonia, Total (as N)	0.0099	0.0099	0.0050	mg/L	0.1	20	-			✓	Water	Anions and Nutrients
WG2411039-11	L1839891-6	CRADT-R-SH	DUP	565099	Ammonia, Total (as N)	0.0295	0.0294	0.0050	mg/L	0.3	20	-			✓	Water	Anions and Nutrients
WG2405972-12	L1839891-8	STONEY CK-R-1MD	DUP	564022	Bromide (Br)	<0.050	<0.050	0.050	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2405972-15	L1839891-27	NEW BRIDGE R-1MAB	DUP	564022	Bromide (Br)	<0.050	<0.050	0.050	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2405972-18	L1839891-36	FIELD BLANK	DUP	564022	Bromide (Br)	<0.050	<0.050	0.050	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2405972-12	L1839891-8	STONEY CK-R-1MD	DUP	564022	Chloride (Cl)	0.53	0.53	0.50	mg/L	0.2	20	-			✓	Water	Anions and Nutrients
WG2405972-15	L1839891-27	NEW BRIDGE R-1MAB	DUP	564022	Chloride (Cl)	0.53	0.52	0.50	mg/L	0.5	20	-			✓	Water	Anions and Nutrients
WG2405972-18	L1839891-36	FIELD BLANK	DUP	564022	Chloride (Cl)	<0.50	<0.50	0.50	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2405972-12	L1839891-8	STONEY CK-R-1MD	DUP	564022	Fluoride (F)	0.059	0.059	0.020	mg/L	0.9	20	-			✓	Water	Anions and Nutrients
WG2405972-15	L1839891-27	NEW BRIDGE R-1MAB	DUP	564022	Fluoride (F)	0.060	0.059	0.020	mg/L	1.6	20	-			✓	Water	Anions and Nutrients
WG2405972-18	L1839891-36	FIELD BLANK	DUP	564022	Fluoride (F)	<0.020	<0.020	0.020	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2405972-12	L1839891-8	STONEY CK-R-1MD	DUP	564022	Nitrate (as N)	0.0728	0.0725	0.0050	mg/L	0.4	20	-			✓	Water	Anions and Nutrients
WG2405972-15	L1839891-27	NEW BRIDGE R-1MAB	DUP	564022	Nitrate (as N)	0.0721	0.0732	0.0050	mg/L	1.5	20	-			✓	Water	Anions and Nutrients
WG2405972-18	L1839891-36	FIELD BLANK	DUP	564022	Nitrate (as N)	<0.0050	<0.0050	0.0050	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2405972-12	L1839891-8	STONEY CK-R-1MD	DUP	564022	Nitrite (as N)	<0.0010	<0.0010	0.0010	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2405972-15	L1839891-27	NEW BRIDGE R-1MAB	DUP	564022	Nitrite (as N)	0.0010	0.0017	0.0010	mg/L	-		0.0007	0.002		✓	Water	Anions and Nutrients
WG2405972-18	L1839891-36	FIELD BLANK	DUP	564022	Nitrite (as N)	<0.0010	<0.0010	0.0010	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2408337-11	L1839891-11	STONEY CK L-1MD	DUP	562673	Total Kjeldahl Nitrogen	0.107	0.097	0.050	mg/L	10	20	-			✓	Water	Anions and Nutrients
WG2405844-3	L1839891-8	STONEY CK-R-1MD	DUP	560650	Phosphorus (P)-Total Dissolved	<0.0020	<0.0020	0.0020	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2405844-7	L1839891-23	OLD BRIDGE L-1MD	DUP	560651	Phosphorus (P)-Total Dissolved	<0.0020	<0.0020	0.0020	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
WG2406810-3	L1839891-11	STONEY CK L-1MD	DUP	561404	Phosphorus (P)-Total	0.0043	0.0036	0.0020	mg/L	18	20	-			✓	Water	Anions and Nutrients
WG2406810-7	L1839891-31	NEW BRIDGE R-SH	DUP	561405	Phosphorus (P)-Total	0.0033	0.0034	0.0020	mg/L	1.2	20	-			✓	Water	Anions and Nutrients
WG2405972-12	L1839891-8	STONEY CK-R-1MD	DUP	564022	Sulfate (SO4)	10.4	10.4	0.30	mg/L	0.2	20	-			✓	Water	Anions and Nutrients
WG2405972-15	L1839891-27	NEW BRIDGE R-1MAB	DUP	564022	Sulfate (SO4)	10.5	10.5	0.30	mg/L	0.1	20	-			✓	Water	Anions and Nutrients
WG2405972-18	L1839891-36	FIELD BLANK	DUP	564022	Sulfate (SO4)	<0.30	<0.30	0.30	mg/L	N/A	20	-			✓	Water	Anions and Nutrients
Organic / Inorganic Carbon (Water)																	
WG2408367-6	L1839891-3	BIRCH BANK R- 1M AB	DUP	564090	Total Organic Carbon	1.21	1.06	0.50	mg/L	14	20	-			✓	Water	Organic / Inorganic Carbon
WG2408518-2	L1839891-20	OLD BRIDGE R-1MD	DUP	563320	Total Organic Carbon	1.00	1.02	0.50	mg/L	2	20	-			✓	Water	Organic / Inorganic Carbon
Total Metals (Water)																	
WG2408720-5	L1839891-16	MAGLIOS R-1MAB	DUP	562951	Mercury (Hg)-Total	0.00102	0.00106	0.00050	ug/L	3.5	20	-			✓	Water	Total Metals
WG2408296-11	L1839891-30	NEW BRIDGE L-SH	DUP	562638	Mercury (Hg)-Total	<0.00050	<0.00050	0.00050	ug/L	N/A	20	-			✓	Water	Total Metals
Total Metals (Undigested) (Water)																	
WG2407860-3	L1839891-3	BIRCH BANK R- 1M AB	DUP	562279	Aluminum (Al)-Total	0.0114	0.0100	0.00070	mg/L	13	20	-			✓	Water	Total Metals (Undigested)
WG2407860-5	L1839891-27	NEW BRIDGE R-1MAB	DUP	562279	Aluminum (Al)-Total	0.0108	0.0110	0.00070	mg/L	1.1	20	-			✓	Water	Total Metals (Undigested)
WG2407860-3	L1839891-3	BIRCH BANK R- 1M AB	DUP	562279	Antimony (Sb)-Total	0.000024	0.000025	0.000020	mg/L	5.1	20	-			✓	Water	Total Metals (Undigested)
WG2407860-5	L1839891-27	NEW BRIDGE R-1MAB	DUP	562279	Antimony (Sb)-Total	0.000025	0.000020	0.000020	mg/L	-		0.000005	0.00004		✓	Water	Total Metals (Undigested)
WG2407860-3	L1839891-3	BIRCH BANK R- 1M AB	DUP	562279	Arsenic (As)-Total	0.000155	0.000155	0.000020	mg/L	0.1	20	-			✓	Water	Total Metals (Undigested)
WG2407860-5	L1839891-27	NEW BRIDGE R-1MAB	DUP	562279	Arsenic (As)-Total	0.000153	0.000167	0.000020	mg/L	8.8	20	-			✓	Water	Total Metals (Undigested)
WG2407860-3	L1839891-3	BIRCH BANK R- 1M AB	DUP	562279	Barium (Ba)-Total	0.0191	0.0185	0.000020	mg/L	3.5	20	-			✓	Water	Total Metals (Undigested)
WG2407860-5	L1839891-27	NEW BRIDGE R-1MAB	DUP	562279	Barium (Ba)-Total	0.0188	0.0186	0.000020	mg/L	1	20	-			✓	Water	Total Metals (Undigested)
WG2407860-3	L1839891-3	BIRCH BANK R- 1M AB	DUP	562279	Beryllium (Be)-Total	<0.000010	<0.000010	0.000010	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2407860-5	L1839891-27	NEW BRIDGE R-1MAB	DUP	562279	Beryllium (Be)-Total	<0.000010	<0.000010	0.000010	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2407860-3	L1839891-3	BIRCH BANK R- 1M AB	DUP	562279	Bismuth (Bi)-Total	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2407860-5	L1839891-27	NEW BRIDGE R-1MAB	DUP	562279	Bismuth (Bi)-Total	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2407860-3	L1839891-3	BIRCH BANK R- 1M AB	DUP	562279	Boron (B)-Total	<0.0050	<0.0050	0.0050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2407860-5	L1839891-27	NEW BRIDGE R-1MAB	DUP	562279	Boron (B)-Total	<0.0050	<0.0050	0.0050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2407860-3	L1839891-3	BIRCH BANK R- 1M AB	DUP	562279	Cadmium (Cd)-Total	<0.0000050	0.0000062	0.0000050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2407860-5	L1839891-27	NEW BRIDGE R-1MAB	DUP	562279	Cadmium (Cd)-Total	0.0000141	0.0000107	0.0000050	mg/L	-		0.0000035	0.00001		✓	Water	Total Metals (Undigested)
WG2407860-3	L1839891-3	BIRCH BANK R- 1M AB	DUP	562279	Calcium (Ca)-Total	18.3	17.8	0.030	mg/L	2.8	20	-			✓	Water	Total Metals (Undigested)
WG2407860-5	L1839891-27	NEW BRIDGE R-1MAB	DUP	562279	Calcium (Ca)-Total	18.1	18.1	0.030	mg/L	0.4	20	-			✓	Water	Total Metals (Undigested)
WG2407860-3	L1839891-3	BIRCH BANK R- 1M AB	DUP	562279	Chromium (Cr)-Total	<0.00010	<0.00010	0.00010	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2407860-5	L1839891-27	NEW BRIDGE R-1MAB	DUP	562279	Chromium (Cr)-Total	<0.00010	<0.00010	0.00010	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2407860-3	L1839891-3	BIRCH BANK R- 1M AB	DUP	562279	Cobalt (Co)-Total	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2407860-5	L1839891-27	NEW BRIDGE R-1MAB	DUP	562279	Cobalt (Co)-Total	0.0000277	0.0000196	0.0000050	mg/L	-		0.0000081	0.00001		✓	Water	Total Metals (Undigested)
WG2407860-3	L1839891-3	BIRCH BANK R- 1M AB	DUP	562279	Copper (Cu)-Total	0.00022	0.00022	0.00010	mg/L	2.2	20	-			✓	Water	Total Metals (Undigested)
WG2407860-5	L1839891-27	NEW BRIDGE R-1MAB	DUP	562279	Copper (Cu)-Total	0.00023	0.00023	0.00010	mg/L	0.5	20	-			✓	Water	Total Metals (Undigested)
WG2407860-3	L1839891-3	BIRCH BANK R- 1M AB	DUP	562279	Iron (Fe)-Total	0.0086	0.0083	0.0010	mg/L	3.4	20	-			✓	Water	Total Metals (Undigested)
WG2407860-5	L1839891-27	NEW BRIDGE R-1MAB	DUP	562279	Iron (Fe)-Total	0.0100	0.0096	0.0010	mg/L	4.1	20	-			✓	Water	Total Metals (Undigested)
WG2407860-3	L1839891-3	BIRCH BANK R- 1M AB	DUP	562279	Lead (Pb)-Total	0.000035	0.000035	0.000010	mg/L	1	20	-			✓	Water	Total Metals (Undigested)
WG2407860-5	L1839891-27	NEW BRIDGE R-1MAB	DUP	562279	Lead (Pb)-Total	0.000053	0.000054	0.000010	mg/L	0.9	20	-			✓	Water	Total Metals (Undigested)
WG2407860-3	L1839891-3	BIRCH BANK R- 1M AB	DUP	562279	Lithium (Li)-Total	0.00081	0.00084	0.00050	mg/L	3.5	20	-			✓	Water	Total Metals (Undigested)
WG2407860-5	L1839891-27	NEW BRIDGE R-1MAB	DUP	562279	Lithium (Li)-Total	0.00078	0.00077	0.00050	mg/L	1.5	20	-			✓	Water	Total Metals (Undigested)
WG2407860-3	L1839891-3	BIRCH BANK R- 1M AB	DUP	562279	Magnesium (Mg)-Total	3.86	3.74	0.030	mg/L	3.1	20	-			✓	Water	Total Metals (Undigested)
WG2407860-5	L1839891-27	NEW BRIDGE R-1MAB	DUP	562279	Magnesium (Mg)-Total	3.86	3.80	0.030	mg/L	1.6	20	-			✓	Water	Total Metals (Undigested)
WG2407860-3	L1839891-3	BIRCH BANK R- 1M AB	DUP	562279	Manganese (Mn)-Total	0.00171	0.00166	0.000050	mg/L	2.7	20	-			✓	Water	Total Metals (Undigested)
WG2407860-5	L1839891-27	NEW BRIDGE R-1MAB	DUP	562279	Manganese (Mn)-Total	0.00217	0.00193	0.000050	mg/L	12	20	-			✓	Water	Total Metals (Undigested)
WG2407860-3	L1839891-3	BIRCH BANK R- 1M AB	DUP	562279	Molybdenum (Mo)-Total	0.000563	0.000557	0.000050	mg/L	1.1	20	-			✓	Water	Total Metals (Undigested)
WG2407860-5	L1839891-27	NEW BRIDGE R-1MAB	DUP	562279	Molybdenum (Mo)-Total	0.000553	0.000559	0.000050	mg/L	1	20	-			✓	Water	Total Metals (Undigested)
WG2407860-3	L1839891-3	BIRCH BANK R- 1M AB	DUP	562279	Nickel (Ni)-Total	0.000324	0.000317	0.000050	mg/L	2.3	20	-			✓	Water	Total Metals (Undigested)
WG2407860-5	L1839891-27	NEW BRIDGE R-1MAB	DUP	562279	Nickel (Ni)-Total	0.000378	0.000352	0.000050	mg/L	7.1	20	-			✓	Water	Total Metals (Undigested)
WG2407860-3	L1839891-3	BIRCH BANK R- 1M AB	DUP	562279	Phosphorus (P)-Total	<0.050	<0.050	0.050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2407860-5	L1839891-27	NEW BRIDGE R-1MAB	DUP	562279	Phosphorus (P)-Total	<0.050	<0.050	0.050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2407860-3	L1839891-3	BIRCH BANK R- 1M AB	DUP	562279	Potassium (K)-Total	0.691	0.670	0.050	mg/L	3	20	-			✓	Water	Total Metals (Undigested)
WG2407860-5	L1839891-27	NEW BRIDGE R-1MAB	DUP	562279	Potassium (K)-Total	0.697	0.676	0.050	mg/L	3	20	-			✓	Water	Total Metals (Undigested)
WG2407860-3	L1839891-3	BIRCH BANK R- 1M AB	DUP	562279	Selenium (Se)-Total	0.000186	0.000172	0.000040	mg/L	8	20	-			✓	Water	Total Metals (Undigested)
WG2407860-5	L1839891-27	NEW BRIDGE R-1MAB	DUP	562279	Selenium (Se)-Total	0.000179	0.000143	0.000040	mg/L	-		0.000036	0.00008		✓	Water	Total Metals (Undigested)
WG2407860-3	L1839891-3	BIRCH BANK R- 1M AB	DUP	562279	Silicon (Si)-Total	1.50	1.46	0.050	mg/L	2.4	20	-			✓	Water	Total Metals (Undigested)
WG2407860-5	L1839891-27	NEW BRIDGE R-1MAB	DUP	562279	Silicon (Si)-Total	1.49	1.47	0.050	mg/L	1.5	20	-			✓	Water	Total Metals (Undigested)
WG2407860-3	L1839891-3	BIRCH BANK R- 1M AB	DUP	562279	Silver (Ag)-Total	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2407860-5	L1839891-27	NEW BRIDGE R-1MAB	DUP	562279	Silver (Ag)-Total	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2407860-3	L1839891-3	BIRCH BANK R- 1M AB	DUP	562279	Sodium (Na)-Total	1.23	1.21	0.010	mg/L	2.1	20	-			✓	Water	Total Metals (Undigested)
WG2407860-5	L1839891-27	NEW BRIDGE R-1MAB	DUP	562279	Sodium (Na)-Total	1.23	1.22	0.010	mg/L	0.8	20	-			✓	Water	Total Metals (Undigested)
WG2407860-3	L1839891-3	BIRCH BANK R- 1M AB	DUP	562279	Strontium (Sr)-Total	0.109	0.108	0.000050	mg/L	1.2	20	-			✓	Water	Total Metals (Undigested)
WG2407860-5	L1839891-27	NEW BRIDGE R-1MAB	DUP	562279	Strontium (Sr)-Total	0.107	0.106	0.000050	mg/L	1	20	-			✓	Water	Total Metals (Undigested)
WG2407860-3	L1839891-3	BIRCH BANK R- 1M AB	DUP	562279	Thallium (Tl)-Total	<0.0000020	0.0000023	0.0000020	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2407860-5	L1839891-27	NEW BRIDGE R-1MAB	DUP	562279	Thallium (Tl)-Total	0.0000028	0.0000025	0.0000020	mg/L	9.1	20	-			✓	Water	Total Metals (Undigested)
WG2407860-3	L1839891-3	BIRCH BANK R- 1M AB	DUP	562279	Tin (Sn)-Total	<0.000020	<0.000020	0.000020	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2407860-5	L1839891-27	NEW BRIDGE R-1MAB	DUP	562279	Tin (Sn)-Total	<0.000020	<0.000020	0.000020	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2407860-3	L1839891-3	BIRCH BANK R- 1M AB	DUP	562279	Titanium (Ti)-Total	<0.00050	<0.00050	0.00050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2407860-5	L1839891-27	NEW BRIDGE R-1MAB	DUP	562279	Titanium (Ti)-Total	<0.00050	<0.00050	0.00050	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2407860-3	L1839891-3	BIRCH BANK R- 1M AB	DUP	562279	Uranium (U)-Total	0.000468	0.000462	0.0000030	mg/L	1.3	20	-			✓	Water	Total Metals (Undigested)
WG2407860-5	L1839891-27	NEW BRIDGE R-1MAB	DUP	562279	Uranium (U)-Total	0.000467	0.000460	0.0000030	mg/L	1.5	20	-			✓	Water	Total Metals (Undigested)
WG2407860-3	L1839891-3	BIRCH BANK R- 1M AB	DUP	562279	Vanadium (V)-Total	0.000140	0.000127	0.000050	mg/L	9.9	20	-			✓	Water	Total Metals (Undigested)
WG2407860-5	L1839891-27	NEW BRIDGE R-1MAB	DUP	562279	Vanadium (V)-Total	0.000123	0.000118	0.000050	mg/L	4.3	20	-			✓	Water	Total Metals (Undigested)
WG2407860-3	L1839891-3	BIRCH BANK R- 1M AB	DUP	562279	Zinc (Zn)-Total	0.00066	0.00061	0.00050	mg/L	8	20	-			✓	Water	Total Metals (Undigested)
WG2407860-5	L1839891-27	NEW BRIDGE R-1MAB	DUP	562279	Zinc (Zn)-Total	0.00080	0.00054	0.00050	mg/L	-		0.00026	0.001		✓	Water	Total Metals (Undigested)
WG2407860-3	L1839891-3	BIRCH BANK R- 1M AB	DUP	562279	Zirconium (Zr)-Total	<0.00010	<0.00010	0.00010	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
WG2407860-5	L1839891-27	NEW BRIDGE R-1MAB	DUP	562279	Zirconium (Zr)-Total	<0.00010	<0.00010	0.00010	mg/L	N/A	20	-			✓	Water	Total Metals (Undigested)
Dissolved Metals (Water)																	
WG2404810-7	L1839891-1	BIRCH BANK R-SH	DUP	559627	Aluminum (Al)-Dissolved	0.00591	0.00692	0.00050	mg/L	16	20	-			✓	Water	Dissolved Metals
WG2404810-7	L1839891-1	BIRCH BANK R-SH	DUP	559627	Antimony (Sb)-Dissolved	0.000024	0.000023	0.000020	mg/L	7.7	20	-			✓	Water	Dissolved Metals
WG2404810-7	L1839891-1	BIRCH BANK R-SH	DUP	559627	Arsenic (As)-Dissolved	0.000147	0.000147	0.000020	mg/L	0.1	20	-			✓	Water	Dissolved Metals

WG2404810-7	L1839891-1	BIRCH BANK R-SH	DUP	559627	Barium (Ba)-Dissolved	0.0183	0.0192	0.000020	mg/L	4.7	20	-		✓	Water	Dissolved Metals
WG2404810-7	L1839891-1	BIRCH BANK R-SH	DUP	559627	Beryllium (Be)-Dissolved	<0.000010	<0.000010	0.000010	mg/L	N/A	20	-		✓	Water	Dissolved Metals
WG2404810-7	L1839891-1	BIRCH BANK R-SH	DUP	559627	Bismuth (Bi)-Dissolved	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-		✓	Water	Dissolved Metals
WG2404810-7	L1839891-1	BIRCH BANK R-SH	DUP	559627	Boron (B)-Dissolved	<0.010	<0.010	0.010	mg/L	N/A	20	-		✓	Water	Dissolved Metals
WG2404810-7	L1839891-1	BIRCH BANK R-SH	DUP	559627	Cadmium (Cd)-Dissolved	0.0000052	0.0000054	0.0000050	mg/L	4.5	20	-		✓	Water	Dissolved Metals
WG2404810-7	L1839891-1	BIRCH BANK R-SH	DUP	559627	Calcium (Ca)-Dissolved	18.0	17.7	0.030	mg/L	1.2	20	-		✓	Water	Dissolved Metals
WG2404810-7	L1839891-1	BIRCH BANK R-SH	DUP	559627	Chromium (Cr)-Dissolved	<0.00010	0.00010	0.00010	mg/L	N/A	20	-		✓	Water	Dissolved Metals
WG2404810-7	L1839891-1	BIRCH BANK R-SH	DUP	559627	Cobalt (Co)-Dissolved	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-		✓	Water	Dissolved Metals
WG2404810-7	L1839891-1	BIRCH BANK R-SH	DUP	559627	Copper (Cu)-Dissolved	0.00021	0.00018	0.00010	mg/L	16	20	-		✓	Water	Dissolved Metals
WG2404810-7	L1839891-1	BIRCH BANK R-SH	DUP	559627	Iron (Fe)-Dissolved	0.0013	0.0012	0.0010	mg/L	14	20	-		✓	Water	Dissolved Metals
WG2404810-7	L1839891-1	BIRCH BANK R-SH	DUP	559627	Lead (Pb)-Dissolved	0.0000120	0.0000113	0.0000050	mg/L	6.6	20	-		✓	Water	Dissolved Metals
WG2404810-7	L1839891-1	BIRCH BANK R-SH	DUP	559627	Lithium (Li)-Dissolved	0.00059	0.00062	0.00050	mg/L	5.4	20	-		✓	Water	Dissolved Metals
WG2404810-7	L1839891-1	BIRCH BANK R-SH	DUP	559627	Magnesium (Mg)-Dissolved	3.81	3.80	0.030	mg/L	0.2	20	-		✓	Water	Dissolved Metals
WG2404810-7	L1839891-1	BIRCH BANK R-SH	DUP	559627	Manganese (Mn)-Dissolved	0.000520	0.000499	0.000050	mg/L	4.3	20	-		✓	Water	Dissolved Metals
WG2405665-3	L1839891-1	BIRCH BANK R-SH	DUP	560404	Mercury (Hg)-Dissolved	<0.00050	<0.00050	0.00050	ug/L	N/A	20	-		✓	Water	Dissolved Metals
WG2405665-5	L1839891-25	OLD BRIDGE R-SH	DUP	560404	Mercury (Hg)-Dissolved	<0.00050	<0.00050	0.00050	ug/L	N/A	20	-		✓	Water	Dissolved Metals
WG2404810-7	L1839891-1	BIRCH BANK R-SH	DUP	559627	Molybdenum (Mo)-Dissolved	0.000555	0.000534	0.000050	mg/L	3.8	20	-		✓	Water	Dissolved Metals
WG2404810-7	L1839891-1	BIRCH BANK R-SH	DUP	559627	Nickel (Ni)-Dissolved	0.000298	0.000276	0.000050	mg/L	7.9	20	-		✓	Water	Dissolved Metals
WG2404810-7	L1839891-1	BIRCH BANK R-SH	DUP	559627	Phosphorus (P)-Dissolved	<0.050	<0.050	0.050	mg/L	N/A	20	-		✓	Water	Dissolved Metals
WG2404810-7	L1839891-1	BIRCH BANK R-SH	DUP	559627	Potassium (K)-Dissolved	0.645	0.620	0.050	mg/L	3.9	20	-		✓	Water	Dissolved Metals
WG2404810-7	L1839891-1	BIRCH BANK R-SH	DUP	559627	Selenium (Se)-Dissolved	0.000166	0.000165	0.000040	mg/L	0.6	20	-		✓	Water	Dissolved Metals
WG2404810-7	L1839891-1	BIRCH BANK R-SH	DUP	559627	Silicon (Si)-Dissolved	1.47	1.46	0.050	mg/L	0.8	20	-		✓	Water	Dissolved Metals
WG2404810-7	L1839891-1	BIRCH BANK R-SH	DUP	559627	Silver (Ag)-Dissolved	<0.0000050	<0.0000050	0.0000050	mg/L	N/A	20	-		✓	Water	Dissolved Metals
WG2404810-7	L1839891-1	BIRCH BANK R-SH	DUP	559627	Sodium (Na)-Dissolved	1.19	1.17	0.010	mg/L	2	20	-		✓	Water	Dissolved Metals
WG2404810-7	L1839891-1	BIRCH BANK R-SH	DUP	559627	Strontium (Sr)-Dissolved	0.105	0.104	0.00010	mg/L	1.2	20	-		✓	Water	Dissolved Metals
WG2404810-7	L1839891-1	BIRCH BANK R-SH	DUP	559627	Thallium (Tl)-Dissolved	0.0000025	<0.0000020	0.0000020	mg/L	N/A	20	-		✓	Water	Dissolved Metals
WG2404810-7	L1839891-1	BIRCH BANK R-SH	DUP	559627	Tin (Sn)-Dissolved	<0.000010	<0.000010	0.000010	mg/L	N/A	20	-		✓	Water	Dissolved Metals
WG2404810-7	L1839891-1	BIRCH BANK R-SH	DUP	559627	Titanium (Ti)-Dissolved	<0.00030	<0.00030	0.00030	mg/L	N/A	20	-		✓	Water	Dissolved Metals
WG2404810-7	L1839891-1	BIRCH BANK R-SH	DUP	559627	Uranium (U)-Dissolved	0.000456	0.000441	0.0000020	mg/L	3.3	20	-		✓	Water	Dissolved Metals
WG2404810-7	L1839891-1	BIRCH BANK R-SH	DUP	559627	Vanadium (V)-Dissolved	0.000107	0.000104	0.000050	mg/L	3.1	20	-		✓	Water	Dissolved Metals
WG2404810-7	L1839891-1	BIRCH BANK R-SH	DUP	559627	Zinc (Zn)-Dissolved	0.00167	0.00128	0.00050	mg/L	-		0.00039	0.001	✓	Water	Dissolved Metals
WG2404810-7	L1839891-1	BIRCH BANK R-SH	DUP	559627	Zirconium (Zr)-Dissolved	<0.00010	<0.00010	0.00010	mg/L	N/A	20	-		✓	Water	Dissolved Metals
Aggregate Organics (Water)																
WG2405550-3	L1839891-1	BIRCH BANK R-SH	DUP	560334	BOD	<2.0	<2.0	2.0	mg/L	N/A	20	-		✓	Water	Aggregate Organics
WG2405550-8	L1839891-33	DUPLICATE 2	DUP	560334	BOD	<2.0	<2.0	2.0	mg/L	N/A	20	-		✓	Water	Aggregate Organics
WG2406219-3	L1839891-36	FIELD BLANK	DUP	560868	BOD	<2.0	<2.0	2.0	mg/L	N/A	20	-		✓	Water	Aggregate Organics
WG2410120-2	L1839891-20	OLD BRIDGE R-1MD	DUP	564110	COD	<20	<20	20	mg/L	N/A	20	-		✓	Water	Aggregate Organics
WG2411040-7	L1839891-28	NEW BRIDGE L-1MAB	DUP	564889	COD	<20	<20	20	mg/L	N/A	20	-		✓	Water	Aggregate Organics

Evaluation Legend

✓ QC Lot met ALS Data Quality Objectives

Quality Control L1839891

Job Reference TECK AREMP
Report To Kyle Hawes, ECOSCAPE ENVIRONMENTAL CONSULTANTS LTD.
Date Received 6-Oct-2016 10:00
Report Date 30-Nov-2016 16:49
Report Version 2

QC Type	Analyte	QC Lot #	ALS QC ID	Result	Target	Units	%	Limit	Units	Qual	Eval	Matrix	Class
Physical Tests (Water)													
CRM	Turbidity	560524	WG2405785-2	41.1	40	NTU	102.8	85-115	%		✓	Water	Physical Tests
CRM	Turbidity	560524	WG2405785-5	41.4	40	NTU	103.5	85-115	%		✓	Water	Physical Tests
CRM	Turbidity	560524	WG2405785-8	41.6	40	NTU	104.0	85-115	%		✓	Water	Physical Tests
CRM	Turbidity	560545	WG2405809-2	40.2	40	NTU	100.5	85-115	%		✓	Water	Physical Tests
CRM	Turbidity	560545	WG2405809-5	40.8	40	NTU	102.0	85-115	%		✓	Water	Physical Tests
Anions and Nutrients (Water)													
CRM	Phosphorus (P)-Total Dissolved	560650	WG2405844-2	7.61	7.17	mg/L	106.1	80-120	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total Dissolved	560651	WG2405844-6	7.41	7.17	mg/L	103.3	80-120	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total	561404	WG2406810-2	6.40	7.17	mg/L	89.3	80-120	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total	561405	WG2406810-6	6.88	7.17	mg/L	95.9	80-120	%		✓	Water	Anions and Nutrients
CRM	Phosphorus (P)-Total	560979	WG2405975-10	7.04	7.17	mg/L	98.2	80-120	%		✓	Water	Anions and Nutrients
LCS	Ammonia, Total (as N)	565098	WG2411039-6	0.122	0.12	mg/L	101.8	85-115	%		✓	Water	Anions and Nutrients
LCS	Ammonia, Total (as N)	565341	WG2411129-2	0.123	0.12	mg/L	102.8	85-115	%		✓	Water	Anions and Nutrients
LCS	Ammonia, Total (as N)	565624	WG2411134-2	0.124	0.12	mg/L	103.0	85-115	%		✓	Water	Anions and Nutrients
LCS	Ammonia, Total (as N)	565099	WG2411039-10	0.122	0.12	mg/L	101.5	85-115	%		✓	Water	Anions and Nutrients
LCS	Bromide (Br)	564022	WG2405972-2	0.492	0.5	mg/L	98.4	85-115	%		✓	Water	Anions and Nutrients
LCS	Bromide (Br)	564022	WG2405972-21	0.501	0.5	mg/L	100.2	85-115	%		✓	Water	Anions and Nutrients
LCS	Chloride (Cl)	564022	WG2405972-2	100	100	mg/L	100.3	90-110	%		✓	Water	Anions and Nutrients
LCS	Chloride (Cl)	564022	WG2405972-21	99.7	100	mg/L	99.7	90-110	%		✓	Water	Anions and Nutrients
LCS	Fluoride (F)	564022	WG2405972-2	1.00	1	mg/L	100.1	90-110	%		✓	Water	Anions and Nutrients
LCS	Fluoride (F)	564022	WG2405972-21	1.00	1	mg/L	100.3	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrate (as N)	564022	WG2405972-2	2.52	2.5	mg/L	101.0	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrate (as N)	564022	WG2405972-21	2.51	2.5	mg/L	100.5	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrite (as N)	564022	WG2405972-2	0.505	0.5	mg/L	101.0	90-110	%		✓	Water	Anions and Nutrients
LCS	Nitrite (as N)	564022	WG2405972-21	0.500	0.5	mg/L	99.9	90-110	%		✓	Water	Anions and Nutrients
LCS	Total Kjeldahl Nitrogen	562671	WG2408337-2	1.04	1	mg/L	104.0	75-125	%		✓	Water	Anions and Nutrients
LCS	Total Kjeldahl Nitrogen	562672	WG2408337-6	1.08	1	mg/L	108.0	75-125	%		✓	Water	Anions and Nutrients
LCS	Total Kjeldahl Nitrogen	564666	WG2410767-2	1.03	1	mg/L	102.9	75-125	%		✓	Water	Anions and Nutrients
LCS	Total Kjeldahl Nitrogen	562673	WG2408337-10	1.10	1	mg/L	110.0	75-125	%		✓	Water	Anions and Nutrients
LCS	Sulfate (SO4)	564022	WG2405972-2	101	100	mg/L	100.9	90-110	%		✓	Water	Anions and Nutrients
LCS	Sulfate (SO4)	564022	WG2405972-21	101	100	mg/L	100.5	90-110	%		✓	Water	Anions and Nutrients
Organic / Inorganic Carbon (Water)													
LCS	Total Organic Carbon	564090	WG2408367-1	8.39	8.57	mg/L	97.9	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	564090	WG2408367-5	8.76	8.57	mg/L	102.2	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	564090	WG2408367-9	8.48	8.57	mg/L	98.9	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	563320	WG2408518-1	8.35	8.57	mg/L	97.5	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	563320	WG2408518-5	8.73	8.57	mg/L	101.8	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	563320	WG2408518-9	8.67	8.57	mg/L	101.1	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	564090	WG2408367-13	8.48	8.57	mg/L	98.9	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	564090	WG2408367-17	8.70	8.57	mg/L	101.5	80-120	%		✓	Water	Organic / Inorganic Carbon
LCS	Total Organic Carbon	563320	WG2408518-15	8.76	8.57	mg/L	102.3	80-120	%		✓	Water	Organic / Inorganic Carbon
Total Metals (Water)													
LCS	Mercury (Hg)-Total	562638	WG2408296-5	0.00500	0.005	ug/L	100.0	80-120	%		✓	Water	Total Metals
LCS	Mercury (Hg)-Total	562951	WG2408720-2	0.00503	0.005	ug/L	100.5	80-120	%		✓	Water	Total Metals
LCS	Mercury (Hg)-Total	563431	WG2409272-3	0.00518	0.005	ug/L	103.5	80-120	%		✓	Water	Total Metals
Total Metals (Undigested) (Water)													
LCS	Calcium (Ca)-Total	562279	WG2407860-2	52.5	50	mg/L	104.9	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Magnesium (Mg)-Total	562279	WG2407860-2	50.0	50	mg/L	100.1	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Phosphorus (P)-Total	562279	WG2407860-2	2.46	2.5	mg/L	98.3	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Potassium (K)-Total	562279	WG2407860-2	50.4	50	mg/L	100.9	80-120	%		✓	Water	Total Metals (Undigested)
LCS	Silicon (Si)-Total	562279	WG2407860-2	1.06	1	mg/L	106.5	80-120	%		✓	Water	Total Metals (Undigested)
Dissolved Metals (Water)													
LCS	Aluminum (Al)-Dissolved	559627	WG2404810-2	2.30	2	mg/L	114.8	80-120	%		✓	Water	Dissolved Metals
LCS	Antimony (Sb)-Dissolved	559627	WG2404810-2	0.943	1	mg/L	94.3	80-120	%		✓	Water	Dissolved Metals
LCS	Arsenic (As)-Dissolved	559627	WG2404810-2	1.11	1	mg/L	111.1	80-120	%		✓	Water	Dissolved Metals
LCS	Barium (Ba)-Dissolved	559627	WG2404810-2	0.271	0.25	mg/L	108.5	80-120	%		✓	Water	Dissolved Metals
LCS	Beryllium (Be)-Dissolved	559627	WG2404810-2	0.102	0.1	mg/L	102.2	80-120	%		✓	Water	Dissolved Metals
LCS	Bismuth (Bi)-Dissolved	559627	WG2404810-2	1.01	1	mg/L	101.1	80-120	%		✓	Water	Dissolved Metals
LCS	Boron (B)-Dissolved	559627	WG2404810-2	0.991	1	mg/L	99.1	80-120	%		✓	Water	Dissolved Metals
LCS	Cadmium (Cd)-Dissolved	559627	WG2404810-2	0.103	0.1	mg/L	103.4	80-120	%		✓	Water	Dissolved Metals
LCS	Chromium (Cr)-Dissolved	559627	WG2404810-2	0.278	0.25	mg/L	111.0	80-120	%		✓	Water	Dissolved Metals
LCS	Cobalt (Co)-Dissolved	559627	WG2404810-2	0.272	0.25	mg/L	108.8	80-120	%		✓	Water	Dissolved Metals
LCS	Copper (Cu)-Dissolved	559627	WG2404810-2	0.267	0.25	mg/L	106.7	80-120	%		✓	Water	Dissolved Metals
LCS	Iron (Fe)-Dissolved	559627	WG2404810-2	1.02	1	mg/L	102.2	80-120	%		✓	Water	Dissolved Metals
LCS	Lead (Pb)-Dissolved	559627	WG2404810-2	0.537	0.5	mg/L	107.5	80-120	%		✓	Water	Dissolved Metals
LCS	Lithium (Li)-Dissolved	559627	WG2404810-2	0.261	0.25	mg/L	104.2	80-120	%		✓	Water	Dissolved Metals
LCS	Manganese (Mn)-Dissolved	559627	WG2404810-2	0.294	0.25	mg/L	117.6	80-120	%		✓	Water	Dissolved Metals
LCS	Mercury (Hg)-Dissolved	560404	WG2405665-2	0.00517	0.005	ug/L	103.3	80-120	%		✓	Water	Dissolved Metals
LCS	Mercury (Hg)-Dissolved	563431	WG2409272-3	0.00518	0.005	ug/L	103.5	80-120	%		✓	Water	Dissolved Metals
LCS	Molybdenum (Mo)-Dissolved	559627	WG2404810-2	0.265	0.25	mg/L	106.1	80-120	%		✓	Water	Dissolved Metals
LCS	Nickel (Ni)-Dissolved	559627	WG2404810-2	0.560	0.5	mg/L	112.0	80-120	%		✓	Water	Dissolved Metals
LCS	Selenium (Se)-Dissolved	559627	WG2404810-2	0.985	1	mg/L	98.5	80-120	%		✓	Water	Dissolved Metals
LCS	Silver (Ag)-Dissolved	559627	WG2404810-2	0.0997	0.1	mg/L	99.7	80-120	%		✓	Water	Dissolved Metals
LCS	Sodium (Na)-Dissolved	559627	WG2404810-2	56.4	50	mg/L	112.8	80-120	%		✓	Water	Dissolved Metals
LCS	Strontium (Sr)-Dissolved	559627	WG2404810-2	0.256	0.25	mg/L	102.4	80-120	%		✓	Water	Dissolved Metals
LCS	Thallium (Tl)-Dissolved	559627	WG2404810-2	1.02	1	mg/L	101.5	80-120	%		✓	Water	Dissolved Metals
LCS	Tin (Sn)-Dissolved	559627	WG2404810-2	0.485	0.5	mg/L	97.0	80-120	%		✓	Water	Dissolved Metals

LCS	Titanium (Ti)-Dissolved	559627	WG2404810-2	0.259	0.25	mg/L	103.5	80-120	%		✓	Water	Dissolved Metals
LCS	Uranium (U)-Dissolved	559627	WG2404810-2	0.00509	0.005	mg/L	101.9	80-120	%		✓	Water	Dissolved Metals
LCS	Vanadium (V)-Dissolved	559627	WG2404810-2	0.545	0.5	mg/L	109.0	80-120	%		✓	Water	Dissolved Metals
LCS	Zinc (Zn)-Dissolved	559627	WG2404810-2	0.458	0.5	mg/L	91.5	80-120	%		✓	Water	Dissolved Metals
LCS	Zirconium (Zr)-Dissolved	559627	WG2404810-2	0.0925	0.1	mg/L	92.5	80-120	%		✓	Water	Dissolved Metals
Aggregate Organics (Water)													
LCS	BOD	560334	WG2405550-2	197	198	mg/L	99.6	85-115	%		✓	Water	Aggregate Organics
LCS	BOD	560334	WG2405550-6	175	198	mg/L	88.2	85-115	%		✓	Water	Aggregate Organics
LCS	BOD	560868	WG2406219-2	148	198	mg/L	74.8	85-115	%	G	×	Water	Aggregate Organics
LCS	COD	564110	WG2410120-3	795	750	mg/L	106.0	85-115	%		✓	Water	Aggregate Organics
LCS	COD	564110	WG2410120-6	788	750	mg/L	105.0	85-115	%		✓	Water	Aggregate Organics
LCS	COD	564110	WG2410120-8	779	750	mg/L	103.9	85-115	%		✓	Water	Aggregate Organics
LCS	COD	564889	WG2411040-3	780	750	mg/L	103.9	85-115	%		✓	Water	Aggregate Organics
LCS	COD	564889	WG2411040-6	784	750	mg/L	104.5	85-115	%		✓	Water	Aggregate Organics
LCS	COD	564889	WG2411040-10	789	750	mg/L	105.2	85-115	%		✓	Water	Aggregate Organics
Physical Tests (Water)													
MB	Turbidity	560524	WG2405785-1	<0.10		NTU	-	<0.10	NTU		✓	Water	Physical Tests
MB	Turbidity	560524	WG2405785-4	<0.10		NTU	-	<0.10	NTU		✓	Water	Physical Tests
MB	Turbidity	560524	WG2405785-7	<0.10		NTU	-	<0.10	NTU		✓	Water	Physical Tests
MB	Turbidity	560545	WG2405809-1	<0.10		NTU	-	<0.10	NTU		✓	Water	Physical Tests
MB	Turbidity	560545	WG2405809-4	<0.10		NTU	-	<0.10	NTU		✓	Water	Physical Tests
Anions and Nutrients (Water)													
MB	Ammonia, Total (as N)	565098	WG2411039-5	<0.0050		mg/L	-	<0.0050	mg/L		✓	Water	Anions and Nutrients
MB	Ammonia, Total (as N)	565099	WG2411039-9	<0.0050		mg/L	-	<0.0050	mg/L		✓	Water	Anions and Nutrients
MB	Ammonia, Total (as N)	565341	WG2411129-1	<0.0050		mg/L	-	<0.0050	mg/L		✓	Water	Anions and Nutrients
MB	Ammonia, Total (as N)	565624	WG2411134-1	<0.0050		mg/L	-	<0.0050	mg/L		✓	Water	Anions and Nutrients
MB	Bromide (Br)	564022	WG2405972-1	<0.050		mg/L	-	<0.050	mg/L		✓	Water	Anions and Nutrients
MB	Bromide (Br)	564022	WG2405972-4	<0.050		mg/L	-	<0.050	mg/L		✓	Water	Anions and Nutrients
MB	Bromide (Br)	564022	WG2405972-7	<0.050		mg/L	-	<0.050	mg/L		✓	Water	Anions and Nutrients
MB	Bromide (Br)	564022	WG2405972-10	<0.050		mg/L	-	<0.050	mg/L		✓	Water	Anions and Nutrients
MB	Bromide (Br)	564022	WG2405972-13	<0.050		mg/L	-	<0.050	mg/L		✓	Water	Anions and Nutrients
MB	Bromide (Br)	564022	WG2405972-16	<0.050		mg/L	-	<0.050	mg/L		✓	Water	Anions and Nutrients
MB	Bromide (Br)	564022	WG2405972-19	<0.050		mg/L	-	<0.050	mg/L		✓	Water	Anions and Nutrients
MB	Chloride (Cl)	564022	WG2405972-1	<0.50		mg/L	-	<0.50	mg/L		✓	Water	Anions and Nutrients
MB	Chloride (Cl)	564022	WG2405972-4	<0.50		mg/L	-	<0.50	mg/L		✓	Water	Anions and Nutrients
MB	Chloride (Cl)	564022	WG2405972-7	<0.50		mg/L	-	<0.50	mg/L		✓	Water	Anions and Nutrients
MB	Chloride (Cl)	564022	WG2405972-10	<0.50		mg/L	-	<0.50	mg/L		✓	Water	Anions and Nutrients
MB	Chloride (Cl)	564022	WG2405972-13	<0.50		mg/L	-	<0.50	mg/L		✓	Water	Anions and Nutrients
MB	Chloride (Cl)	564022	WG2405972-16	<0.50		mg/L	-	<0.50	mg/L		✓	Water	Anions and Nutrients
MB	Chloride (Cl)	564022	WG2405972-19	<0.50		mg/L	-	<0.50	mg/L		✓	Water	Anions and Nutrients
MB	Fluoride (F)	564022	WG2405972-1	<0.020		mg/L	-	<0.020	mg/L		✓	Water	Anions and Nutrients
MB	Fluoride (F)	564022	WG2405972-4	<0.020		mg/L	-	<0.020	mg/L		✓	Water	Anions and Nutrients
MB	Fluoride (F)	564022	WG2405972-7	<0.020		mg/L	-	<0.020	mg/L		✓	Water	Anions and Nutrients
MB	Fluoride (F)	564022	WG2405972-10	<0.020		mg/L	-	<0.020	mg/L		✓	Water	Anions and Nutrients
MB	Fluoride (F)	564022	WG2405972-13	<0.020		mg/L	-	<0.020	mg/L		✓	Water	Anions and Nutrients
MB	Fluoride (F)	564022	WG2405972-16	<0.020		mg/L	-	<0.020	mg/L		✓	Water	Anions and Nutrients
MB	Fluoride (F)	564022	WG2405972-19	<0.020		mg/L	-	<0.020	mg/L		✓	Water	Anions and Nutrients
MB	Nitrate (as N)	564022	WG2405972-1	<0.0050		mg/L	-	<0.0050	mg/L		✓	Water	Anions and Nutrients
MB	Nitrate (as N)	564022	WG2405972-4	<0.0050		mg/L	-	<0.0050	mg/L		✓	Water	Anions and Nutrients
MB	Nitrate (as N)	564022	WG2405972-7	<0.0050		mg/L	-	<0.0050	mg/L		✓	Water	Anions and Nutrients
MB	Nitrate (as N)	564022	WG2405972-10	<0.0050		mg/L	-	<0.0050	mg/L		✓	Water	Anions and Nutrients
MB	Nitrate (as N)	564022	WG2405972-13	<0.0050		mg/L	-	<0.0050	mg/L		✓	Water	Anions and Nutrients
MB	Nitrate (as N)	564022	WG2405972-16	<0.0050		mg/L	-	<0.0050	mg/L		✓	Water	Anions and Nutrients
MB	Nitrate (as N)	564022	WG2405972-19	<0.0050		mg/L	-	<0.0050	mg/L		✓	Water	Anions and Nutrients
MB	Nitrite (as N)	564022	WG2405972-1	<0.0010		mg/L	-	<0.0010	mg/L		✓	Water	Anions and Nutrients
MB	Nitrite (as N)	564022	WG2405972-4	<0.0010		mg/L	-	<0.0010	mg/L		✓	Water	Anions and Nutrients
MB	Nitrite (as N)	564022	WG2405972-7	<0.0010		mg/L	-	<0.0010	mg/L		✓	Water	Anions and Nutrients
MB	Nitrite (as N)	564022	WG2405972-10	<0.0010		mg/L	-	<0.0010	mg/L		✓	Water	Anions and Nutrients
MB	Nitrite (as N)	564022	WG2405972-13	<0.0010		mg/L	-	<0.0010	mg/L		✓	Water	Anions and Nutrients
MB	Nitrite (as N)	564022	WG2405972-16	<0.0010		mg/L	-	<0.0010	mg/L		✓	Water	Anions and Nutrients
MB	Nitrite (as N)	564022	WG2405972-19	<0.0010		mg/L	-	<0.0010	mg/L		✓	Water	Anions and Nutrients
MB	Total Kjeldahl Nitrogen	562671	WG2408337-1	<0.050		mg/L	-	<0.050	mg/L		✓	Water	Anions and Nutrients
MB	Total Kjeldahl Nitrogen	562672	WG2408337-5	<0.050		mg/L	-	<0.050	mg/L		✓	Water	Anions and Nutrients
MB	Total Kjeldahl Nitrogen	562673	WG2408337-9	<0.050		mg/L	-	<0.050	mg/L		✓	Water	Anions and Nutrients
MB	Total Kjeldahl Nitrogen	564666	WG2410767-1	<0.050		mg/L	-	<0.050	mg/L		✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total Dissolved	560650	WG2405844-1	<0.0020		mg/L	-	<0.0020	mg/L		✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total Dissolved	560651	WG2405844-5	<0.0020		mg/L	-	<0.0020	mg/L		✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total	560979	WG2405975-9	<0.0020		mg/L	-	<0.0020	mg/L		✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total	561404	WG2406810-1	<0.0020		mg/L	-	<0.0020	mg/L		✓	Water	Anions and Nutrients
MB	Phosphorus (P)-Total	561405	WG2406810-5	<0.0020		mg/L	-	<0.0020	mg/L		✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	564022	WG2405972-1	<0.30		mg/L	-	<0.30	mg/L		✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	564022	WG2405972-4	<0.30		mg/L	-	<0.30	mg/L		✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	564022	WG2405972-7	<0.30		mg/L	-	<0.30	mg/L		✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	564022	WG2405972-10	<0.30		mg/L	-	<0.30	mg/L		✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	564022	WG2405972-13	<0.30		mg/L	-	<0.30	mg/L		✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	564022	WG2405972-16	<0.30		mg/L	-	<0.30	mg/L		✓	Water	Anions and Nutrients
MB	Sulfate (SO4)	564022	WG2405972-19	<0.30		mg/L	-	<0.30	mg/L		✓	Water	Anions and Nutrients
Organic / Inorganic Carbon (Water)													
MB	Total Organic Carbon	564090	WG2408367-4	<0.50		mg/L	-	<0.50	mg/L		✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	564090	WG2408367-8	<0.50		mg/L	-	<0.50	mg/L		✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	563320	WG2408518-4	<0.50		mg/L	-	<0.50	mg/L		✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	563320	WG2408518-8	<0.50		mg/L	-	<0.50	mg/L		✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	564090	WG2408367-12	<0.50		mg/L	-	<0.50	mg/L		✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	564090	WG2408367-16	<0.50		mg/L	-	<0.50	mg/L		✓	Water	Organic / Inorganic Carbon
MB	Total Organic Carbon	563320	WG2408518-14	<0.50		mg/L	-	<0.50	mg/L		✓	Water	Organic / Inorganic Carbon
Total Metals (Water)													
MB	Mercury (Hg)-Total	562638	WG2408296-1	<0.00050		ug/L	-	<0.00050	ug/L		✓	Water	Total Metals
MB	Mercury (Hg)-Total	562638	WG2408296-2	<0.00050		ug/L	-	<0.00050	ug/L		✓	Water	Total Metals
MB	Mercury (Hg)-Total	562638	WG2408296-3	<0.00050		ug/L	-	<0.00050	ug/L		✓	Water	Total Metals
MB	Mercury (Hg)-Total	562638	WG2408296-4	<0.00050		ug/L	-	<0.00050	ug/L		✓	Water	Total Metals

MB	Mercury (Hg)-Total	562951	WG2408720-1	<0.00050		ug/L	-	<0.00050	ug/L	✓	Water	Total Metals
MB	Mercury (Hg)-Total	563431	WG2409272-1	<0.00050		ug/L	-	<0.00050	ug/L	✓	Water	Total Metals
MB	Mercury (Hg)-Total	563431	WG2409272-2	<0.00050		ug/L	-	<0.00050	ug/L	✓	Water	Total Metals
Total Metals (Undigested) (Water)												
MB	Calcium (Ca)-Total	562279	WG2407860-1	<0.030		mg/L	-	<0.030	mg/L	✓	Water	Total Metals (Undigested)
MB	Magnesium (Mg)-Total	562279	WG2407860-1	<0.030		mg/L	-	<0.030	mg/L	✓	Water	Total Metals (Undigested)
MB	Phosphorus (P)-Total	562279	WG2407860-1	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Total Metals (Undigested)
MB	Potassium (K)-Total	562279	WG2407860-1	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Total Metals (Undigested)
MB	Silicon (Si)-Total	562279	WG2407860-1	<0.050		mg/L	-	<0.050	mg/L	✓	Water	Total Metals (Undigested)
Dissolved Metals (Water)												
MB	Aluminum (Al)-Dissolved	559627	WG2404810-1	<0.00050		mg/L	-	<0.00050	mg/L	✓	Water	Dissolved Metals
MB	Antimony (Sb)-Dissolved	559627	WG2404810-1	<0.000020		mg/L	-	<0.000020	mg/L	✓	Water	Dissolved Metals
MB	Arsenic (As)-Dissolved	559627	WG2404810-1	<0.000020		mg/L	-	<0.000020	mg/L	✓	Water	Dissolved Metals
MB	Barium (Ba)-Dissolved	559627	WG2404810-1	<0.000020		mg/L	-	<0.000020	mg/L	✓	Water	Dissolved Metals
MB	Beryllium (Be)-Dissolved	559627	WG2404810-1	<0.000010		mg/L	-	<0.000010	mg/L	✓	Water	Dissolved Metals
MB	Bismuth (Bi)-Dissolved	559627	WG2404810-1	<0.0000050		mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals
MB	Boron (B)-Dissolved	559627	WG2404810-1	<0.010		mg/L	-	<0.010	mg/L	✓	Water	Dissolved Metals
MB	Cadmium (Cd)-Dissolved	559627	WG2404810-1	<0.0000050		mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals
MB	Chromium (Cr)-Dissolved	559627	WG2404810-1	<0.00010		mg/L	-	<0.00010	mg/L	✓	Water	Dissolved Metals
MB	Cobalt (Co)-Dissolved	559627	WG2404810-1	<0.0000050		mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals
MB	Copper (Cu)-Dissolved	559627	WG2404810-1	<0.00010		mg/L	-	<0.00010	mg/L	✓	Water	Dissolved Metals
MB	Iron (Fe)-Dissolved	559627	WG2404810-1	<0.0010		mg/L	-	<0.0010	mg/L	✓	Water	Dissolved Metals
MB	Lead (Pb)-Dissolved	559627	WG2404810-1	<0.0000050		mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals
MB	Lithium (Li)-Dissolved	559627	WG2404810-1	<0.00050		mg/L	-	<0.00050	mg/L	✓	Water	Dissolved Metals
MB	Manganese (Mn)-Dissolved	559627	WG2404810-1	<0.000050		mg/L	-	<0.000050	mg/L	✓	Water	Dissolved Metals
MB	Mercury (Hg)-Dissolved	560404	WG2405665-1	<0.00050		ug/L	-	<0.00050	ug/L	✓	Water	Dissolved Metals
MB	Mercury (Hg)-Dissolved	563431	WG2409272-1	<0.00050		ug/L	-	<0.00050	ug/L	✓	Water	Dissolved Metals
MB	Mercury (Hg)-Dissolved	563431	WG2409272-2	<0.00050		ug/L	-	<0.00050	ug/L	✓	Water	Dissolved Metals
MB	Molybdenum (Mo)-Dissolved	559627	WG2404810-1	<0.000050		mg/L	-	<0.000050	mg/L	✓	Water	Dissolved Metals
MB	Nickel (Ni)-Dissolved	559627	WG2404810-1	<0.000050		mg/L	-	<0.000050	mg/L	✓	Water	Dissolved Metals
MB	Selenium (Se)-Dissolved	559627	WG2404810-1	<0.000040		mg/L	-	<0.000040	mg/L	✓	Water	Dissolved Metals
MB	Silver (Ag)-Dissolved	559627	WG2404810-1	<0.0000050		mg/L	-	<0.0000050	mg/L	✓	Water	Dissolved Metals
MB	Sodium (Na)-Dissolved	559627	WG2404810-1	<0.010		mg/L	-	<0.010	mg/L	✓	Water	Dissolved Metals
MB	Strontium (Sr)-Dissolved	559627	WG2404810-1	<0.00010		mg/L	-	<0.00010	mg/L	✓	Water	Dissolved Metals
MB	Thallium (Tl)-Dissolved	559627	WG2404810-1	<0.0000020		mg/L	-	<0.0000020	mg/L	✓	Water	Dissolved Metals
MB	Tin (Sn)-Dissolved	559627	WG2404810-1	<0.000010		mg/L	-	<0.000010	mg/L	✓	Water	Dissolved Metals
MB	Titanium (Ti)-Dissolved	559627	WG2404810-1	<0.00030		mg/L	-	<0.00030	mg/L	✓	Water	Dissolved Metals
MB	Uranium (U)-Dissolved	559627	WG2404810-1	<0.0000020		mg/L	-	<0.0000020	mg/L	✓	Water	Dissolved Metals
MB	Vanadium (V)-Dissolved	559627	WG2404810-1	<0.000050		mg/L	-	<0.000050	mg/L	✓	Water	Dissolved Metals
MB	Zinc (Zn)-Dissolved	559627	WG2404810-1	<0.00050		mg/L	-	<0.00050	mg/L	✓	Water	Dissolved Metals
MB	Zirconium (Zr)-Dissolved	559627	WG2404810-1	<0.00010		mg/L	-	<0.00010	mg/L	✓	Water	Dissolved Metals
Aggregate Organics (Water)												
MB	BOD	560334	WG2405550-1	<2.0		mg/L	-	<2.0	mg/L	✓	Water	Aggregate Organics
MB	BOD	560334	WG2405550-5	<2.0		mg/L	-	<2.0	mg/L	✓	Water	Aggregate Organics
MB	BOD	560868	WG2406219-1	<2.0		mg/L	-	<2.0	mg/L	✓	Water	Aggregate Organics
MB	COD	564110	WG2410120-1	<20		mg/L	-	<20	mg/L	✓	Water	Aggregate Organics
MB	COD	564110	WG2410120-5	<20		mg/L	-	<20	mg/L	✓	Water	Aggregate Organics
MB	COD	564110	WG2410120-7	<20		mg/L	-	<20	mg/L	✓	Water	Aggregate Organics
MB	COD	564889	WG2411040-1	<20		mg/L	-	<20	mg/L	✓	Water	Aggregate Organics
MB	COD	564889	WG2411040-5	<20		mg/L	-	<20	mg/L	✓	Water	Aggregate Organics
MB	COD	564889	WG2411040-9	<20		mg/L	-	<20	mg/L	✓	Water	Aggregate Organics
Anions and Nutrients (Water)												
MS	Ammonia, Total (as N)	565099	CRADT-R-SH	0.225	0.229	mg/L	98.0	75-125	%	✓	Water	Anions and Nutrients
MS	Ammonia, Total (as N)	565341	OLD BRIDGE L-1MAB	0.206	0.21	mg/L	97.9	75-125	%	✓	Water	Anions and Nutrients
MS	Bromide (Br)	564022	CRADT-R-SH	0.509	0.5	mg/L	101.9	75-125	%	✓	Water	Anions and Nutrients
MS	Bromide (Br)	564022	DUPLICATE 1	0.489	0.5	mg/L	97.7	75-125	%	✓	Water	Anions and Nutrients
MS	Bromide (Br)	564022	OLD BRIDGE L-SH	0.491	0.5	mg/L	98.2	75-125	%	✓	Water	Anions and Nutrients
MS	Chloride (Cl)	564022	CRADT-R-SH	104	101	mg/L	102.6	75-125	%	✓	Water	Anions and Nutrients
MS	Chloride (Cl)	564022	DUPLICATE 1	100	101	mg/L	98.9	75-125	%	✓	Water	Anions and Nutrients
MS	Chloride (Cl)	564022	OLD BRIDGE L-SH	100	101	mg/L	99.6	75-125	%	✓	Water	Anions and Nutrients
MS	Fluoride (F)	564022	CRADT-R-SH	1.12	1.08	mg/L	103.4	75-125	%	✓	Water	Anions and Nutrients
MS	Fluoride (F)	564022	DUPLICATE 1	1.14	1.15	mg/L	99.1	75-125	%	✓	Water	Anions and Nutrients
MS	Fluoride (F)	564022	OLD BRIDGE L-SH	1.06	1.06	mg/L	100.1	75-125	%	✓	Water	Anions and Nutrients
MS	Nitrate (as N)	564022	CRADT-R-SH	2.67	2.59	mg/L	103.2	75-125	%	✓	Water	Anions and Nutrients
MS	Nitrate (as N)	564022	DUPLICATE 1	2.59	2.6	mg/L	99.4	75-125	%	✓	Water	Anions and Nutrients
MS	Nitrate (as N)	564022	OLD BRIDGE L-SH	2.61	2.61	mg/L	100.1	75-125	%	✓	Water	Anions and Nutrients
MS	Nitrite (as N)	564022	CRADT-R-SH	0.519	0.501	mg/L	103.5	75-125	%	✓	Water	Anions and Nutrients
MS	Nitrite (as N)	564022	DUPLICATE 1	0.499	0.502	mg/L	99.4	75-125	%	✓	Water	Anions and Nutrients
MS	Nitrite (as N)	564022	OLD BRIDGE L-SH	0.501	0.5	mg/L	100.3	75-125	%	✓	Water	Anions and Nutrients
MS	Total Kjeldahl Nitrogen	562673	STONEY CK L-SH	1.17	1.1	mg/L	106.3	70-130	%	✓	Water	Anions and Nutrients
MS	Phosphorus (P)-Total Dissolved	560651	OLD BRIDGE L-SH	0.0531	0.05	mg/L	106.2	70-130	%	✓	Water	Anions and Nutrients
MS	Phosphorus (P)-Total Dissolved	560650	STONEY CK R-1MAB	0.0529	0.05	mg/L	105.7	70-130	%	✓	Water	Anions and Nutrients
MS	Phosphorus (P)-Total	561405	DUPLICATE 1	0.0471	0.0542	mg/L	85.9	70-130	%	✓	Water	Anions and Nutrients
MS	Phosphorus (P)-Total	561404	STONEY CK L-SH	0.0457	0.0538	mg/L	83.7	70-130	%	✓	Water	Anions and Nutrients
MS	Sulfate (SO4)	564022	CRADT-R-SH	115	112	mg/L	102.4	75-125	%	✓	Water	Anions and Nutrients
MS	Sulfate (SO4)	564022	DUPLICATE 1	115	117	mg/L	98.3	75-125	%	✓	Water	Anions and Nutrients
MS	Sulfate (SO4)	564022	OLD BRIDGE L-SH	111	112	mg/L	99.4	75-125	%	✓	Water	Anions and Nutrients
Organic / Inorganic Carbon (Water)												

MS	Total Organic Carbon	563320	OLD BRIDGE R-1MAB	6.44	6.3	mg/L	102.9	70-130	%	✓	Water	Organic / Inorganic Carbon
MS	Total Organic Carbon	564090	BIRCH BANK L-1M AB	6.13	5.98	mg/L	103.1	70-130	%	✓	Water	Organic / Inorganic Carbon
Total Metals (Water)												
MS	Mercury (Hg)-Total	562638	STONEY CK L-1MAB	0.00528	0.005	ug/L	105.5	70-130	%	✓	Water	Total Metals
MS	Mercury (Hg)-Total	562951	OLD BRIDGE L-1MAB	0.00460	0.005	ug/L	92.0	70-130	%	✓	Water	Total Metals
Total Metals (Undigested) (Water)												
MS	Aluminum (Al)-Total	562279	CRADT-R-SH	0.225	0.212	mg/L	106.7	70-130	%	✓	Water	Total Metals (Undigested)
MS	Aluminum (Al)-Total	562279	NEW BRIDGE L-SH	0.200	0.211	mg/L	94.5	70-130	%	✓	Water	Total Metals (Undigested)
MS	Antimony (Sb)-Total	562279	CRADT-R-SH	0.0210	0.0206	mg/L	102.2	70-130	%	✓	Water	Total Metals (Undigested)
MS	Antimony (Sb)-Total	562279	NEW BRIDGE L-SH	0.0190	0.02	mg/L	94.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Arsenic (As)-Total	562279	CRADT-R-SH	0.0208	0.0203	mg/L	102.6	70-130	%	✓	Water	Total Metals (Undigested)
MS	Arsenic (As)-Total	562279	NEW BRIDGE L-SH	0.0185	0.0202	mg/L	91.3	70-130	%	✓	Water	Total Metals (Undigested)
MS	Barium (Ba)-Total	562279	CRADT-R-SH	0.0407	0.0381	mg/L	113.1	70-130	%	✓	Water	Total Metals (Undigested)
MS	Barium (Ba)-Total	562279	NEW BRIDGE L-SH	0.0384	0.04	mg/L	N/A	-	%	MS-B	Water	Total Metals (Undigested)
MS	Beryllium (Be)-Total	562279	CRADT-R-SH	0.0404	0.04	mg/L	101.1	70-130	%	✓	Water	Total Metals (Undigested)
MS	Beryllium (Be)-Total	562279	NEW BRIDGE L-SH	0.0387	0.04	mg/L	96.8	70-130	%	✓	Water	Total Metals (Undigested)
MS	Bismuth (Bi)-Total	562279	CRADT-R-SH	0.00869	0.01	mg/L	86.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Bismuth (Bi)-Total	562279	NEW BRIDGE L-SH	0.00827	0.01	mg/L	82.7	70-130	%	✓	Water	Total Metals (Undigested)
MS	Boron (B)-Total	562279	CRADT-R-SH	0.108	0.1	mg/L	108.3	70-130	%	✓	Water	Total Metals (Undigested)
MS	Boron (B)-Total	562279	NEW BRIDGE L-SH	0.107	0.1	mg/L	106.8	70-130	%	✓	Water	Total Metals (Undigested)
MS	Cadmium (Cd)-Total	562279	CRADT-R-SH	0.00433	0.00416	mg/L	104.3	70-130	%	✓	Water	Total Metals (Undigested)
MS	Cadmium (Cd)-Total	562279	NEW BRIDGE L-SH	0.00388	0.00401	mg/L	96.7	70-130	%	✓	Water	Total Metals (Undigested)
MS	Chromium (Cr)-Total	562279	CRADT-R-SH	0.0418	0.04	mg/L	104.5	70-130	%	✓	Water	Total Metals (Undigested)
MS	Chromium (Cr)-Total	562279	NEW BRIDGE L-SH	0.0373	0.04	mg/L	93.3	70-130	%	✓	Water	Total Metals (Undigested)
MS	Cobalt (Co)-Total	562279	CRADT-R-SH	0.0205	0.02	mg/L	102.5	70-130	%	✓	Water	Total Metals (Undigested)
MS	Cobalt (Co)-Total	562279	NEW BRIDGE L-SH	0.0188	0.02	mg/L	93.7	70-130	%	✓	Water	Total Metals (Undigested)
MS	Copper (Cu)-Total	562279	CRADT-R-SH	0.0207	0.0204	mg/L	101.3	70-130	%	✓	Water	Total Metals (Undigested)
MS	Copper (Cu)-Total	562279	NEW BRIDGE L-SH	0.0192	0.0203	mg/L	94.5	70-130	%	✓	Water	Total Metals (Undigested)
MS	Iron (Fe)-Total	562279	CRADT-R-SH	2.03	2.01	mg/L	100.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Iron (Fe)-Total	562279	NEW BRIDGE L-SH	1.87	2.01	mg/L	93.2	70-130	%	✓	Water	Total Metals (Undigested)
MS	Lead (Pb)-Total	562279	CRADT-R-SH	0.0216	0.0208	mg/L	103.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Lead (Pb)-Total	562279	NEW BRIDGE L-SH	0.0192	0.0201	mg/L	95.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Lithium (Li)-Total	562279	CRADT-R-SH	0.107	0.101	mg/L	106.4	70-130	%	✓	Water	Total Metals (Undigested)
MS	Lithium (Li)-Total	562279	NEW BRIDGE L-SH	0.102	0.101	mg/L	101.5	70-130	%	✓	Water	Total Metals (Undigested)
MS	Manganese (Mn)-Total	562279	CRADT-R-SH	0.0234	0.0233	mg/L	100.3	70-130	%	✓	Water	Total Metals (Undigested)
MS	Manganese (Mn)-Total	562279	NEW BRIDGE L-SH	0.0213	0.0241	mg/L	86.0	70-130	%	✓	Water	Total Metals (Undigested)
MS	Molybdenum (Mo)-Total	562279	CRADT-R-SH	0.0213	0.0206	mg/L	103.7	70-130	%	✓	Water	Total Metals (Undigested)
MS	Molybdenum (Mo)-Total	562279	NEW BRIDGE L-SH	0.0200	0.0206	mg/L	97.1	70-130	%	✓	Water	Total Metals (Undigested)
MS	Nickel (Ni)-Total	562279	CRADT-R-SH	0.0408	0.0404	mg/L	101.1	70-130	%	✓	Water	Total Metals (Undigested)
MS	Nickel (Ni)-Total	562279	NEW BRIDGE L-SH	0.0381	0.0404	mg/L	94.3	70-130	%	✓	Water	Total Metals (Undigested)
MS	Selenium (Se)-Total	562279	CRADT-R-SH	0.0392	0.0403	mg/L	97.3	70-130	%	✓	Water	Total Metals (Undigested)
MS	Selenium (Se)-Total	562279	NEW BRIDGE L-SH	0.0378	0.0402	mg/L	94.0	70-130	%	✓	Water	Total Metals (Undigested)
MS	Silver (Ag)-Total	562279	CRADT-R-SH	0.00417	0.004	mg/L	104.2	70-130	%	✓	Water	Total Metals (Undigested)
MS	Silver (Ag)-Total	562279	NEW BRIDGE L-SH	0.00390	0.004	mg/L	97.5	70-130	%	✓	Water	Total Metals (Undigested)
MS	Sodium (Na)-Total	562279	CRADT-R-SH	3.71	3.69	mg/L	101.2	70-130	%	✓	Water	Total Metals (Undigested)
MS	Sodium (Na)-Total	562279	NEW BRIDGE L-SH	3.20	3.42	mg/L	89.1	70-130	%	✓	Water	Total Metals (Undigested)
MS	Strontium (Sr)-Total	562279	CRADT-R-SH	0.131	0.123	mg/L	N/A	-	%	MS-B	Water	Total Metals (Undigested)
MS	Strontium (Sr)-Total	562279	NEW BRIDGE L-SH	0.124	0.13	mg/L	N/A	-	%	MS-B	Water	Total Metals (Undigested)
MS	Thallium (Tl)-Total	562279	CRADT-R-SH	0.00424	0.00412	mg/L	102.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Thallium (Tl)-Total	562279	NEW BRIDGE L-SH	0.00383	0.004	mg/L	95.7	70-130	%	✓	Water	Total Metals (Undigested)
MS	Tin (Sn)-Total	562279	CRADT-R-SH	0.0202	0.02	mg/L	101.2	70-130	%	✓	Water	Total Metals (Undigested)
MS	Tin (Sn)-Total	562279	NEW BRIDGE L-SH	0.0188	0.02	mg/L	94.2	70-130	%	✓	Water	Total Metals (Undigested)
MS	Titanium (Ti)-Total	562279	CRADT-R-SH	0.0413	0.04	mg/L	103.1	70-130	%	✓	Water	Total Metals (Undigested)
MS	Titanium (Ti)-Total	562279	NEW BRIDGE L-SH	0.0380	0.04	mg/L	94.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Uranium (U)-Total	562279	CRADT-R-SH	0.00473	0.00444	mg/L	107.2	70-130	%	✓	Water	Total Metals (Undigested)
MS	Uranium (U)-Total	562279	NEW BRIDGE L-SH	0.00444	0.00451	mg/L	98.2	70-130	%	✓	Water	Total Metals (Undigested)
MS	Vanadium (V)-Total	562279	CRADT-R-SH	0.106	0.1	mg/L	105.9	70-130	%	✓	Water	Total Metals (Undigested)
MS	Vanadium (V)-Total	562279	NEW BRIDGE L-SH	0.0947	0.1	mg/L	94.5	70-130	%	✓	Water	Total Metals (Undigested)
MS	Zinc (Zn)-Total	562279	CRADT-R-SH	0.394	0.404	mg/L	97.4	70-130	%	✓	Water	Total Metals (Undigested)
MS	Zinc (Zn)-Total	562279	NEW BRIDGE L-SH	0.365	0.401	mg/L	91.1	70-130	%	✓	Water	Total Metals (Undigested)

MS	Zirconium (Zr)-Total	562279	CRADT-R-SH	0.0397	0.04	mg/L	99.3	70-130	%	✓	Water	Total Metals (Undigested)
MS	Zirconium (Zr)-Total	562279	NEW BRIDGE L-SH	0.0376	0.04	mg/L	94.1	70-130	%	✓	Water	Total Metals (Undigested)
Dissolved Metals (Water)												
MS	Aluminum (Al)-Dissolved	559627	OLD BRIDGE L-1MAB	0.207	0.207	mg/L	100.1	70-130	%	✓	Water	Dissolved Metals
MS	Antimony (Sb)-Dissolved	559627	OLD BRIDGE L-1MAB	0.0201	0.02	mg/L	100.2	70-130	%	✓	Water	Dissolved Metals
MS	Arsenic (As)-Dissolved	559627	OLD BRIDGE L-1MAB	0.0199	0.0201	mg/L	98.6	70-130	%	✓	Water	Dissolved Metals
MS	Barium (Ba)-Dissolved	559627	OLD BRIDGE L-1MAB	0.0394	0.0385	mg/L	104.9	70-130	%	✓	Water	Dissolved Metals
MS	Beryllium (Be)-Dissolved	559627	OLD BRIDGE L-1MAB	0.0408	0.04	mg/L	101.9	70-130	%	✓	Water	Dissolved Metals
MS	Bismuth (Bi)-Dissolved	559627	OLD BRIDGE L-1MAB	0.00866	0.01	mg/L	86.6	70-130	%	✓	Water	Dissolved Metals
MS	Boron (B)-Dissolved	559627	OLD BRIDGE L-1MAB	0.111	0.1	mg/L	110.9	70-130	%	✓	Water	Dissolved Metals
MS	Cadmium (Cd)-Dissolved	559627	OLD BRIDGE L-1MAB	0.00415	0.004	mg/L	103.7	70-130	%	✓	Water	Dissolved Metals
MS	Calcium (Ca)-Dissolved	559627	OLD BRIDGE L-1MAB	68.2	68	mg/L	100.5	70-130	%	✓	Water	Dissolved Metals
MS	Chromium (Cr)-Dissolved	559627	OLD BRIDGE L-1MAB	0.0395	0.04	mg/L	98.6	70-130	%	✓	Water	Dissolved Metals
MS	Cobalt (Co)-Dissolved	559627	OLD BRIDGE L-1MAB	0.0200	0.02	mg/L	99.8	70-130	%	✓	Water	Dissolved Metals
MS	Copper (Cu)-Dissolved	559627	OLD BRIDGE L-1MAB	0.0205	0.0202	mg/L	101.7	70-130	%	✓	Water	Dissolved Metals
MS	Iron (Fe)-Dissolved	559627	OLD BRIDGE L-1MAB	1.97	2	mg/L	98.2	70-130	%	✓	Water	Dissolved Metals
MS	Lead (Pb)-Dissolved	559627	OLD BRIDGE L-1MAB	0.0202	0.02	mg/L	101.1	70-130	%	✓	Water	Dissolved Metals
MS	Lithium (Li)-Dissolved	559627	OLD BRIDGE L-1MAB	0.106	0.101	mg/L	105.6	70-130	%	✓	Water	Dissolved Metals
MS	Magnesium (Mg)-Dissolved	559627	OLD BRIDGE L-1MAB	51.9	53.8	mg/L	96.2	70-130	%	✓	Water	Dissolved Metals
MS	Manganese (Mn)-Dissolved	559627	OLD BRIDGE L-1MAB	0.0212	0.0207	mg/L	102.6	70-130	%	✓	Water	Dissolved Metals
MS	Mercury (Hg)-Dissolved	560404	MAGLIOS R-1MD	0.00544	0.005	ug/L	108.9	70-130	%	✓	Water	Dissolved Metals
MS	Mercury (Hg)-Dissolved	560404	NEW BRIDGE L-SH	0.00558	0.005	ug/L	111.6	70-130	%	✓	Water	Dissolved Metals
MS	Molybdenum (Mo)-Dissolved	559627	OLD BRIDGE L-1MAB	0.0207	0.0205	mg/L	100.8	70-130	%	✓	Water	Dissolved Metals
MS	Nickel (Ni)-Dissolved	559627	OLD BRIDGE L-1MAB	0.0402	0.0403	mg/L	99.9	70-130	%	✓	Water	Dissolved Metals
MS	Phosphorus (P)-Dissolved	559627	OLD BRIDGE L-1MAB	2.51	2.5	mg/L	100.3	70-130	%	✓	Water	Dissolved Metals
MS	Potassium (K)-Dissolved	559627	OLD BRIDGE L-1MAB	50.5	50.7	mg/L	99.7	70-130	%	✓	Water	Dissolved Metals
MS	Selenium (Se)-Dissolved	559627	OLD BRIDGE L-1MAB	0.0388	0.0402	mg/L	96.6	70-130	%	✓	Water	Dissolved Metals
MS	Silicon (Si)-Dissolved	559627	OLD BRIDGE L-1MAB	2.43	2.49	mg/L	N/A	-	%	MS-B	Water	Dissolved Metals
MS	Silver (Ag)-Dissolved	559627	OLD BRIDGE L-1MAB	0.00405	0.004	mg/L	101.2	70-130	%	✓	Water	Dissolved Metals
MS	Sodium (Na)-Dissolved	559627	OLD BRIDGE L-1MAB	3.26	3.25	mg/L	100.4	70-130	%	✓	Water	Dissolved Metals
MS	Strontium (Sr)-Dissolved	559627	OLD BRIDGE L-1MAB	0.126	0.125	mg/L	N/A	-	%	MS-B	Water	Dissolved Metals
MS	Thallium (Tl)-Dissolved	559627	OLD BRIDGE L-1MAB	0.00400	0.004	mg/L	99.98	70-130	%	✓	Water	Dissolved Metals
MS	Tin (Sn)-Dissolved	559627	OLD BRIDGE L-1MAB	0.0201	0.02	mg/L	100.6	70-130	%	✓	Water	Dissolved Metals
MS	Titanium (Ti)-Dissolved	559627	OLD BRIDGE L-1MAB	0.0409	0.04	mg/L	102.3	70-130	%	✓	Water	Dissolved Metals
MS	Uranium (U)-Dissolved	559627	OLD BRIDGE L-1MAB	0.00464	0.00446	mg/L	104.5	70-130	%	✓	Water	Dissolved Metals
MS	Vanadium (V)-Dissolved	559627	OLD BRIDGE L-1MAB	0.0992	0.1	mg/L	99.1	70-130	%	✓	Water	Dissolved Metals
MS	Zinc (Zn)-Dissolved	559627	OLD BRIDGE L-1MAB	0.398	0.401	mg/L	99.4	70-130	%	✓	Water	Dissolved Metals
MS	Zirconium (Zr)-Dissolved	559627	OLD BRIDGE L-1MAB	0.0391	0.04	mg/L	97.8	70-130	%	✓	Water	Dissolved Metals
Aggregate Organics (Water)												
MS	COD	564889	NEW BRIDGE L-1MD	556	500	mg/L	111.2	75-125	%	✓	Water	Aggregate Organics
MS	COD	564110	OLD BRIDGE R-1MAB	544	500	mg/L	108.8	75-125	%	✓	Water	Aggregate Organics

Qualifier Legend

G	QC result did not meet ALS DQO. Refer to narrative comments for further information.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Evaluation Legend

✓	QC Lot met ALS Data Quality Objectives
✘	QC Lot did not meet ALS Data Quality Objectives

APPENDIX D

CHLOROPHYLL A RESULTS

Chlorophyll a

LAB ID				5101706-01	5101706-02	5101706-03	5101706-04	5101706-05	5101706-06	5101706-07	5101706-08	5101706-09	5101706-10	5101706-11	5101706-12	5101706-13	5101706-14	5101706-15	5101706-16	5101706-17	5101706-18
CLIENT ID				ERO-REF-1-1	ERO-REF-1-1	ERO-REF-1-2	ERO-REF-1-2	ERO-REF-1-3	ERO-REF-1-3	ERO-REF-1-4	ERO-REF-1-4	ERO-REF-1-5	ERO-REF-1-5	ERO-REF-2-1	ERO-REF-2-1	ERO-REF-2-2	ERO-REF-2-2	ERO-REF-2-3	ERO-REF-2-3	ERO-REF-2-4	ERO-REF-2-4
DATE SAMPLED				26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15
DATE RECEIVED				26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15
MATRIX				Water	Solid	Water	Solid	Water	Solid	Water	Solid	Water	Solid	Water	Solid	Water	Solid	Water	Solid	Water	Solid
General Method	**Analyte**	**Units**	**MRL**																		
General Parameters	Dry Weight (grams)	g dry	0.001		0.016		0.032		0.025		0.076		0.031		0.03		0.084		0.02		0.033
General Parameters	Solids, Total Volatile	g dry	0.001		0.007		0.011		0.009		0.018		0.008		0.012		0.018		0.009		0.011
General Parameters	Chlorophyll a	ug	0.1	9.6		24.9		33.2		39.6		22		32.1		36.4		24.2		26.3	
Microbiological Parameters	Heterotrophic Plate Count	CFU/mL	5	11000										> 20000							

Chlorophyll a																				
LAB ID				5101706-19	5101706-20	5101706-21	5101706-22	5101706-23	5101706-24	5101706-25	5101706-26	5101706-27	5101706-28	5101706-29	5101706-30	5101706-31	5101706-32	5101706-33	5101706-34	5101706-35	5101706-36
CLIENT ID				ERO-REF-2-5	ERO-REF-2-5	ERO-EXP-1-1	ERO-EXP-1-1	ERO-EXP-1-2	ERO-EXP-1-2	ERO-EXP-1-3	ERO-EXP-1-3	ERO-EXP-1-4	ERO-EXP-1-4	ERO-EXP-1-5	ERO-EXP-1-5	ERO-EXP-2-1	ERO-EXP-2-1	ERO-EXP-2-2	ERO-EXP-2-2	ERO-EXP-2-3	ERO-EXP-2-3
DATE SAMPLED				26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15
DATE RECEIVED				26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15
MATRIX				Water	Solid	Water	Solid	Water	Solid	Water	Solid	Water	Solid	Water	Solid	Water	Solid	Water	Solid	Water	Solid
General Method	**Analyte**	**Units**	**MRL**																		
General Parameters	Dry Weight (grams)	g dry	0.001		0.029		0.038		0.024		0.047		0.026		0.227		0.046		0.02		0.019
General Parameters	Solids, Total Volatile	g dry	0.001		0.01		0.017		0.01		0.009		0.008		0.045		0.017		0.009		0.008
General Parameters	Chlorophyll a	ug	0.1	19.3		48.6		36.5		33.4		18.4		50.5		69.6		12.6		18.4	
Microbiological Parameters	Heterotrophic Plate Count	CFU/mL	5			10000										> 20000					

Chlorophyll a																				
LAB ID				5101706-37	5101706-38	5101706-39	5101706-40	5101706-41	5101706-42	5101706-43	5101706-44	5101706-45	5101706-46	5101706-47	5101706-48	5101706-49	5101706-50	5101706-51	5101706-52	5101706-53
CLIENT ID				ERO-EXP-2-4	ERO-EXP-2-4	ERO-EXP-2-5	ERO-EXP-2-5	ERO-EXP-3-1	ERO-EXP-3-1	ERO-EXP-3-2	ERO-EXP-3-2	ERO-EXP-3-3	ERO-EXP-3-3	ERO-EXP-3-4	ERO-EXP-3-4	ERO-EXP-3-5	ERO-EXP-3-5	ERO-CRADT-3-1	ERO-CRADT-3-1	ERO-CRADT-3-2
DATE SAMPLED				26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15
DATE RECEIVED				26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15
MATRIX				Water	Solid	Water	Solid	Water	Solid	Water	Solid	Water	Solid	Water	Solid	Water	Solid	Water	Solid	Water
General Method	**Analyte**	**Units**	**MRL**																	
General Parameters	Dry Weight (grams)	g dry	0.001		0.019		0.021		0.015		0.031		0.148		0.076		0.121		0.044	
General Parameters	Solids, Total Volatile	g dry	0.001		0.009		0.012		0.008		0.011		0.039		0.027		0.036		0.017	
General Parameters	Chlorophyll a	ug	0.1	18.5		19.2		12.7		30.8		40.4		64.3		32.3		48.7		23.2
Microbiological Parameters	Heterotrophic Plate Count	CFU/mL	5					> 20000										> 20000		

Chlorophyll a

LAB ID				5101706-54	5101706-55	5101706-56	5101706-57	5101706-58	5101706-59	5101706-60	5101706-61	5101706-62	5101706-63	5101706-64	5101706-65	5101706-66	5101706-67	5101706-68	5101706-69
CLIENT ID				ERO-CRADT-3-2	ERO-CRADT-3-3	ERO-CRADT-3-3	ERO-CRADT-3-4	ERO-CRADT-3-4	ERO-CRADT-3-5	ERO-CRADT-3-5	ERO-EXP-4-1	ERO-EXP-4-1	ERO-EXP-4-2	ERO-EXP-4-2	ERO-EXP-4-3	ERO-EXP-4-3	ERO-EXP-4-4	ERO-EXP-4-4	ERO-EXP-4-5
DATE SAMPLED				26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15
DATE RECEIVED				26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15
MATRIX				Solid	Water	Solid	Water	Solid	Water	Solid	Water	Solid	Water	Solid	Water	Solid	Water	Solid	Water
General Method	**Analyte**	**Units**	**MRL**																
General Parameters	Dry Weight (grams)	g dry	0.001	0.019		0.017		0.015		0.021		0.021		0.006		0.012		0.009	
General Parameters	Solids, Total Volatile	g dry	0.001	0.012		0.011		0.008		0.008		0.004		0.003		0.005		0.004	
General Parameters	Chlorophyll a	ug	0.1		21.2		16.6		10.8		9		5.8		9.4		10.1		8.8
Microbiological Parameters	Heterotrophic Plate Count	CFU/mL	5								> 20000								

Chlorophyll a																				
LAB ID				5101706-70	5101706-71	5101706-72	5101706-73	5101706-74	5101706-75	5101706-76	5101706-77	5101706-78	5101706-79	5101706-80	5101706-81	5101706-82	5101706-83	5101706-84	5101706-85	5101706-86	5101706-87
CLIENT ID				ERO-EXP-4-5	ERO-EXP-5-1	ERO-EXP-5-1	ERO-EXP-5-2	ERO-EXP-5-2	ERO-EXP-5-3	ERO-EXP-5-3	ERO-EXP-5-4	ERO-EXP-5-4	ERO-EXP-5-5	ERO-EXP-5-5	DEP-REF-1	DEP-REF-1	DEP-REF-2	DEP-REF-2	DEP-REF-3	DEP-REF-3	DEP-EXP-1
DATE SAMPLED				26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15
DATE RECEIVED				26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15
MATRIX				Solid	Water	Solid	Water	Solid	Water	Solid	Water	Solid	Water	Solid	Water	Solid	Water	Solid	Water	Solid	Water
General Method	**Analyte**	**Units**	**MRL**																		
General Parameters	Dry Weight (grams)	g dry	0.001	0.014		0.034		0.062		0.017		0.029		0.015		0.115		0.089		0.068	
General Parameters	Solids, Total Volatile	g dry	0.001	0.005		0.02		0.018		0.009		0.009		0.006		0.018		0.014		0.01	
General Parameters	Chlorophyll a	ug	0.1		33.5		34.7		17.3		22.2		14.5		32		59.8		39		22.7
Microbiological Parameters	Heterotrophic Plate Count	CFU/mL	5		> 20000										> 20000						

Chlorophyll a

LAB ID				5101706-88	5101706-89	5101706-90	5101706-91	5101706-92	5101706-93	5101706-94	5101706-95	5101706-96	5101706-97	5101706-98	5101706-99	5101706-AA
CLIENT ID				DEP-EXP-1	DEP-EXP-2	DEP-EXP-2	DEP-EXP-3	DEP-EXP-3	DEP-EXP-4	DEP-EXP-4	DEP-EXP-5	DEP-EXP-5	DEP-EXP-6	DEP-EXP-6	DEP-EXP-7	DEP-EXP-7
DATE SAMPLED				26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15
DATE RECEIVED				26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15
MATRIX				Solid	Water	Solid	Water	Solid	Water	Solid	Water	Solid	Water	Solid	Water	Solid
General Method	**Analyte**	**Units**	**MRL**													
General Parameters	Dry Weight (grams)	g dry	0.001	0.065		0.139		0.089		0.056		0.186		0.156		0.2
General Parameters	Solids, Total Volatile	g dry	0.001	0.008		0.02		0.015		0.01		0.023		0.022		0.019
General Parameters	Chlorophyll a	ug	0.1		68.7		46.2		46.9		46.4		65.4		43	
Microbiological Parameters	Heterotrophic Plate Count	CFU/mL	5													

APPENDIX E

SEDIMENT QUALITY DATA

LAB ID				5101732-81	5101732-82	5101732-83	5101732-84
CLIENT ID				DEP-REF-1-SED	DEP-REF-2-SED	DEP-REF-3-SED	DEP-EXP-1-SED
DATE SAMPLED				13-Oct-15	14-Oct-15	14-Oct-15	18-Oct-15
DATE RECEIVED				26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15
MATRIX				Soil	Soil	Soil	Soil
General Method	**Analyte**	**Units**	**MRL**				
Strong Acid Leachable Metals	Aluminum	mg/kg dry	20	3860	3450	2880	4910
Strong Acid Leachable Metals	Antimony	mg/kg dry	0.1	0.2	0.1	0.2	9.5
Strong Acid Leachable Metals	Arsenic	mg/kg dry	0.4	0.9	1	0.8	6
Strong Acid Leachable Metals	Barium	mg/kg dry	1	39	36	27	143
Strong Acid Leachable Metals	Beryllium	mg/kg dry	0.1	0.1	0.1	0.1	0.2
Strong Acid Leachable Metals	Bismuth	mg/kg dry	0.1	<0.1	<0.1	<0.1	0.3
Strong Acid Leachable Metals	Boron	mg/kg dry	2	<2	<2	<2	<2
Strong Acid Leachable Metals	Cadmium	mg/kg dry	0.04	0.19	0.17	0.11	1.39
Strong Acid Leachable Metals	Calcium	mg/kg dry	100	1930	1990	1730	3550
Strong Acid Leachable Metals	Chromium	mg/kg dry	1	11.9	10	15.6	20.8
Strong Acid Leachable Metals	Cobalt	mg/kg dry	0.1	3.5	2.6	2.5	5.1
Strong Acid Leachable Metals	Copper	mg/kg dry	0.2	5.4	5.1	5.1	95.9
Strong Acid Leachable Metals	Iron	mg/kg dry	20	10200	8710	12000	20900
Strong Acid Leachable Metals	Lead	mg/kg dry	0.2	6.8	7.3	7	160
Strong Acid Leachable Metals	Lithium	mg/kg dry	0.1	8.5	7.7	6.1	7.7
Strong Acid Leachable Metals	Magnesium	mg/kg dry	10	2440	2220	1900	2720
Strong Acid Leachable Metals	Manganese	mg/kg dry	0.4	109	106	108	251
Strong Acid Leachable Metals	Mercury	mg/kg dry	0.05	0.05	<0.05	<0.05	0.23
Strong Acid Leachable Metals	Molybdenum	mg/kg dry	0.1	0.5	0.3	0.2	1
Strong Acid Leachable Metals	Nickel	mg/kg dry	0.4	7.9	7.3	6.4	10.5
Strong Acid Leachable Metals	Phosphorus	mg/kg dry	10	487	515	403	725
Strong Acid Leachable Metals	Potassium	mg/kg dry	10	728	559	421	785
Strong Acid Leachable Metals	Selenium	mg/kg dry	0.5	<0.5	<0.5	<0.5	<0.5
Strong Acid Leachable Metals	Silicon	mg/kg dry	3000	<3000	<3000	<3000	<3000
Strong Acid Leachable Metals	Silver	mg/kg dry	0.2	<0.2	<0.2	<0.2	0.5
Strong Acid Leachable Metals	Sodium	mg/kg dry	40	71	82	66	121
Strong Acid Leachable Metals	Strontium	mg/kg dry	0.2	25.2	20.5	20.4	27.3
Strong Acid Leachable Metals	Sulfur	mg/kg dry	1000	<1000	<1000	<1000	<1000
Strong Acid Leachable Metals	Tellurium	mg/kg dry	0.1	<0.1	<0.1	<0.1	<0.1
Strong Acid Leachable Metals	Thallium	mg/kg dry	0.1	<0.1	<0.1	<0.1	0.3
Strong Acid Leachable Metals	Thorium	mg/kg dry	0.5	4.8	5.8	4.8	6.5
Strong Acid Leachable Metals	Tin	mg/kg dry	0.2	0.5	0.4	0.2	9.7
Strong Acid Leachable Metals	Titanium	mg/kg dry	2	393	302	285	451
Strong Acid Leachable Metals	Uranium	mg/kg dry	0.1	0.9	1.1	0.6	0.9
Strong Acid Leachable Metals	Vanadium	mg/kg dry	0.4	18.5	14.9	26.1	31.1
Strong Acid Leachable Metals	Zinc	mg/kg dry	2	59	48	31	645
Strong Acid Leachable Metals	Zirconium	mg/kg dry	2	<2	<2	<2	3

	5101732-85	5101732-86	5101732-87	5101732-88	5101732-89	5101732-90
	DEP-EXP-2-SED	DEP-EXP-3-SED	DEP-EXP-4-SED	DEP-EXP-5-SED	DEP-EXP-6-SED	DEP-EXP-7-SED
	18-Oct-15	17-Oct-15	17-Oct-15	17-Oct-15	17-Oct-15	17-Oct-15
	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15
	Soil	Soil	Soil	Soil	Soil	Soil
Analyte						
Aluminum	4710	5410	6450	5690	4880	7790
Antimony	17.8	76	15.2	18.9	15.1	2.4
Arsenic	5.5	14.1	5.2	5.9	4.1	3.6
Barium	130	273	118	183	134	204
Beryllium	0.1	0.2	0.2	0.3	0.3	0.3
Bismuth	0.1	0.2	0.1	0.2	<0.1	0.3
Boron	4	8	2	2	3	<2
Cadmium	0.54	0.57	0.46	1.12	0.52	2.81
Calcium	5520	10500	5100	5460	5420	24900
Chromium	19.1	36.6	22.5	26.3	20.7	31.2
Cobalt	6.3	11.2	7.4	7.2	6.6	7.2
Copper	161	514	139	196	176	36
Iron	21800	48700	26300	28100	19000	23600
Lead	141	136	48.9	109	52.8	91.9
Lithium	8.4	7.4	8.6	9.1	7.9	11.2
Magnesium	2620	2560	3960	2970	2980	15400
Manganese	338	743	388	333	339	330
Mercury	0.13	0.12	0.08	0.25	0.17	0.14
Molybdenum	1.8	4.8	1.5	1.6	1.7	3
Nickel	8.4	10.2	10.1	11.6	9.8	18.3
Phosphorus	504	649	627	844	722	1180
Potassium	809	885	727	968	865	1420
Selenium	<0.5	<0.5	<0.5	0.6	<0.5	<0.5
Silicon	<3000	<3000	<3000	<3000	<3000	<3000
Silver	0.6	3.6	0.4	0.9	1.1	0.5
Sodium	175	281	207	171	183	237
Strontium	41.2	55.3	32.3	39.4	39.6	63.8
Sulfur	<1000	<1000	<1000	<1000	<1000	3500
Tellurium	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Thallium	<0.1	<0.1	0.1	0.2	0.2	0.2
Thorium	4.6	5.7	4.5	5.5	4.8	5.9
Tin	16.4	61.4	19.4	25.3	14.2	3.7
Titanium	442	451	510	573	506	899
Uranium	1.1	1.3	0.9	1	0.8	2.2
Vanadium	22.3	43.6	38.9	29.3	20.5	38.9
Zinc	1190	2550	770	1160	793	594
Zirconium	3	5	3	4	4	3

APPENDIX F

PERIPHYTON TAXONOMIC DATA

Periphyton Taxonomic Codes		
Final Code	Bacillariophyte-Diatoms	Peri Names and alternates
P001	Achnanthidium linearis	Achnanthidium linearis
P002	Achnanthidium minutissima	Achnanthidium minutissima
P003	Achnanthidium spp.	Achnanthidium spp.
P004	Amphora ovalis	Amphora ovalis
P005	Amphora perpusilla	Amphora perpusilla
P006	Amphora pediculus	Amphora pediculus
P007	Amphipleura pellucida	Amphipleura pellucida
P008	Anomoeoneis sp.	Anomoeoneis vitrea
P009	Asterionella formosa	Asterionella formosa
P010	Aulicoseira distans	Aulicoseira distans
P011	Aulacoseira granulata	Aulacoseira granulata
P012	Caloneis silicula	Caloneis silicula
P013	Cocconeis fluviatilis	Cocconeis fluviatilis
P014	Cocconeis placentula	Cocconeis placentula
P015	Cyclotella bodanica	Cyclotella bodanica
P016	Cyclotella comta	Cyclotella comta
P017	Cyclotella glomerata	Cyclotella glomerata
P018	Cyclotella ocellata	Cyclotella ocellata
P019	Cyclotella stelligera	Cyclotella stelligera
P020	Cymbella cistula	Cymbella cistula
P021	Cymbella parva	Cymbella parva
P022	Cymbella turgida	Cymbella turgida
P023	Denticula tenuis	Denticula tenuis
P024	Diatoma hiemale	Diatoma hiemale
P025	Diatoma tenue var elongatum	Diatoma tenue var elongatum
P026	Diatoma vulgare	Diatoma vulgare
P027	Didymosphenia geminata	Didymosphenia geminata
P028	Diploneis elliptica	Diploneis elliptica
P029	Epithemia sp.	Epithemia sp.
P030	Eucocconeis flexella	Eucocconeis flexella
P031	Eucocconeis sp.	Eucocconeis sp.
P032	Eunotia lunaris	Eunotia lunaris
P033	Eunotia pectinalis	Eunotia pectinalis
P034	Fragilaria crotonensis	Fragilaria crotonensis
P035	Fragilaria capucina (intermedia)	Fragilaria capucina (intermedia)
P036	Fragilariforma virescens	Fragilariforma virescens
P037	Frustulia rhomboides	Frustulia rhomboides
P038	Gomphonema ovilaceum	Gomphonema ovilaceum
P039	Gomphonema sp.	Gomphonema sp.
P040	Gyrosigma sp.	Gyrosigma sp.
P041	Hannaea arcus	Hannaea arcus
P042	Meridion anceps	Meridion anceps
P043	Meridion circulare	Meridion circulare
P044	Navicula gastrum	Navicula gastrium
P045	Navicula radiosa	Navicula radiosa

P046	Navicula tripunctata	Navicula tripunctata
P047	Navicula spp.	Navicula spp.
P048	Neidium bisulcatum	Neidium bisulcatum
P049	Neidium spp.	Neidium spp.
P050	Nitzschia acicularis	Nitzschia acicularis
P051	Nitzschia hantzschiana	Nitzschia hantzschiana
P052	Nitzschia obtusa	Nitzschia obtusa
P053	Nitzschia palea	Nitzschia palea
P054	Nitzschia stellata	Nitzschia stellata
P055	Nitzschia - sigmoid sp.?	Nitzschia - sigmoid sp.?
P056	Nitzschia sp.	Nitzschia sp.
P057	Pinnularia sp.	Pinnularia sp.
P058	Pleurosigma sp.	Pleurosigma sp.
P059	Rhoicosphenia curvata	Rhoicosphenia curvata
P060	Rhopalodia gibba	Rhopalodia gibba
P061	Stauroneis phoenicenteron.	Stauroneis phoenicenteron.
P062	Stauroforma exiguiformis	Stauroforma exiguiformis
P063	Staurosira ansata	Staurosira ansata
P064	Staurosira construens v ventor	Staurosira construens v ventor
P065	Staurosira construens v. plumila	Staurosira construens v. plumila
P066	Staurosirella leptostauron	Staurosirella leptostauron
P067	Staurosirella pinnata (cf. Fragilaria pinnata)	Staurosirella pinnata (cf. Fragilaria pinnata)
P068	Stephanodiscus hantzschii	Stephanodiscus hantzschii
P069	Stephanodiscus sp	Stephanodiscus sp
P070	Synedra acus	Synedra acus
P071	Synedra acus var angustissima	Synedra acus var angustissima
P072	Synedra nana	Synedra nana
P073	Synedra ulna	Synedra ulna
P074	Synedra ulna var radians	Synedra ulna var radians
P075	Surirella ovata	Surirella ovata
P076	Surirella angusta	Surirella angustata
P077	Surirella sp.	Surirella sp.
P078	Tabellaria fenestrata	Tabellaria fenestrata
P079	Tabellaria flocculosa	Tabellaria flocculosa
P080	Not Identified Flagellates	Not Identified Flagellates
P081	Chromulina sp.	Chromulina sp
P082	Chroomonas acuta.	Chroomonas acuta.
P083	Chrysochromulina sp.	Chrysochromulina sp.
P084	Chrysococcus sp.	Chrysococcus sp.
P085	Cryptomonas sp.	Cryptomonas sp.
P086	Dinobryon divergens (lorica)	Dinobryon divergens
P087	Dinobryon sertularia (lorica)	Dinobryon sertularia
P088	Kephyrion sp.	Kephyrion sp.
P089	Komma sp.	Komma sp.
P090	Mallomonas sp.	Mallomonas sp.
P091	Ceratium hirudinella	Ceratium hirudinella
P092	Gymnodinium sp.	Gymnodinium sp.
P093	Peridinium sp.	Peridinium sp

P094	Anabaena sp. (filaments)	Anabaena sp. (filaments)
P095	Anacystis cyanea	Anacystis cyanea
P096	Coelosphaerium sp. (spheric colony)	Coelosphaerium sp. (spheric colony)
P097	Gloeotrichia sp.	Gloeotrichia sp.
P098	Limnothrix redekei (filament)	Limnothrix redekei (filament)
P099	Lyngbya sp.	Lyngbya sp. 100 micron length
P100	Merismopedia elegans	Merismopedia elegans
P101	Oscillatoria sp. (4 micron dia)	Oscillatoria 4mi sp. (100 L)
P102	Planktolyngbya limnetica (filament)	Planktolyngbya limnetica 100L)
P103	Planktothrix agardhii (filament)	Planktothrix agardhii (100 L filament)
P104	Planktothrix limnetica (filament)	Planktothrix limnetica (100 L filament)
P105	Pseudanabaena sp. (filament 1.5micron dia)	Pseudanabaena sp. 1.5mi (100 L)
P106	Synechococcus sp.	Synechococcus sp.
P107	Synechocystis sp.	Synechocystis sp
P108	Distigma sp. -flagellate	Distigma sp. -flagellate
P109	Euglena spp. -flagellate	Euglena spp. -flagellate
P110	Trachelomonas sp. -flagellate	Trachelomonas sp. -flagellate
P111	Ankistrodesmus spp.	Ankistrodesmus spp.
P112	Botryococcus sp. (colony)	Botryococcus sp. (colony)
P113	Chlamydocapsa sp.	Chlamydocapsa sp.
P114	Chlorella spp.	Chlorella spp.
P115	Closterium sp.	Closterium sp.
P116	Cosmarium spp.	Cosmarium spp
P117	Dichtyosphaerium sp.	Dichtyosphaerium
P118	Eremosphaera sp. (colony)	Eremosphaera sp. (colony)
P119	Euastrum sp.	Euastrum sp.
P120	Gloeocystis sp. colony	Gloeocystis sp. colony
P121	Hyalotheca sp.	Hyalotheca sp.
P122	Oocystis sp. (cells)	Oocystis sp. (cells)
P123	Pediastrum sp. (colony)	Pediastrum sp.
P124	Planctosphaeria sp. (colony)	Planctosphaeria sp. colony
P125	Scenedesmus sp.	Scenedesmus sp.
P126	Spondylosium sp. (cells - filaments)	Spondylosium sp. (cells - filaments)
P127	Staurastrum sp. (cell)	Staurastrum sp.
P128	Bulbochaete (cells)	Bulbochaete (cells)
P129	Cladophora zonata	Cladophora sp. glomerata?
P130	Draparnaldia sp. glomerata?	Draparnaldia sp. glomerata?
P131	Geminella sp. (I cell)	Geminella sp I cell
P132	Microspora sp.	Microspora sp.
P133	Mougeotia sp.	Mougeotia sp.
P134	Oedogonium sp.	Oedogonium sp.
P135	Stigeoclonium sp.	Stigeoclonium sp.
P136	Spirogyra sp.	Spirogyra sp.
P137	Ulothrix sp. (zonata?)	Ulothrix sp. (zonata)
P138	Zygnema sp.	Zygnema sp.
P139	Aphanothece (saxicola?)	Coccoid Chlorophyta Complex (colony) unidentifiable
P140	pico-flagellates	***moved to D012

P141	Brachysira vitrea	Brachysira vitrea
P142	Hantzschia spp.	Hantzschia spp.
P143	Rhizosolenia sp.	Rhizosolenia sp.
P144	Rossithidium linearis	Rossithidium linearis
P145	Ochromonas sp.	Oochromonas sp.
P146	Anabaenopsis elenkinii	Anabaenopsis elenkinii
P147	Coelastrum sp. (colony)	Coelastrum sp. (colony)
P148	Scourfieldia sp. -flagellate	*** changed to P145 Ochromonas
P149	Stichococcus minutissima	Stichococcus minutissima
P150	Navicula minima (oval)	Navicula minima (oval)
P151	Stauroneis sp.	Stauroneis sp
P152	Gomphosphaeria sp.	Gomphosphaeria sp
P153	Lepocinclis ovum	Lepocinclis ovum
P154	Small euglenoid	Chlamydomonas spp.
P155	Leptolyngbya sp.	Leptolyngbya
P156	amoeba	amoeba
P157	Spirulina sp.	Spirolina
P158	Dactylococcopsis sp.	Dactylococcopsis
P159	Campylodiscus sp.	Campylodiscus sp.
P160	Euglenoid large	Euglenoid (Phacus?)
P161	Peranema sp.	Peranema sp.
P162	Gomphonema parvulum	Gomphonema parvulum
P163	Staurosirella sp.	Staurosirella sp.
P164	Cymbella minuta	Cymbella minuta
P165	Gomphonema minutum	Gomphonema minutum
P166	Aphanocapsa sp.	Aphanocapsa sp.
P167	Caloneis sp.	Caloneis sp.
P168	Achnanthidium exiguum	Achnanthidium exiguum
P169	Amphora sp.	Amphora sp
P170	Frustulia sp.	Frustulia sp.
P171	Diploneis sp.	Diploneis sp.
P172	Cymbella spp.	Cymbella sp.
P173	Glenodinium sp.	Glenodinium sp.
P174	Stigonema ocellata	Stigonema ocellata
P175	Chroococcus sp.	Chroococcus sp.
P176	Cymbolpleura sp.	Cymbolpleura sp.
P177	Encyonema minuta	Encyonema minuta
P178	Gomphoneis minuta	Gomphoneis minuta
P179	Cymatopleura sp.	Cymatopleura sp.
P180	Dinobryon bavaricum	Dinobryon bavaricum
P181	Cyclotella sp. (Wehr)	Cyclotella sp. (Wehr)

P182	Calothrix (fusca?)	Calothrix (fusca?)
P183	Phacus (trimarginatus?)	Phacus (trimarginatus?)
P184	Navicula lancelota	Navicula lancelota
P185	Cycolotella ocellata+comta=rossi	Cycolotella ocellata+comta=rossi
P186	Bodo sp.	Bodo sp.
P187	Eunotia spp.	Eunotia spp.
P188	Komvophoron minutissima	Komvophoron minutissima
P189	Gomphonema acuminata	Gomphonema acuminata

APPENDIX G

Periphyton Tissue Metals Analysis

LAB ID				5101732-01	5101732-02	5101732-03	5101732-04	5101732-05	5101732-11	5101732-12	5101732-13	5101732-14	5101732-15	5101732-21	5101732-22
CLIENT ID				ERO-REF-1-1-PeriT	ERO-REF-1-2-PeriT	ERO-REF-1-3-PeriT	ERO-REF-1-4-PeriT	ERO-REF-1-5-PeriT	ERO-REF-2-1-PeriT	ERO-REF-2-2-PeriT	ERO-REF-2-3-PeriT	ERO-REF-2-4-PeriT	ERO-REF-2-5-PeriT	ERO-EXP-2-1-PeriT	ERO-EXP-2-2-PeriT
DATE SAMPLED				15-Oct-15	15-Oct-15	15-Oct-15	15-Oct-15	15-Oct-15	14-Oct-15	14-Oct-15	14-Oct-15	14-Oct-15	14-Oct-15	15-Oct-15	15-Oct-15
DATE RECEIVED				26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15
MATRIX				Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)
General Method	**Analyte**	**Units**	**MRL**												
General Parameters	Moisture	% wet	0.1	94.3	94.6	99	98.4	93.5	95.7	99.1	99.7	99.1	99	99.3	99.6
Metals in Tissue	Aluminum	mg/kg wet	0.4	68.4	97.4	36.4	62.2	54.9	141	46.2	6.9	48.4	36.4	25.8	7.9
Metals in Tissue	Antimony	mg/kg wet	0.002	0.008	0.023	0.001	0.002	0.013	0.006	0.001	0.002	0.003	0.003	0.05	0.043
Metals in Tissue	Arsenic	mg/kg wet	0.005	0.281	0.382	0.165	0.142	0.456	0.202	0.064	0.038	0.076	0.065	0.28	0.095
Metals in Tissue	Barium	mg/kg wet	0.01	7.57	5.9	8.1	2.07	23.5	324	0.78	0.16	16	47.6	6.13	9.46
Metals in Tissue	Beryllium	mg/kg wet	0.002	<0.002	<0.003	0.002	0.002	<0.002	0.006	0.002	<0.0003	0.002	0.001	0.0009	<0.0006
Metals in Tissue	Bismuth	mg/kg wet	0.02	<0.02	<0.03	<0.003	<0.006	<0.02	<0.01	<0.003	<0.003	0.004	<0.005	0.007	0.007
Metals in Tissue	Boron	mg/kg wet	0.1	<0.1	<0.2	0.07	0.06	0.1	0.06	0.03	0.02	0.04	0.03	0.08	<0.03
Metals in Tissue	Cadmium	mg/kg wet	0.002	0.097	0.094	0.005	0.007	0.291	0.034	0.005	0.002	0.016	0.014	0.04	0.224
Metals in Tissue	Calcium	mg/kg wet	2	1220	1120	71	92	8390	279	67	16	201	83	63	19
Metals in Tissue	Chromium	mg/kg wet	0.01	0.14	0.23	0.1	0.17	0.18	0.83	0.13	0.02	0.13	0.09	0.07	0.17
Metals in Tissue	Cobalt	mg/kg wet	0.004	0.048	0.084	0.03	0.054	0.098	0.128	0.043	0.007	0.052	0.049	0.033	0.015
Metals in Tissue	Copper	mg/kg wet	0.01	0.56	0.74	0.31	0.35	0.56	0.71	0.21	0.1	0.22	0.27	0.61	0.52
Metals in Tissue	Iron	mg/kg wet	1	104	192	71	125	122	294	93	14	94	76	62	22
Metals in Tissue	Lead	mg/kg wet	0.004	0.199	1.22	0.1	0.242	0.433	0.595	0.154	0.042	0.337	0.26	4.83	2.44
Metals in Tissue	Magnesium	mg/kg wet	2	285	186	42	55	437	169	40	10	48	44	31	9
Metals in Tissue	Manganese	mg/kg wet	0.02	7.69	6.71	2.63	4.98	18.4	21.6	3.95	0.89	5.66	5.23	8.22	1.69
Metals in Tissue	Mercury	mg/kg wet	0.002	<0.002	<0.003	0.001	0.002	0.002	0.004	0.002	0.001	0.001	0.002	0.009	0.01
Metals in Tissue	Molybdenum	mg/kg wet	0.01	0.02	0.02	0.005	0.006	0.07	0.02	0.005	0.001	0.004	0.007	0.007	0.006
Metals in Tissue	Nickel	mg/kg wet	0.01	0.34	0.45	0.14	0.25	1.95	0.59	0.18	0.04	0.33	0.2	0.11	0.09
Metals in Tissue	Phosphorus	mg/kg wet	5	186	138	15	17	172	33	12	5	16	19	24	5
Metals in Tissue	Potassium	mg/kg wet	10	1560	945	119	82	1330	37	86	63	45	21	90	28
Metals in Tissue	Selenium	mg/kg wet	0.02	0.28	0.04	0.006	0.009	0.1	0.01	0.005	<0.003	0.005	0.007	0.01	0.006
Metals in Tissue	Silver	mg/kg wet	0.01	<0.01	<0.02	<0.001	<0.003	<0.01	<0.005	<0.001	<0.001	0.004	<0.003	0.01	0.007
Metals in Tissue	Sodium	mg/kg wet	2	314	219	11	8	482	11	7	5	17	10	12	5
Metals in Tissue	Strontium	mg/kg wet	0.01	8.48	6.72	0.43	0.72	26	1.95	0.47	0.11	0.65	0.63	0.38	0.41
Metals in Tissue	Thallium	mg/kg wet	0.001	0.007	0.008	0.0007	0.001	0.002	0.002	0.0008	0.0002	0.0009	0.0009	0.009	0.004
Metals in Tissue	Tin	mg/kg wet	0.02	0.3	0.5	0.1	0.1	0.3	0.4	0.05	0.09	0.05	0.05	0.2	0.2
Metals in Tissue	Titanium	mg/kg wet	0.05	4.41	7.97	2.78	4.92	3.8	12.6	4.13	0.64	4.41	3.3	2.43	0.73
Metals in Tissue	Uranium	mg/kg wet	0.001	0.013	0.034	0.012	0.015	0.022	0.042	0.007	0.002	0.007	0.017	0.009	0.007
Metals in Tissue	Vanadium	mg/kg wet	0.02	0.15	0.31	0.13	0.23	0.16	0.5	0.17	0.03	0.16	0.14	0.1	0.04
Metals in Tissue	Zinc	mg/kg wet	0.5	2.9	3.5	1	1.2	7.5	4.4	0.8	0.3	3	2.8	4.1	4.1

5101732-23	5101732-24	5101732-25	5101732-31	5101732-32	5101732-33	5101732-34	5101732-35	5101732-41	5101732-42	5101732-43	5101732-44	5101732-45	5101732-51	5101732-52
ERO-EXP-2-3-PeriT	ERO-EXP-2-4-PeriT	ERO-EXP-2-5-PeriT	ERO-EXP-3-1-PeriT	ERO-EXP-3-2-PeriT	ERO-EXP-3-3-PeriT	ERO-EXP-3-4-PeriT	ERO-EXP-3-5-PeriT	ERO-CRADT-3-1-PeriT	ERO-CRADT-3-2-PeriT	ERO-CRADT-3-3-PeriT	ERO-CRADT-3-4-PeriT	ERO-CRADT-3-5-PeriT	ERO-EXP-4-1-PeriT	ERO-EXP-4-2-PeriT
16-Oct-15	16-Oct-15	16-Oct-15	16-Oct-15	16-Oct-15	16-Oct-15	17-Oct-15	17-Oct-15	16-Oct-15	16-Oct-15	16-Oct-15	16-Oct-15	16-Oct-15	18-Oct-15	18-Oct-15
26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15
Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)
99.5	99.8	99.6	99.9	99.6	99.5	99.8	99.3	99.7	99.6	99.3	99.8	99.8	97.1	99.6
16.2	10.1	6.4	3.5	19.6	17.5	5.2	17.6	20.9	21.1	31.4	1.6	16.6	99.6	11.7
0.075	0.056	0.038	0.037	0.023	0.007	0.031	0.016	0.034	0.155	0.169	0.005	0.014	0.079	0.021
0.338	0.076	0.167	0.056	0.059	0.057	0.037	0.085	0.194	0.117	0.19	0.019	0.069	0.241	0.077
8.86	0.44	13.7	0.26	4.61	0.35	0.15	0.29	0.46	0.51	4.33	0.22	0.29	148	2.22
<0.0008	0.0004	<0.0004	<0.0003	0.0006	0.0006	<0.0002	<0.0006	0.0008	<0.0004	0.001	<0.0003	0.0006	0.004	<0.0004
0.01	0.009	0.005	0.008	0.01	0.006	0.005	<0.006	0.03	<0.004	0.008	<0.003	<0.003	0.02	0.008
<0.04	0.03	0.02	0.03	<0.02	0.04	0.03	0.05	0.02	0.02	0.04	<0.01	0.02	0.06	<0.02
0.233	0.102	0.083	0.14	0.026	0.011	0.012	0.017	0.128	0.022	0.067	0.006	0.015	0.056	0.023
38	44	26	15	25	43	21	40	36	43	55	5	37	297	21
0.07	0.03	0.02	0.62	0.08	0.09	0.15	0.32	0.4	0.7	0.3	0.006	0.33	0.31	0.07
0.029	0.037	0.053	0.008	0.024	0.017	0.009	0.019	0.028	0.022	0.042	0.002	0.021	0.12	0.012
0.66	0.26	0.41	0.65	0.35	0.2	0.28	0.28	0.85	1.38	2.91	0.32	0.75	0.97	0.37
65	26	19	12	43	38	16	38	49	42	81	4	38	217	27
4.56	3.18	2.82	1.8	1.01	0.539	0.293	0.493	3.58	0.787	2.5	0.094	0.495	3.04	0.977
21	12	11	5	18	19	8	23	16	22	30	3	16	109	16
3.08	3.54	4.2	1.05	1.79	2.25	1.31	1.96	2.88	0.98	2.51	0.15	1.41	20	0.93
0.011	0.006	0.049	0.003	0.003	0.002	0.002	0.002	0.011	0.003	0.006	0.002	0.003	0.004	0.002
0.004	0.002	0.003	0.002	0.004	0.009	0.03	0.05	0.04	0.005	0.008	<0.001	0.04	0.01	0.003
0.11	0.09	0.05	0.04	0.08	0.11	0.13	0.23	0.17	0.07	0.11	0.006	0.2	0.4	0.04
8	8	6	3	4	7	3	10	7	4	11	2	5	21	11
31	28	44	14	13	75	47	136	20	25	57	17	39	54	64
<0.008	0.003	0.006	<0.003	0.004	0.004	0.003	<0.006	0.007	<0.004	0.006	<0.003	<0.003	0.01	<0.004
0.01	0.01	0.008	0.01	0.01	0.008	0.006	0.01	0.06	0.01	0.06	0.002	0.005	0.02	0.04
7	3	11	3	9	6	5	9	2	4	4	1	3	50	5
0.45	0.21	0.42	0.08	0.18	0.22	0.13	0.27	0.25	0.21	0.49	0.04	0.18	1.72	0.14
0.004	0.0007	0.003	0.003	0.001	0.0004	0.0005	0.0005	0.004	0.002	0.004	0.0007	0.001	0.002	0.0004
0.3	0.05	0.09	0.08	0.07	0.06	0.07	0.1	0.07	0.1	0.2	0.03	0.05	0.1	0.07
1.75	0.93	0.52	0.27	1.77	1.54	0.44	1.72	2.01	2.79	3.1	0.16	1.72	8.62	1.07
0.01	0.01	0.003	0.001	0.004	0.004	0.002	0.005	0.004	0.002	0.005	0.0004	0.002	0.028	0.003
0.11	0.04	0.03	0.01	0.07	0.07	0.02	0.07	0.08	0.1	0.12	0.006	0.06	0.34	0.04
4.9	2.5	2.6	2.5	5.8	1.4	1.5	2.2	9.7	2.2	5.8	0.5	1.6	8	2.2

5101732-53	5101732-54	5101732-55	5101732-56	5101732-57	5101732-58	5101732-59	5101732-69	5101732-70	5101732-71	5101732-72	5101732-73	5101732-74
ERO-EXP-4-3-PeriT	ERO-EXP-4-4-PeriT	ERO-EXP-4-5-PeriT	ERO-EXP-3-6-PeriT	ERO-EXP-4-7-PeriT	ERO-EXP-4-8-PeriT	ERO-EXP-4-9-PeriT	ERO-EXP-5-1-PeriT	ERO-EXP-5-2-PeriT	ERO-EXP-5-3-PeriT	ERO-EXP-5-4-PeriT	ERO-EXP-5-5-PeriT	ERO-EXP-5-6-PeriT
18-Oct-15	18-Oct-15	18-Oct-15	18-Oct-15	18-Oct-15	18-Oct-15	18-Oct-15	18-Oct-15	18-Oct-15	17-Oct-15	17-Oct-15	17-Oct-15	18-Oct-15
26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15
Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)
98.3	99.2	98.2	99.4	99.5	99.7	99.6	93.6	99.5	99.7	99.8	99.5	99.7
40.1	27.5	73.7	25	32.3	3.8	10.1	460	18.3	10.2	2.9	20.5	12.9
0.013	0.073	0.036	0.009	0.033	0.003	0.01	0.293	0.019	0.029	0.034	0.288	0.009
0.103	0.117	0.283	0.099	0.088	0.05	0.038	0.55	0.057	0.044	0.032	0.092	0.03
38.3	0.46	14	0.55	9.52	0.2	0.21	22.6	0.42	0.35	0.08	8.65	0.21
0.001	0.001	0.003	0.0008	0.001	<0.0005	0.0003	0.015	0.0007	0.0003	<0.0002	0.0007	0.0004
<0.005	0.03	0.03	0.007	0.01	<0.005	<0.003	0.03	0.003	0.003	<0.002	<0.003	<0.002
<0.03	0.03	0.06	0.05	0.03	<0.02	0.03	0.4	0.03	0.03	0.02	0.03	0.01
0.019	0.051	0.066	0.03	0.031	0.007	0.007	0.14	0.011	0.005	0.002	0.005	0.007
78	47	104	48	51	19	22	1140	31	35	14	54	18
0.24	0.19	0.41	0.32	0.11	0.04	0.15	1.62	0.09	0.35	0.04	0.13	0.11
0.04	0.027	0.079	0.031	0.042	0.005	0.011	0.686	0.024	0.015	0.004	0.058	0.014
0.46	0.84	2.29	0.39	0.75	0.3	0.34	20.2	0.71	0.37	0.16	2.52	0.2
96	67	195	65	75	9	24	2310	56	41	8	97	33
0.583	1.6	3.37	0.891	1.46	0.15	0.328	6.95	0.881	0.289	0.083	0.799	0.22
49	27	67	25	31	10	12	307	17	11	6	22	11
4.99	2.22	7.6	3.01	3.36	0.77	1.1	55.3	2.91	1.22	0.47	3.88	1.25
0.002	0.003	0.008	0.003	0.006	0.002	0.002	0.023	0.002	0.002	0.001	0.002	0.001
0.007	0.004	0.02	0.009	0.006	<0.002	0.002	0.37	0.006	0.005	0.007	0.03	0.002
0.16	0.12	0.27	0.22	0.14	0.04	0.06	1.03	0.08	0.06	0.04	0.14	0.05
19	11	23	11	6	5	4	106	6	5	3	5	4
64	75	150	82	21	67	49	632	63	34	30	15	25
<0.005	0.006	0.02	0.007	0.005	<0.005	0.004	0.03	0.004	0.002	<0.002	<0.003	0.002
0.006	0.04	0.04	0.01	0.02	<0.002	0.004	0.05	0.007	0.004	0.005	0.02	0.003
22	6	14	6	16	5	4	30	6	4	4	17	3
0.44	0.34	0.72	0.32	0.35	0.13	0.14	6.58	0.2	0.17	0.07	0.34	0.11
0.001	0.0008	0.003	0.001	0.001	0.0003	0.0004	0.008	0.0006	0.0003	<0.0001	0.0007	0.0004
0.1	0.09	0.2	0.1	0.2	0.1	0.1	2.2	0.08	0.05	0.03	0.3	0.03
3.98	2.44	5.29	2.1	2.65	0.31	1	36.3	1.55	1.08	0.26	1.76	1.21
0.006	0.005	0.017	0.005	0.007	0.002	0.003	0.091	0.009	0.003	0.001	0.005	0.002
0.14	0.11	0.26	0.09	0.11	0.01	0.04	1.57	0.07	0.05	0.01	0.08	0.05
3.9	5.6	11.9	3.6	8.7	1	1	119	2.8	1.7	0.5	9.1	1.1

APPENDIX H

Benthic Invertebrate Taxonomy and Metrics

Project: Teck Trail Operations - LCR AREMP (15-1438)
Ecoscape, Kyle Hawes
Taxonomist: Sue Salter
suesalter@cordilleraconsulting.ca
250-494-7553

Phylum	Class	Order	Family	Taxonomy	ITIS Code	Functional Feeding Group		Site:	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-EXP
								Sample:	1-1	1-2	1-3	1-4	1-5	2-1	2-2	2-3	2-4	2-5	1-1
								CC#:	CC161652	CC161653	CC161654	CC161655	CC161656	CC161657	CC161658	CC161659	CC161660	CC161661	CC161662
								Sieve Size:	400	400	400	400	400	400	400	400	400	400	400
								SubSample %:	100	36	15	31.25	50	8	16	37.5	27	100	25
Arthropoda					82696		**Phylum: Arthropoda**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda					563886		**Subphylum: Hexapoda**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta				99208		**| Class: Insecta**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera			100502	CG	**| Order: Ephemeroptera**		0	0	0	0	0	0	1	2	0	0	0
Arthropoda	Insecta	Ephemeroptera	Ameletidae		568544		**| Family: Ameletidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Ameletidae	Ameletus	100996	CG	*Ameletus*		0	0	0	0	0	0	0	0	0	1	0
Arthropoda	Insecta	Ephemeroptera	Baetidae		100755	CG	**| Family: Baetidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae	Acentrella sp.	100801	CG	*Acentrella sp.*		0	1	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae	Acerpenna sp.	568546	SH	*Acerpenna sp.*		1	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis	100800	CG	*Baetis*		0	4	0	2	0	5	3	11	0	0	10
Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis bicaudatus	100823	CG	*Baetis bicaudatus*		0	0	0	0	0	0	0	9	0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis tricaudatus group	100800A	CG	*Baetis tricaudatus group*		0	0	2	4	0	1	4	17	0	0	12
Arthropoda	Insecta	Ephemeroptera	Ephemerellidae		101232		**| Family: Ephemerellidae**		0	1	41	79	13	4	14	34	2	2	90
Arthropoda	Insecta	Ephemeroptera	Ephemerellidae	Drunella grandis group	101365A	CG	*Drunella grandis group*		0	0	6	11	0	21	14	4	0	0	5
Arthropoda	Insecta	Ephemeroptera	Ephemerellidae	Drunella sp.	101365	CG	*Drunella sp.*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Ephemerellidae	Ephemerella	101233	CG	*Ephemerella*		0	0	13	9	5	0	1	5	2	0	0
Arthropoda	Insecta	Ephemeroptera	Heptageniidae		100504		**| Family: Heptageniidae**		0	7	0	2	7	0	3	5	3	0	0
Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Epeorus	100626	SC	*Epeorus*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Heptagenia	100602	SC	*Heptagenia*		0	0	0	0	1	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Rhithrogena	100572	SC	*Rhithrogena*		0	2	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Leptophlebiidae		101095	CG	**| Family: Leptophlebiidae**		0	0	0	0	0	0	0	1	0	0	0
Arthropoda	Insecta	Plecoptera			102467		**| Order: Plecoptera**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Chloroperlidae		103202	P	**| Family: Chloroperlidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Nemouridae		102517	SH	**| Family: Nemouridae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Nemouridae	Zapada	102591	SH	*Zapada*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Nemouridae	Zapada cinctipes	102594	SH	*Zapada cinctipes*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Nemouridae	Zapada columbiana	102596	SH	*Zapada columbiana*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Perlodidae		102994	P	**| Family: Perlodidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Perlodidae	Megarcys sp.	103110	P	*Megarcys sp.*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Perlodidae	Skwala	103102	P	*Skwala*		0	0	0	0	0	0	0	1	0	0	0
Arthropoda	Insecta	Plecoptera	Pteronarcyidae		102470		**| Family: Pteronarcyidae**		0	0	0	0	0	1	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Taeniopterygidae		102788		**| Family: Taeniopterygidae**		0	7	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera			115095		**| Order: Trichoptera**		0	0	0	0	0	0	1	0	0	0	0
Arthropoda	Insecta	Trichoptera	Apataniidae		598182		**| Family: Apataniidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Apataniidae	Apatania	115935	SC	*Apatania*		0	0	0	1	0	0	0	0	0	1	0
Arthropoda	Insecta	Trichoptera	Brachycentridae		116905	CF	**| Family: Brachycentridae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Brachycentridae	Brachycentrus occidentalis	116918	OM	*Brachycentrus occidentalis*		0	0	2	3	0	9	6	8	0	0	0
Arthropoda	Insecta	Trichoptera	Glossosomatidae		117120		**| Family: Glossosomatidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Glossosomatidae	Glossosoma	117159	SC	*Glossosoma*		0	0	0	0	0	1	1	0	0	0	1
Arthropoda	Insecta	Trichoptera	Glossosomatidae	Protoptila	115221	SC	*Protoptila*		24	0	1	5	3	0	0	6	0	1	1
Arthropoda	Insecta	Trichoptera	Hydropsychidae		115398	CF	**| Family: Hydropsychidae**		0	0	4	4	0	7	0	2	0	1	3
Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche	115408	CF	*Cheumatopsyche*		12	0	74	91	4	45	86	91	5	0	52
Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche	115453	CF	*Hydropsyche*		1	0	132	65	5	187	192	99	9	1	88
Arthropoda	Insecta	Trichoptera	Hydroptilidae		115629		**| Family: Hydroptilidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Hydroptilidae	Hydroptila	115641	PH	*Hydroptila*		0	0	0	1	0	0	0	0	0	0	0

							Site:	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-EXP
							Sample:	1-1	1-2	1-3	1-4	1-5	2-1	2-2	2-3	2-4	2-5	1-1
							CC#:	CC161652	CC161653	CC161654	CC161655	CC161656	CC161657	CC161658	CC161659	CC161660	CC161661	CC161662
						Functional Feeding	Sieve Size:	400	400	400	400	400	400	400	400	400	400	400
Phylum	**Class**	**Order**	**Family**	**Taxonomy**	**ITIS Code**	**Group**	**SubSample %:**	100	36	15	31.25	50	8	16	37.5	27	100	25
Arthropoda	Insecta	Trichoptera	Lepidostomatidae		116793		**| Family: Lepidostomatidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Lepidostomatidae	Lepidostoma	116794	SH	*Lepidostoma*	1	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Leptoceridae		116547		**| Family: Leptoceridae**	0	0	0	0	0	0	0	0	1	0	0
Arthropoda	Insecta	Trichoptera	Leptoceridae	Ceraclea	116684	OM	*Ceraclea*	7	2	7	10	12	11	0	4	2	0	17
Arthropoda	Insecta	Trichoptera	Leptoceridae	Mystacides	116598	OM	*Mystacides*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Leptoceridae	Nectopsyche sp.	116651	OM	*Nectopsyche sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Leptoceridae	Oecetis	116607	P	*Oecetis*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Limnephilidae		115933	CG	**| Family: Limnephilidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Psychomyiidae		115334		**| Family: Psychomyiidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Psychomyiidae	Psychomyia	115335	CG	*Psychomyia*	0	0	0	1	0	1	0	0	0	0	1
Arthropoda	Insecta	Trichoptera	Rhyacophilidae		115096		**| Family: Rhyacophilidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Rhyacophilidae	Rhyacophila vofixa group	115097S	P	*Rhyacophila vofixa group*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Uenoidae		568757		**| Family: Uenoidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Uenoidae	Neophylax sp.	116046	SC	*Neophylax sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera			109216	P	**| Order: Coleoptera**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera		Georissus sp.	112754	SC	*Georissus sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Dytiscidae		111963	P	**| Family: Dytiscidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Dytiscidae	Oreodytes sp.	112314	P	*Oreodytes sp.*	1	0	0	0	0	0	0	0	12	0	0
Arthropoda	Insecta	Coleoptera	Dytiscidae	Sanfilippodytes sp.	728253	P	*Sanfilippodytes sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Dytiscidae	Stictotarsus	568826	P	*Stictotarsus*	0	0	0	0	1	0	0	0	0	1	1
Arthropoda	Insecta	Coleoptera	Elmidae		114093	CG	**| Family: Elmidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia sp.	114126	CG	*Dubiraphia sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	Heterlimnius sp.	114167	CG	*Heterlimnius sp.*	0	0	0	1	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	Optioservus sp.	114177	SC	*Optioservus sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	Rhizelmis nigra	114199	SC	*Rhizelmis nigra*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera			118831		**| Order: Diptera**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Ceratopogonidae		127076	P	**| Family: Ceratopogonidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Ceratopogonidae	Probezzia	127729	P	*Probezzia*	0	1	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		127917		**| Family: Chironomidae**	0	2	9	2	4	0	3	10	0	2	2
Arthropoda	Insecta	Diptera	Chironomidae		129228	CG	**| Subfamily: Chironominae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		129229	CG	**| Tribe: Chironomini**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Chironomus	129254	CG	*Chironomus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Cryptochironomus	129368	P	*Cryptochironomus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Demicryptochironomus sp.	129421	CG	*Demicryptochironomus sp.*	0	0	0	0	0	0	0	0	1	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Dicrotendipes	129428	CG	*Dicrotendipes*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Endochironomus sp.	129470	CG	*Endochironomus sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Microtendipes pedellus group	129535	CF	*Microtendipes pedellus group*	4	0	0	15	8	0	0	1	2	1	3
Arthropoda	Insecta	Diptera	Chironomidae	Pagastiella sp.	129561	CG	*Pagastiella sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Parachironomus	129564	P	*Parachironomus*	0	2	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Paracladopelma sp.	129597	CG	*Paracladopelma sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Phaenopsectra	129637	SC	*Phaenopsectra*	0	0	0	0	0	0	0	0	1	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Polypedilum sp.	129657	CG	*Polypedilum sp.*	1	0	1	2	3	0	0	0	1	1	2
Arthropoda	Insecta	Diptera	Chironomidae	Robackia demeijerei	129733	CG	*Robackia demeijerei*	0	0	0	0	0	0	0	0	0	3	0
Arthropoda	Insecta	Diptera	Chironomidae	Stictochironomus	129785	CG	*Stictochironomus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		129872	CG	**| Tribe: Tanytarsini**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Cladotanytarsus	129873	CG	*Cladotanytarsus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Micropsectra	129890	CG	*Micropsectra*	0	0	0	0	0	0	0	1	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Paratanytarsus	129935	CF	*Paratanytarsus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Rheotanytarsus	129952	CF	*Rheotanytarsus*	0	0	2	19	0	0	2	0	0	0	1
Arthropoda	Insecta	Diptera	Chironomidae	Stempellinella sp.	129969	CF	*Stempellinella sp.*	0	0	0	0	0	0	0	0	1	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsus	129978	CF	*Tanytarsus*	1	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		128341	CG	**| Subfamily: Diamesinae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		128351	CG	**| Tribe: Diamesini**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Diamesa	128355	CG	*Diamesa*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Pagastia	128401	CG	*Pagastia*	0	0	0	1	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Potthastia longimana group	128408	CG	*Potthastia longimana group*	2	2	0	0	0	0	0	0	1	0	0

Phylum	Class	Order	Family	Taxonomy	ITIS Code	Functional Feeding Group	Site:	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-EXP
							Sample:	1-1	1-2	1-3	1-4	1-5	2-1	2-2	2-3	2-4	2-5	1-1
							CC#:	CC161652	CC161653	CC161654	CC161655	CC161656	CC161657	CC161658	CC161659	CC161660	CC161661	CC161662
							Sieve Size:	400	400	400	400	400	400	400	400	400	400	400
							SubSample %:	100	36	15	31.25	50	8	16	37.5	27	100	25
Arthropoda	Insecta	Diptera	Chironomidae		128457		| **Subfamily: Orthocladiinae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Brillia sp.	128477	SH	*Brillia sp.*	0	0	1	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Cardiocladius	128511	P	*Cardiocladius*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Eukiefferiella	128689	OM	*Eukiefferiella*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Orthocladius complex	128874A	CG	*Orthocladius complex*	0	0	1	40	3	8	1	2	0	0	40
Arthropoda	Insecta	Diptera	Chironomidae	Parakiefferiella	128968	CG	*Parakiefferiella*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Psectrocladius	129018	CG	*Psectrocladius*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Synorthocladius	129161	CG	*Synorthocladius*	1	1	0	0	1	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Tvetenia	129197	CG	*Tvetenia*	0	0	0	0	0	1	0	0	0	0	1
Arthropoda	Insecta	Diptera	Chironomidae		128437	CG	| **Subfamily: Prodiamesinae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Monodiamesa sp.	128440	CG	*Monodiamesa sp.*	0	1	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		127994	P	| **Subfamily: Tanypodinae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		128078	P	| **Tribe: Pentaneurini**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Thienemannimyia group	127917N	P	*Thienemannimyia group*	0	0	0	5	1	1	1	1	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		128270		| **Tribe: Procladiini**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Procladius	128277	P	*Procladius*	1	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Empididae		135830	P	| **Family: Empididae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Empididae	Hemerodromia sp.	136327	P	*Hemerodromia sp.*	8	1	0	1	1	0	0	1	0	0	0
Arthropoda	Insecta	Diptera	Psychodidae		125351		| **Family: Psychodidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Psychodidae	Pericoma/Telmatoscopus sp.	125514	CG	*Pericoma/Telmatoscopus sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Simuliidae		126640	CF	| **Family: Simuliidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Simuliidae	Simulium	126774	CF	*Simulium*	0	0	0	0	1	0	0	2	0	0	0
Arthropoda	Insecta	Diptera	Tabanidae		130934		| **Family: Tabanidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Tipulidae		118840	SH	| **Family: Tipulidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Tipulidae	Antocha monticola	119660	CG	*Antocha monticola*	0	0	1	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Tipulidae	Tipula	119037	OM	*Tipula*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Hemiptera			103359		| **Order: Hemiptera**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Hemiptera	Corixidae		103364	P	| **Family: Corixidae**	0	0	0	0	0	0	0	0	0	1	0
Arthropoda	Insecta	Hemiptera	Corixidae	Hesperocorixa sp.	103444	P	*Hesperocorixa sp.*	0	0	0	0	0	0	0	0	0	5	0
Arthropoda	Insecta	Hemiptera	Corixidae	Sigara	103369	P	*Sigara*	0	1	0	0	1	0	0	0	44	13	0
Arthropoda	Insecta	Odonata			101593		| **Order: Odonata**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Odonata	Gomphidae		101664		| **Family: Gomphidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda					83677		**Subphylum: Crustacea**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca				89787		| **Class: Malacostraca**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Amphipoda			93294		| **Order: Amphipoda**	3	6	1	0	0	0	0	2	11	3	0
Arthropoda	Malacostraca	Amphipoda	Crangonyctidae		95080		| **Family: Crangonyctidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Amphipoda	Crangonyctidae	Crangonyx	95081	CG	*Crangonyx*	1	98	0	0	14	0	0	0	26	24	1
Arthropoda	Malacostraca	Amphipoda	Hyalellidae		94022		| **Family: Hyalellidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Amphipoda	Hyalellidae	Hyalella	94025	CG	*Hyalella*	6	0	0	0	2	0	0	0	3	22	0
Arthropoda	Malacostraca	Decapoda			95599		| **Order: Decapoda**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Decapoda	Cambaridae		97336		| **Family: Cambaridae**	0	2	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Isopoda			92120		| **Order: Isopoda**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Isopoda	Asellidae		92657	CG	| **Family: Asellidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Isopoda	Asellidae	Caecidotea	92686	CG	*Caecidotea*	1	0	0	0	0	0	0	0	0	0	0
Arthropoda					82697		**Subphylum: Chelicerata**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida				82708	P	| **Class: Arachnida**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes			82769	P	| **Order: Trombidiformes**	2	0	0	0	0	0	0	0	0	0	1
Arthropoda	Arachnida	Trombidiformes	Hygrobatidae		83281		| **Family: Hygrobatidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Hygrobatidae	Atractides	83282	P	*Atractides*	3	0	3	5	0	2	0	1	0	0	2
Arthropoda	Arachnida	Trombidiformes	Hygrobatidae	Hygrobates	83297	P	*Hygrobates*	50	16	1	0	84	0	0	0	2	0	0
Arthropoda	Arachnida	Trombidiformes	Lebertiidae		83033	P	| **Family: Lebertiidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Lebertiidae	Lebertia	83034	P	*Lebertia*	0	0	0	0	1	1	0	0	1	1	3

Phylum	Class	Order	Family	Taxonomy	ITIS Code	Functional Feeding Group		Site:	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-EXP
								Sample:	1-1	1-2	1-3	1-4	1-5	2-1	2-2	2-3	2-4	2-5	1-1
								CC#:	CC161652	CC161653	CC161654	CC161655	CC161656	CC161657	CC161658	CC161659	CC161660	CC161661	CC161662
								Sieve Size:	400	400	400	400	400	400	400	400	400	400	400
								SubSample %:	100	36	15	31.25	50	8	16	37.5	27	100	25
Arthropoda	Arachnida	Trombidiformes	Limnesiidae		83050	P		**| Family: Limnesiidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Limnesiidae	Limnesia sp.	83051	P		*Limnesia sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Mideopsidae		83476	P		**| Family: Mideopsidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Mideopsidae	Mideopsis sp.	83479	P		*Mideopsis sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Sperchontidae		895710			**| Family: Sperchontidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Sperchontidae	Sperchon	83006	P		*Sperchon*	0	0	0	0	0	3	1	4	0	0	0
Arthropoda	Arachnida	Trombidiformes	Torrenticolidae		83249	P		**| Family: Torrenticolidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Torrenticolidae	Testudacarus sp.	83250	P		*Testudacarus sp.*	2	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Torrenticolidae	Torrenticola	83254	P		*Torrenticola*	0	1	0	0	0	0	0	0	0	1	1
Arthropoda	Arachnida	Acari			82754			**| Order: Acari**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Oribatida			83538	P		**| Order: Oribatida**	1	0	0	0	0	0	0	0	0	0	0
Mollusca					69458			**Phylum: Mollusca**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia				79118			**| Class: Bivalvia**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia	Veneroida			80384			**| Order: Veneroida**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia	Veneroida	Pisidiidae		81388	CF		**| Family: Pisidiidae**	0	2	0	0	0	0	0	0	3	0	0
Mollusca	Bivalvia	Veneroida	Unionoida		79912			**| Family: Unionoida**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia	Veneroida	Unionidae		79913	CF		**| Family: Unionidae**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia	Veneroida	Unionidae	Anodonta sp.	79930	CF		*Anodonta sp.*	0	0	0	0	0	0	0	0	0	1	0
Mollusca	Bivalvia	Veneroida	Pisidiidae	Pisidium	81400	CF		*Pisidium*	5	22	0	0	2	0	0	0	2	4	0
Mollusca	Bivalvia	Veneroida	Pisidiidae	Sphaerium sp.	81391	CG		*Sphaerium sp.*	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda				69459			**| Class: Gastropoda**	12	19	2	2	1	8	1	4	12	37	4
Mollusca	Gastropoda	Basommatophora			76437			**| Order: Basommatophora**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora	Ancylidae		76568			**| Family: Ancylidae**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora	Ancylidae	Ferrissia	76569	SC		*Ferrissia*	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora	Lymnaeidae		76483	SC		**| Family: Lymnaeidae**	16	76	1	0	35	2	0	13	28	154	2
Mollusca	Gastropoda	Basommatophora	Lymnaeidae	Radix auricularia	76526	SC		*Radix auricularia*	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora	Physidae		76676			**| Family: Physidae**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora	Physidae	Physa	76677	SC		*Physa*	18	4	17	7	34	10	0	6	11	55	27
Mollusca	Gastropoda	Basommatophora	Planorbidae		76591	SC		**| Family: Planorbidae**	6	4	0	0	20	0	0	0	84	65	0
Mollusca	Gastropoda	Heterostropha			566849			**| Order: Heterostropha**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Heterostropha	Valvatidae		70345			**| Family: Valvatidae**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Heterostropha	Valvatidae	Valvata	70346	SC		*Valvata*	0	0	0	0	0	0	0	0	0	1	0
Mollusca	Gastropoda	Heterostropha	Valvatidae	Valvata tricarinata	70354	SC		*Valvata tricarinata*	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Hypsogastropoda			566851			**| Order: Hypsogastropoda**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Hypsogastropoda	Hydrobiidae		70493	SC		**| Family: Hydrobiidae**	3	1	5	3	68	12	1	4	0	29	8
Annelida					64357			**Phylum: Annelida**	0	0	0	0	0	0	0	0	0	0	0
Annelida					568832			**Subphylum: Clitellata**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea				914192			**| Class: Hirudinea**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Arhynchobdellida			568835			**| Order: Arhynchobdellida**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Arhynchobdellida	Erpobdellidae		69438	P		**| Family: Erpobdellidae**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Arhynchobdellida	Erpobdellidae	Nephelopsis obscura	69456	P		*Nephelopsis obscura*	0	0	0	0	0	0	0	0	1	0	0
Annelida	Hirudinea	Rhynchobdellida			69295			**| Order: Rhynchobdellida**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Rhynchobdellida	Glossiphoniidae		69357			**| Family: Glossiphoniidae**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Rhynchobdellida	Glossiphoniidae	Helobdella stagnalis	69398	PA		*Helobdella stagnalis*	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Rhynchobdellida	Glossiphoniidae	Theromyzon	69375	P		*Theromyzon*	0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta				68422	CG		**| Class: Oligochaeta**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta	Lumbriculida			68439			**| Order: Lumbriculida**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta	Lumbriculida	Lumbriculidae		68440	CG		**| Family: Lumbriculidae**	6	20	0	0	24	0	3	0	25	4	0
Annelida	Oligochaeta	Lumbriculida	Lumbriculidae	Rhynchelmis sp.	68463	CG		*Rhynchelmis sp.*	2	0	0	0	0	0	0	0	0	0	0

Phylum	Class	Order	Family	Taxonomy	ITIS Code	Functional Feeding Group		Site:	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-EXP
								Sample:	1-1	1-2	1-3	1-4	1-5	2-1	2-2	2-3	2-4	2-5	1-1
								CC#:	CC161652	CC161653	CC161654	CC161655	CC161656	CC161657	CC161658	CC161659	CC161660	CC161661	CC161662
								Sieve Size:	400	400	400	400	400	400	400	400	400	400	400
								SubSample %:	100	36	15	31.25	50	8	16	37.5	27	100	25
Annelida	Oligochaeta	Tubificida			68498		**| Order: Tubificida**		0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta	Tubificida	Enchytraeidae		68510	CG	**| Family: Enchytraeidae**		0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta	Tubificida	Enchytraeidae	Enchytraeus	68531	CG	*Enchytraeus*		0	0	0	0	0	0	0	18	63	4	0
Annelida	Oligochaeta	Tubificida	Naididae		68854	CG	**| Family: Naididae**		3	13	0	0	2	0	0	0	15	15	20
Annelida	Oligochaeta	Tubificida	Naididae	Nais	68946	CG	*Nais*		0	5	0	0	0	0	0	0	0	0	0
Cnidaria					48738		**Phylum: Cnidaria**		0	0	0	0	0	0	0	0	0	0	0
Cnidaria	Hydrozoa				48739		**| Class: Hydrozoa**		0	0	0	0	0	0	0	0	0	0	0
Cnidaria	Hydrozoa	Anthoathecatae			718925		**| Order: Anthoathecatae**		0	0	0	0	0	0	0	0	0	0	0
Cnidaria	Hydrozoa	Anthoathecatae	Hydridae		50844		**| Family: Hydridae**		0	0	0	0	0	0	0	0	0	0	0
Cnidaria	Hydrozoa	Anthoathecatae	Hydridae	Hydra	50845	P	*Hydra*		3	0	0	0	0	0	0	0	0	0	0
								Totals:	**208**	**324**	**327**	**391**	**361**	**341**	**339**	**369**	**374**	**454**	**399**
							Taxa present but not included:												
					0000000		*Terrestrials*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda					82696		**Phylum: Arthropoda**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Entognatha				676821		**| Class: Entognatha**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Entognatha	Collembola			99237	CG	**| Order: Collembola**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda					83677		**Subphylum: Crustacea**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Ostracoda				84195	CG	**| Class: Ostracoda**		0	1	0	0	0	0	0	0	1	0	0
Arthropoda	Branchiopoda				83687		**| Class: Branchiopoda**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Branchiopoda	Cladocera			83832		**| Order: Cladocera**		0	0	0	0	0	0	0	0	1	1	0
Arthropoda	Maxillipoda				610004		**| Class: Maxillipoda**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Copepoda				85257	CG	**| Class: Copepoda**		0	0	0	0	0	0	1	10	1	0	0
Nemata					563956	SH	**Phylum: Nemata**		1	1	0	1	0	0	0	0	1	1	1
Platyhelminthes					53963		**Phylum: Platyhelminthes**		0	0	0	0	0	0	0	0	0	0	0
Platyhelminthes	Turbellaria				53964	P	**| Class: Turbellaria**		1	1	0	0	1	1	1	20	1	1	1
								Totals:	**2**	**3**	**0**	**1**	**1**	**1**	**2**	**30**	**5**	**3**	**2**

Project: Teck Trail Operations - LCR AREMP (15-1438)
Ecoscape, Kyle Hawes
Taxonomist: Sue Salter
suesalter@cordilleraconsulting.ca
250-494-7553

Phylum	Class	Order	Family	Taxonomy	ITIS Code	Functional Feeding Group		Site:	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP
								Sample:	1-2	1-3	1-4	1-5	2-1	2-2	2-3	2-5	3-1	3-2	3-3
								CC#:	CC161663	CC161664	CC161665	CC161666	CC161667	CC161668	CC161669	CC161670	CC161671	CC161672	CC161673
								Sieve Size:	400	400	400	400	400	400	400	400	400	400	400
								SubSample %:	37.5	37.5	25	12	11	26	11	9	29	100	40
Arthropoda					82696		**Phylum: Arthropoda**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda					563886		**Subphylum: Hexapoda**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta				99208		**| Class: Insecta**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera			100502	CG	**| Order: Ephemeroptera**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Ameletidae		568544		**| Family: Ameletidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Ameletidae	Ameletus	100996	CG	*Ameletus*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae		100755	CG	**| Family: Baetidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae	Acentrella sp.	100801	CG	*Acentrella sp.*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae	Acerpenna sp.	568546	SH	*Acerpenna sp.*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis	100800	CG	*Baetis*		6	0	8	5	11	0	4	0	4	0	3
Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis bicaudatus	100823	CG	*Baetis bicaudatus*		0	2	0	0	0	2	0	6	6	0	5
Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis tricaudatus group	100800A	CG	*Baetis tricaudatus group*		2	2	6	3	0	5	3	14	11	2	5
Arthropoda	Insecta	Ephemeroptera	Ephemerellidae		101232		**| Family: Ephemerellidae**		18	45	101	86	186	88	62	58	60	38	95
Arthropoda	Insecta	Ephemeroptera	Ephemerellidae	Drunella grandis group	101365A	CG	*Drunella grandis group*		0	2	10	12	35	17	17	23	17	0	21
Arthropoda	Insecta	Ephemeroptera	Ephemerellidae	Drunella sp.	101365	CG	*Drunella sp.*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Ephemerellidae	Ephemerella	101233	CG	*Ephemerella*		1	22	16	12	1	2	4	28	18	1	7
Arthropoda	Insecta	Ephemeroptera	Heptageniidae		100504		**| Family: Heptageniidae**		8	7	2	0	1	2	1	3	0	4	0
Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Epeorus	100626	SC	*Epeorus*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Heptagenia	100602	SC	*Heptagenia*		0	3	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Rhithrogena	100572	SC	*Rhithrogena*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Leptophlebiidae		101095	CG	**| Family: Leptophlebiidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera			102467		**| Order: Plecoptera**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Chloroperlidae		103202	P	**| Family: Chloroperlidae**		0	0	0	1	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Nemouridae		102517	SH	**| Family: Nemouridae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Nemouridae	Zapada	102591	SH	*Zapada*		0	0	0	0	0	0	1	0	0	0	0
Arthropoda	Insecta	Plecoptera	Nemouridae	Zapada cinctipes	102594	SH	*Zapada cinctipes*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Nemouridae	Zapada columbiana	102596	SH	*Zapada columbiana*		0	0	0	0	0	0	0	0	1	0	0
Arthropoda	Insecta	Plecoptera	Perlodidae		102994	P	**| Family: Perlodidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Perlodidae	Megarcys sp.	103110	P	*Megarcys sp.*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Perlodidae	Skwala	103102	P	*Skwala*		1	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Pteronarcyidae		102470		**| Family: Pteronarcyidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Taeniopterygidae		102788		**| Family: Taeniopterygidae**		0	0	0	0	2	0	0	0	0	1	0
Arthropoda	Insecta	Trichoptera			115095		**| Order: Trichoptera**		0	0	0	0	0	0	0	0	1	0	0
Arthropoda	Insecta	Trichoptera	Apataniidae		598182		**| Family: Apataniidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Apataniidae	Apatania	115935	SC	*Apatania*		0	0	1	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Brachycentridae		116905	CF	**| Family: Brachycentridae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Brachycentridae	Brachycentrus occidentalis	116918	OM	*Brachycentrus occidentalis*		0	0	1	2	23	26	35	20	15	0	2
Arthropoda	Insecta	Trichoptera	Glossosomatidae		117120		**| Family: Glossosomatidae**		0	0	0	0	0	0	0	0	1	0	0
Arthropoda	Insecta	Trichoptera	Glossosomatidae	Glossosoma	117159	SC	*Glossosoma*		0	0	0	0	0	2	7	0	2	0	3
Arthropoda	Insecta	Trichoptera	Glossosomatidae	Protoptila	115221	SC	*Protoptila*		0	1	1	1	0	1	1	0	0	0	4
Arthropoda	Insecta	Trichoptera	Hydropsychidae		115398	CF	**| Family: Hydropsychidae**		0	5	5	9	6	2	8	7	6	0	5
Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche	115408	CF	*Cheumatopsyche*		31	52	83	33	20	43	18	21	10	19	21
Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche	115453	CF	*Hydropsyche*		27	17	101	122	144	100	152	169	172	0	112
Arthropoda	Insecta	Trichoptera	Hydroptilidae		115629		**| Family: Hydroptilidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Hydroptilidae	Hydroptila	115641	PH	*Hydroptila*		3	1	0	0	0	0	0	0	0	0	0

							Site:	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP
							Sample:	1-2	1-3	1-4	1-5	2-1	2-2	2-3	2-5	3-1	3-2	3-3
							CC#:	CC161663	CC161664	CC161665	CC161666	CC161667	CC161668	CC161669	CC161670	CC161671	CC161672	CC161673
						Functional Feeding	Sieve Size:	400	400	400	400	400	400	400	400	400	400	400
Phylum	**Class**	**Order**	**Family**	**Taxonomy**	**ITIS Code**	**Group**	**SubSample %:**	37.5	37.5	25	12	11	26	11	9	29	100	40
Arthropoda	Insecta	Trichoptera	Lepidostomatidae		116793		**| Family: Lepidostomatidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Lepidostomatidae	Lepidostoma	116794	SH	*Lepidostoma*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Leptoceridae		116547		**| Family: Leptoceridae**	0	0	1	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Leptoceridae	Ceraclea	116684	OM	*Ceraclea*	8	12	13	0	2	3	0	5	0	9	0
Arthropoda	Insecta	Trichoptera	Leptoceridae	Mystacides	116598	OM	*Mystacides*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Leptoceridae	Nectopsyche sp.	116651	OM	*Nectopsyche sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Leptoceridae	Oecetis	116607	P	*Oecetis*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Limnephilidae		115933	CG	**| Family: Limnephilidae**	0	0	0	1	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Psychomyiidae		115334		**| Family: Psychomyiidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Psychomyiidae	Psychomyia	115335	CG	*Psychomyia*	1	1	2	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Rhyacophilidae		115096		**| Family: Rhyacophilidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Rhyacophilidae	Rhyacophila vofixa group	115097S	P	*Rhyacophila vofixa group*	0	0	0	0	0	0	0	0	0	1	0
Arthropoda	Insecta	Trichoptera	Uenoidae		568757		**| Family: Uenoidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Uenoidae	Neophylax sp.	116046	SC	*Neophylax sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera			109216	P	**| Order: Coleoptera**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera		Georissus sp.	112754	SC	*Georissus sp.*	0	0	0	0	1	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Dytiscidae		111963	P	**| Family: Dytiscidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Dytiscidae	Oreodytes sp.	112314	P	*Oreodytes sp.*	0	2	1	0	0	0	0	0	0	5	0
Arthropoda	Insecta	Coleoptera	Dytiscidae	Sanfilippodytes sp.	728253	P	*Sanfilippodytes sp.*	0	0	0	0	0	0	0	0	0	1	0
Arthropoda	Insecta	Coleoptera	Dytiscidae	Stictotarsus	568826	P	*Stictotarsus*	1	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae		114093	CG	**| Family: Elmidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia sp.	114126	CG	*Dubiraphia sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	Heterlimnius sp.	114167	CG	*Heterlimnius sp.*	0	0	1	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	Optioservus sp.	114177	SC	*Optioservus sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	Rhizelmis nigra	114199	SC	*Rhizelmis nigra*	0	0	0	0	0	0	0	0	0	1	0
Arthropoda	Insecta	Diptera			118831		**| Order: Diptera**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Ceratopogonidae		127076	P	**| Family: Ceratopogonidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Ceratopogonidae	Probezzia	127729	P	*Probezzia*	0	0	0	0	0	0	0	0	0	1	0
Arthropoda	Insecta	Diptera	Chironomidae		127917		**| Family: Chironomidae**	2	1	5	1	1	0	0	0	1	0	0
Arthropoda	Insecta	Diptera	Chironomidae		129228	CG	**| Subfamily: Chironominae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		129229	CG	**| Tribe: Chironomini**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Chironomus	129254	CG	*Chironomus*	0	0	0	0	0	1	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Cryptochironomus	129368	P	*Cryptochironomus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Demicryptochironomus sp.	129421	CG	*Demicryptochironomus sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Dicrotendipes	129428	CG	*Dicrotendipes*	0	0	0	0	0	0	0	0	1	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Endochironomus sp.	129470	CG	*Endochironomus sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Microtendipes pedellus group	129535	CF	*Microtendipes pedellus group*	3	3	3	0	1	0	0	0	0	1	0
Arthropoda	Insecta	Diptera	Chironomidae	Pagastiella sp.	129561	CG	*Pagastiella sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Parachironomus	129564	P	*Parachironomus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Paracladopelma sp.	129597	CG	*Paracladopelma sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Phaenopsectra	129637	SC	*Phaenopsectra*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Polypedilum sp.	129657	CG	*Polypedilum sp.*	0	2	0	1	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Robackia demeijerei	129733	CG	*Robackia demeijerei*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Stictochironomus	129785	CG	*Stictochironomus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		129872	CG	**| Tribe: Tanytarsini**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Cladotanytarsus	129873	CG	*Cladotanytarsus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Micropsectra	129890	CG	*Micropsectra*	0	0	0	0	0	0	0	0	0	1	0
Arthropoda	Insecta	Diptera	Chironomidae	Paratanytarsus	129935	CF	*Paratanytarsus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Rheotanytarsus	129952	CF	*Rheotanytarsus*	20	4	0	2	17	0	0	0	0	0	1
Arthropoda	Insecta	Diptera	Chironomidae	Stempellinella sp.	129969	CF	*Stempellinella sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsus	129978	CF	*Tanytarsus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		128341	CG	**| Subfamily: Diamesinae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		128351	CG	**| Tribe: Diamesini**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Diamesa	128355	CG	*Diamesa*	0	0	0	0	0	0	0	0	0	0	2
Arthropoda	Insecta	Diptera	Chironomidae	Pagastia	128401	CG	*Pagastia*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Potthastia longimana group	128408	CG	*Potthastia longimana group*	0	1	0	0	0	0	0	0	0	0	0

Phylum	Class	Order	Family	Taxonomy	ITIS Code	Functional Feeding Group		Site:	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP
								Sample:	1-2	1-3	1-4	1-5	2-1	2-2	2-3	2-5	3-1	3-2	3-3
								CC#:	CC161663	CC161664	CC161665	CC161666	CC161667	CC161668	CC161669	CC161670	CC161671	CC161672	CC161673
								Sieve Size:	400	400	400	400	400	400	400	400	400	400	400
								SubSample %:	37.5	37.5	25	12	11	26	11	9	29	100	40
Arthropoda	Insecta	Diptera	Chironomidae		128457		**| Subfamily: Orthocladiinae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Brillia sp.	128477	SH	*Brillia sp.*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Cardiocladius	128511	P	*Cardiocladius*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Eukiefferiella	128689	OM	*Eukiefferiella*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Orthocladius complex	128874A	CG	*Orthocladius complex*		12	18	21	13	15	2	0	4	3	4	9
Arthropoda	Insecta	Diptera	Chironomidae	Parakiefferiella	128968	CG	*Parakiefferiella*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Psectrocladius	129018	CG	*Psectrocladius*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Synorthocladius	129161	CG	*Synorthocladius*		0	0	1	0	0	0	0	0	0	0	1
Arthropoda	Insecta	Diptera	Chironomidae	Tvetenia	129197	CG	*Tvetenia*		0	0	1	3	1	1	0	1	1	0	3
Arthropoda	Insecta	Diptera	Chironomidae		128437	CG	**| Subfamily: Prodiamesinae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Monodiamesa sp.	128440	CG	*Monodiamesa sp.*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		127994	P	**| Subfamily: Tanypodinae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		128078	P	**| Tribe: Pentaneurini**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Thienemannimyia group	127917N	P	*Thienemannimyia group*		1	2	2	0	1	1	1	0	1	0	3
Arthropoda	Insecta	Diptera	Chironomidae		128270		**| Tribe: Procladiini**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Procladius	128277	P	*Procladius*		0	0	0	0	1	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Empididae		135830	P	**| Family: Empididae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Empididae	Hemerodromia sp.	136327	P	*Hemerodromia sp.*		0	1	1	0	1	0	0	0	0	71	0
Arthropoda	Insecta	Diptera	Psychodidae		125351		**| Family: Psychodidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Psychodidae	Pericoma/Telmatoscopus sp.	125514	CG	*Pericoma/Telmatoscopus sp.*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Simuliidae		126640	CF	**| Family: Simuliidae**		0	0	0	0	1	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Simuliidae	Simulium	126774	CF	*Simulium*		0	0	1	0	0	0	0	0	1	0	1
Arthropoda	Insecta	Diptera	Tabanidae		130934		**| Family: Tabanidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Tipulidae		118840	SH	**| Family: Tipulidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Tipulidae	Antocha monticola	119660	CG	*Antocha monticola*		0	0	1	1	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Tipulidae	Tipula	119037	OM	*Tipula*		0	0	0	0	0	0	0	0	0	1	0
Arthropoda	Insecta	Hemiptera			103359		**| Order: Hemiptera**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Hemiptera	Corixidae		103364	P	**| Family: Corixidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Hemiptera	Corixidae	Hesperocorixa sp.	103444	P	*Hesperocorixa sp.*		1	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Hemiptera	Corixidae	Sigara	103369	P	*Sigara*		0	0	0	0	0	0	0	0	0	7	0
Arthropoda	Insecta	Odonata			101593		**| Order: Odonata**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Odonata	Gomphidae		101664		**| Family: Gomphidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda					83677		**Subphylum: Crustacea**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca				89787		**| Class: Malacostraca**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Amphipoda			93294		**| Order: Amphipoda**		3	16	2	0	0	0	0	0	0	11	0
Arthropoda	Malacostraca	Amphipoda	Crangonyctidae		95080		**| Family: Crangonyctidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Amphipoda	Crangonyctidae	Crangonyx	95081	CG	*Crangonyx*		34	45	9	1	0	0	0	0	0	14	0
Arthropoda	Malacostraca	Amphipoda	Hyalellidae		94022		**| Family: Hyalellidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Amphipoda	Hyalellidae	Hyalella	94025	CG	*Hyalella*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Decapoda			95599		**| Order: Decapoda**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Decapoda	Cambaridae		97336		**| Family: Cambaridae**		0	1	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Isopoda			92120		**| Order: Isopoda**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Isopoda	Asellidae		92657	CG	**| Family: Asellidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Isopoda	Asellidae	Caecidotea	92686	CG	*Caecidotea*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda					82697		**Subphylum: Chelicerata**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida				82708	P	**| Class: Arachnida**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes			82769	P	**| Order: Trombidiformes**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Hygrobatidae		83281		**| Family: Hygrobatidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Hygrobatidae	Atractides	83282	P	*Atractides*		0	2	2	1	0	2	1	0	1	3	1
Arthropoda	Arachnida	Trombidiformes	Hygrobatidae	Hygrobates	83297	P	*Hygrobates*		10	0	0	0	0	1	0	0	0	23	2
Arthropoda	Arachnida	Trombidiformes	Lebertiidae		83033	P	**| Family: Lebertiidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Lebertiidae	Lebertia	83034	P	*Lebertia*		0	3	0	0	1	0	0	1	1	4	0

							Site:	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP
							Sample:	1-2	1-3	1-4	1-5	2-1	2-2	2-3	2-5	3-1	3-2	3-3
							CC#:	CC161663	CC161664	CC161665	CC161666	CC161667	CC161668	CC161669	CC161670	CC161671	CC161672	CC161673
						Functional Feeding	Sieve Size:	400	400	400	400	400	400	400	400	400	400	400
Phylum	**Class**	**Order**	**Family**	**Taxonomy**	**ITIS Code**	**Group**	**SubSample %:**	37.5	37.5	25	12	11	26	11	9	29	100	40
Arthropoda	Arachnida	Trombidiformes	Limnesiidae		83050	P	**| Family: Limnesiidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Limnesiidae	Limnesia sp.	83051	P	*Limnesia sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Mideopsidae		83476	P	**| Family: Mideopsidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Mideopsidae	Mideopsis sp.	83479	P	*Mideopsis sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Sperchontidae		895710		**| Family: Sperchontidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Sperchontidae	Sperchon	83006	P	*Sperchon*	0	0	0	0	1	0	1	2	1	1	3
Arthropoda	Arachnida	Trombidiformes	Torrenticolidae		83249	P	**| Family: Torrenticolidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Torrenticolidae	Testudacarus sp.	83250	P	*Testudacarus sp.*	0	0	0	0	0	0	0	0	1	0	0
Arthropoda	Arachnida	Trombidiformes	Torrenticolidae	Torrenticola	83254	P	*Torrenticola*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Acari			82754		**| Order: Acari**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Oribatida			83538	P	**| Order: Oribatida**	0	0	0	0	0	0	0	0	0	0	0
Mollusca					69458		**Phylum: Mollusca**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia				79118		**| Class: Bivalvia**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia	Veneroida			80384		**| Order: Veneroida**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia	Veneroida	Pisidiidae		81388	CF	**| Family: Pisidiidae**	0	2	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia	Veneroida	Unionoida		79912		**| Family: Unionoida**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia	Veneroida	Unionidae		79913	CF	**| Family: Unionidae**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia	Veneroida	Unionidae	Anodonta sp.	79930	CF	*Anodonta sp.*	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia	Veneroida	Pisidiidae	Pisidium	81400	CF	*Pisidium*	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia	Veneroida	Pisidiidae	Sphaerium sp.	81391	CG	*Sphaerium sp.*	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda				69459		**| Class: Gastropoda**	8	4	2	6	0	2	7	1	0	17	1
Mollusca	Gastropoda	Basommatophora			76437		**| Order: Basommatophora**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora	Ancylidae		76568		**| Family: Ancylidae**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora	Ancylidae	Ferrissia	76569	SC	*Ferrissia*	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora	Lymnaeidae		76483	SC	**| Family: Lymnaeidae**	8	6	0	0	1	4	3	0	0	150	0
Mollusca	Gastropoda	Basommatophora	Lymnaeidae	Radix auricularia	76526	SC	*Radix auricularia*	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora	Physidae		76676		**| Family: Physidae**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora	Physidae	Physa	76677	SC	*Physa*	44	43	24	3	3	10	6	8	0	25	2
Mollusca	Gastropoda	Basommatophora	Planorbidae		76591	SC	**| Family: Planorbidae**	0	0	0	0	0	0	0	0	0	10	0
Mollusca	Gastropoda	Heterostropha			566849		**| Order: Heterostropha**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Heterostropha	Valvatidae		70345		**| Family: Valvatidae**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Heterostropha	Valvatidae	Valvata	70346	SC	*Valvata*	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Heterostropha	Valvatidae	Valvata tricarinata	70354	SC	*Valvata tricarinata*	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Hypsogastropoda			566851		**| Order: Hypsogastropoda**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Hypsogastropoda	Hydrobiidae		70493	SC	**| Family: Hydrobiidae**	16	6	1	1	0	2	2	0	0	0	0
Annelida					64357		**Phylum: Annelida**	0	0	0	0	0	0	0	0	0	0	0
Annelida					568832		**Subphylum: Clitellata**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea				914192		**| Class: Hirudinea**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Arhynchobdellida			568835		**| Order: Arhynchobdellida**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Arhynchobdellida	Erpobdellidae		69438	P	**| Family: Erpobdellidae**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Arhynchobdellida	Erpobdellidae	Nephelopsis obscura	69456	P	*Nephelopsis obscura*	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Rhynchobdellida			69295		**| Order: Rhynchobdellida**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Rhynchobdellida	Glossiphoniidae		69357		**| Family: Glossiphoniidae**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Rhynchobdellida	Glossiphoniidae	Helobdella stagnalis	69398	PA	*Helobdella stagnalis*	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Rhynchobdellida	Glossiphoniidae	Theromyzon	69375	P	*Theromyzon*	0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta				68422	CG	**| Class: Oligochaeta**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta	Lumbriculida			68439		**| Order: Lumbriculida**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta	Lumbriculida	Lumbriculidae		68440	CG	**| Family: Lumbriculidae**	0	2	0	0	0	1	1	0	0	0	0
Annelida	Oligochaeta	Lumbriculida	Lumbriculidae	Rhynchelmis sp.	68463	CG	*Rhynchelmis sp.*	0	0	0	0	0	0	0	0	0	0	0

Phylum	Class	Order	Family	Taxonomy	ITIS Code	Functional Feeding Group		Site:	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP
								Sample:	1-2	1-3	1-4	1-5	2-1	2-2	2-3	2-5	3-1	3-2	3-3
								CC#:	CC161663	CC161664	CC161665	CC161666	CC161667	CC161668	CC161669	CC161670	CC161671	CC161672	CC161673
								Sieve Size:	400	400	400	400	400	400	400	400	400	400	400
								SubSample %:	37.5	37.5	25	12	11	26	11	9	29	100	40
Annelida	Oligochaeta	Tubificida			68498		**| Order: Tubificida**		0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta	Tubificida	Enchytraeidae		68510	CG	**| Family: Enchytraeidae**		0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta	Tubificida	Enchytraeidae	Enchytraeus	68531	CG	*Enchytraeus*		0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta	Tubificida	Naididae		68854	CG	**| Family: Naididae**		53	25	43	1	0	1	0	1	0	13	10
Annelida	Oligochaeta	Tubificida	Naididae	Nais	68946	CG	*Nais*		0	0	0	0	0	0	0	0	0	0	0
Cnidaria					48738		**Phylum: Cnidaria**		0	0	0	0	0	0	0	0	0	0	0
Cnidaria	Hydrozoa				48739		**| Class: Hydrozoa**		0	0	0	0	0	0	0	0	0	0	0
Cnidaria	Hydrozoa	Anthoathecatae			718925		**| Order: Anthoathecatae**		0	0	0	0	0	0	0	0	0	0	0
Cnidaria	Hydrozoa	Anthoathecatae	Hydridae		50844		**| Family: Hydridae**		0	0	0	0	0	0	0	0	0	0	0
Cnidaria	Hydrozoa	Anthoathecatae	Hydridae	Hydra	50845	P	*Hydra*		7	1	4	0	0	0	0	0	0	0	0
								Totals:	**329**	**362**	**476**	**321**	**477**	**321**	**335**	**372**	**336**	**439**	**322**
							Taxa present but not included:												
					0000000		*Terrestrials*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda					82696		**Phylum: Arthropoda**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Entognatha				676821		**| Class: Entognatha**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Entognatha	Collembola			99237	CG	**| Order: Collembola**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda					83677		**Subphylum: Crustacea**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Ostracoda				84195	CG	**| Class: Ostracoda**		0	0	0	0	1	0	0	0	0	0	0
Arthropoda	Branchiopoda				83687		**| Class: Branchiopoda**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Branchiopoda	Cladocera			83832		**| Order: Cladocera**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Maxillipoda				610004		**| Class: Maxillipoda**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Copepoda				85257	CG	**| Class: Copepoda**		0	0	0	0	1	0	0	0	0	0	0
Nemata					563956	SH	**Phylum: Nemata**		0	0	1	0	1	1	0	0	1	0	0
Platyhelminthes					53963		**Phylum: Platyhelminthes**		0	0	0	0	0	0	0	0	0	0	0
Platyhelminthes	Turbellaria				53964	P	**| Class: Turbellaria**		1	1	1	0	0	1	1	0	1	0	1
								Totals:	**1**	**1**	**2**	**0**	**3**	**2**	**1**	**0**	**2**	**0**	**1**

Project: Teck Trail Operations - LCR AREMP (15-1438)
Ecoscape, Kyle Hawes
Taxonomist: Sue Salter
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250-494-7553

Phylum	Class	Order	Family	Taxonomy	ITIS Code	Functional Feeding Group											
							Site:	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP
							Sample:	3-4	3-5	4-1	4-2	4-3	4-4	4-5	5-1	5-2	5-3	5-4
							CC#:	CC161674	CC161675	CC161676	CC161677	CC161678	CC161679	CC161680	CC161681	CC161682	CC161683	CC161684
							Sieve Size:	400	400	400	400	400	400	400	400	400	400	400
							SubSample %:	21	20	100	100	100	17	100	100	15	34	100
Arthropoda					82696		**Phylum: Arthropoda**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda					563886		**Subphylum: Hexapoda**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta				99208		**| Class: Insecta**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera			100502	CG	**| Order: Ephemeroptera**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Ameletidae		568544		**| Family: Ameletidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Ameletidae	Ameletus	100996	CG	*Ameletus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae		100755	CG	**| Family: Baetidae**	0	0	1	1	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae	Acentrella sp.	100801	CG	*Acentrella sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae	Acerpenna sp.	568546	SH	*Acerpenna sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis	100800	CG	*Baetis*	17	0	0	4	1	10	0	3	3	5	4
Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis bicaudatus	100823	CG	*Baetis bicaudatus*	0	2	0	3	0	1	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis tricaudatus group	100800A	CG	*Baetis tricaudatus group*	12	6	0	5	1	0	0	2	3	6	3
Arthropoda	Insecta	Ephemeroptera	Ephemerellidae		101232		**| Family: Ephemerellidae**	55	90	2	9	31	65	14	145	46	143	33
Arthropoda	Insecta	Ephemeroptera	Ephemerellidae	Drunella grandis group	101365A	CG	*Drunella grandis group*	9	14	0	1	0	16	1	9	13	4	2
Arthropoda	Insecta	Ephemeroptera	Ephemerellidae	Drunella sp.	101365	CG	*Drunella sp.*	0	0	0	0	0	0	0	1	0	0	0
Arthropoda	Insecta	Ephemeroptera	Ephemerellidae	Ephemerella	101233	CG	*Ephemerella*	3	6	0	2	6	5	3	22	8	37	10
Arthropoda	Insecta	Ephemeroptera	Heptageniidae		100504		**| Family: Heptageniidae**	0	0	2	0	1	0	0	0	1	1	1
Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Epeorus	100626	SC	*Epeorus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Heptagenia	100602	SC	*Heptagenia*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Rhithrogena	100572	SC	*Rhithrogena*	0	0	0	0	0	0	0	1	0	1	0
Arthropoda	Insecta	Ephemeroptera	Leptophlebiidae		101095	CG	**| Family: Leptophlebiidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera			102467		**| Order: Plecoptera**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Chloroperlidae		103202	P	**| Family: Chloroperlidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Nemouridae		102517	SH	**| Family: Nemouridae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Nemouridae	Zapada	102591	SH	*Zapada*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Nemouridae	Zapada cinctipes	102594	SH	*Zapada cinctipes*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Nemouridae	Zapada columbiana	102596	SH	*Zapada columbiana*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Perlodidae		102994	P	**| Family: Perlodidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Perlodidae	Megarcys sp.	103110	P	*Megarcys sp.*	0	0	0	0	0	2	0	2	2	0	2
Arthropoda	Insecta	Plecoptera	Perlodidae	Skwala	103102	P	*Skwala*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Pteronarcyidae		102470		**| Family: Pteronarcyidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Taeniopterygidae		102788		**| Family: Taeniopterygidae**	0	0	0	1	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera			115095		**| Order: Trichoptera**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Apataniidae		598182		**| Family: Apataniidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Apataniidae	Apatania	115935	SC	*Apatania*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Brachycentridae		116905	CF	**| Family: Brachycentridae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Brachycentridae	Brachycentrus occidentalis	116918	OM	*Brachycentrus occidentalis*	10	2	0	0	0	1	0	1	2	2	0
Arthropoda	Insecta	Trichoptera	Glossosomatidae		117120		**| Family: Glossosomatidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Glossosomatidae	Glossosoma	117159	SC	*Glossosoma*	3	4	0	2	0	0	0	1	0	0	0
Arthropoda	Insecta	Trichoptera	Glossosomatidae	Protoptila	115221	SC	*Protoptila*	0	0	0	3	2	1	0	5	0	0	0
Arthropoda	Insecta	Trichoptera	Hydropsychidae		115398	CF	**| Family: Hydropsychidae**	7	4	0	0	1	7	0	4	3	4	0
Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche	115408	CF	*Cheumatopsyche*	20	46	4	54	1	73	1	15	75	23	2
Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche	115453	CF	*Hydropsyche*	182	87	1	3	9	95	21	27	35	41	3
Arthropoda	Insecta	Trichoptera	Hydroptilidae		115629		**| Family: Hydroptilidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Hydroptilidae	Hydroptila	115641	PH	*Hydroptila*	0	1	0	0	0	0	0	4	0	0	0

Phylum	Class	Order	Family	Taxonomy	ITIS Code	Functional Feeding Group	Site:	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP
							Sample:	3-4	3-5	4-1	4-2	4-3	4-4	4-5	5-1	5-2	5-3	5-4
							CC#:	CC161674	CC161675	CC161676	CC161677	CC161678	CC161679	CC161680	CC161681	CC161682	CC161683	CC161684
							Sieve Size:	400	400	400	400	400	400	400	400	400	400	400
							SubSample %:	21	20	100	100	100	17	100	100	15	34	100
Arthropoda	Insecta	Trichoptera	Lepidostomatidae		116793		| **Family: Lepidostomatidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Lepidostomatidae	Lepidostoma	116794	SH	*Lepidostoma*	0	0	0	0	2	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Leptoceridae		116547		| **Family: Leptoceridae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Leptoceridae	Ceraclea	116684	OM	*Ceraclea*	2	7	1	5	7	13	1	9	3	6	5
Arthropoda	Insecta	Trichoptera	Leptoceridae	Mystacides	116598	OM	*Mystacides*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Leptoceridae	Nectopsyche sp.	116651	OM	*Nectopsyche sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Leptoceridae	Oecetis	116607	P	*Oecetis*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Limnephilidae		115933	CG	| **Family: Limnephilidae**	0	0	0	0	0	0	0	3	0	0	0
Arthropoda	Insecta	Trichoptera	Psychomyiidae		115334		| **Family: Psychomyiidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Psychomyiidae	Psychomyia	115335	CG	*Psychomyia*	0	0	0	0	1	1	0	1	0	0	0
Arthropoda	Insecta	Trichoptera	Rhyacophilidae		115096		| **Family: Rhyacophilidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Rhyacophilidae	Rhyacophila vofixa group	115097S	P	*Rhyacophila vofixa group*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Uenoidae		568757		| **Family: Uenoidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Uenoidae	Neophylax sp.	116046	SC	*Neophylax sp.*	0	0	0	1	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera			109216	P	| **Order: Coleoptera**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera		Georissus sp.	112754	SC	*Georissus sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Dytiscidae		111963	P	| **Family: Dytiscidae**	0	0	0	0	0	0	0	0	0	1	0
Arthropoda	Insecta	Coleoptera	Dytiscidae	Oreodytes sp.	112314	P	*Oreodytes sp.*	0	0	0	0	1	0	1	0	0	0	0
Arthropoda	Insecta	Coleoptera	Dytiscidae	Sanfilippodytes sp.	728253	P	*Sanfilippodytes sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Dytiscidae	Stictotarsus	568826	P	*Stictotarsus*	0	0	0	0	0	0	2	3	0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae		114093	CG	| **Family: Elmidae**	0	0	0	1	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia sp.	114126	CG	*Dubiraphia sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	Heterlimnius sp.	114167	CG	*Heterlimnius sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	Optioservus sp.	114177	SC	*Optioservus sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	Rhizelmis nigra	114199	SC	*Rhizelmis nigra*	0	1	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera			118831		| **Order: Diptera**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Ceratopogonidae		127076	P	| **Family: Ceratopogonidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Ceratopogonidae	Probezzia	127729	P	*Probezzia*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		127917		| **Family: Chironomidae**	1	2	2	0	0	0	0	3	0	1	1
Arthropoda	Insecta	Diptera	Chironomidae		129228	CG	| **Subfamily: Chironominae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		129229	CG	| **Tribe: Chironomini**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Chironomus	129254	CG	*Chironomus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Cryptochironomus	129368	P	*Cryptochironomus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Demicryptochironomus sp.	129421	CG	*Demicryptochironomus sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Dicrotendipes	129428	CG	*Dicrotendipes*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Endochironomus sp.	129470	CG	*Endochironomus sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Microtendipes pedellus group	129535	CF	*Microtendipes pedellus group*	0	0	2	0	1	0	0	13	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Pagastiella sp.	129561	CG	*Pagastiella sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Parachironomus	129564	P	*Parachironomus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Paracladopelma sp.	129597	CG	*Paracladopelma sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Phaenopsectra	129637	SC	*Phaenopsectra*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Polypedilum sp.	129657	CG	*Polypedilum sp.*	0	2	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Robackia demeijerei	129733	CG	*Robackia demeijerei*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Stictochironomus	129785	CG	*Stictochironomus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		129872	CG	| **Tribe: Tanytarsini**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Cladotanytarsus	129873	CG	*Cladotanytarsus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Micropsectra	129890	CG	*Micropsectra*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Paratanytarsus	129935	CF	*Paratanytarsus*	0	0	0	0	0	0	0	3	3	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Rheotanytarsus	129952	CF	*Rheotanytarsus*	0	1	0	0	0	0	0	0	0	0	1
Arthropoda	Insecta	Diptera	Chironomidae	Stempellinella sp.	129969	CF	*Stempellinella sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsus	129978	CF	*Tanytarsus*	0	0	0	0	0	1	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		128341	CG	| **Subfamily: Diamesinae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		128351	CG	| **Tribe: Diamesini**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Diamesa	128355	CG	*Diamesa*	0	0	0	2	0	0	0	0	0	0	3
Arthropoda	Insecta	Diptera	Chironomidae	Pagastia	128401	CG	*Pagastia*	0	1	0	0	0	0	0	0	0	1	0
Arthropoda	Insecta	Diptera	Chironomidae	Potthastia longimana group	128408	CG	*Potthastia longimana group*	0	0	0	0	0	0	1	0	0	0	1

Phylum	Class	Order	Family	Taxonomy	ITIS Code	Functional Feeding Group	Site:	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP
							Sample:	3-4	3-5	4-1	4-2	4-3	4-4	4-5	5-1	5-2	5-3	5-4
							CC#:	CC161674	CC161675	CC161676	CC161677	CC161678	CC161679	CC161680	CC161681	CC161682	CC161683	CC161684
							Sieve Size:	400	400	400	400	400	400	400	400	400	400	400
							SubSample %:	21	20	100	100	100	17	100	100	15	34	100
Arthropoda	Insecta	Diptera	Chironomidae		128457		| **Subfamily: Orthocladiinae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Brillia sp.	128477	SH	*Brillia sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Cardiocladius	128511	P	*Cardiocladius*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Eukiefferiella	128689	OM	*Eukiefferiella*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Orthocladius complex	128874A	CG	*Orthocladius complex*	1	19	1	2	2	2	0	26	2	2	6
Arthropoda	Insecta	Diptera	Chironomidae	Parakiefferiella	128968	CG	*Parakiefferiella*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Psectrocladius	129018	CG	*Psectrocladius*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Synorthocladius	129161	CG	*Synorthocladius*	0	0	0	0	1	0	0	1	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Tvetenia	129197	CG	*Tvetenia*	0	5	0	0	0	0	0	2	1	8	0
Arthropoda	Insecta	Diptera	Chironomidae		128437	CG	| **Subfamily: Prodiamesinae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Monodiamesa sp.	128440	CG	*Monodiamesa sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		127994	P	| **Subfamily: Tanypodinae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		128078	P	| **Tribe: Pentaneurini**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Thienemannimyia group	127917N	P	*Thienemannimyia group*	0	1	0	0	2	1	0	0	4	0	1
Arthropoda	Insecta	Diptera	Chironomidae		128270		| **Tribe: Procladiini**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Procladius	128277	P	*Procladius*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Empididae		135830	P	| **Family: Empididae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Empididae	Hemerodromia sp.	136327	P	*Hemerodromia sp.*	0	0	2	1	0	0	2	0	0	0	0
Arthropoda	Insecta	Diptera	Psychodidae		125351		| **Family: Psychodidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Psychodidae	Pericoma/Telmatoscopus sp.	125514	CG	*Pericoma/Telmatoscopus sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Simuliidae		126640	CF	| **Family: Simuliidae**	1	0	0	0	0	0	0	0	0	1	0
Arthropoda	Insecta	Diptera	Simuliidae	Simulium	126774	CF	*Simulium*	0	0	0	1	0	0	0	1	0	0	0
Arthropoda	Insecta	Diptera	Tabanidae		130934		| **Family: Tabanidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Tipulidae		118840	SH	| **Family: Tipulidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Tipulidae	Antocha monticola	119660	CG	*Antocha monticola*	0	0	0	0	0	0	0	1	0	0	0
Arthropoda	Insecta	Diptera	Tipulidae	Tipula	119037	OM	*Tipula*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Hemiptera			103359		| **Order: Hemiptera**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Hemiptera	Corixidae		103364	P	| **Family: Corixidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Hemiptera	Corixidae	Hesperocorixa sp.	103444	P	*Hesperocorixa sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Hemiptera	Corixidae	Sigara	103369	P	*Sigara*	0	1	0	0	3	0	5	3	0	0	0
Arthropoda	Insecta	Odonata			101593		| **Order: Odonata**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Odonata	Gomphidae		101664		| **Family: Gomphidae**	0	0	1	0	0	0	0	0	0	0	0
Arthropoda					83677		**Subphylum: Crustacea**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca				89787		| **Class: Malacostraca**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Amphipoda			93294		| **Order: Amphipoda**	0	0	43	1	1	0	5	0	0	0	1
Arthropoda	Malacostraca	Amphipoda	Crangonyctidae		95080		| **Family: Crangonyctidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Amphipoda	Crangonyctidae	Crangonyx	95081	CG	*Crangonyx*	0	0	40	6	4	0	1	2	0	0	0
Arthropoda	Malacostraca	Amphipoda	Hyalellidae		94022		| **Family: Hyalellidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Amphipoda	Hyalellidae	Hyalella	94025	CG	*Hyalella*	0	0	0	0	0	0	0	1	0	0	0
Arthropoda	Malacostraca	Decapoda			95599		| **Order: Decapoda**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Decapoda	Cambaridae		97336		| **Family: Cambaridae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Isopoda			92120		| **Order: Isopoda**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Isopoda	Asellidae		92657	CG	| **Family: Asellidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Isopoda	Asellidae	Caecidotea	92686	CG	*Caecidotea*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda					82697		**Subphylum: Chelicerata**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida				82708	P	| **Class: Arachnida**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes			82769	P	| **Order: Trombidiformes**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Hygrobatidae		83281		| **Family: Hygrobatidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Hygrobatidae	Atractides	83282	P	*Atractides*	3	0	0	4	0	3	0	2	1	0	3
Arthropoda	Arachnida	Trombidiformes	Hygrobatidae	Hygrobates	83297	P	*Hygrobates*	0	1	3	0	1	0	2	46	0	0	0
Arthropoda	Arachnida	Trombidiformes	Lebertiidae		83033	P	| **Family: Lebertiidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Lebertiidae	Lebertia	83034	P	*Lebertia*	0	1	4	3	3	0	0	3	1	0	3

							Site:	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP
							Sample:	3-4	3-5	4-1	4-2	4-3	4-4	4-5	5-1	5-2	5-3	5-4
							CC#:	CC161674	CC161675	CC161676	CC161677	CC161678	CC161679	CC161680	CC161681	CC161682	CC161683	CC161684
						Functional Feeding	Sieve Size:	400	400	400	400	400	400	400	400	400	400	400
Phylum	**Class**	**Order**	**Family**	**Taxonomy**	**ITIS Code**	**Group**	**SubSample %:**	21	20	100	100	100	17	100	100	15	34	100
Arthropoda	Arachnida	Trombidiformes	Limnesiidae		83050	P	**| Family: Limnesiidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Limnesiidae	Limnesia sp.	83051	P	*Limnesia sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Mideopsidae		83476	P	**| Family: Mideopsidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Mideopsidae	Mideopsis sp.	83479	P	*Mideopsis sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Sperchontidae		895710		**| Family: Sperchontidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Sperchontidae	Sperchon	83006	P	*Sperchon*	3	1	0	0	0	0	0	1	2	1	0
Arthropoda	Arachnida	Trombidiformes	Torrenticolidae		83249	P	**| Family: Torrenticolidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Torrenticolidae	Testudacarus sp.	83250	P	*Testudacarus sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Torrenticolidae	Torrenticola	83254	P	*Torrenticola*	0	0	0	0	0	1	1	1	1	0	0
Arthropoda	Arachnida	Acari			82754		**| Order: Acari**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Oribatida			83538	P	**| Order: Oribatida**	0	0	0	0	0	0	0	0	0	0	0
Mollusca					69458		**Phylum: Mollusca**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia				79118		**| Class: Bivalvia**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia	Veneroida			80384		**| Order: Veneroida**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia	Veneroida	Pisidiidae		81388	CF	**| Family: Pisidiidae**	0	0	0	0	0	0	1	0	1	0	0
Mollusca	Bivalvia	Veneroida	Unionoida		79912		**| Family: Unionoida**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia	Veneroida	Unionidae		79913	CF	**| Family: Unionidae**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia	Veneroida	Unionidae	Anodonta sp.	79930	CF	*Anodonta sp.*	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia	Veneroida	Pisidiidae	Pisidium	81400	CF	*Pisidium*	0	0	1	0	0	0	2	0	0	0	0
Mollusca	Bivalvia	Veneroida	Pisidiidae	Sphaerium sp.	81391	CG	*Sphaerium sp.*	0	0	0	0	0	0	1	0	0	0	0
Mollusca	Gastropoda				69459		**| Class: Gastropoda**	0	1	3	2	1	0	9	26	0	2	4
Mollusca	Gastropoda	Basommatophora			76437		**| Order: Basommatophora**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora	Ancylidae		76568		**| Family: Ancylidae**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora	Ancylidae	Ferrissia	76569	SC	*Ferrissia*	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora	Lymnaeidae		76483	SC	**| Family: Lymnaeidae**	0	0	14	64	30	6	40	263	10	1	0
Mollusca	Gastropoda	Basommatophora	Lymnaeidae	Radix auricularia	76526	SC	*Radix auricularia*	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora	Physidae		76676		**| Family: Physidae**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora	Physidae	Physa	76677	SC	*Physa*	1	2	9	14	9	5	6	48	6	7	11
Mollusca	Gastropoda	Basommatophora	Planorbidae		76591	SC	**| Family: Planorbidae**	0	0	2	3	0	0	8	17	1	0	0
Mollusca	Gastropoda	Heterostropha			566849		**| Order: Heterostropha**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Heterostropha	Valvatidae		70345		**| Family: Valvatidae**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Heterostropha	Valvatidae	Valvata	70346	SC	*Valvata*	0	0	0	0	1	0	0	0	0	0	0
Mollusca	Gastropoda	Heterostropha	Valvatidae	Valvata tricarinata	70354	SC	*Valvata tricarinata*	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Hypsogastropoda			566851		**| Order: Hypsogastropoda**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Hypsogastropoda	Hydrobiidae		70493	SC	**| Family: Hydrobiidae**	0	0	0	10	1	1	0	28	1	0	0
Annelida					64357		**Phylum: Annelida**	0	0	0	0	0	0	0	0	0	0	0
Annelida					568832		**Subphylum: Clitellata**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea				914192		**| Class: Hirudinea**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Arhynchobdellida			568835		**| Order: Arhynchobdellida**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Arhynchobdellida	Erpobdellidae		69438	P	**| Family: Erpobdellidae**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Arhynchobdellida	Erpobdellidae	Nephelopsis obscura	69456	P	*Nephelopsis obscura*	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Rhynchobdellida			69295		**| Order: Rhynchobdellida**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Rhynchobdellida	Glossiphoniidae		69357		**| Family: Glossiphoniidae**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Rhynchobdellida	Glossiphoniidae	Helobdella stagnalis	69398	PA	*Helobdella stagnalis*	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Rhynchobdellida	Glossiphoniidae	Theromyzon	69375	P	*Theromyzon*	0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta				68422	CG	**| Class: Oligochaeta**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta	Lumbriculida			68439		**| Order: Lumbriculida**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta	Lumbriculida	Lumbriculidae		68440	CG	**| Family: Lumbriculidae**	0	0	39	3	0	0	2	0	0	0	0
Annelida	Oligochaeta	Lumbriculida	Lumbriculidae	Rhynchelmis sp.	68463	CG	*Rhynchelmis sp.*	0	0	0	0	0	0	0	0	0	0	0

Phylum	Class	Order	Family	Taxonomy	ITIS Code	Functional Feeding Group		Site:	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP
								Sample:	3-4	3-5	4-1	4-2	4-3	4-4	4-5	5-1	5-2	5-3	5-4
								CC#:	CC161674	CC161675	CC161676	CC161677	CC161678	CC161679	CC161680	CC161681	CC161682	CC161683	CC161684
								Sieve Size:	400	400	400	400	400	400	400	400	400	400	400
								SubSample %:	21	20	100	100	100	17	100	100	15	34	100
Annelida	Oligochaeta	Tubificida			68498		**| Order: Tubificida**		0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta	Tubificida	Enchytraeidae		68510	CG	**| Family: Enchytraeidae**		0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta	Tubificida	Enchytraeidae	Enchytraeus	68531	CG	*Enchytraeus*		0	0	0	0	1	0	135	0	0	0	0
Annelida	Oligochaeta	Tubificida	Naididae		68854	CG	**| Family: Naididae**		0	3	0	0	2	0	0	15	105	11	42
Annelida	Oligochaeta	Tubificida	Naididae	Nais	68946	CG	*Nais*		0	0	0	0	0	0	0	0	0	0	0
Cnidaria					48738		**Phylum: Cnidaria**		0	0	0	0	0	0	0	0	0	0	0
Cnidaria	Hydrozoa				48739		**| Class: Hydrozoa**		0	0	0	0	0	0	0	0	0	0	0
Cnidaria	Hydrozoa	Anthoathecatae			718925		**| Order: Anthoathecatae**		0	0	0	0	0	0	0	0	0	0	0
Cnidaria	Hydrozoa	Anthoathecatae	Hydridae		50844		**| Family: Hydridae**		0	0	0	0	0	0	0	0	0	0	0
Cnidaria	Hydrozoa	Anthoathecatae	Hydridae	Hydra	50845	P	*Hydra*		0	0	3	0	2	0	0	0	1	0	1
								Totals:	**330**	**311**	**180**	**211**	**129**	**310**	**265**	**764**	**334**	**309**	**143**
							Taxa present but not included:												
					0000000		*Terrestrials*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda					82696		**Phylum: Arthropoda**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Entognatha				676821		**| Class: Entognatha**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Entognatha	Collembola			99237	CG	**| Order: Collembola**		0	0	1	0	0	0	0	0	0	0	0
Arthropoda					83677		**Subphylum: Crustacea**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Ostracoda				84195	CG	**| Class: Ostracoda**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Branchiopoda				83687		**| Class: Branchiopoda**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Branchiopoda	Cladocera			83832		**| Order: Cladocera**		0	0	0	0	1	0	0	0	0	0	0
Arthropoda	Maxillipoda				610004		**| Class: Maxillipoda**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Copepoda				85257	CG	**| Class: Copepoda**		0	0	0	0	0	0	10	0	0	0	0
Nemata					563956	SH	**Phylum: Nemata**		1	0	0	1	0	0	0	1	0	0	0
Platyhelminthes					53963		**Phylum: Platyhelminthes**		0	0	0	0	0	0	0	0	0	0	0
Platyhelminthes	Turbellaria				53964	P	**| Class: Turbellaria**		1	0	1	1	1	0	20	1	1	1	1
								Totals:	**2**	**0**	**2**	**2**	**2**	**0**	**30**	**2**	**1**	**1**	**1**

Project: Teck Trail Operations - LCR AREMP (15-1438)
Ecoscape, Kyle Hawes
Taxonomist: Sue Salter
suesalter@cordilleraconsulting.ca
250-494-7553

Phylum	Class	Order	Family	Taxonomy	ITIS Code	Functional Feeding Group		Site:	ERO-EXP	ERO-CRADT	ERO-CRADT	ERO-CRADT	ERO-CRADT	ERO-CRADT	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF
								Sample:	5-5	3-1	3-2	3-3	3-4	3-5	1-1	1-2	1-3	1-4	1-5
								CC#:	CC161685	CC161686	CC161687	CC161688	CC161689	CC161690	CC161691	CC161692	CC161693	CC161694	CC161695
								Sieve Size:	400	400	400	400	400	400	400	400	400	400	400
								SubSample %:	100	18	75	42	17	50	100	100	100	100	24
Arthropoda					82696		**Phylum: Arthropoda**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda					563886		**Subphylum: Hexapoda**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta				99208		**| Class: Insecta**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera			100502	CG	**| Order: Ephemeroptera**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Ameletidae		568544		**| Family: Ameletidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Ameletidae	Ameletus	100996	CG	*Ameletus*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae		100755	CG	**| Family: Baetidae**		0	0	1	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae	Acentrella sp.	100801	CG	*Acentrella sp.*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae	Acerpenna sp.	568546	SH	*Acerpenna sp.*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis	100800	CG	*Baetis*		0	5	1	7	6	5	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis bicaudatus	100823	CG	*Baetis bicaudatus*		0	1	0	0	0	1	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis tricaudatus group	100800A	CG	*Baetis tricaudatus group*		1	6	7	6	5	2	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Ephemerellidae		101232		**| Family: Ephemerellidae**		9	45	41	88	44	89	0	0	0	0	1
Arthropoda	Insecta	Ephemeroptera	Ephemerellidae	Drunella grandis group	101365A	CG	*Drunella grandis group*		1	10	3	21	10	3	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Ephemerellidae	Drunella sp.	101365	CG	*Drunella sp.*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Ephemerellidae	Ephemerella	101233	CG	*Ephemerella*		4	14	12	21	14	24	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Heptageniidae		100504		**| Family: Heptageniidae**		0	1	4	8	2	6	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Epeorus	100626	SC	*Epeorus*		0	0	0	0	0	1	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Heptagenia	100602	SC	*Heptagenia*		0	0	2	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Rhithrogena	100572	SC	*Rhithrogena*		0	0	1	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Leptophlebiidae		101095	CG	**| Family: Leptophlebiidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera			102467		**| Order: Plecoptera**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Chloroperlidae		103202	P	**| Family: Chloroperlidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Nemouridae		102517	SH	**| Family: Nemouridae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Nemouridae	Zapada	102591	SH	*Zapada*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Nemouridae	Zapada cinctipes	102594	SH	*Zapada cinctipes*		0	0	1	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Nemouridae	Zapada columbiana	102596	SH	*Zapada columbiana*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Perlodidae		102994	P	**| Family: Perlodidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Perlodidae	Megarcys sp.	103110	P	*Megarcys sp.*		0	0	1	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Perlodidae	Skwala	103102	P	*Skwala*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Pteronarcyidae		102470		**| Family: Pteronarcyidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Taeniopterygidae		102788		**| Family: Taeniopterygidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera			115095		**| Order: Trichoptera**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Apataniidae		598182		**| Family: Apataniidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Apataniidae	Apatania	115935	SC	*Apatania*		5	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Brachycentridae		116905	CF	**| Family: Brachycentridae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Brachycentridae	Brachycentrus occidentalis	116918	OM	*Brachycentrus occidentalis*		0	8	0	5	12	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Glossosomatidae		117120		**| Family: Glossosomatidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Glossosomatidae	Glossosoma	117159	SC	*Glossosoma*		0	0	1	1	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Glossosomatidae	Protoptila	115221	SC	*Protoptila*		1	0	2	1	1	1	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Hydropsychidae		115398	CF	**| Family: Hydropsychidae**		1	8	4	3	1	1	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche	115408	CF	*Cheumatopsyche*		13	22	14	62	38	48	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche	115453	CF	*Hydropsyche*		21	181	40	72	147	23	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Hydroptilidae		115629		**| Family: Hydroptilidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Hydroptilidae	Hydroptila	115641	PH	*Hydroptila*		0	0	0	0	0	0	0	0	0	0	0

							Site:	ERO-EXP	ERO-CRADT	ERO-CRADT	ERO-CRADT	ERO-CRADT	ERO-CRADT	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF
							Sample:	5-5	3-1	3-2	3-3	3-4	3-5	1-1	1-2	1-3	1-4	1-5
							CC#:	CC161685	CC161686	CC161687	CC161688	CC161689	CC161690	CC161691	CC161692	CC161693	CC161694	CC161695
						Functional Feeding	Sieve Size:	400	400	400	400	400	400	400	400	400	400	400
Phylum	**Class**	**Order**	**Family**	**Taxonomy**	**ITIS Code**	**Group**	**SubSample %:**	100	18	75	42	17	50	100	100	100	100	24
Arthropoda	Insecta	Trichoptera	Lepidostomatidae		116793		**| Family: Lepidostomatidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Lepidostomatidae	Lepidostoma	116794	SH	*Lepidostoma*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Leptoceridae		116547		**| Family: Leptoceridae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Leptoceridae	Ceraclea	116684	OM	*Ceraclea*	0	4	9	17	3	9	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Leptoceridae	Mystacides	116598	OM	*Mystacides*	0	0	0	0	0	0	0	21	2	3	2
Arthropoda	Insecta	Trichoptera	Leptoceridae	Nectopsyche sp.	116651	OM	*Nectopsyche sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Leptoceridae	Oecetis	116607	P	*Oecetis*	0	0	0	0	0	0	4	26	5	6	0
Arthropoda	Insecta	Trichoptera	Limnephilidae		115933	CG	**| Family: Limnephilidae**	0	0	3	0	0	2	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Psychomyiidae		115334		**| Family: Psychomyiidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Psychomyiidae	Psychomyia	115335	CG	*Psychomyia*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Rhyacophilidae		115096		**| Family: Rhyacophilidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Rhyacophilidae	Rhyacophila vofixa group	115097S	P	*Rhyacophila vofixa group*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Uenoidae		568757		**| Family: Uenoidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Uenoidae	Neophylax sp.	116046	SC	*Neophylax sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera			109216	P	**| Order: Coleoptera**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera		Georissus sp.	112754	SC	*Georissus sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Dytiscidae		111963	P	**| Family: Dytiscidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Dytiscidae	Oreodytes sp.	112314	P	*Oreodytes sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Dytiscidae	Sanfilippodytes sp.	728253	P	*Sanfilippodytes sp.*	0	0	0	0	1	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Dytiscidae	Stictotarsus	568826	P	*Stictotarsus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae		114093	CG	**| Family: Elmidae**	0	0	1	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia sp.	114126	CG	*Dubiraphia sp.*	0	0	0	0	0	0	0	2	0	1	8
Arthropoda	Insecta	Coleoptera	Elmidae	Heterlimnius sp.	114167	CG	*Heterlimnius sp.*	0	0	0	0	0	0	0	0	0	1	0
Arthropoda	Insecta	Coleoptera	Elmidae	Optioservus sp.	114177	SC	*Optioservus sp.*	0	0	1	0	1	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	Rhizelmis nigra	114199	SC	*Rhizelmis nigra*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera			118831		**| Order: Diptera**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Ceratopogonidae		127076	P	**| Family: Ceratopogonidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Ceratopogonidae	Probezzia	127729	P	*Probezzia*	0	0	0	0	0	0	0	2	4	3	1
Arthropoda	Insecta	Diptera	Chironomidae		127917		**| Family: Chironomidae**	0	3	1	1	0	3	0	12	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		129228	CG	**| Subfamily: Chironominae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		129229	CG	**| Tribe: Chironomini**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Chironomus	129254	CG	*Chironomus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Cryptochironomus	129368	P	*Cryptochironomus*	0	0	0	0	0	1	0	1	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Demicryptochironomus sp.	129421	CG	*Demicryptochironomus sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Dicrotendipes	129428	CG	*Dicrotendipes*	0	0	0	1	0	0	0	0	0	2	4
Arthropoda	Insecta	Diptera	Chironomidae	Endochironomus sp.	129470	CG	*Endochironomus sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Microtendipes pedellus group	129535	CF	*Microtendipes pedellus group*	1	0	0	0	0	4	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Pagastiella sp.	129561	CG	*Pagastiella sp.*	0	0	0	0	0	0	0	0	1	0	1
Arthropoda	Insecta	Diptera	Chironomidae	Parachironomus	129564	P	*Parachironomus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Paracladopelma sp.	129597	CG	*Paracladopelma sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Phaenopsectra	129637	SC	*Phaenopsectra*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Polypedilum sp.	129657	CG	*Polypedilum sp.*	0	0	0	1	0	0	0	2	0	4	1
Arthropoda	Insecta	Diptera	Chironomidae	Robackia demeijerei	129733	CG	*Robackia demeijerei*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Stictochironomus	129785	CG	*Stictochironomus*	0	0	0	0	0	0	0	1	1	5	3
Arthropoda	Insecta	Diptera	Chironomidae		129872	CG	**| Tribe: Tanytarsini**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Cladotanytarsus	129873	CG	*Cladotanytarsus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Micropsectra	129890	CG	*Micropsectra*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Paratanytarsus	129935	CF	*Paratanytarsus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Rheotanytarsus	129952	CF	*Rheotanytarsus*	0	1	0	2	1	8	0	0	0	1	0
Arthropoda	Insecta	Diptera	Chironomidae	Stempellinella sp.	129969	CF	*Stempellinella sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsus	129978	CF	*Tanytarsus*	0	0	0	0	0	1	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		128341	CG	**| Subfamily: Diamesinae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		128351	CG	**| Tribe: Diamesini**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Diamesa	128355	CG	*Diamesa*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Pagastia	128401	CG	*Pagastia*	0	2	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Potthastia longimana group	128408	CG	*Potthastia longimana group*	0	0	0	0	0	0	0	0	0	0	2

							Site:	ERO-EXP	ERO-CRADT	ERO-CRADT	ERO-CRADT	ERO-CRADT	ERO-CRADT	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF
							Sample:	5-5	3-1	3-2	3-3	3-4	3-5	1-1	1-2	1-3	1-4	1-5
							CC#:	CC161685	CC161686	CC161687	CC161688	CC161689	CC161690	CC161691	CC161692	CC161693	CC161694	CC161695
						Functional Feeding	Sieve Size:	400	400	400	400	400	400	400	400	400	400	400
Phylum	**Class**	**Order**	**Family**	**Taxonomy**	**ITIS Code**	**Group**	**SubSample %:**	100	18	75	42	17	50	100	100	100	100	24
Arthropoda	Insecta	Diptera	Chironomidae		128457		**| Subfamily: Orthocladiinae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Brillia sp.	128477	SH	*Brillia sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Cardiocladius	128511	P	*Cardiocladius*	0	2	1	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Eukiefferiella	128689	OM	*Eukiefferiella*	0	4	1	0	0	1	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Orthocladius complex	128874A	CG	*Orthocladius complex*	0	10	2	0	2	17	0	1	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Parakiefferiella	128968	CG	*Parakiefferiella*	0	0	0	1	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Psectrocladius	129018	CG	*Psectrocladius*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Synorthocladius	129161	CG	*Synorthocladius*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Tvetenia	129197	CG	*Tvetenia*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		128437	CG	**| Subfamily: Prodiamesinae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Monodiamesa sp.	128440	CG	*Monodiamesa sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		127994	P	**| Subfamily: Tanypodinae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		128078	P	**| Tribe: Pentaneurini**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Thienemannimyia group	127917N	P	*Thienemannimyia group*	0	0	1	1	2	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		128270		**| Tribe: Procladiini**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Procladius	128277	P	*Procladius*	0	0	0	1	0	0	0	3	4	1	4
Arthropoda	Insecta	Diptera	Empididae		135830	P	**| Family: Empididae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Empididae	Hemerodromia sp.	136327	P	*Hemerodromia sp.*	0	0	3	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Psychodidae		125351		**| Family: Psychodidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Psychodidae	Pericoma/Telmatoscopus sp.	125514	CG	*Pericoma/Telmatoscopus sp.*	0	1	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Simuliidae		126640	CF	**| Family: Simuliidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Simuliidae	Simulium	126774	CF	*Simulium*	1	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Tabanidae		130934		**| Family: Tabanidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Tipulidae		118840	SH	**| Family: Tipulidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Tipulidae	Antocha monticola	119660	CG	*Antocha monticola*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Tipulidae	Tipula	119037	OM	*Tipula*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Hemiptera			103359		**| Order: Hemiptera**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Hemiptera	Corixidae		103364	P	**| Family: Corixidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Hemiptera	Corixidae	Hesperocorixa sp.	103444	P	*Hesperocorixa sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Hemiptera	Corixidae	Sigara	103369	P	*Sigara*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Odonata			101593		**| Order: Odonata**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Odonata	Gomphidae		101664		**| Family: Gomphidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda					83677		**Subphylum: Crustacea**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca				89787		**| Class: Malacostraca**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Amphipoda			93294		**| Order: Amphipoda**	0	0	5	0	1	3	0	3	0	0	1
Arthropoda	Malacostraca	Amphipoda	Crangonyctidae		95080		**| Family: Crangonyctidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Amphipoda	Crangonyctidae	Crangonyx	95081	CG	*Crangonyx*	0	1	7	1	0	1	1	0	0	0	4
Arthropoda	Malacostraca	Amphipoda	Hyalellidae		94022		**| Family: Hyalellidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Amphipoda	Hyalellidae	Hyalella	94025	CG	*Hyalella*	0	0	0	0	1	2	0	6	0	0	8
Arthropoda	Malacostraca	Decapoda			95599		**| Order: Decapoda**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Decapoda	Cambaridae		97336		**| Family: Cambaridae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Isopoda			92120		**| Order: Isopoda**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Isopoda	Asellidae		92657	CG	**| Family: Asellidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Isopoda	Asellidae	Caecidotea	92686	CG	*Caecidotea*	0	0	0	2	0	0	14	212	56	81	195
Arthropoda					82697		**Subphylum: Chelicerata**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida				82708	P	**| Class: Arachnida**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes			82769	P	**| Order: Trombidiformes**	0	0	0	0	0	1	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Hygrobatidae		83281		**| Family: Hygrobatidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Hygrobatidae	Atractides	83282	P	*Atractides*	1	1	4	2	1	8	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Hygrobatidae	Hygrobates	83297	P	*Hygrobates*	1	0	1	2	0	6	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Lebertiidae		83033	P	**| Family: Lebertiidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Lebertiidae	Lebertia	83034	P	*Lebertia*	0	0	2	1	0	8	0	0	0	0	0

							Site:	ERO-EXP	ERO-CRADT	ERO-CRADT	ERO-CRADT	ERO-CRADT	ERO-CRADT	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF
							Sample:	5-5	3-1	3-2	3-3	3-4	3-5	1-1	1-2	1-3	1-4	1-5
							CC#:	CC161685	CC161686	CC161687	CC161688	CC161689	CC161690	CC161691	CC161692	CC161693	CC161694	CC161695
						Functional Feeding	Sieve Size:	400	400	400	400	400	400	400	400	400	400	400
Phylum	**Class**	**Order**	**Family**	**Taxonomy**	**ITIS Code**	**Group**	**SubSample %:**	100	18	75	42	17	50	100	100	100	100	24
Arthropoda	Arachnida	Trombidiformes	Limnesiidae		83050	P	**| Family: Limnesiidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Limnesiidae	Limnesia sp.	83051	P	*Limnesia sp.*	0	0	0	0	0	0	0	2	0	0	0
Arthropoda	Arachnida	Trombidiformes	Mideopsidae		83476	P	**| Family: Mideopsidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Mideopsidae	Mideopsis sp.	83479	P	*Mideopsis sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Sperchontidae		895710		**| Family: Sperchontidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Sperchontidae	Sperchon	83006	P	*Sperchon*	1	0	2	1	0	1	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Torrenticolidae		83249	P	**| Family: Torrenticolidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Torrenticolidae	Testudacarus sp.	83250	P	*Testudacarus sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Torrenticolidae	Torrenticola	83254	P	*Torrenticola*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Acari			82754		**| Order: Acari**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Oribatida			83538	P	**| Order: Oribatida**	0	0	2	0	0	0	0	0	0	0	0
Mollusca					69458		**Phylum: Mollusca**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia				79118		**| Class: Bivalvia**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia	Veneroida			80384		**| Order: Veneroida**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia	Veneroida	Pisidiidae		81388	CF	**| Family: Pisidiidae**	0	0	0	0	0	0	0	2	2	11	5
Mollusca	Bivalvia	Veneroida	Unionoida		79912		**| Family: Unionoida**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia	Veneroida	Unionidae		79913	CF	**| Family: Unionidae**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia	Veneroida	Unionidae	Anodonta sp.	79930	CF	*Anodonta sp.*	0	0	0	0	0	0	0	0	0	1	0
Mollusca	Bivalvia	Veneroida	Pisidiidae	Pisidium	81400	CF	*Pisidium*	0	0	0	0	0	0	4	19	77	37	31
Mollusca	Bivalvia	Veneroida	Pisidiidae	Sphaerium sp.	81391	CG	*Sphaerium sp.*	0	0	0	0	0	0	0	0	2	1	0
Mollusca	Gastropoda				69459		**| Class: Gastropoda**	4	0	5	6	5	4	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora			76437		**| Order: Basommatophora**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora	Ancylidae		76568		**| Family: Ancylidae**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora	Ancylidae	Ferrissia	76569	SC	*Ferrissia*	0	0	2	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora	Lymnaeidae		76483	SC	**| Family: Lymnaeidae**	33	1	65	14	4	14	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora	Lymnaeidae	Radix auricularia	76526	SC	*Radix auricularia*	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora	Physidae		76676		**| Family: Physidae**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora	Physidae	Physa	76677	SC	*Physa*	6	5	76	43	19	16	0	2	0	0	0
Mollusca	Gastropoda	Basommatophora	Planorbidae		76591	SC	**| Family: Planorbidae**	1	0	2	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Heterostropha			566849		**| Order: Heterostropha**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Heterostropha	Valvatidae		70345		**| Family: Valvatidae**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Heterostropha	Valvatidae	Valvata	70346	SC	*Valvata*	0	0	0	0	0	0	0	1	0	0	0
Mollusca	Gastropoda	Heterostropha	Valvatidae	Valvata tricarinata	70354	SC	*Valvata tricarinata*	0	0	0	0	0	0	0	3	1	0	0
Mollusca	Gastropoda	Hypsogastropoda			566851		**| Order: Hypsogastropoda**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Hypsogastropoda	Hydrobiidae		70493	SC	**| Family: Hydrobiidae**	0	0	0	0	0	0	0	0	0	0	0
Annelida					64357		**Phylum: Annelida**	0	0	0	0	0	0	0	0	0	0	0
Annelida					568832		**Subphylum: Clitellata**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea				914192		**| Class: Hirudinea**	0	0	0	0	0	0	0	1	0	0	0
Annelida	Hirudinea	Arhynchobdellida			568835		**| Order: Arhynchobdellida**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Arhynchobdellida	Erpobdellidae		69438	P	**| Family: Erpobdellidae**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Arhynchobdellida	Erpobdellidae	Nephelopsis obscura	69456	P	*Nephelopsis obscura*	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Rhynchobdellida			69295		**| Order: Rhynchobdellida**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Rhynchobdellida	Glossiphoniidae		69357		**| Family: Glossiphoniidae**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Rhynchobdellida	Glossiphoniidae	Helobdella stagnalis	69398	PA	*Helobdella stagnalis*	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Rhynchobdellida	Glossiphoniidae	Theromyzon	69375	P	*Theromyzon*	0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta				68422	CG	**| Class: Oligochaeta**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta	Lumbriculida			68439		**| Order: Lumbriculida**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta	Lumbriculida	Lumbriculidae		68440	CG	**| Family: Lumbriculidae**	0	0	0	0	0	0	5	8	27	38	15
Annelida	Oligochaeta	Lumbriculida	Lumbriculidae	Rhynchelmis sp.	68463	CG	*Rhynchelmis sp.*	0	0	0	0	0	0	0	0	0	0	0

Phylum	Class	Order	Family	Taxonomy	ITIS Code	Functional Feeding Group		Site:	ERO-EXP	ERO-CRADT	ERO-CRADT	ERO-CRADT	ERO-CRADT	ERO-CRADT	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF
								Sample:	5-5	3-1	3-2	3-3	3-4	3-5	1-1	1-2	1-3	1-4	1-5
								CC#:	CC161685	CC161686	CC161687	CC161688	CC161689	CC161690	CC161691	CC161692	CC161693	CC161694	CC161695
								Sieve Size:	400	400	400	400	400	400	400	400	400	400	400
								SubSample %:	100	18	75	42	17	50	100	100	100	100	24
Annelida	Oligochaeta	Tubificida			68498		**| Order: Tubificida**		0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta	Tubificida	Enchytraeidae		68510	CG	**| Family: Enchytraeidae**		0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta	Tubificida	Enchytraeidae	Enchytraeus	68531	CG	*Enchytraeus*		0	2	1	0	0	0	0	0	0	0	0
Annelida	Oligochaeta	Tubificida	Naididae		68854	CG	**| Family: Naididae**		0	0	0	0	0	0	1	2	15	15	37
Annelida	Oligochaeta	Tubificida	Naididae	Nais	68946	CG	*Nais*		0	0	3	2	0	14	0	0	0	0	0
Cnidaria					48738		**Phylum: Cnidaria**		0	0	0	0	0	0	0	0	0	0	0
Cnidaria	Hydrozoa				48739		**| Class: Hydrozoa**		0	0	0	0	0	0	0	0	0	0	0
Cnidaria	Hydrozoa	Anthoathecatae			718925		**| Order: Anthoathecatae**		0	0	0	0	0	0	0	0	0	0	0
Cnidaria	Hydrozoa	Anthoathecatae	Hydridae		50844		**| Family: Hydridae**		0	0	0	0	0	0	0	0	0	0	0
Cnidaria	Hydrozoa	Anthoathecatae	Hydridae	Hydra	50845	P	*Hydra*		3	0	0	0	0	0	0	0	0	0	6
								Totals:	**108**	**338**	**335**	**394**	**321**	**328**	**29**	**332**	**197**	**211**	**329**
							Taxa present but not included:												
					0000000		*Terrestrials*		0	0	1	0	0	0	0	0	0	0	0
Arthropoda					82696		**Phylum: Arthropoda**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Entognatha				676821		**| Class: Entognatha**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Entognatha	Collembola			99237	CG	**| Order: Collembola**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda					83677		**Subphylum: Crustacea**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Ostracoda				84195	CG	**| Class: Ostracoda**		0	0	0	1	0	0	0	1	1	10	0
Arthropoda	Branchiopoda				83687		**| Class: Branchiopoda**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Branchiopoda	Cladocera			83832		**| Order: Cladocera**		0	0	0	0	0	1	0	0	0	0	1
Arthropoda	Maxillipoda				610004		**| Class: Maxillipoda**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Copepoda				85257	CG	**| Class: Copepoda**		0	0	0	0	0	0	0	0	1	10	1
Nemata					563956	SH	**Phylum: Nemata**		1	0	10	1	0	1	0	0	0	0	0
Platyhelminthes					53963		**Phylum: Platyhelminthes**		0	0	0	0	0	0	0	0	0	0	0
Platyhelminthes	Turbellaria				53964	P	**| Class: Turbellaria**		1	0	10	1	0	1	0	1	0	10	1
								Totals:	**2**	**0**	**21**	**3**	**0**	**3**	**0**	**2**	**2**	**30**	**3**

Project: Teck Trail Operations - LCR AREMP (15-1438)
Ecoscape, Kyle Hawes
Taxonomist: Sue Salter
suesalter@cordilleraconsulting.ca
250-494-7553

							Site:	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-EXP
							Sample:	2-1	2-2	2-3	2-4	2-5	3-1	3-2	3-3	3-4	3-5	1-1
							CC#:	CC161696	CC161697	CC161698	CC161699	CC161700	CC161701	CC161702	CC161703	CC161704	CC161705	CC161706
						Functional Feeding	**Sieve Size:**	400	400	400	400	400	400	400	400	400	400	400
Phylum	**Class**	**Order**	**Family**	**Taxonomy**	**ITIS Code**	**Group**	**SubSample %:**	45	40	100	50	27	100	100	100	100	100	100
Arthropoda					82696		**Phylum: Arthropoda**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda					563886		**Subphylum: Hexapoda**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta				99208		**| Class: Insecta**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera			100502	CG	**| Order: Ephemeroptera**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Ameletidae		568544		**| Family: Ameletidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Ameletidae	Ameletus	100996	CG	*Ameletus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae		100755	CG	**| Family: Baetidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae	Acentrella sp.	100801	CG	*Acentrella sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae	Acerpenna sp.	568546	SH	*Acerpenna sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis	100800	CG	*Baetis*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis bicaudatus	100823	CG	*Baetis bicaudatus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis tricaudatus group	100800A	CG	*Baetis tricaudatus group*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Ephemerellidae		101232		**| Family: Ephemerellidae**	0	0	0	0	0	0	3	0	0	3	0
Arthropoda	Insecta	Ephemeroptera	Ephemerellidae	Drunella grandis group	101365A	CG	*Drunella grandis group*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Ephemerellidae	Drunella sp.	101365	CG	*Drunella sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Ephemerellidae	Ephemerella	101233	CG	*Ephemerella*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Heptageniidae		100504		**| Family: Heptageniidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Epeorus	100626	SC	*Epeorus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Heptagenia	100602	SC	*Heptagenia*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Rhithrogena	100572	SC	*Rhithrogena*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Leptophlebiidae		101095	CG	**| Family: Leptophlebiidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera			102467		**| Order: Plecoptera**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Chloroperlidae		103202	P	**| Family: Chloroperlidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Nemouridae		102517	SH	**| Family: Nemouridae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Nemouridae	Zapada	102591	SH	*Zapada*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Nemouridae	Zapada cinctipes	102594	SH	*Zapada cinctipes*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Nemouridae	Zapada columbiana	102596	SH	*Zapada columbiana*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Perlodidae		102994	P	**| Family: Perlodidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Perlodidae	Megarcys sp.	103110	P	*Megarcys sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Perlodidae	Skwala	103102	P	*Skwala*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Pteronarcyidae		102470		**| Family: Pteronarcyidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Taeniopterygidae		102788		**| Family: Taeniopterygidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera			115095		**| Order: Trichoptera**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Apataniidae		598182		**| Family: Apataniidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Apataniidae	Apatania	115935	SC	*Apatania*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Brachycentridae		116905	CF	**| Family: Brachycentridae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Brachycentridae	Brachycentrus occidentalis	116918	OM	*Brachycentrus occidentalis*	0	0	0	2	1	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Glossosomatidae		117120		**| Family: Glossosomatidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Glossosomatidae	Glossosoma	117159	SC	*Glossosoma*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Glossosomatidae	Protoptila	115221	SC	*Protoptila*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Hydropsychidae		115398	CF	**| Family: Hydropsychidae**	0	0	0	0	0	0	1	0	0	0	0
Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche	115408	CF	*Cheumatopsyche*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche	115453	CF	*Hydropsyche*	0	2	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Hydroptilidae		115629		**| Family: Hydroptilidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Hydroptilidae	Hydroptila	115641	PH	*Hydroptila*	0	0	0	0	0	0	0	0	0	0	0

							Site:	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-EXP
							Sample:	2-1	2-2	2-3	2-4	2-5	3-1	3-2	3-3	3-4	3-5	1-1
							CC#:	CC161696	CC161697	CC161698	CC161699	CC161700	CC161701	CC161702	CC161703	CC161704	CC161705	CC161706
						Functional Feeding	Sieve Size:	400	400	400	400	400	400	400	400	400	400	400
Phylum	**Class**	**Order**	**Family**	**Taxonomy**	**ITIS Code**	**Group**	**SubSample %:**	45	40	100	50	27	100	100	100	100	100	100
Arthropoda	Insecta	Trichoptera	Lepidostomatidae		116793		**| Family: Lepidostomatidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Lepidostomatidae	Lepidostoma	116794	SH	*Lepidostoma*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Leptoceridae		116547		**| Family: Leptoceridae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Leptoceridae	Ceraclea	116684	OM	*Ceraclea*	0	0	0	0	1	0	1	0	0	0	0
Arthropoda	Insecta	Trichoptera	Leptoceridae	Mystacides	116598	OM	*Mystacides*	1	2	1	1	1	0	0	0	0	0	1
Arthropoda	Insecta	Trichoptera	Leptoceridae	Nectopsyche sp.	116651	OM	*Nectopsyche sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Leptoceridae	Oecetis	116607	P	*Oecetis*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Limnephilidae		115933	CG	**| Family: Limnephilidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Psychomyiidae		115334		**| Family: Psychomyiidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Psychomyiidae	Psychomyia	115335	CG	*Psychomyia*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Rhyacophilidae		115096		**| Family: Rhyacophilidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Rhyacophilidae	Rhyacophila vofixa group	115097S	P	*Rhyacophila vofixa group*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Uenoidae		568757		**| Family: Uenoidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Uenoidae	Neophylax sp.	116046	SC	*Neophylax sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera			109216	P	**| Order: Coleoptera**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera		Georissus sp.	112754	SC	*Georissus sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Dytiscidae		111963	P	**| Family: Dytiscidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Dytiscidae	Oreodytes sp.	112314	P	*Oreodytes sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Dytiscidae	Sanfilippodytes sp.	728253	P	*Sanfilippodytes sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Dytiscidae	Stictotarsus	568826	P	*Stictotarsus*	2	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae		114093	CG	**| Family: Elmidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia sp.	114126	CG	*Dubiraphia sp.*	0	0	3	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	Heterlimnius sp.	114167	CG	*Heterlimnius sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	Optioservus sp.	114177	SC	*Optioservus sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	Rhizelmis nigra	114199	SC	*Rhizelmis nigra*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera			118831		**| Order: Diptera**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Ceratopogonidae		127076	P	**| Family: Ceratopogonidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Ceratopogonidae	Probezzia	127729	P	*Probezzia*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		127917		**| Family: Chironomidae**	0	0	0	0	0	0	0	0	3	0	0
Arthropoda	Insecta	Diptera	Chironomidae		129228	CG	**| Subfamily: Chironominae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		129229	CG	**| Tribe: Chironomini**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Chironomus	129254	CG	*Chironomus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Cryptochironomus	129368	P	*Cryptochironomus*	0	0	1	0	0	0	0	0	1	0	3
Arthropoda	Insecta	Diptera	Chironomidae	Demicryptochironomus sp.	129421	CG	*Demicryptochironomus sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Dicrotendipes	129428	CG	*Dicrotendipes*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Endochironomus sp.	129470	CG	*Endochironomus sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Microtendipes pedellus group	129535	CF	*Microtendipes pedellus group*	0	0	0	0	1	10	11	19	8	14	13
Arthropoda	Insecta	Diptera	Chironomidae	Pagastiella sp.	129561	CG	*Pagastiella sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Parachironomus	129564	P	*Parachironomus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Paracladopelma sp.	129597	CG	*Paracladopelma sp.*	0	0	0	1	0	2	1	1	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Phaenopsectra	129637	SC	*Phaenopsectra*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Polypedilum sp.	129657	CG	*Polypedilum sp.*	2	0	0	0	2	2	10	3	5	6	1
Arthropoda	Insecta	Diptera	Chironomidae	Robackia demeijerei	129733	CG	*Robackia demeijerei*	0	0	0	1	7	28	11	29	14	11	0
Arthropoda	Insecta	Diptera	Chironomidae	Stictochironomus	129785	CG	*Stictochironomus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		129872	CG	**| Tribe: Tanytarsini**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Cladotanytarsus	129873	CG	*Cladotanytarsus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Micropsectra	129890	CG	*Micropsectra*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Paratanytarsus	129935	CF	*Paratanytarsus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Rheotanytarsus	129952	CF	*Rheotanytarsus*	0	0	0	0	0	10	4	1	0	0	23
Arthropoda	Insecta	Diptera	Chironomidae	Stempellinella sp.	129969	CF	*Stempellinella sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsus	129978	CF	*Tanytarsus*	0	0	0	0	0	0	1	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		128341	CG	**| Subfamily: Diamesinae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		128351	CG	**| Tribe: Diamesini**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Diamesa	128355	CG	*Diamesa*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Pagastia	128401	CG	*Pagastia*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Potthastia longimana group	128408	CG	*Potthastia longimana group*	0	0	0	0	0	0	0	0	0	1	1

Phylum	Class	Order	Family	Taxonomy	ITIS Code	Functional Feeding Group	Site:	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-EXP
							Sample:	2-1	2-2	2-3	2-4	2-5	3-1	3-2	3-3	3-4	3-5	1-1
							CC#:	CC161696	CC161697	CC161698	CC161699	CC161700	CC161701	CC161702	CC161703	CC161704	CC161705	CC161706
							Sieve Size:	400	400	400	400	400	400	400	400	400	400	400
							SubSample %:	45	40	100	50	27	100	100	100	100	100	100
Arthropoda	Insecta	Diptera	Chironomidae		128457		| **Subfamily: Orthocladiinae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Brillia sp.	128477	SH	*Brillia sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Cardiocladius	128511	P	*Cardiocladius*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Eukiefferiella	128689	OM	*Eukiefferiella*	0	0	0	0	0	0	0	1	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Orthocladius complex	128874A	CG	*Orthocladius complex*	0	0	0	0	0	4	2	2	3	1	1
Arthropoda	Insecta	Diptera	Chironomidae	Parakiefferiella	128968	CG	*Parakiefferiella*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Psectrocladius	129018	CG	*Psectrocladius*	0	0	0	0	0	0	0	0	0	0	1
Arthropoda	Insecta	Diptera	Chironomidae	Synorthocladius	129161	CG	*Synorthocladius*	0	0	0	0	0	0	0	0	0	1	0
Arthropoda	Insecta	Diptera	Chironomidae	Tvetenia	129197	CG	*Tvetenia*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		128437	CG	| **Subfamily: Prodiamesinae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Monodiamesa sp.	128440	CG	*Monodiamesa sp.*	0	0	0	0	0	1	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		127994	P	| **Subfamily: Tanypodinae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		128078	P	| **Tribe: Pentaneurini**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Thienemannimyia group	127917N	P	*Thienemannimyia group*	0	0	0	0	0	0	0	0	1	1	0
Arthropoda	Insecta	Diptera	Chironomidae		128270		| **Tribe: Procladiini**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Procladius	128277	P	*Procladius*	0	0	1	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Empididae		135830	P	| **Family: Empididae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Empididae	Hemerodromia sp.	136327	P	*Hemerodromia sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Psychodidae		125351		| **Family: Psychodidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Psychodidae	Pericoma/Telmatoscopus sp.	125514	CG	*Pericoma/Telmatoscopus sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Simuliidae		126640	CF	| **Family: Simuliidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Simuliidae	Simulium	126774	CF	*Simulium*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Tabanidae		130934		| **Family: Tabanidae**	0	0	0	0	0	0	0	0	0	0	1
Arthropoda	Insecta	Diptera	Tipulidae		118840	SH	| **Family: Tipulidae**	0	0	0	0	0	0	0	0	0	1	0
Arthropoda	Insecta	Diptera	Tipulidae	Antocha monticola	119660	CG	*Antocha monticola*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Tipulidae	Tipula	119037	OM	*Tipula*	0	0	0	0	0	2	1	0	3	0	0
Arthropoda	Insecta	Hemiptera			103359		| **Order: Hemiptera**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Hemiptera	Corixidae		103364	P	| **Family: Corixidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Hemiptera	Corixidae	Hesperocorixa sp.	103444	P	*Hesperocorixa sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Hemiptera	Corixidae	Sigara	103369	P	*Sigara*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Odonata			101593		| **Order: Odonata**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Odonata	Gomphidae		101664		| **Family: Gomphidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda					83677		**Subphylum: Crustacea**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca				89787		| **Class: Malacostraca**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Amphipoda			93294		| **Order: Amphipoda**	6	8	14	10	13	1	0	0	0	0	0
Arthropoda	Malacostraca	Amphipoda	Crangonyctidae		95080		| **Family: Crangonyctidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Amphipoda	Crangonyctidae	Crangonyx	95081	CG	*Crangonyx*	3	0	24	0	4	0	0	0	0	0	0
Arthropoda	Malacostraca	Amphipoda	Hyalellidae		94022		| **Family: Hyalellidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Amphipoda	Hyalellidae	Hyalella	94025	CG	*Hyalella*	25	7	42	7	14	0	1	0	0	0	0
Arthropoda	Malacostraca	Decapoda			95599		| **Order: Decapoda**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Decapoda	Cambaridae		97336		| **Family: Cambaridae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Isopoda			92120		| **Order: Isopoda**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Isopoda	Asellidae		92657	CG	| **Family: Asellidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Isopoda	Asellidae	Caecidotea	92686	CG	*Caecidotea*	196	216	454	259	140	0	3	0	0	1	0
Arthropoda					82697		**Subphylum: Chelicerata**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida				82708	P	| **Class: Arachnida**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes			82769	P	| **Order: Trombidiformes**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Hygrobatidae		83281		| **Family: Hygrobatidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Hygrobatidae	Atractides	83282	P	*Atractides*	0	0	0	0	0	0	0	0	0	1	0
Arthropoda	Arachnida	Trombidiformes	Hygrobatidae	Hygrobates	83297	P	*Hygrobates*	0	0	0	0	0	6	26	10	1	2	0
Arthropoda	Arachnida	Trombidiformes	Lebertiidae		83033	P	| **Family: Lebertiidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Lebertiidae	Lebertia	83034	P	*Lebertia*	13	1	0	0	0	2	2	3	1	0	3

Phylum	Class	Order	Family	Taxonomy	ITIS Code	Functional Feeding Group		Site:	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-EXP
								Sample:	2-1	2-2	2-3	2-4	2-5	3-1	3-2	3-3	3-4	3-5	1-1
								CC#:	CC161696	CC161697	CC161698	CC161699	CC161700	CC161701	CC161702	CC161703	CC161704	CC161705	CC161706
								Sieve Size:	400	400	400	400	400	400	400	400	400	400	400
								SubSample %:	45	40	100	50	27	100	100	100	100	100	100
Arthropoda	Arachnida	Trombidiformes	Limnesiidae		83050	P		**| Family: Limnesiidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Limnesiidae	Limnesia sp.	83051	P		*Limnesia sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Mideopsidae		83476	P		**| Family: Mideopsidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Mideopsidae	Mideopsis sp.	83479	P		*Mideopsis sp.*	1	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Sperchontidae		895710			**| Family: Sperchontidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Sperchontidae	Sperchon	83006	P		*Sperchon*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Torrenticolidae		83249	P		**| Family: Torrenticolidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Torrenticolidae	Testudacarus sp.	83250	P		*Testudacarus sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Torrenticolidae	Torrenticola	83254	P		*Torrenticola*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Acari			82754			**| Order: Acari**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Oribatida			83538	P		**| Order: Oribatida**	0	0	0	0	0	0	0	0	0	0	0
Mollusca					69458			**Phylum: Mollusca**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia				79118			**| Class: Bivalvia**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia	Veneroida			80384			**| Order: Veneroida**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia	Veneroida	Pisidiidae		81388	CF		**| Family: Pisidiidae**	0	1	12	0	11	6	4	0	5	2	3
Mollusca	Bivalvia	Veneroida	Unionoida		79912			**| Family: Unionoida**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia	Veneroida	Unionidae		79913	CF		**| Family: Unionidae**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia	Veneroida	Unionidae	Anodonta sp.	79930	CF		*Anodonta sp.*	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia	Veneroida	Pisidiidae	Pisidium	81400	CF		*Pisidium*	1	1	17	0	24	3	4	1	3	4	14
Mollusca	Bivalvia	Veneroida	Pisidiidae	Sphaerium sp.	81391	CG		*Sphaerium sp.*	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda				69459			**| Class: Gastropoda**	8	1	2	1	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora			76437			**| Order: Basommatophora**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora	Ancylidae		76568			**| Family: Ancylidae**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora	Ancylidae	Ferrissia	76569	SC		*Ferrissia*	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora	Lymnaeidae		76483	SC		**| Family: Lymnaeidae**	1	0	0	0	0	0	0	0	0	0	1
Mollusca	Gastropoda	Basommatophora	Lymnaeidae	Radix auricularia	76526	SC		*Radix auricularia*	0	0	0	0	0	0	0	0	0	0	1
Mollusca	Gastropoda	Basommatophora	Physidae		76676			**| Family: Physidae**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora	Physidae	Physa	76677	SC		*Physa*	1	1	29	1	7	1	4	0	0	0	0
Mollusca	Gastropoda	Basommatophora	Planorbidae		76591	SC		**| Family: Planorbidae**	44	31	56	43	59	1	1	0	0	1	4
Mollusca	Gastropoda	Heterostropha			566849			**| Order: Heterostropha**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Heterostropha	Valvatidae		70345			**| Family: Valvatidae**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Heterostropha	Valvatidae	Valvata	70346	SC		*Valvata*	1	0	4	3	4	0	0	0	0	0	0
Mollusca	Gastropoda	Heterostropha	Valvatidae	Valvata tricarinata	70354	SC		*Valvata tricarinata*	26	5	10	12	5	0	0	0	0	0	0
Mollusca	Gastropoda	Hypsogastropoda			566851			**| Order: Hypsogastropoda**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Hypsogastropoda	Hydrobiidae		70493	SC		**| Family: Hydrobiidae**	0	0	0	0	0	12	25	7	9	10	0
Annelida					64357			**Phylum: Annelida**	0	0	0	0	0	0	0	0	0	0	0
Annelida					568832			**Subphylum: Clitellata**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea				914192			**| Class: Hirudinea**	0	3	2	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Arhynchobdellida			568835			**| Order: Arhynchobdellida**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Arhynchobdellida	Erpobdellidae		69438	P		**| Family: Erpobdellidae**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Arhynchobdellida	Erpobdellidae	Nephelopsis obscura	69456	P		*Nephelopsis obscura*	0	2	0	0	3	0	0	0	0	0	0
Annelida	Hirudinea	Rhynchobdellida			69295			**| Order: Rhynchobdellida**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Rhynchobdellida	Glossiphoniidae		69357			**| Family: Glossiphoniidae**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Rhynchobdellida	Glossiphoniidae	Helobdella stagnalis	69398	PA		*Helobdella stagnalis*	0	0	0	0	1	0	0	0	0	0	0
Annelida	Hirudinea	Rhynchobdellida	Glossiphoniidae	Theromyzon	69375	P		*Theromyzon*	0	3	21	1	1	0	0	0	0	0	0
Annelida	Oligochaeta				68422	CG		**| Class: Oligochaeta**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta	Lumbriculida			68439			**| Order: Lumbriculida**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta	Lumbriculida	Lumbriculidae		68440	CG		**| Family: Lumbriculidae**	2	18	13	1	10	9	8	4	12	10	20
Annelida	Oligochaeta	Lumbriculida	Lumbriculidae	Rhynchelmis sp.	68463	CG		*Rhynchelmis sp.*	0	0	0	0	0	0	0	0	0	0	0

Phylum	Class	Order	Family	Taxonomy	ITIS Code	Functional Feeding Group		Site:	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-EXP
								Sample:	2-1	2-2	2-3	2-4	2-5	3-1	3-2	3-3	3-4	3-5	1-1
								CC#:	CC161696	CC161697	CC161698	CC161699	CC161700	CC161701	CC161702	CC161703	CC161704	CC161705	CC161706
								Sieve Size:	400	400	400	400	400	400	400	400	400	400	400
								SubSample %:	45	40	100	50	27	100	100	100	100	100	100
Annelida	Oligochaeta	Tubificida			68498		**| Order: Tubificida**		0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta	Tubificida	Enchytraeidae		68510	CG	**| Family: Enchytraeidae**		0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta	Tubificida	Enchytraeidae	Enchytraeus	68531	CG	*Enchytraeus*		0	0	0	0	0	0	0	0	0	0	20
Annelida	Oligochaeta	Tubificida	Naididae		68854	CG	**| Family: Naididae**		0	18	40	0	25	2	0	0	0	8	20
Annelida	Oligochaeta	Tubificida	Naididae	Nais	68946	CG	*Nais*		0	0	0	0	0	0	0	0	0	0	0
Cnidaria					48738		**Phylum: Cnidaria**		0	0	0	0	0	0	0	0	0	0	0
Cnidaria	Hydrozoa				48739		**| Class: Hydrozoa**		0	0	0	0	0	0	0	0	0	0	0
Cnidaria	Hydrozoa	Anthoathecatae			718925		**| Order: Anthoathecatae**		0	0	0	0	0	0	0	0	0	0	0
Cnidaria	Hydrozoa	Anthoathecatae	Hydridae		50844		**| Family: Hydridae**		0	0	0	0	0	0	0	0	0	0	0
Cnidaria	Hydrozoa	Anthoathecatae	Hydridae	Hydra	50845	P	*Hydra*		0	0	1	0	0	0	0	0	0	1	0
								Totals:	**333**	**320**	**747**	**343**	**334**	**102**	**124**	**81**	**69**	**79**	**131**
							Taxa present but not included:												
					0000000		*Terrestrials*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda					82696		**Phylum: Arthropoda**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Entognatha				676821		**| Class: Entognatha**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Entognatha	Collembola			99237	CG	**| Order: Collembola**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda					83677		**Subphylum: Crustacea**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Ostracoda				84195	CG	**| Class: Ostracoda**		0	0	0	1	0	0	0	0	1	0	1
Arthropoda	Branchiopoda				83687		**| Class: Branchiopoda**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Branchiopoda	Cladocera			83832		**| Order: Cladocera**		1	0	0	0	0	0	1	0	1	0	0
Arthropoda	Maxillipoda				610004		**| Class: Maxillipoda**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Copepoda				85257	CG	**| Class: Copepoda**		0	0	1	1	40	1	0	0	1	0	1
Nemata					563956	SH	**Phylum: Nemata**		0	1	0	0	0	0	1	0	1	0	0
Platyhelminthes					53963		**Phylum: Platyhelminthes**		0	0	0	0	0	0	0	0	0	0	0
Platyhelminthes	Turbellaria				53964	P	**| Class: Turbellaria**		0	0	1	0	10	0	1	0	1	0	0
								Totals:	**1**	**1**	**2**	**2**	**50**	**1**	**3**	**0**	**5**	**0**	**2**

Project: Teck Trail Operations - LCR AREMP (15-1438)
Ecoscape, Kyle Hawes
Taxonomist: Sue Salter
suesalter@cordilleraconsulting.ca
250-494-7553

							Site:	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP
							Sample:	1-2	1-3	1-4	1-5	2-1	2-2	2-3	2-4	2-5	3-1	3-2	
							CC#:	CC161707	CC161708	CC161709	CC161710	CC161711	CC161712	CC161713	CC161714	CC161715	CC161716	CC161717	
						Functional Feeding	**Sieve Size:**	400	400	400	400	400	400	400	400	400	400	400	
Phylum	**Class**	**Order**	**Family**	**Taxonomy**	**ITIS Code**	**Group**	**SubSample %:**	100	100	100	100	100	100	100	100	100	100	100	
Arthropoda					82696		**Phylum: Arthropoda**	0	0	0	0	0	0	0	0	0	0	0	
Arthropoda					563886		**Subphylum: Hexapoda**	0	0	0	0	0	0	0	0	0	0	0	
Arthropoda	Insecta				99208		**| Class: Insecta**	0	0	0	0	0	0	0	0	0	0	0	
Arthropoda	Insecta	Ephemeroptera			100502	CG	**| Order: Ephemeroptera**	0	0	0	0	0	0	0	0	0	0	0	
Arthropoda	Insecta	Ephemeroptera	Ameletidae		568544		**| Family: Ameletidae**	0	0	0	0	0	0	0	0	0	0	0	
Arthropoda	Insecta	Ephemeroptera	Ameletidae	Ameletus	100996	CG	*Ameletus*	0	0	0	0	0	0	0	0	0	0	0	
Arthropoda	Insecta	Ephemeroptera	Baetidae		100755	CG	**| Family: Baetidae**	0	0	0	0	0	0	0	0	0	0	0	
Arthropoda	Insecta	Ephemeroptera	Baetidae	Acentrella sp.	100801	CG	*Acentrella sp.*	0	0	0	0	0	0	0	0	0	0	0	
Arthropoda	Insecta	Ephemeroptera	Baetidae	Acerpenna sp.	568546	SH	*Acerpenna sp.*	0	0	0	0	0	0	0	0	0	0	0	
Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis	100800	CG	*Baetis*	0	0	0	0	0	0	0	0	0	0	0	
Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis bicaudatus	100823	CG	*Baetis bicaudatus*	0	0	0	1	0	0	0	0	0	0	0	
Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis tricaudatus group	100800A	CG	*Baetis tricaudatus group*	0	0	0	0	0	0	0	0	0	0	0	
Arthropoda	Insecta	Ephemeroptera	Ephemerellidae		101232		**| Family: Ephemerellidae**	2	0	12	14	0	0	0	0	0	0	0	
Arthropoda	Insecta	Ephemeroptera	Ephemerellidae	Drunella grandis group	101365A	CG	*Drunella grandis group*	0	0	3	0	0	0	0	0	0	0	0	
Arthropoda	Insecta	Ephemeroptera	Ephemerellidae	Drunella sp.	101365	CG	*Drunella sp.*	0	0	0	0	0	0	0	0	0	0	0	
Arthropoda	Insecta	Ephemeroptera	Ephemerellidae	Ephemerella	101233	CG	*Ephemerella*	0	0	0	2	0	0	0	0	0	0	0	
Arthropoda	Insecta	Ephemeroptera	Heptageniidae		100504		**| Family: Heptageniidae**	0	0	0	0	0	0	0	0	0	0	0	
Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Epeorus	100626	SC	*Epeorus*	0	0	0	0	0	0	0	0	0	0	0	
Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Heptagenia	100602	SC	*Heptagenia*	0	0	0	0	0	0	0	0	0	0	0	
Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Rhithrogena	100572	SC	*Rhithrogena*	0	0	0	0	0	0	0	0	0	0	0	
Arthropoda	Insecta	Ephemeroptera	Leptophlebiidae		101095	CG	**| Family: Leptophlebiidae**	0	0	0	0	0	0	0	0	0	0	0	
Arthropoda	Insecta	Plecoptera			102467		**| Order: Plecoptera**	0	0	0	0	0	0	0	0	0	0	0	
Arthropoda	Insecta	Plecoptera	Chloroperlidae		103202	P	**| Family: Chloroperlidae**	0	0	0	0	0	0	0	0	0	0	0	
Arthropoda	Insecta	Plecoptera	Nemouridae		102517	SH	**| Family: Nemouridae**	0	0	0	0	0	0	0	0	0	0	0	
Arthropoda	Insecta	Plecoptera	Nemouridae	Zapada	102591	SH	*Zapada*	0	0	0	0	0	0	0	0	0	0	0	
Arthropoda	Insecta	Plecoptera	Nemouridae	Zapada cinctipes	102594	SH	*Zapada cinctipes*	0	0	0	0	0	0	0	0	0	0	0	
Arthropoda	Insecta	Plecoptera	Nemouridae	Zapada columbiana	102596	SH	*Zapada columbiana*	0	0	0	0	0	0	0	0	0	0	0	
Arthropoda	Insecta	Plecoptera	Perlodidae		102994	P	**| Family: Perlodidae**	0	0	0	0	0	0	0	0	0	0	0	
Arthropoda	Insecta	Plecoptera	Perlodidae	Megarcys sp.	103110	P	*Megarcys sp.*	0	0	0	0	0	0	0	0	0	0	0	
Arthropoda	Insecta	Plecoptera	Perlodidae	Skwala	103102	P	*Skwala*	0	0	0	0	0	0	0	0	0	0	0	
Arthropoda	Insecta	Plecoptera	Pteronarcyidae		102470		**| Family: Pteronarcyidae**	0	0	0	0	0	0	0	0	0	0	0	
Arthropoda	Insecta	Plecoptera	Taeniopterygidae		102788		**| Family: Taeniopterygidae**	0	0	0	0	0	0	0	0	0	0	0	
Arthropoda	Insecta	Trichoptera			115095		**| Order: Trichoptera**	0	0	0	0	0	0	0	0	0	0	0	
Arthropoda	Insecta	Trichoptera	Apataniidae		598182		**| Family: Apataniidae**	0	0	0	0	0	0	0	0	0	0	0	
Arthropoda	Insecta	Trichoptera	Apataniidae	Apatania	115935	SC	*Apatania*	0	1	1	0	0	0	0	0	0	0	0	
Arthropoda	Insecta	Trichoptera	Brachycentridae		116905	CF	**| Family: Brachycentridae**	0	0	0	0	0	0	0	0	0	0	0	
Arthropoda	Insecta	Trichoptera	Brachycentridae	Brachycentrus occidentalis	116918	OM	*Brachycentrus occidentalis*	0	0	0	0	0	0	0	0	0	0	1	
Arthropoda	Insecta	Trichoptera	Glossosomatidae		117120		**| Family: Glossosomatidae**	0	0	0	0	0	0	0	0	0	0	0	
Arthropoda	Insecta	Trichoptera	Glossosomatidae	Glossosoma	117159	SC	*Glossosoma*	0	0	0	0	0	0	0	0	0	0	0	
Arthropoda	Insecta	Trichoptera	Glossosomatidae	Protoptila	115221	SC	*Protoptila*	0	0	0	0	0	0	0	0	0	0	0	
Arthropoda	Insecta	Trichoptera	Hydropsychidae		115398	CF	**| Family: Hydropsychidae**	0	0	0	0	0	0	0	0	0	0	0	
Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche	115408	CF	*Cheumatopsyche*	0	0	1	1	0	0	0	0	0	0	0	
Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche	115453	CF	*Hydropsyche*	0	0	1	1	0	1	0	0	0	0	0	
Arthropoda	Insecta	Trichoptera	Hydroptilidae		115629		**| Family: Hydroptilidae**	0	0	0	0	0	0	0	0	0	0	0	
Arthropoda	Insecta	Trichoptera	Hydroptilidae	Hydroptila	115641	PH	*Hydroptila*	0	0	0	0	0	0	0	0	0	0	0	

							Site:	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP
							Sample:	1-2	1-3	1-4	1-5	2-1	2-2	2-3	2-4	2-5	3-1	3-2
							CC#:	CC161707	CC161708	CC161709	CC161710	CC161711	CC161712	CC161713	CC161714	CC161715	CC161716	CC161717
						Functional Feeding	Sieve Size:	400	400	400	400	400	400	400	400	400	400	400
Phylum	**Class**	**Order**	**Family**	**Taxonomy**	**ITIS Code**	**Group**	**SubSample %:**	100	100	100	100	100	100	100	100	100	100	100
Arthropoda	Insecta	Trichoptera	Lepidostomatidae		116793		**| Family: Lepidostomatidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Lepidostomatidae	Lepidostoma	116794	SH	*Lepidostoma*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Leptoceridae		116547		**| Family: Leptoceridae**	0	0	0	0	0	0	0	1	0	0	0
Arthropoda	Insecta	Trichoptera	Leptoceridae	Ceraclea	116684	OM	*Ceraclea*	1	0	0	0	0	0	2	0	0	0	0
Arthropoda	Insecta	Trichoptera	Leptoceridae	Mystacides	116598	OM	*Mystacides*	1	0	1	4	3	22	36	25	29	24	15
Arthropoda	Insecta	Trichoptera	Leptoceridae	Nectopsyche sp.	116651	OM	*Nectopsyche sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Leptoceridae	Oecetis	116607	P	*Oecetis*	0	0	0	0	0	0	0	0	0	3	1
Arthropoda	Insecta	Trichoptera	Limnephilidae		115933	CG	**| Family: Limnephilidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Psychomyiidae		115334		**| Family: Psychomyiidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Psychomyiidae	Psychomyia	115335	CG	*Psychomyia*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Rhyacophilidae		115096		**| Family: Rhyacophilidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Rhyacophilidae	Rhyacophila vofixa group	115097S	P	*Rhyacophila vofixa group*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Uenoidae		568757		**| Family: Uenoidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Uenoidae	Neophylax sp.	116046	SC	*Neophylax sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera			109216	P	**| Order: Coleoptera**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera		Georissus sp.	112754	SC	*Georissus sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Dytiscidae		111963	P	**| Family: Dytiscidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Dytiscidae	Oreodytes sp.	112314	P	*Oreodytes sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Dytiscidae	Sanfilippodytes sp.	728253	P	*Sanfilippodytes sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Dytiscidae	Stictotarsus	568826	P	*Stictotarsus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae		114093	CG	**| Family: Elmidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia sp.	114126	CG	*Dubiraphia sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	Heterlimnius sp.	114167	CG	*Heterlimnius sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	Optioservus sp.	114177	SC	*Optioservus sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	Rhizelmis nigra	114199	SC	*Rhizelmis nigra*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera			118831		**| Order: Diptera**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Ceratopogonidae		127076	P	**| Family: Ceratopogonidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Ceratopogonidae	Probezzia	127729	P	*Probezzia*	0	0	0	0	0	4	0	4	1	0	1
Arthropoda	Insecta	Diptera	Chironomidae		127917		**| Family: Chironomidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		129228	CG	**| Subfamily: Chironominae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		129229	CG	**| Tribe: Chironomini**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Chironomus	129254	CG	*Chironomus*	0	0	0	0	0	0	0	0	0	0	1
Arthropoda	Insecta	Diptera	Chironomidae	Cryptochironomus	129368	P	*Cryptochironomus*	0	0	0	0	1	0	2	1	0	1	0
Arthropoda	Insecta	Diptera	Chironomidae	Demicryptochironomus sp.	129421	CG	*Demicryptochironomus sp.*	0	0	0	0	0	1	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Dicrotendipes	129428	CG	*Dicrotendipes*	0	1	0	0	0	4	2	6	3	3	1
Arthropoda	Insecta	Diptera	Chironomidae	Endochironomus sp.	129470	CG	*Endochironomus sp.*	0	0	0	0	1	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Microtendipes pedellus group	129535	CF	*Microtendipes pedellus group*	1	4	8	4	0	0	0	2	1	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Pagastiella sp.	129561	CG	*Pagastiella sp.*	0	0	0	0	1	0	1	0	1	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Parachironomus	129564	P	*Parachironomus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Paracladopelma sp.	129597	CG	*Paracladopelma sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Phaenopsectra	129637	SC	*Phaenopsectra*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Polypedilum sp.	129657	CG	*Polypedilum sp.*	0	0	0	0	4	0	5	2	4	2	0
Arthropoda	Insecta	Diptera	Chironomidae	Robackia demeijerei	129733	CG	*Robackia demeijerei*	1	1	2	1	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Stictochironomus	129785	CG	*Stictochironomus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		129872	CG	**| Tribe: Tanytarsini**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Cladotanytarsus	129873	CG	*Cladotanytarsus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Micropsectra	129890	CG	*Micropsectra*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Paratanytarsus	129935	CF	*Paratanytarsus*	0	0	0	0	0	0	3	1	1	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Rheotanytarsus	129952	CF	*Rheotanytarsus*	0	1	1	0	0	2	1	3	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Stempellinella sp.	129969	CF	*Stempellinella sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsus	129978	CF	*Tanytarsus*	2	0	1	1	0	4	0	0	0	0	4
Arthropoda	Insecta	Diptera	Chironomidae		128341	CG	**| Subfamily: Diamesinae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		128351	CG	**| Tribe: Diamesini**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Diamesa	128355	CG	*Diamesa*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Pagastia	128401	CG	*Pagastia*	1	0	1	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Potthastia longimana group	128408	CG	*Potthastia longimana group*	0	0	0	1	0	2	0	0	0	0	0

Phylum	Class	Order	Family	Taxonomy	ITIS Code	Functional Feeding Group	Site:	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP
							Sample:	1-2	1-3	1-4	1-5	2-1	2-2	2-3	2-4	2-5	3-1	3-2
							CC#:	CC161707	CC161708	CC161709	CC161710	CC161711	CC161712	CC161713	CC161714	CC161715	CC161716	CC161717
							Sieve Size:	400	400	400	400	400	400	400	400	400	400	400
							SubSample %:	100	100	100	100	100	100	100	100	100	100	100
Arthropoda	Insecta	Diptera	Chironomidae		128457		| **Subfamily: Orthocladiinae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Brillia sp.	128477	SH	*Brillia sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Cardiocladius	128511	P	*Cardiocladius*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Eukiefferiella	128689	OM	*Eukiefferiella*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Orthocladius complex	128874A	CG	*Orthocladius complex*	1	0	1	0	0	0	1	2	1	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Parakiefferiella	128968	CG	*Parakiefferiella*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Psectrocladius	129018	CG	*Psectrocladius*	0	0	0	0	0	2	1	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Synorthocladius	129161	CG	*Synorthocladius*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Tvetenia	129197	CG	*Tvetenia*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		128437	CG	| **Subfamily: Prodiamesinae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Monodiamesa sp.	128440	CG	*Monodiamesa sp.*	0	0	0	0	0	0	0	0	1	0	0
Arthropoda	Insecta	Diptera	Chironomidae		127994	P	| **Subfamily: Tanypodinae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		128078	P	| **Tribe: Pentaneurini**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Thienemannimyia group	127917N	P	*Thienemannimyia group*	0	0	1	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		128270		| **Tribe: Procladiini**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Procladius	128277	P	*Procladius*	0	0	0	0	5	33	40	48	33	0	2
Arthropoda	Insecta	Diptera	Empididae		135830	P	| **Family: Empididae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Empididae	Hemerodromia sp.	136327	P	*Hemerodromia sp.*	2	0	0	3	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Psychodidae		125351		| **Family: Psychodidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Psychodidae	Pericoma/Telmatoscopus sp.	125514	CG	*Pericoma/Telmatoscopus sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Simuliidae		126640	CF	| **Family: Simuliidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Simuliidae	Simulium	126774	CF	*Simulium*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Tabanidae		130934		| **Family: Tabanidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Tipulidae		118840	SH	| **Family: Tipulidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Tipulidae	Antocha monticola	119660	CG	*Antocha monticola*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Tipulidae	Tipula	119037	OM	*Tipula*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Hemiptera			103359		| **Order: Hemiptera**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Hemiptera	Corixidae		103364	P	| **Family: Corixidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Hemiptera	Corixidae	Hesperocorixa sp.	103444	P	*Hesperocorixa sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Hemiptera	Corixidae	Sigara	103369	P	*Sigara*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Odonata			101593		| **Order: Odonata**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Odonata	Gomphidae		101664		| **Family: Gomphidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda					83677		**Subphylum: Crustacea**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca				89787		| **Class: Malacostraca**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Amphipoda			93294		| **Order: Amphipoda**	0	0	0	0	0	3	6	0	9	0	0
Arthropoda	Malacostraca	Amphipoda	Crangonyctidae		95080		| **Family: Crangonyctidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Amphipoda	Crangonyctidae	Crangonyx	95081	CG	*Crangonyx*	0	0	0	0	0	11	10	0	2	0	0
Arthropoda	Malacostraca	Amphipoda	Hyalellidae		94022		| **Family: Hyalellidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Amphipoda	Hyalellidae	Hyalella	94025	CG	*Hyalella*	0	0	0	0	1	0	2	0	5	0	0
Arthropoda	Malacostraca	Decapoda			95599		| **Order: Decapoda**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Decapoda	Cambaridae		97336		| **Family: Cambaridae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Isopoda			92120		| **Order: Isopoda**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Isopoda	Asellidae		92657	CG	| **Family: Asellidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Isopoda	Asellidae	Caecidotea	92686	CG	*Caecidotea*	0	0	0	0	0	12	4	1	9	0	0
Arthropoda					82697		**Subphylum: Chelicerata**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida				82708	P	| **Class: Arachnida**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes			82769	P	| **Order: Trombidiformes**	0	0	0	0	0	0	1	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Hygrobatidae		83281		| **Family: Hygrobatidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Hygrobatidae	Atractides	83282	P	*Atractides*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Hygrobatidae	Hygrobates	83297	P	*Hygrobates*	5	0	0	1	0	0	1	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Lebertiidae		83033	P	| **Family: Lebertiidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Lebertiidae	Lebertia	83034	P	*Lebertia*	6	5	1	1	0	0	2	2	1	0	0

							Site:	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP
							Sample:	1-2	1-3	1-4	1-5	2-1	2-2	2-3	2-4	2-5	3-1	3-2
							CC#:	CC161707	CC161708	CC161709	CC161710	CC161711	CC161712	CC161713	CC161714	CC161715	CC161716	CC161717
						Functional Feeding	Sieve Size:	400	400	400	400	400	400	400	400	400	400	400
Phylum	**Class**	**Order**	**Family**	**Taxonomy**	**ITIS Code**	**Group**	**SubSample %:**	100	100	100	100	100	100	100	100	100	100	100
Arthropoda	Arachnida	Trombidiformes	Limnesiidae		83050	P	**| Family: Limnesiidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Limnesiidae	Limnesia sp.	83051	P	*Limnesia sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Mideopsidae		83476	P	**| Family: Mideopsidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Mideopsidae	Mideopsis sp.	83479	P	*Mideopsis sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Sperchontidae		895710		**| Family: Sperchontidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Sperchontidae	Sperchon	83006	P	*Sperchon*	0	0	0	0	0	1	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Torrenticolidae		83249	P	**| Family: Torrenticolidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Torrenticolidae	Testudacarus sp.	83250	P	*Testudacarus sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Torrenticolidae	Torrenticola	83254	P	*Torrenticola*	0	1	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Acari			82754		**| Order: Acari**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Oribatida			83538	P	**| Order: Oribatida**	0	0	0	0	0	0	0	0	0	0	0
Mollusca					69458		**Phylum: Mollusca**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia				79118		**| Class: Bivalvia**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia	Veneroida			80384		**| Order: Veneroida**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia	Veneroida	Pisidiidae		81388	CF	**| Family: Pisidiidae**	0	0	0	7	1	7	14	66	29	0	0
Mollusca	Bivalvia	Veneroida	Unionoida		79912		**| Family: Unionoida**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia	Veneroida	Unionidae		79913	CF	**| Family: Unionidae**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia	Veneroida	Unionidae	Anodonta sp.	79930	CF	*Anodonta sp.*	0	0	0	0	0	1	0	0	1	0	0
Mollusca	Bivalvia	Veneroida	Pisidiidae	Pisidium	81400	CF	*Pisidium*	6	14	11	11	20	190	17	31	114	2	0
Mollusca	Bivalvia	Veneroida	Pisidiidae	Sphaerium sp.	81391	CG	*Sphaerium sp.*	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda				69459		**| Class: Gastropoda**	0	0	0	0	0	0	0	6	0	0	0
Mollusca	Gastropoda	Basommatophora			76437		**| Order: Basommatophora**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora	Ancylidae		76568		**| Family: Ancylidae**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora	Ancylidae	Ferrissia	76569	SC	*Ferrissia*	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora	Lymnaeidae		76483	SC	**| Family: Lymnaeidae**	1	0	1	1	4	17	10	6	6	3	5
Mollusca	Gastropoda	Basommatophora	Lymnaeidae	Radix auricularia	76526	SC	*Radix auricularia*	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora	Physidae		76676		**| Family: Physidae**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora	Physidae	Physa	76677	SC	*Physa*	0	1	2	3	0	2	3	1	6	0	0
Mollusca	Gastropoda	Basommatophora	Planorbidae		76591	SC	**| Family: Planorbidae**	0	0	2	0	1	10	4	4	5	0	1
Mollusca	Gastropoda	Heterostropha			566849		**| Order: Heterostropha**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Heterostropha	Valvatidae		70345		**| Family: Valvatidae**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Heterostropha	Valvatidae	Valvata	70346	SC	*Valvata*	0	0	0	0	10	11	19	16	10	0	0
Mollusca	Gastropoda	Heterostropha	Valvatidae	Valvata tricarinata	70354	SC	*Valvata tricarinata*	0	0	1	0	2	16	16	5	11	2	2
Mollusca	Gastropoda	Hypsogastropoda			566851		**| Order: Hypsogastropoda**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Hypsogastropoda	Hydrobiidae		70493	SC	**| Family: Hydrobiidae**	0	0	0	0	0	1	2	0	2	0	0
Annelida					64357		**Phylum: Annelida**	0	0	0	0	0	0	0	0	0	0	0
Annelida					568832		**Subphylum: Clitellata**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea				914192		**| Class: Hirudinea**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Arhynchobdellida			568835		**| Order: Arhynchobdellida**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Arhynchobdellida	Erpobdellidae		69438	P	**| Family: Erpobdellidae**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Arhynchobdellida	Erpobdellidae	Nephelopsis obscura	69456	P	*Nephelopsis obscura*	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Rhynchobdellida			69295		**| Order: Rhynchobdellida**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Rhynchobdellida	Glossiphoniidae		69357		**| Family: Glossiphoniidae**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Rhynchobdellida	Glossiphoniidae	Helobdella stagnalis	69398	PA	*Helobdella stagnalis*	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Rhynchobdellida	Glossiphoniidae	Theromyzon	69375	P	*Theromyzon*	0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta				68422	CG	**| Class: Oligochaeta**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta	Lumbriculida			68439		**| Order: Lumbriculida**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta	Lumbriculida	Lumbriculidae		68440	CG	**| Family: Lumbriculidae**	13	10	8	5	57	93	9	11	1	5	0
Annelida	Oligochaeta	Lumbriculida	Lumbriculidae	Rhynchelmis sp.	68463	CG	*Rhynchelmis sp.*	0	0	0	0	0	0	0	0	0	0	0

Phylum	Class	Order	Family	Taxonomy	ITIS Code	Functional Feeding Group		Site:	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP
								Sample:	1-2	1-3	1-4	1-5	2-1	2-2	2-3	2-4	2-5	3-1	3-2
								CC#:	CC161707	CC161708	CC161709	CC161710	CC161711	CC161712	CC161713	CC161714	CC161715	CC161716	CC161717
								Sieve Size:	400	400	400	400	400	400	400	400	400	400	400
								SubSample %:	100	100	100	100	100	100	100	100	100	100	100
Annelida	Oligochaeta	Tubificida			68498		**| Order: Tubificida**		0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta	Tubificida	Enchytraeidae		68510	CG	**| Family: Enchytraeidae**		0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta	Tubificida	Enchytraeidae	Enchytraeus	68531	CG	*Enchytraeus*		0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta	Tubificida	Naididae		68854	CG	**| Family: Naididae**		0	10	7	15	0	0	0	10	8	0	0
Annelida	Oligochaeta	Tubificida	Naididae	Nais	68946	CG	*Nais*		0	0	0	0	0	0	0	0	0	0	0
Cnidaria					48738		**Phylum: Cnidaria**		0	0	0	0	0	0	0	0	0	0	0
Cnidaria	Hydrozoa				48739		**| Class: Hydrozoa**		0	0	0	0	0	0	0	0	0	0	0
Cnidaria	Hydrozoa	Anthoathecatae			718925		**| Order: Anthoathecatae**		0	0	0	0	0	0	0	0	0	0	0
Cnidaria	Hydrozoa	Anthoathecatae	Hydridae		50844		**| Family: Hydridae**		0	0	0	0	0	0	0	0	0	0	0
Cnidaria	Hydrozoa	Anthoathecatae	Hydridae	Hydra	50845	P	*Hydra*		0	0	0	0	0	0	0	0	0	0	0
								Totals:	**43**	**49**	**67**	**77**	**111**	**450**	**214**	**254**	**294**	**45**	**34**
							Taxa present but not included:												
					0000000		*Terrestrials*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda					82696		**Phylum: Arthropoda**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Entognatha				676821		**| Class: Entognatha**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Entognatha	Collembola			99237	CG	**| Order: Collembola**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda					83677		**Subphylum: Crustacea**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Ostracoda				84195	CG	**| Class: Ostracoda**		0	0	0	1	0	1	0	0	1	0	0
Arthropoda	Branchiopoda				83687		**| Class: Branchiopoda**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Branchiopoda	Cladocera			83832		**| Order: Cladocera**		0	0	0	1	0	1	1	10	1	0	0
Arthropoda	Maxillipoda				610004		**| Class: Maxillipoda**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Copepoda				85257	CG	**| Class: Copepoda**		0	0	1	1	1	0	1	30	1	0	0
Nemata					563956	SH	**Phylum: Nemata**		1	0	0	1	0	0	0	10	0	0	0
Platyhelminthes					53963		**Phylum: Platyhelminthes**		0	0	0	0	0	0	0	0	0	0	0
Platyhelminthes	Turbellaria				53964	P	**| Class: Turbellaria**		0	0	1	1	1	0	1	50	1	0	0
								Totals:	**1**	**0**	**2**	**5**	**2**	**2**	**3**	**100**	**4**	**0**	**0**

Project: Teck Trail Operations - LCR AREMP (15-1438)
Ecoscape, Kyle Hawes
Taxonomist: Sue Salter
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250-494-7553

Phylum	Class	Order	Family	Taxonomy	ITIS Code	Functional Feeding Group		Site:	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP
								Sample:	3-3	3-4	3-5	4-1	4-2	4-3	4-4	4-5	5-1	5-2	5-3
								CC#:	CC161718	CC161719	CC161720	CC161721	CC161722	CC161723	CC161724	CC161725	CC161726	CC161727	CC161728
								Sieve Size:	400	400	400	400	400	400	400	400	400	400	400
								SubSample %:	100	100	100	100	100	100	100	100	100	100	100
Arthropoda					82696		**Phylum: Arthropoda**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda					563886		**Subphylum: Hexapoda**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta				99208		**| Class: Insecta**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera			100502	CG	**| Order: Ephemeroptera**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Ameletidae		568544		**| Family: Ameletidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Ameletidae	Ameletus	100996	CG	*Ameletus*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae		100755	CG	**| Family: Baetidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae	Acentrella sp.	100801	CG	*Acentrella sp.*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae	Acerpenna sp.	568546	SH	*Acerpenna sp.*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis	100800	CG	*Baetis*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis bicaudatus	100823	CG	*Baetis bicaudatus*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis tricaudatus group	100800A	CG	*Baetis tricaudatus group*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Ephemerellidae		101232		**| Family: Ephemerellidae**		0	0	0	0	0	0	1	16	0	0	0
Arthropoda	Insecta	Ephemeroptera	Ephemerellidae	Drunella grandis group	101365A	CG	*Drunella grandis group*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Ephemerellidae	Drunella sp.	101365	CG	*Drunella sp.*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Ephemerellidae	Ephemerella	101233	CG	*Ephemerella*		0	0	0	0	0	0	0	3	0	0	0
Arthropoda	Insecta	Ephemeroptera	Heptageniidae		100504		**| Family: Heptageniidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Epeorus	100626	SC	*Epeorus*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Heptagenia	100602	SC	*Heptagenia*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Rhithrogena	100572	SC	*Rhithrogena*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Leptophlebiidae		101095	CG	**| Family: Leptophlebiidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera			102467		**| Order: Plecoptera**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Chloroperlidae		103202	P	**| Family: Chloroperlidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Nemouridae		102517	SH	**| Family: Nemouridae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Nemouridae	Zapada	102591	SH	*Zapada*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Nemouridae	Zapada cinctipes	102594	SH	*Zapada cinctipes*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Nemouridae	Zapada columbiana	102596	SH	*Zapada columbiana*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Perlodidae		102994	P	**| Family: Perlodidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Perlodidae	Megarcys sp.	103110	P	*Megarcys sp.*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Perlodidae	Skwala	103102	P	*Skwala*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Pteronarcyidae		102470		**| Family: Pteronarcyidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Taeniopterygidae		102788		**| Family: Taeniopterygidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera			115095		**| Order: Trichoptera**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Apataniidae		598182		**| Family: Apataniidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Apataniidae	Apatania	115935	SC	*Apatania*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Brachycentridae		116905	CF	**| Family: Brachycentridae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Brachycentridae	Brachycentrus occidentalis	116918	OM	*Brachycentrus occidentalis*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Glossosomatidae		117120		**| Family: Glossosomatidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Glossosomatidae	Glossosoma	117159	SC	*Glossosoma*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Glossosomatidae	Protoptila	115221	SC	*Protoptila*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Hydropsychidae		115398	CF	**| Family: Hydropsychidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche	115408	CF	*Cheumatopsyche*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche	115453	CF	*Hydropsyche*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Hydroptilidae		115629		**| Family: Hydroptilidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Hydroptilidae	Hydroptila	115641	PH	*Hydroptila*		0	0	0	0	0	0	0	0	0	0	0

Phylum	Class	Order	Family	Taxonomy	ITIS Code	Functional Feeding Group	Site:	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP
							Sample:	3-3	3-4	3-5	4-1	4-2	4-3	4-4	4-5	5-1	5-2	5-3
							CC#:	CC161718	CC161719	CC161720	CC161721	CC161722	CC161723	CC161724	CC161725	CC161726	CC161727	CC161728
							Sieve Size:	400	400	400	400	400	400	400	400	400	400	400
							SubSample %:	100	100	100	100	100	100	100	100	100	100	100
Arthropoda	Insecta	Trichoptera	Lepidostomatidae		116793		| **Family: Lepidostomatidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Lepidostomatidae	Lepidostoma	116794	SH	*Lepidostoma*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Leptoceridae		116547		| **Family: Leptoceridae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Leptoceridae	Ceraclea	116684	OM	*Ceraclea*	0	0	0	0	0	0	0	0	0	1	0
Arthropoda	Insecta	Trichoptera	Leptoceridae	Mystacides	116598	OM	*Mystacides*	44	23	26	0	0	0	1	1	0	0	1
Arthropoda	Insecta	Trichoptera	Leptoceridae	Nectopsyche sp.	116651	OM	*Nectopsyche sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Leptoceridae	Oecetis	116607	P	*Oecetis*	5	2	1	0	0	0	0	0	0	0	1
Arthropoda	Insecta	Trichoptera	Limnephilidae		115933	CG	| **Family: Limnephilidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Psychomyiidae		115334		| **Family: Psychomyiidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Psychomyiidae	Psychomyia	115335	CG	*Psychomyia*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Rhyacophilidae		115096		| **Family: Rhyacophilidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Rhyacophilidae	Rhyacophila vofixa group	115097S	P	*Rhyacophila vofixa group*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Uenoidae		568757		| **Family: Uenoidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Uenoidae	Neophylax sp.	116046	SC	*Neophylax sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera			109216	P	| **Order: Coleoptera**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera		Georissus sp.	112754	SC	*Georissus sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Dytiscidae		111963	P	| **Family: Dytiscidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Dytiscidae	Oreodytes sp.	112314	P	*Oreodytes sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Dytiscidae	Sanfilippodytes sp.	728253	P	*Sanfilippodytes sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Dytiscidae	Stictotarsus	568826	P	*Stictotarsus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae		114093	CG	| **Family: Elmidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia sp.	114126	CG	*Dubiraphia sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	Heterlimnius sp.	114167	CG	*Heterlimnius sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	Optioservus sp.	114177	SC	*Optioservus sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	Rhizelmis nigra	114199	SC	*Rhizelmis nigra*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera			118831		| **Order: Diptera**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Ceratopogonidae		127076	P	| **Family: Ceratopogonidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Ceratopogonidae	Probezzia	127729	P	*Probezzia*	1	6	2	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		127917		| **Family: Chironomidae**	0	0	1	0	0	0	0	0	1	0	12
Arthropoda	Insecta	Diptera	Chironomidae		129228	CG	| **Subfamily: Chironominae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		129229	CG	| **Tribe: Chironomini**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Chironomus	129254	CG	*Chironomus*	10	1	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Cryptochironomus	129368	P	*Cryptochironomus*	0	6	8	0	0	0	0	0	17	1	6
Arthropoda	Insecta	Diptera	Chironomidae	Demicryptochironomus sp.	129421	CG	*Demicryptochironomus sp.*	0	4	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Dicrotendipes	129428	CG	*Dicrotendipes*	6	1	5	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Endochironomus sp.	129470	CG	*Endochironomus sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Microtendipes pedellus group	129535	CF	*Microtendipes pedellus group*	0	2	0	0	0	0	20	3	0	0	1
Arthropoda	Insecta	Diptera	Chironomidae	Pagastiella sp.	129561	CG	*Pagastiella sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Parachironomus	129564	P	*Parachironomus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Paracladopelma sp.	129597	CG	*Paracladopelma sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Phaenopsectra	129637	SC	*Phaenopsectra*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Polypedilum sp.	129657	CG	*Polypedilum sp.*	6	0	0	0	0	1	3	3	0	0	2
Arthropoda	Insecta	Diptera	Chironomidae	Robackia demeijerei	129733	CG	*Robackia demeijerei*	0	0	0	0	0	1	0	1	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Stictochironomus	129785	CG	*Stictochironomus*	0	1	1	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		129872	CG	| **Tribe: Tanytarsini**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Cladotanytarsus	129873	CG	*Cladotanytarsus*	1	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Micropsectra	129890	CG	*Micropsectra*	0	3	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Paratanytarsus	129935	CF	*Paratanytarsus*	1	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Rheotanytarsus	129952	CF	*Rheotanytarsus*	0	0	1	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Stempellinella sp.	129969	CF	*Stempellinella sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsus	129978	CF	*Tanytarsus*	6	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		128341	CG	| **Subfamily: Diamesinae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		128351	CG	| **Tribe: Diamesini**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Diamesa	128355	CG	*Diamesa*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Pagastia	128401	CG	*Pagastia*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Potthastia longimana group	128408	CG	*Potthastia longimana group*	0	0	0	0	0	0	0	0	0	0	0

Phylum	Class	Order	Family	Taxonomy	ITIS Code	Functional Feeding Group		Site:	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP
								Sample:	3-3	3-4	3-5	4-1	4-2	4-3	4-4	4-5	5-1	5-2	5-3
								CC#:	CC161718	CC161719	CC161720	CC161721	CC161722	CC161723	CC161724	CC161725	CC161726	CC161727	CC161728
								Sieve Size:	400	400	400	400	400	400	400	400	400	400	400
								SubSample %:	100	100	100	100	100	100	100	100	100	100	100
Arthropoda	Insecta	Diptera	Chironomidae		128457		**| Subfamily: Orthocladiinae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Brillia sp.	128477	SH	*Brillia sp.*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Cardiocladius	128511	P	*Cardiocladius*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Eukiefferiella	128689	OM	*Eukiefferiella*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Orthocladius complex	128874A	CG	*Orthocladius complex*		0	0	0	0	0	0	1	1	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Parakiefferiella	128968	CG	*Parakiefferiella*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Psectrocladius	129018	CG	*Psectrocladius*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Synorthocladius	129161	CG	*Synorthocladius*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Tvetenia	129197	CG	*Tvetenia*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		128437	CG	**| Subfamily: Prodiamesinae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Monodiamesa sp.	128440	CG	*Monodiamesa sp.*		0	1	0	0	0	0	0	0	0	1	0
Arthropoda	Insecta	Diptera	Chironomidae		127994	P	**| Subfamily: Tanypodinae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		128078	P	**| Tribe: Pentaneurini**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Thienemannimyia group	127917N	P	*Thienemannimyia group*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		128270		**| Tribe: Procladiini**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Procladius	128277	P	*Procladius*		56	17	5	0	0	0	0	0	1	1	1
Arthropoda	Insecta	Diptera	Empididae		135830	P	**| Family: Empididae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Empididae	Hemerodromia sp.	136327	P	*Hemerodromia sp.*		0	0	0	0	0	0	0	0	0	1	0
Arthropoda	Insecta	Diptera	Psychodidae		125351		**| Family: Psychodidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Psychodidae	Pericoma/Telmatoscopus sp.	125514	CG	*Pericoma/Telmatoscopus sp.*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Simuliidae		126640	CF	**| Family: Simuliidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Simuliidae	Simulium	126774	CF	*Simulium*		0	0	0	0	0	0	1	9	0	0	0
Arthropoda	Insecta	Diptera	Tabanidae		130934		**| Family: Tabanidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Tipulidae		118840	SH	**| Family: Tipulidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Tipulidae	Antocha monticola	119660	CG	*Antocha monticola*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Tipulidae	Tipula	119037	OM	*Tipula*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Hemiptera			103359		**| Order: Hemiptera**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Hemiptera	Corixidae		103364	P	**| Family: Corixidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Hemiptera	Corixidae	Hesperocorixa sp.	103444	P	*Hesperocorixa sp.*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Hemiptera	Corixidae	Sigara	103369	P	*Sigara*		0	1	0	0	0	0	3	6	0	0	0
Arthropoda	Insecta	Odonata			101593		**| Order: Odonata**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Odonata	Gomphidae		101664		**| Family: Gomphidae**		1	0	0	0	0	0	0	0	0	0	0
Arthropoda					83677		**Subphylum: Crustacea**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca				89787		**| Class: Malacostraca**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Amphipoda			93294		**| Order: Amphipoda**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Amphipoda	Crangonyctidae		95080		**| Family: Crangonyctidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Amphipoda	Crangonyctidae	Crangonyx	95081	CG	*Crangonyx*		1	0	0	0	0	0	0	0	0	1	2
Arthropoda	Malacostraca	Amphipoda	Hyalellidae		94022		**| Family: Hyalellidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Amphipoda	Hyalellidae	Hyalella	94025	CG	*Hyalella*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Decapoda			95599		**| Order: Decapoda**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Decapoda	Cambaridae		97336		**| Family: Cambaridae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Isopoda			92120		**| Order: Isopoda**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Isopoda	Asellidae		92657	CG	**| Family: Asellidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Isopoda	Asellidae	Caecidotea	92686	CG	*Caecidotea*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda					82697		**Subphylum: Chelicerata**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida				82708	P	**| Class: Arachnida**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes			82769	P	**| Order: Trombidiformes**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Hygrobatidae		83281		**| Family: Hygrobatidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Hygrobatidae	Atractides	83282	P	*Atractides*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Hygrobatidae	Hygrobates	83297	P	*Hygrobates*		0	0	0	0	0	0	0	0	0	2	1
Arthropoda	Arachnida	Trombidiformes	Lebertiidae		83033	P	**| Family: Lebertiidae**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Lebertiidae	Lebertia	83034	P	*Lebertia*		0	2	0	0	0	0	3	0	0	1	0

Phylum	Class	Order	Family	Taxonomy	ITIS Code	Functional Feeding Group	SubSample %:	DEP-EXP 3-3 CC161718 400 100	DEP-EXP 3-4 CC161719 400 100	DEP-EXP 3-5 CC161720 400 100	DEP-EXP 4-1 CC161721 400 100	DEP-EXP 4-2 CC161722 400 100	DEP-EXP 4-3 CC161723 400 100	DEP-EXP 4-4 CC161724 400 100	DEP-EXP 4-5 CC161725 400 100	DEP-EXP 5-1 CC161726 400 100	DEP-EXP 5-2 CC161727 400 100	DEP-EXP 5-3 CC161728 400 100
Arthropoda	Arachnida	Trombidiformes	Limnesiidae		83050	P	**| Family: Limnesiidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Limnesiidae	Limnesia sp.	83051	P	*Limnesia sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Mideopsidae		83476	P	**| Family: Mideopsidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Mideopsidae	Mideopsis sp.	83479	P	*Mideopsis sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Sperchontidae		895710		**| Family: Sperchontidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Sperchontidae	Sperchon	83006	P	*Sperchon*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Torrenticolidae		83249	P	**| Family: Torrenticolidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Torrenticolidae	Testudacarus sp.	83250	P	*Testudacarus sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Torrenticolidae	Torrenticola	83254	P	*Torrenticola*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Acari			82754		**| Order: Acari**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Oribatida			83538	P	**| Order: Oribatida**	0	0	0	0	0	0	0	0	0	0	0
Mollusca					69458		**Phylum: Mollusca**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia				79118		**| Class: Bivalvia**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia	Veneroida			80384		**| Order: Veneroida**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia	Veneroida	Pisidiidae		81388	CF	**| Family: Pisidiidae**	54	6	0	0	0	3	2	0	18	7	10
Mollusca	Bivalvia	Veneroida	Unionoida		79912		**| Family: Unionoida**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia	Veneroida	Unionidae		79913	CF	**| Family: Unionidae**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia	Veneroida	Unionidae	Anodonta sp.	79930	CF	*Anodonta sp.*	0	0	0	0	0	0	2	0	0	0	0
Mollusca	Bivalvia	Veneroida	Pisidiidae	Pisidium	81400	CF	*Pisidium*	15	10	0	1	5	7	3	9	11	18	22
Mollusca	Bivalvia	Veneroida	Pisidiidae	Sphaerium sp.	81391	CG	*Sphaerium sp.*	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda				69459		**| Class: Gastropoda**	3	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora			76437		**| Order: Basommatophora**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora	Ancylidae		76568		**| Family: Ancylidae**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora	Ancylidae	Ferrissia	76569	SC	*Ferrissia*	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora	Lymnaeidae		76483	SC	**| Family: Lymnaeidae**	40	14	6	0	0	0	1	6	4	2	4
Mollusca	Gastropoda	Basommatophora	Lymnaeidae	Radix auricularia	76526	SC	*Radix auricularia*	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora	Physidae		76676		**| Family: Physidae**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora	Physidae	Physa	76677	SC	*Physa*	0	0	0	0	0	0	0	1	0	0	0
Mollusca	Gastropoda	Basommatophora	Planorbidae		76591	SC	**| Family: Planorbidae**	4	0	2	0	0	0	0	0	6	0	0
Mollusca	Gastropoda	Heterostropha			566849		**| Order: Heterostropha**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Heterostropha	Valvatidae		70345		**| Family: Valvatidae**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Heterostropha	Valvatidae	Valvata	70346	SC	*Valvata*	0	0	0	0	0	0	0	0	0	0	1
Mollusca	Gastropoda	Heterostropha	Valvatidae	Valvata tricarinata	70354	SC	*Valvata tricarinata*	17	13	5	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Hypsogastropoda			566851		**| Order: Hypsogastropoda**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Hypsogastropoda	Hydrobiidae		70493	SC	**| Family: Hydrobiidae**	0	0	0	0	1	1	4	0	0	0	0
Annelida					64357		**Phylum: Annelida**	0	0	0	0	0	0	0	0	0	0	0
Annelida					568832		**Subphylum: Clitellata**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea				914192		**| Class: Hirudinea**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Arhynchobdellida			568835		**| Order: Arhynchobdellida**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Arhynchobdellida	Erpobdellidae		69438	P	**| Family: Erpobdellidae**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Arhynchobdellida	Erpobdellidae	Nephelopsis obscura	69456	P	*Nephelopsis obscura*	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Rhynchobdellida			69295		**| Order: Rhynchobdellida**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Rhynchobdellida	Glossiphoniidae		69357		**| Family: Glossiphoniidae**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Rhynchobdellida	Glossiphoniidae	Helobdella stagnalis	69398	PA	*Helobdella stagnalis*	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Rhynchobdellida	Glossiphoniidae	Theromyzon	69375	P	*Theromyzon*	0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta				68422	CG	**| Class: Oligochaeta**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta	Lumbriculida			68439		**| Order: Lumbriculida**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta	Lumbriculida	Lumbriculidae		68440	CG	**| Family: Lumbriculidae**	85	0	0	0	1	10	20	15	99	32	45
Annelida	Oligochaeta	Lumbriculida	Lumbriculidae	Rhynchelmis sp.	68463	CG	*Rhynchelmis sp.*	0	0	0	0	0	0	0	0	0	0	0

Phylum	Class	Order	Family	Taxonomy	ITIS Code	Functional Feeding Group		Site:	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP
								Sample:	3-3	3-4	3-5	4-1	4-2	4-3	4-4	4-5	5-1	5-2	5-3
								CC#:	CC161718	CC161719	CC161720	CC161721	CC161722	CC161723	CC161724	CC161725	CC161726	CC161727	CC161728
								Sieve Size:	400	400	400	400	400	400	400	400	400	400	400
								SubSample %:	100	100	100	100	100	100	100	100	100	100	100
Annelida	Oligochaeta	Tubificida			68498		**| Order: Tubificida**		0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta	Tubificida	Enchytraeidae		68510	CG	**| Family: Enchytraeidae**		0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta	Tubificida	Enchytraeidae	Enchytraeus	68531	CG	*Enchytraeus*		0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta	Tubificida	Naididae		68854	CG	**| Family: Naididae**		0	0	0	0	0	2	5	4	15	0	12
Annelida	Oligochaeta	Tubificida	Naididae	Nais	68946	CG	*Nais*		0	0	0	0	0	0	0	0	0	0	0
Cnidaria					48738		**Phylum: Cnidaria**		0	0	0	0	0	0	0	0	0	0	0
Cnidaria	Hydrozoa				48739		**| Class: Hydrozoa**		0	0	0	0	0	0	0	0	0	0	0
Cnidaria	Hydrozoa	Anthoathecatae			718925		**| Order: Anthoathecatae**		0	0	0	0	0	0	0	0	0	0	0
Cnidaria	Hydrozoa	Anthoathecatae	Hydridae		50844		**| Family: Hydridae**		0	0	0	0	0	0	0	0	0	0	0
Cnidaria	Hydrozoa	Anthoathecatae	Hydridae	Hydra	50845	P	*Hydra*		0	0	0	0	0	0	0	0	0	0	0
								Totals:	**356**	**113**	**63**	**1**	**7**	**25**	**70**	**78**	**172**	**68**	**121**
							Taxa present but not included:												
					0000000		*Terrestrials*		0	0	0	0	0	0	0	0	0	0	0
Arthropoda					82696		**Phylum: Arthropoda**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Entognatha				676821		**| Class: Entognatha**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Entognatha	Collembola			99237	CG	**| Order: Collembola**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda					83677		**Subphylum: Crustacea**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Ostracoda				84195	CG	**| Class: Ostracoda**		0	1	0	0	0	0	0	0	0	1	1
Arthropoda	Branchiopoda				83687		**| Class: Branchiopoda**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Branchiopoda	Cladocera			83832		**| Order: Cladocera**		0	1	0	0	0	0	0	0	0	0	1
Arthropoda	Maxillipoda				610004		**| Class: Maxillipoda**		0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Copepoda				85257	CG	**| Class: Copepoda**		0	1	0	0	0	0	0	0	1	1	1
Nemata					563956	SH	**Phylum: Nemata**		0	1	0	0	0	0	1	0	0	0	1
Platyhelminthes					53963		**Phylum: Platyhelminthes**		0	0	0	0	0	0	0	0	0	0	0
Platyhelminthes	Turbellaria				53964	P	**| Class: Turbellaria**		0	0	0	0	0	0	0	0	0	0	0
								Totals:	**0**	**4**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**2**	**4**

Project: Teck Trail Operations - LCR AREMP (15-1438)
Ecoscape, Kyle Hawes
Taxonomist: Sue Salter
suesalter@cordilleraconsulting.ca
250-494-7553

Phylum	Class	Order	Family	Taxonomy	ITIS Code	Functional Feeding Group											
							Site:	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP
							Sample:	5-4	5-5	6-1	6-2	6-3	6-4	6-5	7-1	7-2	7-3	7-4
							CC#:	CC161729	CC161730	CC161731	CC161732	CC161733	CC161734	CC161735	CC161736	CC161737	CC161738	CC161739
							Sieve Size:	400	400	400	400	400	400	400	400	400	400	400
							SubSample %:	100	100	100	100	100	100	100	50	100	43.75	100
Arthropoda					82696		**Phylum: Arthropoda**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda					563886		**Subphylum: Hexapoda**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta				99208		**| Class: Insecta**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera			100502	CG	**| Order: Ephemeroptera**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Ameletidae		568544		**| Family: Ameletidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Ameletidae	Ameletus	100996	CG	*Ameletus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae		100755	CG	**| Family: Baetidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae	Acentrella sp.	100801	CG	*Acentrella sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae	Acerpenna sp.	568546	SH	*Acerpenna sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis	100800	CG	*Baetis*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis bicaudatus	100823	CG	*Baetis bicaudatus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis tricaudatus group	100800A	CG	*Baetis tricaudatus group*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Ephemerellidae		101232		**| Family: Ephemerellidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Ephemerellidae	Drunella grandis group	101365A	CG	*Drunella grandis group*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Ephemerellidae	Drunella sp.	101365	CG	*Drunella sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Ephemerellidae	Ephemerella	101233	CG	*Ephemerella*	0	0	0	1	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Heptageniidae		100504		**| Family: Heptageniidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Epeorus	100626	SC	*Epeorus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Heptagenia	100602	SC	*Heptagenia*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Rhithrogena	100572	SC	*Rhithrogena*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Ephemeroptera	Leptophlebiidae		101095	CG	**| Family: Leptophlebiidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera			102467		**| Order: Plecoptera**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Chloroperlidae		103202	P	**| Family: Chloroperlidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Nemouridae		102517	SH	**| Family: Nemouridae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Nemouridae	Zapada	102591	SH	*Zapada*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Nemouridae	Zapada cinctipes	102594	SH	*Zapada cinctipes*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Nemouridae	Zapada columbiana	102596	SH	*Zapada columbiana*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Perlodidae		102994	P	**| Family: Perlodidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Perlodidae	Megarcys sp.	103110	P	*Megarcys sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Perlodidae	Skwala	103102	P	*Skwala*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Pteronarcyidae		102470		**| Family: Pteronarcyidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Plecoptera	Taeniopterygidae		102788		**| Family: Taeniopterygidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera			115095		**| Order: Trichoptera**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Apataniidae		598182		**| Family: Apataniidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Apataniidae	Apatania	115935	SC	*Apatania*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Brachycentridae		116905	CF	**| Family: Brachycentridae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Brachycentridae	Brachycentrus occidentalis	116918	OM	*Brachycentrus occidentalis*	0	0	0	0	0	0	0	0	2	0	0
Arthropoda	Insecta	Trichoptera	Glossosomatidae		117120		**| Family: Glossosomatidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Glossosomatidae	Glossosoma	117159	SC	*Glossosoma*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Glossosomatidae	Protoptila	115221	SC	*Protoptila*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Hydropsychidae		115398	CF	**| Family: Hydropsychidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche	115408	CF	*Cheumatopsyche*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche	115453	CF	*Hydropsyche*	0	0	0	0	0	0	0	0	1	0	0
Arthropoda	Insecta	Trichoptera	Hydroptilidae		115629		**| Family: Hydroptilidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Hydroptilidae	Hydroptila	115641	PH	*Hydroptila*	0	0	0	0	0	0	0	0	0	0	1

							Site:	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP
							Sample:	5-4	5-5	6-1	6-2	6-3	6-4	6-5	7-1	7-2	7-3	7-4
							CC#:	CC161729	CC161730	CC161731	CC161732	CC161733	CC161734	CC161735	CC161736	CC161737	CC161738	CC161739
						Functional Feeding	Sieve Size:	400	400	400	400	400	400	400	400	400	400	400
Phylum	**Class**	**Order**	**Family**	**Taxonomy**	**ITIS Code**	**Group**	**SubSample %:**	100	100	100	100	100	100	100	50	100	43.75	100
Arthropoda	Insecta	Trichoptera	Lepidostomatidae		116793		**| Family: Lepidostomatidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Lepidostomatidae	Lepidostoma	116794	SH	*Lepidostoma*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Leptoceridae		116547		**| Family: Leptoceridae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Leptoceridae	Ceraclea	116684	OM	*Ceraclea*	0	0	0	0	0	0	0	0	0	1	1
Arthropoda	Insecta	Trichoptera	Leptoceridae	Mystacides	116598	OM	*Mystacides*	0	1	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Leptoceridae	Nectopsyche sp.	116651	OM	*Nectopsyche sp.*	0	0	0	0	0	0	0	0	1	0	0
Arthropoda	Insecta	Trichoptera	Leptoceridae	Oecetis	116607	P	*Oecetis*	0	1	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Limnephilidae		115933	CG	**| Family: Limnephilidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Psychomyiidae		115334		**| Family: Psychomyiidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Psychomyiidae	Psychomyia	115335	CG	*Psychomyia*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Rhyacophilidae		115096		**| Family: Rhyacophilidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Rhyacophilidae	Rhyacophila vofixa group	115097S	P	*Rhyacophila vofixa group*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Uenoidae		568757		**| Family: Uenoidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Trichoptera	Uenoidae	Neophylax sp.	116046	SC	*Neophylax sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera			109216	P	**| Order: Coleoptera**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera		Georissus sp.	112754	SC	*Georissus sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Dytiscidae		111963	P	**| Family: Dytiscidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Dytiscidae	Oreodytes sp.	112314	P	*Oreodytes sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Dytiscidae	Sanfilippodytes sp.	728253	P	*Sanfilippodytes sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Dytiscidae	Stictotarsus	568826	P	*Stictotarsus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae		114093	CG	**| Family: Elmidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia sp.	114126	CG	*Dubiraphia sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	Heterlimnius sp.	114167	CG	*Heterlimnius sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	Optioservus sp.	114177	SC	*Optioservus sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	Rhizelmis nigra	114199	SC	*Rhizelmis nigra*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera			118831		**| Order: Diptera**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Ceratopogonidae		127076	P	**| Family: Ceratopogonidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Ceratopogonidae	Probezzia	127729	P	*Probezzia*	0	1	1	0	1	0	0	0	1	0	0
Arthropoda	Insecta	Diptera	Chironomidae		127917		**| Family: Chironomidae**	0	15	0	0	0	0	0	0	9	0	0
Arthropoda	Insecta	Diptera	Chironomidae		129228	CG	**| Subfamily: Chironominae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		129229	CG	**| Tribe: Chironomini**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Chironomus	129254	CG	*Chironomus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Cryptochironomus	129368	P	*Cryptochironomus*	0	6	1	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Demicryptochironomus sp.	129421	CG	*Demicryptochironomus sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Dicrotendipes	129428	CG	*Dicrotendipes*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Endochironomus sp.	129470	CG	*Endochironomus sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Microtendipes pedellus group	129535	CF	*Microtendipes pedellus group*	0	1	2	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Pagastiella sp.	129561	CG	*Pagastiella sp.*	2	0	0	0	0	0	0	1	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Parachironomus	129564	P	*Parachironomus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Paracladopelma sp.	129597	CG	*Paracladopelma sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Phaenopsectra	129637	SC	*Phaenopsectra*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Polypedilum sp.	129657	CG	*Polypedilum sp.*	4	2	8	0	2	1	2	3	5	4	0
Arthropoda	Insecta	Diptera	Chironomidae	Robackia demeijerei	129733	CG	*Robackia demeijerei*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Stictochironomus	129785	CG	*Stictochironomus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		129872	CG	**| Tribe: Tanytarsini**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Cladotanytarsus	129873	CG	*Cladotanytarsus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Micropsectra	129890	CG	*Micropsectra*	0	0	0	0	0	1	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Paratanytarsus	129935	CF	*Paratanytarsus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Rheotanytarsus	129952	CF	*Rheotanytarsus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Stempellinella sp.	129969	CF	*Stempellinella sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsus	129978	CF	*Tanytarsus*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		128341	CG	**| Subfamily: Diamesinae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		128351	CG	**| Tribe: Diamesini**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Diamesa	128355	CG	*Diamesa*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Pagastia	128401	CG	*Pagastia*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Potthastia longimana group	128408	CG	*Potthastia longimana group*	0	0	0	0	0	1	0	0	0	0	0

							Site:	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP
							Sample:	5-4	5-5	6-1	6-2	6-3	6-4	6-5	7-1	7-2	7-3	7-4
							CC#:	CC161729	CC161730	CC161731	CC161732	CC161733	CC161734	CC161735	CC161736	CC161737	CC161738	CC161739
						Functional Feeding	Sieve Size:	400	400	400	400	400	400	400	400	400	400	400
Phylum	**Class**	**Order**	**Family**	**Taxonomy**	**ITIS Code**	**Group**	**SubSample %:**	100	100	100	100	100	100	100	50	100	43.75	100
Arthropoda	Insecta	Diptera	Chironomidae		128457		**| Subfamily: Orthocladiinae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Brillia sp.	128477	SH	*Brillia sp.*	0	0	0	0	0	0	0	0	0	1	0
Arthropoda	Insecta	Diptera	Chironomidae	Cardiocladius	128511	P	*Cardiocladius*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Eukiefferiella	128689	OM	*Eukiefferiella*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Orthocladius complex	128874A	CG	*Orthocladius complex*	0	0	0	0	0	0	0	0	1	1	0
Arthropoda	Insecta	Diptera	Chironomidae	Parakiefferiella	128968	CG	*Parakiefferiella*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Psectrocladius	129018	CG	*Psectrocladius*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Synorthocladius	129161	CG	*Synorthocladius*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Tvetenia	129197	CG	*Tvetenia*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		128437	CG	**| Subfamily: Prodiamesinae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Monodiamesa sp.	128440	CG	*Monodiamesa sp.*	1	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		127994	P	**| Subfamily: Tanypodinae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae		128078	P	**| Tribe: Pentaneurini**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Thienemannimyia group	127917N	P	*Thienemannimyia group*	0	0	0	0	0	0	0	0	1	0	0
Arthropoda	Insecta	Diptera	Chironomidae		128270		**| Tribe: Procladiini**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Procladius	128277	P	*Procladius*	0	6	1	0	0	0	0	1	1	0	0
Arthropoda	Insecta	Diptera	Empididae		135830	P	**| Family: Empididae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Empididae	Hemerodromia sp.	136327	P	*Hemerodromia sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Psychodidae		125351		**| Family: Psychodidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Psychodidae	Pericoma/Telmatoscopus sp.	125514	CG	*Pericoma/Telmatoscopus sp.*	0	0	0	0	0	0	0	0	0	1	0
Arthropoda	Insecta	Diptera	Simuliidae		126640	CF	**| Family: Simuliidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Simuliidae	Simulium	126774	CF	*Simulium*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Tabanidae		130934		**| Family: Tabanidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Tipulidae		118840	SH	**| Family: Tipulidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Tipulidae	Antocha monticola	119660	CG	*Antocha monticola*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Diptera	Tipulidae	Tipula	119037	OM	*Tipula*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Hemiptera			103359		**| Order: Hemiptera**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Hemiptera	Corixidae		103364	P	**| Family: Corixidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Hemiptera	Corixidae	Hesperocorixa sp.	103444	P	*Hesperocorixa sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Hemiptera	Corixidae	Sigara	103369	P	*Sigara*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Odonata			101593		**| Order: Odonata**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Insecta	Odonata	Gomphidae		101664		**| Family: Gomphidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda					83677		**Subphylum: Crustacea**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca				89787		**| Class: Malacostraca**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Amphipoda			93294		**| Order: Amphipoda**	1	1	0	0	0	0	0	0	0	22	2
Arthropoda	Malacostraca	Amphipoda	Crangonyctidae		95080		**| Family: Crangonyctidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Amphipoda	Crangonyctidae	Crangonyx	95081	CG	*Crangonyx*	2	0	0	0	0	0	0	1	0	23	12
Arthropoda	Malacostraca	Amphipoda	Hyalellidae		94022		**| Family: Hyalellidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Amphipoda	Hyalellidae	Hyalella	94025	CG	*Hyalella*	0	0	0	0	0	0	0	0	0	21	1
Arthropoda	Malacostraca	Decapoda			95599		**| Order: Decapoda**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Decapoda	Cambaridae		97336		**| Family: Cambaridae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Isopoda			92120		**| Order: Isopoda**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Isopoda	Asellidae		92657	CG	**| Family: Asellidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Malacostraca	Isopoda	Asellidae	Caecidotea	92686	CG	*Caecidotea*	0	1	0	0	0	0	0	55	135	131	756
Arthropoda					82697		**Subphylum: Chelicerata**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida				82708	P	**| Class: Arachnida**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes			82769	P	**| Order: Trombidiformes**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Hygrobatidae		83281		**| Family: Hygrobatidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Hygrobatidae	Atractides	83282	P	*Atractides*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Hygrobatidae	Hygrobates	83297	P	*Hygrobates*	3	0	0	0	0	0	0	0	1	0	1
Arthropoda	Arachnida	Trombidiformes	Lebertiidae		83033	P	**| Family: Lebertiidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Lebertiidae	Lebertia	83034	P	*Lebertia*	3	2	0	0	0	0	0	1	0	0	1

							Site:	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP
							Sample:	5-4	5-5	6-1	6-2	6-3	6-4	6-5	7-1	7-2	7-3	7-4
							CC#:	CC161729	CC161730	CC161731	CC161732	CC161733	CC161734	CC161735	CC161736	CC161737	CC161738	CC161739
						Functional Feeding	Sieve Size:	400	400	400	400	400	400	400	400	400	400	400
Phylum	**Class**	**Order**	**Family**	**Taxonomy**	**ITIS Code**	**Group**	**SubSample %:**	100	100	100	100	100	100	100	50	100	43.75	100
Arthropoda	Arachnida	Trombidiformes	Limnesiidae		83050	P	**| Family: Limnesiidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Limnesiidae	Limnesia sp.	83051	P	*Limnesia sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Mideopsidae		83476	P	**| Family: Mideopsidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Mideopsidae	Mideopsis sp.	83479	P	*Mideopsis sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Sperchontidae		895710		**| Family: Sperchontidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Sperchontidae	Sperchon	83006	P	*Sperchon*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Torrenticolidae		83249	P	**| Family: Torrenticolidae**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Torrenticolidae	Testudacarus sp.	83250	P	*Testudacarus sp.*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Trombidiformes	Torrenticolidae	Torrenticola	83254	P	*Torrenticola*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Acari			82754		**| Order: Acari**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Arachnida	Oribatida			83538	P	**| Order: Oribatida**	0	0	0	0	0	0	0	0	0	0	1
Mollusca					69458		**Phylum: Mollusca**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia				79118		**| Class: Bivalvia**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia	Veneroida			80384		**| Order: Veneroida**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia	Veneroida	Pisidiidae		81388	CF	**| Family: Pisidiidae**	3	6	5	2	3	1	2	1	19	19	3
Mollusca	Bivalvia	Veneroida	Unionoida		79912		**| Family: Unionoida**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia	Veneroida	Unionidae		79913	CF	**| Family: Unionidae**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Bivalvia	Veneroida	Unionidae	Anodonta sp.	79930	CF	*Anodonta sp.*	0	0	0	0	0	0	0	1	0	0	0
Mollusca	Bivalvia	Veneroida	Pisidiidae	Pisidium	81400	CF	*Pisidium*	41	68	3	18	23	12	14	27	54	45	13
Mollusca	Bivalvia	Veneroida	Pisidiidae	Sphaerium sp.	81391	CG	*Sphaerium sp.*	0	0	0	0	0	0	0	0	0	1	0
Mollusca	Gastropoda				69459		**| Class: Gastropoda**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora			76437		**| Order: Basommatophora**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora	Ancylidae		76568		**| Family: Ancylidae**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora	Ancylidae	Ferrissia	76569	SC	*Ferrissia*	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora	Lymnaeidae		76483	SC	**| Family: Lymnaeidae**	16	7	2	1	0	0	0	4	13	11	1
Mollusca	Gastropoda	Basommatophora	Lymnaeidae	Radix auricularia	76526	SC	*Radix auricularia*	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora	Physidae		76676		**| Family: Physidae**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Basommatophora	Physidae	Physa	76677	SC	*Physa*	14	0	1	0	0	0	0	2	3	31	2
Mollusca	Gastropoda	Basommatophora	Planorbidae		76591	SC	**| Family: Planorbidae**	0	0	0	0	0	1	0	0	0	7	0
Mollusca	Gastropoda	Heterostropha			566849		**| Order: Heterostropha**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Heterostropha	Valvatidae		70345		**| Family: Valvatidae**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Heterostropha	Valvatidae	Valvata	70346	SC	*Valvata*	0	0	0	0	0	0	0	1	0	0	0
Mollusca	Gastropoda	Heterostropha	Valvatidae	Valvata tricarinata	70354	SC	*Valvata tricarinata*	0	1	0	0	0	0	0	6	15	0	1
Mollusca	Gastropoda	Hypsogastropoda			566851		**| Order: Hypsogastropoda**	0	0	0	0	0	0	0	0	0	0	0
Mollusca	Gastropoda	Hypsogastropoda	Hydrobiidae		70493	SC	**| Family: Hydrobiidae**	0	0	0	0	0	0	0	0	1	3	0
Annelida					64357		**Phylum: Annelida**	0	0	0	0	0	0	0	0	0	0	0
Annelida					568832		**Subphylum: Clitellata**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea				914192		**| Class: Hirudinea**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Arhynchobdellida			568835		**| Order: Arhynchobdellida**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Arhynchobdellida	Erpobdellidae		69438	P	**| Family: Erpobdellidae**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Arhynchobdellida	Erpobdellidae	Nephelopsis obscura	69456	P	*Nephelopsis obscura*	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Rhynchobdellida			69295		**| Order: Rhynchobdellida**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Rhynchobdellida	Glossiphoniidae		69357		**| Family: Glossiphoniidae**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Rhynchobdellida	Glossiphoniidae	Helobdella stagnalis	69398	PA	*Helobdella stagnalis*	0	0	0	0	0	0	0	0	0	0	0
Annelida	Hirudinea	Rhynchobdellida	Glossiphoniidae	Theromyzon	69375	P	*Theromyzon*	0	1	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta				68422	CG	**| Class: Oligochaeta**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta	Lumbriculida			68439		**| Order: Lumbriculida**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta	Lumbriculida	Lumbriculidae		68440	CG	**| Family: Lumbriculidae**	1	54	20	45	90	190	65	94	191	3	9
Annelida	Oligochaeta	Lumbriculida	Lumbriculidae	Rhynchelmis sp.	68463	CG	*Rhynchelmis sp.*	0	0	0	0	0	0	0	0	0	0	0

Phylum	Class	Order	Family	Taxonomy	ITIS Code	Functional Feeding Group		Site:	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP
								Sample:	5-4	5-5	6-1	6-2	6-3	6-4	6-5	7-1	7-2	7-3	7-4
								CC#:	CC161729	CC161730	CC161731	CC161732	CC161733	CC161734	CC161735	CC161736	CC161737	CC161738	CC161739
								Sieve Size:	400	400	400	400	400	400	400	400	400	400	400
								SubSample %:	100	100	100	100	100	100	100	50	100	43.75	100
Annelida	Oligochaeta	Tubificida			68498			**| Order: Tubificida**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta	Tubificida	Enchytraeidae		68510	CG		**| Family: Enchytraeidae**	0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta	Tubificida	Enchytraeidae	Enchytraeus	68531	CG		*Enchytraeus*	0	0	0	0	0	0	0	0	0	0	0
Annelida	Oligochaeta	Tubificida	Naididae		68854	CG		**| Family: Naididae**	2	20	5	11	23	80	19	251	116	3	3
Annelida	Oligochaeta	Tubificida	Naididae	Nais	68946	CG		*Nais*	0	0	0	0	0	0	0	0	0	0	0
Cnidaria					48738			**Phylum: Cnidaria**	0	0	0	0	0	0	0	0	0	0	0
Cnidaria	Hydrozoa				48739			**| Class: Hydrozoa**	0	0	0	0	0	0	0	0	0	0	0
Cnidaria	Hydrozoa	Anthoathecatae			718925			**| Order: Anthoathecatae**	0	0	0	0	0	0	0	0	0	0	0
Cnidaria	Hydrozoa	Anthoathecatae	Hydridae		50844			**| Family: Hydridae**	0	0	0	0	0	0	0	0	0	0	0
Cnidaria	Hydrozoa	Anthoathecatae	Hydridae	Hydra	50845	P		*Hydra*	0	0	0	0	0	0	0	0	0	0	0
								Totals:	**93**	**194**	**49**	**78**	**142**	**287**	**102**	**449**	**570**	**328**	**808**
								Taxa present but not included:											
					0000000			*Terrestrials*	0	0	0	0	0	0	0	0	0	0	0
Arthropoda					82696			**Phylum: Arthropoda**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Entognatha				676821			**| Class: Entognatha**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Entognatha	Collembola			99237	CG		**| Order: Collembola**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda					83677			**Subphylum: Crustacea**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Ostracoda				84195	CG		**| Class: Ostracoda**	0	0	0	0	0	0	0	0	1	0	0
Arthropoda	Branchiopoda				83687			**| Class: Branchiopoda**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Branchiopoda	Cladocera			83832			**| Order: Cladocera**	0	0	0	1	0	0	0	0	0	0	0
Arthropoda	Maxillipoda				610004			**| Class: Maxillipoda**	0	0	0	0	0	0	0	0	0	0	0
Arthropoda	Copepoda				85257	CG		**| Class: Copepoda**	0	1	20	0	0	0	0	0	1	0	0
Nemata					563956	SH		**Phylum: Nemata**	0	0	0	0	0	0	0	0	0	0	1
Platyhelminthes					53963			**Phylum: Platyhelminthes**	0	0	0	0	0	0	0	0	0	0	0
Platyhelminthes	Turbellaria				53964	P		**| Class: Turbellaria**	0	0	0	0	0	0	0	0	0	1	0
								Totals:	**0**	**1**	**20**	**1**	**0**	**0**	**0**	**0**	**2**	**1**	**1**

Project: Teck Trail Operations - LCR AREMP (15-1438)
Ecoscape, Kyle Hawes
Taxonomist: Sue Salter
suesalter@cordilleraconsulting.ca
250-494-7553

							Site:	DEP-EXP	ERO-EXP	
							Sample:	7-5	2-4	
							CC#:	CC161740	CC161741	
						Functional Feeding	**Sieve Size:**	400	400	
Phylum	**Class**	**Order**	**Family**	**Taxonomy**	**ITIS Code**	**Group**	**SubSample %:**	100	13	
Arthropoda					82696		**Phylum: Arthropoda**	0	0	
Arthropoda					563886		**Subphylum: Hexapoda**	0	0	
Arthropoda	Insecta				99208		**| Class: Insecta**	0	0	
Arthropoda	Insecta	Ephemeroptera			100502	CG	**| Order: Ephemeroptera**	0	0	
Arthropoda	Insecta	Ephemeroptera	Ameletidae		568544		**| Family: Ameletidae**	0	0	
Arthropoda	Insecta	Ephemeroptera	Ameletidae	Ameletus	100996	CG	*Ameletus*	0	0	
Arthropoda	Insecta	Ephemeroptera	Baetidae		100755	CG	**| Family: Baetidae**	0	0	
Arthropoda	Insecta	Ephemeroptera	Baetidae	Acentrella sp.	100801	CG	*Acentrella sp.*	0	0	
Arthropoda	Insecta	Ephemeroptera	Baetidae	Acerpenna sp.	568546	SH	*Acerpenna sp.*	0	0	
Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis	100800	CG	*Baetis*	0	5	
Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis bicaudatus	100823	CG	*Baetis bicaudatus*	0	0	
Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetis tricaudatus group	100800A	CG	*Baetis tricaudatus group*	0	2	
Arthropoda	Insecta	Ephemeroptera	Ephemerellidae		101232		**| Family: Ephemerellidae**	0	73	
Arthropoda	Insecta	Ephemeroptera	Ephemerellidae	Drunella grandis group	101365A	CG	*Drunella grandis group*	0	31	
Arthropoda	Insecta	Ephemeroptera	Ephemerellidae	Drunella sp.	101365	CG	*Drunella sp.*	0	0	
Arthropoda	Insecta	Ephemeroptera	Ephemerellidae	Ephemerella	101233	CG	*Ephemerella*	0	11	
Arthropoda	Insecta	Ephemeroptera	Heptageniidae		100504		**| Family: Heptageniidae**	0	0	
Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Epeorus	100626	SC	*Epeorus*	0	0	
Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Heptagenia	100602	SC	*Heptagenia*	0	0	
Arthropoda	Insecta	Ephemeroptera	Heptageniidae	Rhithrogena	100572	SC	*Rhithrogena*	0	0	
Arthropoda	Insecta	Ephemeroptera	Leptophlebiidae		101095	CG	**| Family: Leptophlebiidae**	0	0	
Arthropoda	Insecta	Plecoptera			102467		**| Order: Plecoptera**	0	0	
Arthropoda	Insecta	Plecoptera	Chloroperlidae		103202	P	**| Family: Chloroperlidae**	0	0	
Arthropoda	Insecta	Plecoptera	Nemouridae		102517	SH	**| Family: Nemouridae**	0	0	
Arthropoda	Insecta	Plecoptera	Nemouridae	Zapada	102591	SH	*Zapada*	0	0	
Arthropoda	Insecta	Plecoptera	Nemouridae	Zapada cinctipes	102594	SH	*Zapada cinctipes*	0	0	
Arthropoda	Insecta	Plecoptera	Nemouridae	Zapada columbiana	102596	SH	*Zapada columbiana*	0	0	
Arthropoda	Insecta	Plecoptera	Perlodidae		102994	P	**| Family: Perlodidae**	0	0	
Arthropoda	Insecta	Plecoptera	Perlodidae	Megarcys sp.	103110	P	*Megarcys sp.*	0	0	
Arthropoda	Insecta	Plecoptera	Perlodidae	Skwala	103102	P	*Skwala*	0	0	
Arthropoda	Insecta	Plecoptera	Pteronarcyidae		102470		**| Family: Pteronarcyidae**	0	0	
Arthropoda	Insecta	Plecoptera	Taeniopterygidae		102788		**| Family: Taeniopterygidae**	0	0	
Arthropoda	Insecta	Trichoptera			115095		**| Order: Trichoptera**	0	0	
Arthropoda	Insecta	Trichoptera	Apataniidae		598182		**| Family: Apataniidae**	0	0	
Arthropoda	Insecta	Trichoptera	Apataniidae	Apatania	115935	SC	*Apatania*	0	0	
Arthropoda	Insecta	Trichoptera	Brachycentridae		116905	CF	**| Family: Brachycentridae**	0	0	
Arthropoda	Insecta	Trichoptera	Brachycentridae	Brachycentrus occidentalis	116918	OM	*Brachycentrus occidentalis*	0	40	
Arthropoda	Insecta	Trichoptera	Glossosomatidae		117120		**| Family: Glossosomatidae**	0	1	
Arthropoda	Insecta	Trichoptera	Glossosomatidae	Glossosoma	117159	SC	*Glossosoma*	0	3	
Arthropoda	Insecta	Trichoptera	Glossosomatidae	Protoptila	115221	SC	*Protoptila*	0	1	
Arthropoda	Insecta	Trichoptera	Hydropsychidae		115398	CF	**| Family: Hydropsychidae**	0	1	
Arthropoda	Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche	115408	CF	*Cheumatopsyche*	0	14	
Arthropoda	Insecta	Trichoptera	Hydropsychidae	Hydropsyche	115453	CF	*Hydropsyche*	0	135	
Arthropoda	Insecta	Trichoptera	Hydroptilidae		115629		**| Family: Hydroptilidae**	0	0	
Arthropoda	Insecta	Trichoptera	Hydroptilidae	Hydroptila	115641	PH	*Hydroptila*	0	0	

							Site:	DEP-EXP	ERO-EXP
							Sample:	7-5	2-4
							CC#:	CC161740	CC161741
						Functional Feeding	Sieve Size:	400	400
Phylum	Class	Order	Family	Taxonomy	ITIS Code	Group	SubSample %:	100	13
Arthropoda	Insecta	Trichoptera	Lepidostomatidae		116793		**| Family: Lepidostomatidae**	0	0
Arthropoda	Insecta	Trichoptera	Lepidostomatidae	Lepidostoma	116794	SH	*Lepidostoma*	0	0
Arthropoda	Insecta	Trichoptera	Leptoceridae		116547		**| Family: Leptoceridae**	0	0
Arthropoda	Insecta	Trichoptera	Leptoceridae	Ceraclea	116684	OM	*Ceraclea*	2	6
Arthropoda	Insecta	Trichoptera	Leptoceridae	Mystacides	116598	OM	*Mystacides*	0	0
Arthropoda	Insecta	Trichoptera	Leptoceridae	Nectopsyche sp.	116651	OM	*Nectopsyche sp.*	0	0
Arthropoda	Insecta	Trichoptera	Leptoceridae	Oecetis	116607	P	*Oecetis*	0	0
Arthropoda	Insecta	Trichoptera	Limnephilidae		115933	CG	**| Family: Limnephilidae**	0	0
Arthropoda	Insecta	Trichoptera	Psychomyiidae		115334		**| Family: Psychomyiidae**	0	0
Arthropoda	Insecta	Trichoptera	Psychomyiidae	Psychomyia	115335	CG	*Psychomyia*	0	0
Arthropoda	Insecta	Trichoptera	Rhyacophilidae		115096		**| Family: Rhyacophilidae**	0	0
Arthropoda	Insecta	Trichoptera	Rhyacophilidae	Rhyacophila vofixa group	115097S	P	*Rhyacophila vofixa group*	0	0
Arthropoda	Insecta	Trichoptera	Uenoidae		568757		**| Family: Uenoidae**	0	0
Arthropoda	Insecta	Trichoptera	Uenoidae	Neophylax sp.	116046	SC	*Neophylax sp.*	0	0
Arthropoda	Insecta	Coleoptera			109216	P	**| Order: Coleoptera**	0	0
Arthropoda	Insecta	Coleoptera		Georissus sp.	112754	SC	*Georissus sp.*	0	0
Arthropoda	Insecta	Coleoptera	Dytiscidae		111963	P	**| Family: Dytiscidae**	0	0
Arthropoda	Insecta	Coleoptera	Dytiscidae	Oreodytes sp.	112314	P	*Oreodytes sp.*	0	0
Arthropoda	Insecta	Coleoptera	Dytiscidae	Sanfilippodytes sp.	728253	P	*Sanfilippodytes sp.*	0	0
Arthropoda	Insecta	Coleoptera	Dytiscidae	Stictotarsus	568826	P	*Stictotarsus*	0	0
Arthropoda	Insecta	Coleoptera	Elmidae		114093	CG	**| Family: Elmidae**	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	Dubiraphia sp.	114126	CG	*Dubiraphia sp.*	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	Heterlimnius sp.	114167	CG	*Heterlimnius sp.*	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	Optioservus sp.	114177	SC	*Optioservus sp.*	0	0
Arthropoda	Insecta	Coleoptera	Elmidae	Rhizelmis nigra	114199	SC	*Rhizelmis nigra*	0	0
Arthropoda	Insecta	Diptera			118831		**| Order: Diptera**	0	0
Arthropoda	Insecta	Diptera	Ceratopogonidae		127076	P	**| Family: Ceratopogonidae**	0	0
Arthropoda	Insecta	Diptera	Ceratopogonidae	Probezzia	127729	P	*Probezzia*	0	0
Arthropoda	Insecta	Diptera	Chironomidae		127917		**| Family: Chironomidae**	0	0
Arthropoda	Insecta	Diptera	Chironomidae		129228	CG	**| Subfamily: Chironominae**	0	0
Arthropoda	Insecta	Diptera	Chironomidae		129229	CG	**| Tribe: Chironomini**	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Chironomus	129254	CG	*Chironomus*	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Cryptochironomus	129368	P	*Cryptochironomus*	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Demicryptochironomus sp.	129421	CG	*Demicryptochironomus sp.*	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Dicrotendipes	129428	CG	*Dicrotendipes*	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Endochironomus sp.	129470	CG	*Endochironomus sp.*	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Microtendipes pedellus group	129535	CF	*Microtendipes pedellus group*	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Pagastiella sp.	129561	CG	*Pagastiella sp.*	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Parachironomus	129564	P	*Parachironomus*	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Paracladopelma sp.	129597	CG	*Paracladopelma sp.*	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Phaenopsectra	129637	SC	*Phaenopsectra*	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Polypedilum sp.	129657	CG	*Polypedilum sp.*	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Robackia demeijerei	129733	CG	*Robackia demeijerei*	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Stictochironomus	129785	CG	*Stictochironomus*	0	0
Arthropoda	Insecta	Diptera	Chironomidae		129872	CG	**| Tribe: Tanytarsini**	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Cladotanytarsus	129873	CG	*Cladotanytarsus*	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Micropsectra	129890	CG	*Micropsectra*	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Paratanytarsus	129935	CF	*Paratanytarsus*	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Rheotanytarsus	129952	CF	*Rheotanytarsus*	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Stempellinella sp.	129969	CF	*Stempellinella sp.*	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Tanytarsus	129978	CF	*Tanytarsus*	0	0
Arthropoda	Insecta	Diptera	Chironomidae		128341	CG	**| Subfamily: Diamesinae**	0	0
Arthropoda	Insecta	Diptera	Chironomidae		128351	CG	**| Tribe: Diamesini**	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Diamesa	128355	CG	*Diamesa*	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Pagastia	128401	CG	*Pagastia*	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Potthastia longimana group	128408	CG	*Potthastia longimana group*	0	0

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Phylum	Class	Order	Family	Taxonomy	ITIS Code	Group	SubSample %:	100	13
Arthropoda	Insecta	Diptera	Chironomidae		128457		**| Subfamily: Orthocladiinae**	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Brillia sp.	128477	SH	*Brillia sp.*	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Cardiocladius	128511	P	*Cardiocladius*	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Eukiefferiella	128689	OM	*Eukiefferiella*	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Orthocladius complex	128874A	CG	*Orthocladius complex*	4	1
Arthropoda	Insecta	Diptera	Chironomidae	Parakiefferiella	128968	CG	*Parakiefferiella*	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Psectrocladius	129018	CG	*Psectrocladius*	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Synorthocladius	129161	CG	*Synorthocladius*	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Tvetenia	129197	CG	*Tvetenia*	0	0
Arthropoda	Insecta	Diptera	Chironomidae		128437	CG	**| Subfamily: Prodiamesinae**	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Monodiamesa sp.	128440	CG	*Monodiamesa sp.*	0	0
Arthropoda	Insecta	Diptera	Chironomidae		127994	P	**| Subfamily: Tanypodinae**	0	0
Arthropoda	Insecta	Diptera	Chironomidae		128078	P	**| Tribe: Pentaneurini**	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Thienemannimyia group	127917N	P	*Thienemannimyia group*	0	1
Arthropoda	Insecta	Diptera	Chironomidae		128270		**| Tribe: Procladiini**	0	0
Arthropoda	Insecta	Diptera	Chironomidae	Procladius	128277	P	*Procladius*	0	0
Arthropoda	Insecta	Diptera	Empididae		135830	P	**| Family: Empididae**	0	0
Arthropoda	Insecta	Diptera	Empididae	Hemerodromia sp.	136327	P	*Hemerodromia sp.*	0	0
Arthropoda	Insecta	Diptera	Psychodidae		125351		**| Family: Psychodidae**	0	0
Arthropoda	Insecta	Diptera	Psychodidae	Pericoma/Telmatoscopus sp.	125514	CG	*Pericoma/Telmatoscopus sp.*	0	0
Arthropoda	Insecta	Diptera	Simuliidae		126640	CF	**| Family: Simuliidae**	0	0
Arthropoda	Insecta	Diptera	Simuliidae	Simulium	126774	CF	*Simulium*	0	0
Arthropoda	Insecta	Diptera	Tabanidae		130934		**| Family: Tabanidae**	0	0
Arthropoda	Insecta	Diptera	Tipulidae		118840	SH	**| Family: Tipulidae**	0	0
Arthropoda	Insecta	Diptera	Tipulidae	Antocha monticola	119660	CG	*Antocha monticola*	0	0
Arthropoda	Insecta	Diptera	Tipulidae	Tipula	119037	OM	*Tipula*	0	0
Arthropoda	Insecta	Hemiptera			103359		**| Order: Hemiptera**	0	0
Arthropoda	Insecta	Hemiptera	Corixidae		103364	P	**| Family: Corixidae**	0	0
Arthropoda	Insecta	Hemiptera	Corixidae	Hesperocorixa sp.	103444	P	*Hesperocorixa sp.*	0	0
Arthropoda	Insecta	Hemiptera	Corixidae	Sigara	103369	P	*Sigara*	0	0
Arthropoda	Insecta	Odonata			101593		**| Order: Odonata**	0	0
Arthropoda	Insecta	Odonata	Gomphidae		101664		**| Family: Gomphidae**	0	0
Arthropoda					83677		**Subphylum: Crustacea**	0	0
Arthropoda	Malacostraca				89787		**| Class: Malacostraca**	0	0
Arthropoda	Malacostraca	Amphipoda			93294		**| Order: Amphipoda**	0	0
Arthropoda	Malacostraca	Amphipoda	Crangonyctidae		95080		**| Family: Crangonyctidae**	0	0
Arthropoda	Malacostraca	Amphipoda	Crangonyctidae	Crangonyx	95081	CG	*Crangonyx*	1	0
Arthropoda	Malacostraca	Amphipoda	Hyalellidae		94022		**| Family: Hyalellidae**	0	0
Arthropoda	Malacostraca	Amphipoda	Hyalellidae	Hyalella	94025	CG	*Hyalella*	0	0
Arthropoda	Malacostraca	Decapoda			95599		**| Order: Decapoda**	0	0
Arthropoda	Malacostraca	Decapoda	Cambaridae		97336		**| Family: Cambaridae**	0	0
Arthropoda	Malacostraca	Isopoda			92120		**| Order: Isopoda**	0	0
Arthropoda	Malacostraca	Isopoda	Asellidae		92657	CG	**| Family: Asellidae**	0	0
Arthropoda	Malacostraca	Isopoda	Asellidae	Caecidotea	92686	CG	*Caecidotea*	131	0
Arthropoda					82697		**Subphylum: Chelicerata**	0	0
Arthropoda	Arachnida				82708	P	**| Class: Arachnida**	0	0
Arthropoda	Arachnida	Trombidiformes			82769	P	**| Order: Trombidiformes**	0	0
Arthropoda	Arachnida	Trombidiformes	Hygrobatidae		83281		**| Family: Hygrobatidae**	0	0
Arthropoda	Arachnida	Trombidiformes	Hygrobatidae	Atractides	83282	P	*Atractides*	0	2
Arthropoda	Arachnida	Trombidiformes	Hygrobatidae	Hygrobates	83297	P	*Hygrobates*	4	0
Arthropoda	Arachnida	Trombidiformes	Lebertiidae		83033	P	**| Family: Lebertiidae**	0	0
Arthropoda	Arachnida	Trombidiformes	Lebertiidae	Lebertia	83034	P	*Lebertia*	1	0

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Phylum	Class	Order	Family	Taxonomy	ITIS Code	Group	SubSample %:	100	13
Arthropoda	Arachnida	Trombidiformes	Limnesiidae		83050	P	**| Family: Limnesiidae**	0	0
Arthropoda	Arachnida	Trombidiformes	Limnesiidae	Limnesia sp.	83051	P	*Limnesia sp.*	0	0
Arthropoda	Arachnida	Trombidiformes	Mideopsidae		83476	P	**| Family: Mideopsidae**	0	0
Arthropoda	Arachnida	Trombidiformes	Mideopsidae	Mideopsis sp.	83479	P	*Mideopsis sp.*	0	0
Arthropoda	Arachnida	Trombidiformes	Sperchontidae		895710		**| Family: Sperchontidae**	0	0
Arthropoda	Arachnida	Trombidiformes	Sperchontidae	Sperchon	83006	P	*Sperchon*	0	1
Arthropoda	Arachnida	Trombidiformes	Torrenticolidae		83249	P	**| Family: Torrenticolidae**	0	0
Arthropoda	Arachnida	Trombidiformes	Torrenticolidae	Testudacarus sp.	83250	P	*Testudacarus sp.*	0	0
Arthropoda	Arachnida	Trombidiformes	Torrenticolidae	Torrenticola	83254	P	*Torrenticola*	0	0
Arthropoda	Arachnida	Acari			82754		**| Order: Acari**	0	0
Arthropoda	Arachnida	Oribatida			83538	P	**| Order: Oribatida**	0	0
Mollusca					69458		**Phylum: Mollusca**	0	0
Mollusca	Bivalvia				79118		**| Class: Bivalvia**	0	0
Mollusca	Bivalvia	Veneroida			80384		**| Order: Veneroida**	0	0
Mollusca	Bivalvia	Veneroida	Pisidiidae		81388	CF	**| Family: Pisidiidae**	5	0
Mollusca	Bivalvia	Veneroida	Unionoida		79912		**| Family: Unionoida**	0	0
Mollusca	Bivalvia	Veneroida	Unionidae		79913	CF	**| Family: Unionidae**	0	0
Mollusca	Bivalvia	Veneroida	Unionidae	Anodonta sp.	79930	CF	*Anodonta sp.*	0	0
Mollusca	Bivalvia	Veneroida	Pisidiidae	Pisidium	81400	CF	*Pisidium*	5	0
Mollusca	Bivalvia	Veneroida	Pisidiidae	Sphaerium sp.	81391	CG	*Sphaerium sp.*	0	0
Mollusca	Gastropoda				69459		**| Class: Gastropoda**	0	0
Mollusca	Gastropoda	Basommatophora			76437		**| Order: Basommatophora**	0	0
Mollusca	Gastropoda	Basommatophora	Ancylidae		76568		**| Family: Ancylidae**	0	0
Mollusca	Gastropoda	Basommatophora	Ancylidae	Ferrissia	76569	SC	*Ferrissia*	0	0
Mollusca	Gastropoda	Basommatophora	Lymnaeidae		76483	SC	**| Family: Lymnaeidae**	17	1
Mollusca	Gastropoda	Basommatophora	Lymnaeidae	Radix auricularia	76526	SC	*Radix auricularia*	0	0
Mollusca	Gastropoda	Basommatophora	Physidae		76676		**| Family: Physidae**	0	0
Mollusca	Gastropoda	Basommatophora	Physidae	Physa	76677	SC	*Physa*	9	5
Mollusca	Gastropoda	Basommatophora	Planorbidae		76591	SC	**| Family: Planorbidae**	0	0
Mollusca	Gastropoda	Heterostropha			566849		**| Order: Heterostropha**	0	0
Mollusca	Gastropoda	Heterostropha	Valvatidae		70345		**| Family: Valvatidae**	0	0
Mollusca	Gastropoda	Heterostropha	Valvatidae	Valvata	70346	SC	*Valvata*	0	0
Mollusca	Gastropoda	Heterostropha	Valvatidae	Valvata tricarinata	70354	SC	*Valvata tricarinata*	2	0
Mollusca	Gastropoda	Hypsogastropoda			566851		**| Order: Hypsogastropoda**	0	0
Mollusca	Gastropoda	Hypsogastropoda	Hydrobiidae		70493	SC	**| Family: Hydrobiidae**	2	1
Annelida					64357		**Phylum: Annelida**	0	0
Annelida					568832		**Subphylum: Clitellata**	0	0
Annelida	Hirudinea				914192		**| Class: Hirudinea**	0	0
Annelida	Hirudinea	Arhynchobdellida			568835		**| Order: Arhynchobdellida**	0	0
Annelida	Hirudinea	Arhynchobdellida	Erpobdellidae		69438	P	**| Family: Erpobdellidae**	0	0
Annelida	Hirudinea	Arhynchobdellida	Erpobdellidae	Nephelopsis obscura	69456	P	*Nephelopsis obscura*	0	0
Annelida	Hirudinea	Rhynchobdellida			69295		**| Order: Rhynchobdellida**	0	0
Annelida	Hirudinea	Rhynchobdellida	Glossiphoniidae		69357		**| Family: Glossiphoniidae**	0	0
Annelida	Hirudinea	Rhynchobdellida	Glossiphoniidae	Helobdella stagnalis	69398	PA	*Helobdella stagnalis*	0	0
Annelida	Hirudinea	Rhynchobdellida	Glossiphoniidae	Theromyzon	69375	P	*Theromyzon*	0	0
Annelida	Oligochaeta				68422	CG	**| Class: Oligochaeta**	0	0
Annelida	Oligochaeta	Lumbriculida			68439		**| Order: Lumbriculida**	0	0
Annelida	Oligochaeta	Lumbriculida	Lumbriculidae		68440	CG	**| Family: Lumbriculidae**	0	0
Annelida	Oligochaeta	Lumbriculida	Lumbriculidae	Rhynchelmis sp.	68463	CG	*Rhynchelmis sp.*	0	0

Phylum	Class	Order	Family	Taxonomy	ITIS Code	Functional Feeding Group		Site:	DEP-EXP	ERO-EXP
								Sample:	7-5	2-4
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								Sieve Size:	400	400
								SubSample %:	100	13
Annelida	Oligochaeta	Tubificida			68498		**| Order: Tubificida**		0	0
Annelida	Oligochaeta	Tubificida	Enchytraeidae		68510	CG	**| Family: Enchytraeidae**		0	0
Annelida	Oligochaeta	Tubificida	Enchytraeidae	Enchytraeus	68531	CG	*Enchytraeus*		10	3
Annelida	Oligochaeta	Tubificida	Naididae		68854	CG	**| Family: Naididae**		10	0
Annelida	Oligochaeta	Tubificida	Naididae	Nais	68946	CG	*Nais*		0	0
Cnidaria					48738		**Phylum: Cnidaria**		0	0
Cnidaria	Hydrozoa				48739		**| Class: Hydrozoa**		0	0
Cnidaria	Hydrozoa	Anthoathecatae			718925		**| Order: Anthoathecatae**		0	0
Cnidaria	Hydrozoa	Anthoathecatae	Hydridae		50844		**| Family: Hydridae**		0	0
Cnidaria	Hydrozoa	Anthoathecatae	Hydridae	Hydra	50845	P	*Hydra*		0	0
								Totals:	**203**	**338**
							Taxa present but not included:			
					0000000		*Terrestrials*		0	0
Arthropoda					82696		**Phylum: Arthropoda**		0	0
Arthropoda	Entognatha				676821		**| Class: Entognatha**		0	0
Arthropoda	Entognatha	Collembola			99237	CG	**| Order: Collembola**		0	0
Arthropoda					83677		**Subphylum: Crustacea**		0	0
Arthropoda	Ostracoda				84195	CG	**| Class: Ostracoda**		0	0
Arthropoda	Branchiopoda				83687		**| Class: Branchiopoda**		0	0
Arthropoda	Branchiopoda	Cladocera			83832		**| Order: Cladocera**		0	0
Arthropoda	Maxillipoda				610004		**| Class: Maxillipoda**		0	0
Arthropoda	Copepoda				85257	CG	**| Class: Copepoda**		0	0
Nemata					563956	SH	**Phylum: Nemata**		0	0
Platyhelminthes					53963		**Phylum: Platyhelminthes**		0	0
Platyhelminthes	Turbellaria				53964	P	**| Class: Turbellaria**		0	20
								Totals:	**0**	**20**

Cordillera Consulting

Project: Teck Trail Operations - LCR AREMP (15-1438)
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Site:	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	
Sample:	1-1	1-2	1-3	1-4	1-5	2-1	2-2	2-3	2-4	2-5	1-1	1-2	1-3	1-4	
CC#:	CC161652	CC161653	CC161654	CC161655	CC161656	CC161657	CC161658	CC161659	CC161660	CC161661	CC161662	CC161663	CC161664	CC161665	
Richness Measures															
Species Richness	33	30	23	28	30	22	20	31	30	30	28	27	36	34	
EPT Richness	6	7	10	15	8	12	12	16	7	6	11	11	14	15	
Ephemeroptera Richness	1	5	4	6	4	4	7	9	3	2	4	5	7	6	
Plecoptera Richness		1				1		1				1			
Trichoptera Richness	5	1	6	9	4	7	5	6	4	4	7	5	7	9	
Chironomidae Richness	6	5	5	7	6	3	4	5	6	4	6	5	7	6	
Oligochaeta Richness	3	3			2		1	1	3	3	1	1	2	1	
Non-Chiro. Non-Olig. Richness															
Abundance Measures															
Corrected Abundance	208	904	2181	1249	722	4270	2120	987	1385	454	1596	878	967	1904	
EPT Abundance	46	66.7	1880	921.6	100	3662.5	2037.8	797.3	88.8	7	1120	282.7	458.7	1404	
Dominance Measures															
1st Dominant Taxon	Hygrobates	Crangonyx	Hydropsyche	Cheumatopsyche	Hygrobates	Hydropsyche	Hydropsyche	Hydropsyche	Planorbidae	Lymnaeidae	Ephemerellidae	Naididae	Cheumatopsyche	Ephemerellidae	
1st Dominant Abundance	50	272	880	291	168	2338	1200	264	311	154	360	141	139	404	
2nd Dominant Taxon	Protoptila	Lymnaeidae	Cheumatopsyche	Ephemerellidae	Hydrobiidae	Cheumatopsyche	Cheumatopsyche	Cheumatopsyche	Enchytraeus	Planorbidae	Hydropsyche	Physa	Crangonyx	Hydropsyche	
2nd Dominant Abundance	24	211	493	253	136	563	538	243	233	65	352	117	120	404	
3rd Dominant Taxon	Physa	Pisidium	Ephemerellidae	Hydropsyche	Lymnaeidae	Drunella grandis group	Ephemerellidae	Ephemerellidae	Sigara	Physa	Cheumatopsyche	Crangonyx	Ephemerellidae	Cheumatopsyche	
3rd Dominant Abundance	18	61	273	208	70	263	88	91	163	55	208	91	120	332	
% 1 Dominant Taxon	24.04%	30.09%	40.35%	23.30%	23.27%	54.75%	56.60%	26.75%	22.45%	33.92%	22.56%	16.06%	14.37%	21.22%	
% 2 Dominant Taxa	11.54%	23.34%	22.60%	20.26%	18.84%	13.19%	25.38%	24.62%	16.82%	14.32%	22.06%	13.33%	12.41%	21.22%	
% 3 Dominant Taxa	8.65%	6.75%	12.52%	16.65%	9.70%	6.16%	4.15%	9.22%	11.77%	12.11%	13.03%	10.36%	12.41%	17.44%	
Community Composition															
% Ephemeroptera	0.48%	4.61%	18.95%	27.41%	7.20%	9.07%	11.80%	23.77%	1.87%	0.66%	29.32%	10.63%	22.89%	30.04%	
% Plecoptera		2.15%				0.29%		0.27%				0.31%			
% Trichoptera	21.63%	0.62%	67.25%	46.37%	6.65%	76.41%	84.32%	56.74%	4.54%	0.88%	40.85%	21.26%	24.55%	43.70%	
% EPT	22.12%	7.38%	86.20%	73.79%	13.85%	85.77%	96.12%	80.78%	6.41%	1.54%	70.18%	32.20%	47.44%	73.74%	
% Diptera	8.65%	3.10%	4.59%	21.78%	6.09%	2.93%	2.07%	4.88%	1.87%	1.54%	12.28%	11.54%	8.83%	7.56%	
% Oligochaeta	5.29%	11.68%			7.20%		0.89%	4.86%	27.55%	5.07%	5.01%	16.09%	7.45%	9.03%	
% Baetidae	0.48%	1.54%	0.61%	1.54%		1.76%	2.07%	9.99%			5.51%	2.43%	1.10%	2.94%	
% Chironomidae	4.81%	2.48%	4.28%	21.52%	5.54%	2.93%	2.07%	4.06%	1.87%	1.54%	12.28%	11.54%	8.55%	6.93%	
% Odonata															
Functional Group Composition															
% Predators	34.13%	6.86%	1.24%	2.80%	24.65%	2.08%	0.57%	2.33%	16.03%	4.85%	2.01%	6.61%	3.00%	2.10%	
% Shredder-Herbivores	0.96%		0.32%												
% Collector-Gatherers	11.06%	44.69%	7.38%	18.09%	14.96%	10.89%	7.97%	18.84%	36.68%	16.30%	23.06%	33.14%	33.61%	25.00%	
% Scrapers	32.21%	26.77%	7.34%	4.08%	44.60%	7.33%	0.57%	7.90%	33.21%	67.40%	9.77%	20.62%	16.34%	5.67%	
% MH															
% CF	11.06%	7.41%	64.79%	49.72%	5.54%	70.00%	82.59%	52.68%	5.85%	1.76%	36.84%	24.60%	22.85%	40.55%	
% OM	3.37%	0.66%	2.75%	3.36%	3.32%	5.88%	1.79%	3.24%	0.51%		4.26%	2.39%	3.31%	2.94%	
% PA															
% Piercer-Herbivore				0.24%								0.91%	0.31%		
% Gatherer															
% Unclassified	7.21%	13.61%	16.19%	21.70%	6.93%	3.82%	6.51%	14.99%	7.73%	9.69%	24.06%	11.73%	20.58%	23.74%	

Site:	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-REF	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP
Sample:	1-1	1-2	1-3	1-4	1-5	2-1	2-2	2-3	2-4	2-5	1-1	1-2	1-3	1-4
CC#:	CC161652	CC161653	CC161654	CC161655	CC161656	CC161657	CC161658	CC161659	CC161660	CC161661	CC161662	CC161663	CC161664	CC161665
Functional Group Richness														
Predators Richness	9	6	2	3	6	4	2	5	5	6	5	6	6	5
Shredder-Herbivores Richness	2		1											
Collector-Gatherers Richness	9	9	6	9	8	6	7	10	9	8	9	7	11	12
Scrapers Richness	5	5	4	4	6	4	2	4	4	7	5	3	5	4
MH Richness														
CF Richness	5	2	4	5	5	3	3	5	6	5	5	4	6	5
OM Richness	1	1	2	2	1	2	1	2	1		1	1	1	2
PA Richness														
Piercer-Herbivore Richness				1								1	1	
Gatherer Richness														
Unclassified	2	7	4	4	4	3	5	5	5	4	3	5	6	6
Diversity/Evenness Measures														
Shannon-Weiner H' (log 10)	1.22	1.03	0.84	1.03	1.10	0.78	0.61	1.07	1.11	0.98	1.03	1.19	1.23	1.05
Shannon-Weiner H' (log 2)	4.05	3.41	2.80	3.43	3.66	2.59	2.03	3.55	3.70	3.26	3.41	3.96	4.08	3.49
Shannon-Weiner H' (log e)	2.81	2.36	1.94	2.38	2.53	1.79	1.41	2.46	2.56	2.26	2.36	2.75	2.83	2.42
Simpson's Index (D)	0.09	0.16	0.24	0.14	0.12	0.33	0.39	0.15	0.11	0.17	0.14	0.08	0.08	0.14
Simpson's Index of Diversity (1 - D)	0.91	0.84	0.76	0.86	0.88	0.67	0.61	0.85	0.89	0.83	0.86	0.92	0.92	0.86
Simpson's Reciprocal Index (1/D)	10.58	6.16	4.24	7.14	8.34	3.06	2.57	6.68	8.81	6.00	7.28	11.93	12.12	7.34
Biotic Indices														
Hilsenhoff Biotic Index	5.57	5.14	3.74	3.64	5.07	3.74	3.89	4.18	6.80	5.67	3.96	5.39	4.22	3.97

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Site:	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	
Sample:	1-5	2-1	2-2	2-3	2-5	3-1	3-2	3-3	3-4	3-5	4-1	4-2	
CC#:	CC161666	CC161667	CC161668	CC161669	CC161670	CC161671	CC161672	CC161673	CC161674	CC161675	CC161676	CC161677	
Richness Measures													
Species Richness	24	25	25	21	18	24	29	25	17	27	22	29	
EPT Richness	12	11	13	13	11	14	8	12	11	12	6	14	
Ephemeroptera Richness	5	5	6	6	6	6	4	6	5	5	3	7	
Plecoptera Richness	1	1		1		1	1					1	
Trichoptera Richness	6	5	7	6	5	7	3	6	6	7	3	6	
Chironomidae Richness	5	7	4	1	2	5	3	6	2	7	3	2	
Oligochaeta Richness	1		2	1	1		1	1		1	1	1	
Non-Chiro. Non-Olig. Richness													
Abundance Measures													
Corrected Abundance	2673	4335	1237	3046	4133	1154	439	814	1572	1555	180	211	
EPT Abundance	2391.7	3918.2	1126.9	2845.4	3933.4	1117.1	75	707.5	1523.8	1345	11	94	
Dominance Measures													
1st Dominant Taxon	Hydropsyche	Ephemerellidae	Hydropsyche	Hydropsyche	Hydropsyche	Hydropsyche	Lymnaeidae	Hydropsyche	Hydropsyche	Ephemerellidae	Amphipoda	Lymnaeidae	
1st Dominant Abundance	1017	1691	385	1382	1878	593	150	280	867	450	43	64	
2nd Dominant Taxon	Ephemerellidae	Hydropsyche	Ephemerellidae	Ephemerellidae	Ephemerellidae	Ephemerellidae	Hemerodromia sp.	Ephemerellidae	Ephemerellidae	Hydropsyche	Crangonyx	Cheumatopsyche	
2nd Dominant Abundance	717	1309	338	564	644	207	71	238	262	435	40	54	
3rd Dominant Taxon	Cheumatopsyche	Drunella grandis group	Cheumatopsyche	Brachycentrus occidentalis	Ephemerella	Ephemerella	Ephemerellidae	Cheumatopsyche	Cheumatopsyche	Cheumatopsyche	Lumbriculidae	Physa	
3rd Dominant Abundance	275	318	165	318	311	62	38	53	95	230	39	14	
% 1 Dominant Taxon	38.05%	39.01%	31.12%	45.37%	45.44%	51.39%	34.17%	34.40%	55.15%	28.94%	23.89%	30.33%	
% 2 Dominant Taxa	26.82%	30.20%	27.32%	18.52%	15.58%	17.94%	16.17%	29.24%	16.67%	27.97%	22.22%	25.59%	
% 3 Dominant Taxa	10.29%	7.34%	13.34%	10.44%	7.52%	5.37%	8.66%	6.51%	6.04%	14.79%	21.67%	6.64%	
Community Composition													
% Ephemeroptera	36.79%	49.07%	36.07%	27.16%	35.49%	34.66%	10.25%	41.77%	29.08%	37.94%	2.78%	11.85%	
% Plecoptera	0.31%	0.42%		0.30%		0.29%	0.23%					0.47%	
% Trichoptera	52.38%	40.89%	55.03%	65.96%	59.68%	61.85%	6.61%	45.15%	67.85%	48.55%	3.33%	32.23%	
% EPT	89.48%	90.39%	91.10%	93.41%	95.17%	96.80%	17.08%	86.92%	96.93%	86.50%	6.11%	44.55%	
% Diptera	6.54%	8.18%	1.54%	0.30%	1.34%	2.37%	18.00%	6.14%	0.92%	9.97%	3.89%	2.84%	
% Oligochaeta	0.31%		0.61%	0.30%	0.27%		2.96%	3.07%		0.96%	21.67%	1.42%	
% Baetidae	2.50%	2.31%	2.17%	2.09%	5.38%	6.27%	0.46%	3.99%	8.78%	2.57%	0.56%	6.16%	
% Chironomidae	6.23%	7.76%	1.54%	0.30%	1.34%	2.07%	1.37%	5.84%	0.61%	9.97%	2.78%	1.90%	
% Odonata											0.56%		
Functional Group Composition													
% Predators	0.60%	1.04%	1.29%	0.89%	0.80%	1.30%	26.65%	2.95%	1.78%	1.61%	6.67%	3.79%	
% Shredder-Herbivores				0.30%		0.26%							
% Collector-Gatherers	16.46%	13.19%	10.02%	8.63%	20.71%	18.20%	7.97%	20.76%	12.72%	18.65%	45.00%	14.22%	
% Scrapers	1.53%	1.04%	5.90%	5.68%	2.15%	0.61%	42.37%	2.83%	1.21%	2.25%	13.89%	45.97%	
% MH													
% CF	51.78%	39.65%	45.11%	53.15%	52.96%	56.41%	4.56%	43.24%	63.61%	44.37%	4.44%	27.49%	
% OM	0.64%	5.24%	9.05%	10.44%	6.73%	4.51%	2.28%	0.61%	3.69%	2.89%	0.56%	2.37%	
% PA													
% Piercer-Herbivore										0.32%			
% Gatherer													
% Unclassified	28.99%	39.84%	28.62%	20.91%	16.65%	18.72%	16.17%	29.61%	16.98%	29.90%	29.44%	6.16%	

Site:	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP
Sample:	1-5	2-1	2-2	2-3	2-5	3-1	3-2	3-3	3-4	3-5	4-1	4-2
CC#:	CC161666	CC161667	CC161668	CC161669	CC161670	CC161671	CC161672	CC161673	CC161674	CC161675	CC161676	CC161677
Functional Group Richness												
Predators Richness	2	5	3	3	2	5	10	4	2	5	4	3
Shredder-Herbivores Richness				1		1						
Collector-Gatherers Richness	11	5	9	5	7	8	6	10	5	9	4	11
Scrapers Richness	3	3	5	5	1	1	4	3	2	3	3	7
MH Richness												
CF Richness	4	6	3	3	3	4	2	5	4	4	4	3
OM Richness	1	2	2	1	2	1	2	1	2	2	1	1
PA Richness												
Piercer-Herbivore Richness											1	
Gatherer Richness												
Unclassified	3	4	3	3	3	4	5	2	2	3	6	4
Diversity/Evenness Measures												
Shannon-Weiner H' (log 10)	0.84	0.79	0.88	0.82	0.83	0.77	1.03	0.90	0.71	0.92	0.96	1.04
Shannon-Weiner H' (log 2)	2.80	2.62	2.94	2.71	2.77	2.56	3.42	3.00	2.35	3.05	3.18	3.44
Shannon-Weiner H' (log e)	1.94	1.81	2.04	1.88	1.92	1.77	2.37	2.08	1.63	2.12	2.20	2.39
Simpson's Index (D)	0.23	0.26	0.20	0.26	0.25	0.31	0.16	0.21	0.34	0.19	0.16	0.17
Simpson's Index of Diversity (1 - D)	0.77	0.74	0.80	0.74	0.75	0.69	0.84	0.79	0.66	0.81	0.84	0.83
Simpson's Reciprocal Index (1/D)	4.29	3.91	5.00	3.87	4.02	3.27	6.17	4.66	2.93	5.23	6.25	6.01
Biotic Indices												
Hilsenhoff Biotic Index	2.84	2.24	2.74	2.72	2.98	2.92	5.24	2.90	3.36	3.00	4.41	4.89

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Site:	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-CRADT	ERO-CRADT	ERO-CRADT	ERO-CRADT	ERO-CRADT
Sample:	4-3	4-4	4-5	5-1	5-2	5-3	5-4	5-5	3-1	3-2	3-3	3-4	3-5
CC#:	CC161678	CC161679	CC161680	CC161681	CC161682	CC161683	CC161684	CC161685	CC161686	CC161687	CC161688	CC161689	CC161690
Richness Measures													
Species Richness	30	21	24	41	27	23	23	19	24	40	30	23	33
EPT Richness	12	13	6	18	12	12	10	9	12	18	13	12	14
Ephemeroptera Richness	5	5	3	7	6	7	6	4	7	9	6	6	8
Plecoptera Richness		1		1	1		1			2			
Trichoptera Richness	7	7	3	10	5	5	3	5	5	7	7	6	6
Chironomidae Richness	4	3	1	6	4	4	6	1	6	5	7	3	7
Oligochaeta Richness	2		2	1	1	1	1		1	2	1		1
Non-Chiro. Non-Olig. Richness													
Abundance Measures													
Corrected Abundance	129	1823	265	764	2229	913	143	108	1881	444	934	1891	656
EPT Abundance	63	1706	41	255	1293.3	802.8	65	56	1694.5	195.8	742.8	1664.7	430
Dominance Measures													
1st Dominant Taxon	Ephemerellidae	Hydropsyche	Enchytraeus	Lymnaeidae	Naididae	Ephemerellidae	Naididae	Lymnaeidae	Hydropsyche	Physa	Ephemerellidae	Hydropsyche	Ephemerellidae
1st Dominant Abundance	31	559	135	263	700	421	42	33	1006	101	210	865	178
2nd Dominant Taxon	Lymnaeidae	Cheumatopsyche	Lymnaeidae	Ephemerellidae	Cheumatopsyche	Hydropsyche	Ephemerellidae	Hydropsyche	Ephemerellidae	Lymnaeidae	Hydropsyche	Ephemerellidae	Cheumatopsyche
2nd Dominant Abundance	30	429	40	145	500	121	33	21	250	87	171	259	96
3rd Dominant Taxon	Hydropsyche	Ephemerellidae	Hydropsyche	Physa	Ephemerellidae	Ephemerella	Physa	Cheumatopsyche	Cheumatopsyche	Ephemerellidae	Cheumatopsyche	Cheumatopsyche	Ephemerella
3rd Dominant Abundance	9	382	21	48	307	109	11	13	122	55	148	224	48
% 1 Dominant Taxon	24.03%	30.66%	50.94%	34.42%	31.40%	46.11%	29.37%	30.56%	53.48%	22.75%	22.48%	45.74%	27.13%
% 2 Dominant Taxa	23.26%	23.53%	15.09%	18.98%	22.43%	13.25%	23.08%	19.44%	13.29%	19.59%	18.31%	13.70%	14.63%
% 3 Dominant Taxa	6.98%	20.95%	7.92%	6.28%	13.77%	11.94%	7.69%	12.04%	6.49%	12.39%	15.85%	11.85%	7.32%
Community Composition													
% Ephemeroptera	31.01%	31.30%	6.79%	23.95%	22.14%	63.45%	37.06%	13.89%	24.23%	21.60%	38.49%	25.20%	39.94%
% Plecoptera		0.65%		0.26%	0.60%		1.40%			0.59%			
% Trichoptera	17.83%	61.63%	8.68%	9.16%	35.29%	24.48%	6.99%	37.96%	65.86%	21.91%	41.04%	62.83%	25.61%
% EPT	48.84%	93.58%	15.47%	33.38%	58.02%	87.93%	45.45%	51.85%	90.09%	44.10%	79.53%	88.03%	65.55%
% Diptera	4.65%	1.29%	1.13%	6.54%	2.99%	4.17%	9.09%	1.85%	6.80%	2.68%	2.06%	1.56%	10.67%
% Oligochaeta	2.33%		51.70%	1.96%	31.40%	3.55%	29.37%		0.59%	1.19%	0.51%		4.27%
% Baetidae	1.55%	3.55%		0.65%	1.79%	3.54%	4.90%	0.93%	3.55%	2.68%	3.32%	3.42%	2.44%
% Chironomidae	4.65%	1.29%	0.38%	6.28%	2.99%	3.86%	9.09%	0.93%	6.50%	1.78%	2.06%	1.56%	10.67%
% Odonata													
Functional Group Composition													
% Predators	9.30%	2.30%	4.91%	7.98%	3.63%	0.66%	6.99%	5.56%	0.90%	4.95%	1.93%	1.27%	7.62%
% Shredder-Herbivores	1.55%									0.23%			
% Collector-Gatherers	14.73%	11.30%	54.34%	11.65%	40.38%	23.99%	49.65%	5.56%	15.47%	11.94%	15.95%	11.79%	21.65%
% Scrapers	33.33%	4.17%	20.38%	47.51%	5.43%	2.96%	7.69%	42.59%	1.81%	45.72%	14.88%	7.83%	9.76%
% MH													
% CF	9.30%	56.77%	9.43%	8.25%	34.99%	22.34%	4.20%	34.26%	62.63%	17.34%	35.44%	58.22%	25.91%
% OM	5.43%	4.50%	0.38%	1.31%	1.48%	2.63%	3.50%		4.68%	2.93%	5.57%	4.71%	3.05%
% PA													
% Piercer-Herbivore				0.52%									
% Gatherer													
% Unclassified	26.36%	20.95%	10.57%	22.77%	14.09%	47.43%	27.97%	12.04%	14.51%	16.89%	26.23%	16.18%	32.01%

Site:	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-EXP	ERO-CRADT	ERO-CRADT	ERO-CRADT	ERO-CRADT	ERO-CRADT
Sample:	4-3	4-4	4-5	5-1	5-2	5-3	5-4	5-5	3-1	3-2	3-3	3-4	3-5
CC#:	CC161678	CC161679	CC161680	CC161681	CC161682	CC161683	CC161684	CC161685	CC161686	CC161687	CC161688	CC161689	CC161690
Functional Group Richness													
Predators Richness	6	4	6	8	7	2	5	4	2	9	6	3	6
Shredder-Herbivores Richness	1									1			
Collector-Gatherers Richness	9	6	7	14	7	8	8	3	10	11	10	6	10
Scrapers Richness	5	4	3	7	4	3	1	5	2	9	4	4	4
MH Richness													
CF Richness	4	4	4	6	5	4	3	5	4	3	4	4	6
OM Richness	1	2	1	2	2	2	1		3	2	2	2	2
PA Richness													
Piercer-Herbivore Richness				1									
Gatherer Richness													
Unclassified	4	1	3	3	2	4	5	2	3	5	4	4	5
Diversity/Evenness Measures													
Shannon-Weiner H' (log 10)	1.12	0.86	0.81	1.05	0.93	0.85	1.02	0.98	0.81	1.13	1.04	0.85	1.16
Shannon-Weiner H' (log 2)	3.74	2.86	2.69	3.50	3.10	2.82	3.40	3.25	2.68	3.74	3.47	2.83	3.85
Shannon-Weiner H' (log e)	2.59	1.98	1.87	2.43	2.15	1.96	2.36	2.25	1.86	2.59	2.40	1.96	2.67
Simpson's Index (D)	0.12	0.20	0.29	0.17	0.18	0.25	0.15	0.15	0.31	0.12	0.13	0.25	0.12
Simpson's Index of Diversity (1 - D)	0.88	0.80	0.71	0.83	0.82	0.75	0.85	0.85	0.69	0.88	0.87	0.75	0.88
Simpson's Reciprocal Index (1/D)	8.05	5.00	3.42	5.92	5.48	3.96	6.58	6.52	3.19	8.06	7.66	3.99	8.56
Biotic Indices													
Hilsenhoff Biotic Index	3.86	3.25	7.29	4.33	5.56	2.13	5.04	4.38	3.48	4.74	3.36	3.46	3.67

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Site:	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	
Sample:	1-1	1-2	1-3	1-4	1-5	2-1	2-2	2-3	2-4	2-5	3-1	3-2		
CC#:	CC161691	CC161692	CC161693	CC161694	CC161695	CC161696	CC161697	CC161698	CC161699	CC161700	CC161701	CC161702		
Richness Measures														
Species Richness	6	22	13	17	19	17	17	20	14	21	18	21		
EPT Richness	1	2	2	2	2	1	2	1	2	3		3		
Ephemeroptera Richness					1							1		
Plecoptera Richness														
Trichoptera Richness	1	2	2	2	1	1	2	1	2	3		2		
Chironomidae Richness		6	3	5	6	1		2	2	3	7	7		
Oligochaeta Richness	2	2	2	2	2	1	2	2	1	2	2	1		
Non-Chiro. Non-Olig. Richness														
Abundance Measures														
Corrected Abundance	29	332	197	211	1371	739	805	747	686	1241	102	124		
EPT Abundance	4	47	7	9	12.5	2.2	10	1	6	11.1		5		
Dominance Measures														
1st Dominant Taxon	Caecidotea	Caecidotea	Pisidium	Caecidotea	Caecidotea	Caecidotea	Caecidotea	Caecidotea	Caecidotea	Caecidotea	Robackia demeijerei	Hygrobates		
1st Dominant Abundance	14	212	77	81	813	436	540	454	518	519	28	26		
2nd Dominant Taxon	Lumbriculidae	Oecetis	Caecidotea	Lumbriculidae	Naididae	Planorbidae	Planorbidae	Planorbidae	Planorbidae	Planorbidae	Hydrobiidae	Hydrobiidae		
2nd Dominant Abundance	5	26	56	38	154	98	78	56	86	219	12	25		
3rd Dominant Taxon	Oecetis	Mystacides	Lumbriculidae	Pisidium	Pisidium	Valvata tricarinata	Naididae	Hyalella	Valvata tricarinata	Naididae	Microtendipes pedellus group	Microtendipes pedellus group		
3rd Dominant Abundance	4	21	27	37	129	58	45	42	24	93	10	11		
% 1 Dominant Taxon	48.28%	63.86%	39.09%	38.39%	59.30%	59.00%	67.08%	60.78%	75.51%	41.82%	27.45%	20.97%		
% 2 Dominant Taxa	17.24%	7.83%	28.43%	18.01%	11.23%	13.26%	9.69%	7.50%	12.54%	17.65%	11.76%	20.16%		
% 3 Dominant Taxa	13.79%	6.33%	13.71%	17.54%	9.41%	7.85%	5.59%	5.62%	3.50%	7.49%	9.80%	8.87%		
Community Composition														
% Ephemeroptera					0.31%							2.42%		
% Plecoptera														
% Trichoptera	13.79%	14.16%	3.55%	4.27%	0.61%	0.30%	1.24%	0.13%	0.87%	0.89%		1.61%		
% EPT	13.79%	14.16%	3.55%	4.27%	0.91%	0.30%	1.24%	0.13%	0.87%	0.89%		4.03%		
% Diptera		6.63%	5.08%	7.58%	4.87%	0.60%		0.27%	0.58%	2.98%	57.84%	33.06%		
% Oligochaeta	20.69%	3.01%	21.32%	25.12%	15.81%	0.60%	11.18%	7.10%	0.29%	10.44%	10.78%	6.45%		
% Baetidae														
% Chironomidae		6.02%	3.05%	6.16%	4.57%	0.60%		0.27%	0.58%	2.98%	55.88%	32.26%		
% Odonata														
Functional Group Composition														
% Predators	13.79%	10.24%	6.60%	4.74%	3.36%	4.74%	1.99%	3.21%	0.29%	1.21%	7.84%	22.58%		
% Shredder-Herbivores														
% Collector-Gatherers	72.41%	70.48%	51.78%	70.14%	84.54%	68.61%	80.50%	77.11%	78.43%	60.35%	47.06%	29.03%		
% Scrapers		1.81%	0.51%			21.92%	11.68%	13.25%	17.20%	22.48%	13.73%	24.19%		
% MH														
% CF	13.79%	6.33%	40.10%	23.70%	10.94%	0.27%	1.37%	3.88%		10.80%	28.43%	20.16%		
% OM		6.33%	1.02%	1.42%	0.58%	0.27%	0.62%	0.13%	0.87%	0.97%	1.96%	1.61%		
% PA										0.32%				
% Piercer-Herbivore														
% Gatherer														
% Unclassified		4.82%			0.58%	4.19%	3.85%	2.41%	3.21%	3.87%	0.98%	2.42%		

Site:	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF	DEP-REF
Sample:	1-1	1-2	1-3	1-4	1-5	2-1	2-2	2-3	2-4	2-5	3-1	3-2
CC#:	CC161691	CC161692	CC161693	CC161694	CC161695	CC161696	CC161697	CC161698	CC161699	CC161700	CC161701	CC161702
Functional Group Richness												
Predators Richness	1	5	3	3	3	3	3	4	1	2	2	2
Shredder-Herbivores Richness												
Collector-Gatherers Richness	4	8	6	9	11	5	4	6	5	7	7	7
Scrapers Richness		3	1			5	3	4	4	4	3	3
MH Richness												
CF Richness	1	2	2	4	2	1	3	2		3	4	6
OM Richness		1	1	1	1	1	1	1	2	3	1	2
PA Richness										1		
Piercer-Herbivore Richness												
Gatherer Richness												
Unclassified		3			2	2	3	3	2	1	1	1
Diversity/Evenness Measures												
Shannon-Weiner H' (log 10)	0.62	0.67	0.72	0.83	0.69	0.65	0.59	0.71	0.42	0.89	1.05	1.08
Shannon-Weiner H' (log 2)	2.07	2.23	2.40	2.75	2.29	2.15	1.95	2.34	1.39	2.95	3.47	3.59
Shannon-Weiner H' (log e)	1.43	1.55	1.66	1.91	1.59	1.49	1.35	1.62	0.96	2.04	2.41	2.49
Simpson's Index (D)	0.28	0.42	0.26	0.22	0.38	0.38	0.47	0.39	0.59	0.22	0.12	0.11
Simpson's Index of Diversity (1 - D)	0.72	0.58	0.74	0.78	0.62	0.62	0.53	0.61	0.41	0.78	0.88	0.89
Simpson's Reciprocal Index (1/D)	3.59	2.37	3.90	4.61	2.65	2.64	2.14	2.60	1.70	4.50	8.39	9.08
Biotic Indices												
Hilsenhoff Biotic Index	7.93	7.54	8.09	7.97	7.95	7.44	7.64	7.63	7.55	7.49	5.84	5.44

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Site:	DEP-REF	DEP-REF	DEP-REF	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	
Sample:	3-3	3-4	3-5	1-1	1-2	1-3	1-4	1-5	2-1	2-2	2-3	2-4	2-5		
CC#:	CC161703	CC161704	CC161705	CC161706	CC161707	CC161708	CC161709	CC161710	CC161711	CC161712	CC161713	CC161714	CC161715		
Richness Measures															
Species Richness		12	14	19	18	14	11	21	19	14	24	27	23	26	
EPT Richness				1	1	3	1	6	6	1	2	2	2	1	
Ephemeroptera Richness				1		1		2	3						
Plecoptera Richness															
Trichoptera Richness					1	2	1	4	3	1	2	2	2	1	
Chironomidae Richness		7	7	7	7	5	4	7	4	5	7	9	8	8	
Oligochaeta Richness		1	1	2	3	1	2	2	2	1	1	1	2	2	
Non-Chiro. Non-Olig. Richness															
Abundance Measures															
Corrected Abundance		81	69	79	131	43	49	67	77	111	450	214	254	294	
EPT Abundance				3	1	4	1	19	23	3	23	38	26	29	
Dominance Measures															
1st Dominant Taxon	Robackia demeijerei	Robackia demeijerei	Microtendipes pedellus group	Rheotanytarsus	Lumbriculidae	Pisidium	Ephemerellidae	Naididae	Lumbriculidae	Pisidium	Procladius	Pisidiidae	Pisidium		
1st Dominant Abundance		29	14	14	23	13	14	12	15	57	190	40	66	114	
2nd Dominant Taxon	Microtendipes pedellus group	Lumbriculidae	Robackia demeijerei	Enchytraeus	Pisidium	Lumbriculidae	Pisidium	Ephemerellidae	Pisidium	Lumbriculidae	Mystacides	Procladius	Procladius		
2nd Dominant Abundance	19	12	11	20	6	10	11	14	20	93	36	48	33		
3rd Dominant Taxon	Hygrobates	Hydrobiidae	Lumbriculidae	Lumbriculidae	Lebertia	Naididae	Lumbriculidae	Pisidium	Valvata	Procladius	Valvata	Pisidium	Pisidiidae		
3rd Dominant Abundance	10	9	10	20	6	10	8	11	10	33	19	31	29		
% 1 Dominant Taxon	35.80%	20.29%	17.72%	17.56%	30.23%	28.57%	17.91%	19.48%	51.35%	42.22%	18.69%	25.98%	38.78%		
% 2 Dominant Taxa	23.46%	17.39%	13.92%	15.27%	13.95%	20.41%	16.42%	18.18%	18.02%	20.67%	16.82%	18.90%	11.22%		
% 3 Dominant Taxa	12.35%	13.04%	12.66%	15.27%	13.95%	20.41%	11.94%	14.29%	9.01%	7.33%	8.88%	12.20%	9.86%		
Community Composition															
% Ephemeroptera			3.80%		4.65%		22.39%	22.08%							
% Plecoptera															
% Trichoptera				0.76%	4.65%	2.04%	5.97%	7.79%	2.70%	5.11%	17.76%	10.24%	9.86%		
% EPT			3.80%	0.76%	9.30%	2.04%	28.36%	29.87%	2.70%	5.11%	17.76%	10.24%	9.86%		
% Diptera	69.14%	55.07%	45.57%	33.59%	18.60%	14.29%	22.39%	12.99%	10.81%	11.56%	26.17%	27.17%	15.65%		
% Oligochaeta	4.94%	17.39%	22.78%	45.80%	30.23%	40.82%	22.39%	25.97%	51.35%	20.67%	4.21%	8.27%	3.06%		
% Baetidae								1.30%							
% Chironomidae	69.14%	50.72%	44.30%	32.82%	13.95%	14.29%	22.39%	9.09%	10.81%	10.67%	26.17%	25.59%	15.31%		
% Odonata															
Functional Group Composition															
% Predators	16.05%	5.80%	6.33%	4.58%	30.23%	12.24%	2.99%	6.49%	5.41%	8.44%	21.50%	21.65%	11.90%		
% Shredder-Herbivores			1.27%												
% Collector-Gatherers	48.15%	49.28%	49.37%	48.85%	37.21%	44.90%	32.84%	32.47%	57.66%	27.78%	16.36%	12.60%	11.90%		
% Scrapers	8.64%	13.04%	13.92%	4.58%	2.33%	4.08%	10.45%	5.19%	15.32%	12.67%	25.23%	12.60%	13.61%		
% MH															
% CF	25.93%	23.19%	25.32%	40.46%	20.93%	38.78%	34.33%	32.47%	18.92%	45.56%	16.36%	40.55%	49.66%		
% OM	1.23%	4.35%		0.76%	4.65%		1.49%	5.19%	2.70%	4.89%	17.76%	9.84%	9.86%		
% PA															
% Piercer-Herbivore															
% Gatherer															
% Unclassified		4.35%	3.80%	0.76%	4.65%		17.91%	18.18%		0.67%	2.80%	2.76%	3.06%		

Site:	DEP-REF	DEP-REF	DEP-REF	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP
Sample:	3-3	3-4	3-5	1-1	1-2	1-3	1-4	1-5	2-1	2-2	2-3	2-4	2-5
CC#:	CC161703	CC161704	CC161705	CC161706	CC161707	CC161708	CC161709	CC161710	CC161711	CC161712	CC161713	CC161714	CC161715
Functional Group Richness													
Predators Richness	2	4	4	2	3	2	2	3	2	3	5	4	3
Shredder-Herbivores Richness			1										
Collector-Gatherers Richness	5	4	8	7	4	4	6	6	5	7	9	6	10
Scrapers Richness	1	1	2	3	1	2	5	2	4	6	6	5	6
MH Richness													
CF Richness	3	3	3	4	3	3	6	6	2	6	4	5	5
OM Richness	1	1		1	2		1	1	1	1	2	1	1
PA Richness													
Piercer-Herbivore Richness													
Gatherer Richness													
Unclassified		1	1	1	1		1	1		1	1	2	1
Diversity/Evenness Measures													
Shannon-Weiner H' (log 10)	0.82	1.01	1.08	1.00	0.96	0.83	1.11	1.07	0.73	0.88	1.17	1.03	0.98
Shannon-Weiner H' (log 2)	2.71	3.34	3.59	3.32	3.18	2.77	3.69	3.56	2.41	2.92	3.88	3.43	3.27
Shannon-Weiner H' (log e)	1.88	2.31	2.49	2.30	2.20	1.92	2.55	2.46	1.67	2.02	2.69	2.37	2.26
Simpson's Index (D)	0.20	0.11	0.09	0.12	0.13	0.17	0.09	0.10	0.30	0.23	0.09	0.13	0.19
Simpson's Index of Diversity (1 - D)	0.80	0.89	0.91	0.88	0.87	0.83	0.91	0.90	0.70	0.77	0.91	0.87	0.81
Simpson's Reciprocal Index (1/D)	4.94	9.27	10.62	8.46	7.46	5.97	10.84	9.72	3.29	4.30	10.84	7.42	5.36
Biotic Indices													
Hilsenhoff Biotic Index	5.96	5.80	5.75	7.79	6.88	7.96	5.57	6.06	7.78	7.51	6.75	7.48	7.30

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	Site:	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP
	Sample:	3-1	3-2	3-3	3-4	3-5	4-1	4-2	4-3	4-4	4-5	5-1	5-2	5-3	5-4
	CC#:	CC161716	CC161717	CC161718	CC161719	CC161720	CC161721	CC161722	CC161723	CC161724	CC161725	CC161726	CC161727	CC161728	CC161729
Richness Measures															
Species Richness		9	11	19	18	12	1	3	7	15	14	9	12	15	13
EPT Richness		2	3	2	2	2				2	3		1	2	
Ephemeroptera Richness										1	2				
Plecoptera Richness															
Trichoptera Richness		2	3	2	2	2				1	1		1	2	
Chironomidae Richness		3	4	7	9	6			2	3	4	3	3	5	3
Oligochaeta Richness		1		1				1	2	2	2	2	1	2	2
Non-Chiro. Non-Olig. Richness															
Abundance Measures															
Corrected Abundance		45	34	356	113	63	1	7	25	70	78	172	68	121	93
EPT Abundance		27	17	49	25	27				2	20		1	2	
Dominance Measures															
1st Dominant Taxon		Mystacides	Mystacides	Lumbriculidae	Mystacides	Mystacides	Pisidium	Pisidium	Lumbriculidae	Lumbriculidae	Ephemerellidae	Lumbriculidae	Lumbriculidae	Lumbriculidae	Pisidium
1st Dominant Abundance		24	15	85	23	26	1	5	10	20	16	99	32	45	41
2nd Dominant Taxon		Lumbriculidae	Lymnaeidae	Procladius	Procladius	Cryptochironomus		Hydrobiidae	Pisidium	Microtendipes pedellus group	Lumbriculidae	Pisidiidae	Pisidium	Pisidium	Lymnaeidae
2nd Dominant Abundance		5	5	56	17	8		1	7	20	15	18	18	22	16
3rd Dominant Taxon		Lymnaeidae	Tanytarsus	Pisidiidae	Lymnaeidae	Lymnaeidae		Lumbriculidae	Pisidiidae	Naididae	Pisidium	Cryptochironomus	Pisidiidae	Naididae	Physa
3rd Dominant Abundance		3	4	54	14	6		1	3	5	9	17	7	12	14
% 1 Dominant Taxon		53.33%	44.12%	23.88%	20.35%	41.27%	100.00%	71.43%	40.00%	28.57%	20.51%	57.56%	47.06%	37.19%	44.09%
% 2 Dominant Taxa		11.11%	14.71%	15.73%	15.04%	12.70%		14.29%	28.00%	28.57%	19.23%	10.47%	26.47%	18.18%	17.20%
% 3 Dominant Taxa		6.67%	11.76%	15.17%	12.39%	9.52%		14.29%	12.00%	7.14%	11.54%	9.88%	10.29%	9.92%	15.05%
Community Composition															
% Ephemeroptera										1.43%	24.36%				
% Plecoptera															
% Trichoptera		60.00%	50.00%	13.76%	22.12%	42.86%				1.43%	1.28%		1.47%	1.65%	
% EPT		60.00%	50.00%	13.76%	22.12%	42.86%				2.86%	25.64%		1.47%	1.65%	
% Diptera		13.33%	26.47%	24.44%	37.17%	36.51%			8.00%	35.71%	21.79%	11.05%	5.88%	18.18%	7.53%
% Oligochaeta		11.11%		23.88%				14.29%	48.00%	35.71%	24.36%	66.28%	47.06%	47.11%	3.23%
% Baetidae															
% Chironomidae		13.33%	23.53%	24.16%	31.86%	33.33%			8.00%	34.29%	10.26%	11.05%	4.41%	18.18%	7.53%
% Odonata				0.28%											
Functional Group Composition															
% Predators		8.89%	11.76%	17.42%	30.09%	25.40%				8.57%	7.69%	10.47%	8.82%	7.44%	6.45%
% Shredder-Herbivores															
% Collector-Gatherers		22.22%	5.88%	30.62%	9.73%	9.52%		14.29%	56.00%	41.43%	34.62%	66.28%	50.00%	50.41%	12.90%
% Scrapers		11.11%	23.53%	17.13%	23.89%	20.63%		14.29%	4.00%	7.14%	8.97%	5.81%	2.94%	4.13%	32.26%
% MH															
% CF		4.44%	11.76%	21.35%	15.93%	1.59%	100.00%	71.43%	40.00%	40.00%	26.92%	16.86%	36.76%	27.27%	47.31%
% OM		53.33%	47.06%	12.36%	20.35%	41.27%				1.43%	1.28%		1.47%	0.83%	
% PA															
% Piercer-Herbivore															
% Gatherer															
% Unclassified				1.12%		1.59%				1.43%	20.51%	0.58%		9.92%	1.08%

Site:	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP
Sample:	3-1	3-2	3-3	3-4	3-5	4-1	4-2	4-3	4-4	4-5	5-1	5-2	5-3	5-4
CC#:	CC161716	CC161717	CC161718	CC161719	CC161720	CC161721	CC161722	CC161723	CC161724	CC161725	CC161726	CC161727	CC161728	CC161729
Functional Group Richness														
Predators Richness	2	3	3	6	4				2	1	2	5	4	2
Shredder-Herbivores Richness														
Collector-Gatherers Richness	3	2	6	6	2		1	4	4	6	2	3	4	6
Scrapers Richness	2	3	3	2	3		1	1	2	2	2	1	2	2
MH Richness														
CF Richness	1	1	4	3	1	1	1	2	5	3	2	2	3	2
OM Richness	1	2	1	1	1				1	1		1	1	
PA Richness														
Piercer-Herbivore Richness														
Gatherer Richness														
Unclassified			2		1				1	1	1		1	1
Diversity/Evenness Measures														
Shannon-Weiner H' (log 10)	0.70	0.80	0.97	1.06	0.84		0.35	0.68	0.92	0.99	0.62	0.69	0.87	0.79
Shannon-Weiner H' (log 2)	2.34	2.67	3.23	3.52	2.79		1.15	2.26	3.05	3.30	2.07	2.28	2.89	2.61
Shannon-Weiner H' (log e)	1.62	1.85	2.24	2.44	1.94		0.80	1.57	2.11	2.29	1.44	1.58	2.01	1.81
Simpson's Index (D)	0.30	0.22	0.14	0.10	0.20		0.48	0.23	0.17	0.11	0.36	0.29	0.19	0.25
Simpson's Index of Diversity (1 - D)	0.70	0.78	0.86	0.90	0.80	1.00	0.52	0.77	0.83	0.89	0.64	0.71	0.81	0.75
Simpson's Reciprocal Index (1/D)	3.32	4.56	7.33	9.59	4.88		2.10	4.29	5.89	8.78	2.76	3.39	5.15	4.08
Biotic Indices														
Hilsenhoff Biotic Index	5.64	5.53	7.30	6.87	6.10	8.00	6.86	7.68	6.54	5.55	8.09	7.78	7.79	7.39

Cordillera Consulting

Project: Teck Trail Operations - LCR AREMP (15-1438)
Ecoscape, Kyle Hawes
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250-494-7553

Site:	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	ERO-EXP	
Sample:	5-5	6-1	6-2	6-3	6-4	6-5	7-1	7-2	7-3	7-4	7-5	2-4	
CC#:	CC161730	CC161731	CC161732	CC161733	CC161734	CC161735	CC161736	CC161737	CC161738	CC161739	CC161740	CC161741	
Richness Measures													
Species Richness	18	11	6	6	8	5	15	19	18	16	14	21	
EPT Richness	2		1					3	1	2	1	13	
Ephemeroptera Richness			1									5	
Plecoptera Richness													
Trichoptera Richness	2							3	1	2	1	8	
Chironomidae Richness	5	4		1	3	1	3	5	3		1	2	
Oligochaeta Richness	2	2	2	2	2	2	2	2	2	2	2	1	
Non-Chiro. Non-Olig. Richness													
Abundance Measures													
Corrected Abundance	194	49	78	142	287	102	898	570	748	808	203	2601	
EPT Abundance	2		1					4	2.3	2	2	2484.8	
Dominance Measures													
1st Dominant Taxon	Pisidium	Lumbriculidae	Lumbriculidae	Lumbriculidae	Lumbriculidae	Lumbriculidae	Naididae	Lumbriculidae	Caecidotea	Caecidotea	Caecidotea	Hydropsyche	
1st Dominant Abundance	68	20	45	90	190	65	502	191	299	756	131	1038	
2nd Dominant Taxon	Lumbriculidae	Polypedilum sp.	Pisidium	Naididae	Naididae	Naididae	Lumbriculidae	Caecidotea	Pisidium	Pisidium	Lymnaeidae	Ephemerellidae	
2nd Dominant Abundance	54	8	18	23	80	19	188	135	103	13	17	562	
3rd Dominant Taxon	Naididae	Pisidiidae	Naididae	Pisidium	Pisidium	Pisidium	Caecidotea	Naididae	Physa	Crangonyx	Naididae	Brachycentrus occidentalis	
3rd Dominant Abundance	20	5	11	23	12	14	110	116	71	12	10	308	
% 1 Dominant Taxon	35.05%	40.82%	57.69%	63.38%	66.20%	63.73%	55.90%	33.51%	39.97%	93.56%	64.53%	39.91%	
% 2 Dominant Taxa	27.84%	16.33%	23.08%	16.20%	27.87%	18.63%	20.94%	23.68%	13.77%	1.61%	8.37%	21.61%	
% 3 Dominant Taxa	10.31%	10.20%	14.10%	16.20%	4.18%	13.73%	12.25%	20.35%	9.49%	1.49%	4.93%	11.84%	
Community Composition													
% Ephemeroptera			1.28%									36.08%	
% Plecoptera													
% Trichoptera	1.03%							0.70%	0.31%	0.25%	0.99%	59.45%	
% EPT	1.03%		1.28%					0.70%	0.31%	0.25%	0.99%	95.53%	
% Diptera	15.98%	26.53%		2.11%	1.05%	1.96%	1.11%	3.16%	2.14%		1.97%	0.59%	
% Oligochaeta	38.14%	51.02%	71.79%	79.58%	94.08%	82.35%	76.84%	53.86%	1.84%	1.49%	9.85%	0.89%	
% Baetidae												2.07%	
% Chironomidae	15.46%	24.49%		1.41%	1.05%	1.96%	1.11%	2.98%	1.83%		1.97%	0.59%	
% Odonata													
Functional Group Composition													
% Predators	8.76%	6.12%		0.70%			0.45%	0.70%		0.37%	2.46%	1.19%	
% Shredder-Herbivores									0.27%				
% Collector-Gatherers	39.69%	67.35%	73.08%	80.99%	95.12%	84.31%	90.20%	78.60%	57.35%	96.66%	76.85%	15.65%	
% Scrapers	4.12%	6.12%	1.28%		0.35%		2.90%	5.61%	15.91%	0.50%	14.78%	3.27%	
% MH													
% CF	38.66%	20.41%	25.64%	18.31%	4.53%	15.69%	6.46%	12.98%	19.52%	1.98%	4.93%	44.37%	
% OM	0.52%							0.53%	0.27%	0.12%	0.99%	13.61%	
% PA													
% Piercer-Herbivore										0.12%			
% Gatherer													
% Unclassified	8.25%							1.58%	6.68%	0.25%		21.91%	

	Site:	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	DEP-EXP	ERO-EXP
	Sample:	5-5	6-1	6-2	6-3	6-4	6-5	7-1	7-2	7-3	7-4	7-5	2-4
	CC#:	CC161730	CC161731	CC161732	CC161733	CC161734	CC161735	CC161736	CC161737	CC161738	CC161739	CC161740	CC161741
Functional Group Richness													
Predators Richness		6	3		1			2	4		3	2	3
Shredder-Herbivores Richness										1			
Collector-Gatherers Richness		4	3	3	3	5	3	6	5	9	5	5	6
Scrapers Richness		2	2	1		1		4	4	4	3	4	5
MH Richness													
CF Richness		3	3	2	2	2	2	3	3	2	2	2	3
OM Richness		1							2	1	1	1	2
PA Richness													
Piercer-Herbivore Richness											1		
Gatherer Richness													
Unclassified		2							1	1	1		2
Diversity/Evenness Measures													
Shannon-Weiner H' (log 10)		0.83	0.82	0.49	0.46	0.37	0.45	0.58	0.78	0.88	0.16	0.63	0.82
Shannon-Weiner H' (log 2)		2.75	2.71	1.64	1.52	1.24	1.48	1.92	2.59	2.93	0.55	2.09	2.73
Shannon-Weiner H' (log e)		1.91	1.88	1.14	1.06	0.86	1.03	1.33	1.79	2.03	0.38	1.45	1.89
Simpson's Index (D)		0.22	0.21	0.40	0.45	0.52	0.46	0.37	0.22	0.21	0.88	0.43	0.23
Simpson's Index of Diversity (1 - D)		0.78	0.79	0.60	0.55	0.48	0.54	0.63	0.78	0.79	0.12	0.57	0.77
Simpson's Reciprocal Index (1/D)		4.60	4.84	2.50	2.22	1.94	2.20	2.67	4.54	4.85	1.14	2.33	4.31
Biotic Indices													
Hilsenhoff Biotic Index		7.90	7.69	8.17	8.28	8.52	8.33	9.06	8.25	6.98	7.91	7.84	2.47

APPENDIX I

Benthic Invertebrate Tissue Metals Analysis

LAB ID				5101732-06	5101732-07	5101732-08	5101732-09	5101732-10	5101732-16	5101732-17	5101732-18	5101732-19	5101732-20	5101732-26	5101732-27	5101732-28
CLIENT ID				ERO-REF-1-1-BenTS	ERO-REF-1-2-BenTS	ERO-REF-1-3-BenTC	ERO-REF-1-4-BenTC	ERO-REF-1-5-BenTS	ERO-REF-2-1-BenTC	ERO-REF-2-2-BenTC	ERO-REF-2-3-BenTC	ERO-REF-2-4-BenTS	ERO-REF-2-5-BenTS	ERO-EXP-2-1-BenTC	ERO-EXP-2-2-BenTC	ERO-EXP-2-3-BenTC
DATE SAMPLED				15-Oct-15	15-Oct-15	15-Oct-15	15-Oct-15	15-Oct-15	14-Oct-15	14-Oct-15	14-Oct-15	14-Oct-15	14-Oct-15	15-Oct-15	15-Oct-15	16-Oct-15
DATE RECEIVED				26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15
MATRIX				Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)
General Method	**Analyte**	**Units**	**MRL**													
General Parameters	Moisture	% wet	0.1	68.5	66.8	91	85.3	63.4	87.4	83.8	83.6	75.2	63.2	86.2	78.9	85.2
Metals in Tissue	Aluminum	mg/kg wet	0.4	51.4	88.1	119	334	67.8	99.3	575	89.7	20	65.5	47.5	31.9	45.4
Metals in Tissue	Antimony	mg/kg wet	0.002	0.011	0.036	0.015	0.023	0.011	0.009	0.017	0.009	<0.020	0.011	0.1	0.429	0.341
Metals in Tissue	Arsenic	mg/kg wet	0.005	0.381	0.338	0.089	0.159	0.287	0.176	0.163	0.12	0.164	0.297	0.298	0.398	0.293
Metals in Tissue	Barium	mg/kg wet	0.01	28.9	43.7	7.52	7.71	48.5	7.13	20.4	6.74	21.6	50.4	8.63	7.54	4.2
Metals in Tissue	Beryllium	mg/kg wet	0.002	<0.002	<0.002	<0.006	0.008	<0.002	<0.005	0.016	<0.005	<0.020	<0.002	<0.005	<0.004	<0.009
Metals in Tissue	Bismuth	mg/kg wet	0.02	<0.02	<0.02	<0.06	<0.04	<0.02	<0.05	<0.03	<0.05	<0.20	<0.02	<0.05	<0.04	<0.09
Metals in Tissue	Boron	mg/kg wet	0.1	<0.1	<0.1	<0.3	<0.2	<0.1	<0.2	0.2	<0.2	<1.0	<0.1	<0.3	<0.2	<0.5
Metals in Tissue	Cadmium	mg/kg wet	0.002	0.322	0.384	0.08	0.094	0.438	0.177	0.161	0.09	0.171	0.498	0.345	1.29	0.619
Metals in Tissue	Calcium	mg/kg wet	2	94800	98900	284	263	108000	253	910	149	97400	98200	229	167	170
Metals in Tissue	Chromium	mg/kg wet	0.01	0.11	0.17	0.29	0.55	0.18	0.17	1.35	0.19	<0.10	0.12	0.12	0.13	0.12
Metals in Tissue	Cobalt	mg/kg wet	0.004	0.056	0.094	0.113	0.252	0.075	0.129	0.449	0.105	0.049	0.106	0.09	0.139	0.099
Metals in Tissue	Copper	mg/kg wet	0.01	6.49	8.31	2.22	2.53	6.1	2.63	2.66	2.94	5.41	8.58	3.04	5.26	4.65
Metals in Tissue	Iron	mg/kg wet	1	81	143	204	598	115	183	350	171	50	120	78	62	68
Metals in Tissue	Lead	mg/kg wet	0.004	0.284	1.54	0.512	1.43	0.399	0.28	1.49	0.365	0.341	0.329	7.55	16.4	22.7
Metals in Tissue	Magnesium	mg/kg wet	2	439	410	165	278	355	227	506	176	158	363	155	259	171
Metals in Tissue	Manganese	mg/kg wet	0.02	36.2	25.9	36.1	43.4	32	66.6	69.3	42.4	17.1	28.4	83.1	125	59.8
Metals in Tissue	Mercury	mg/kg wet	0.002	0.003	0.005	<0.006	<0.004	0.004	<0.005	0.004	0.005	<0.020	0.005	0.013	0.042	0.08
Metals in Tissue	Molybdenum	mg/kg wet	0.01	0.04	0.05	0.16	0.14	0.04	0.21	0.16	0.2	<0.10	0.05	0.24	0.34	0.21
Metals in Tissue	Nickel	mg/kg wet	0.01	0.3	0.46	0.57	0.75	0.41	0.74	2.98	0.6	0.29	0.49	0.5	0.8	0.48
Metals in Tissue	Phosphorus	mg/kg wet	5	819	736	590	457	725	954	1130	760	386	766	845	1270	648
Metals in Tissue	Potassium	mg/kg wet	10	731	651	618	542	559	1210	682	878	212	642	1120	1630	743
Metals in Tissue	Selenium	mg/kg wet	0.02	0.08	0.1	0.1	0.08	0.07	0.18	0.11	0.16	<0.20	0.1	0.23	0.55	0.3
Metals in Tissue	Silver	mg/kg wet	0.01	0.03	0.09	<0.03	0.03	0.04	<0.02	<0.02	<0.02	<0.10	0.06	0.04	0.09	0.07
Metals in Tissue	Sodium	mg/kg wet	2	1440	1350	179	151	1280	277	144	261	705	1250	284	374	255
Metals in Tissue	Strontium	mg/kg wet	0.01	252	265	1.29	1.77	306	1.31	5.12	1.36	139	308	1.3	1.1	0.8
Metals in Tissue	Thallium	mg/kg wet	0.001	0.004	0.007	0.004	0.009	0.007	0.003	0.016	0.004	<0.010	0.007	0.04	0.114	0.142
Metals in Tissue	Tin	mg/kg wet	0.02	0.1	0.2	0.9	0.6	0.2	1	1.3	1.3	<0.2	0.3	1.3	1	1.2
Metals in Tissue	Titanium	mg/kg wet	0.05	3.43	7.77	10.2	45.9	6.66	6.94	73.7	7.59	1.57	5.4	2.93	2.98	2.76
Metals in Tissue	Uranium	mg/kg wet	0.001	0.043	0.077	0.055	0.086	0.069	0.072	0.508	0.048	0.043	0.091	0.039	0.061	0.045
Metals in Tissue	Vanadium	mg/kg wet	0.02	0.13	0.24	0.43	1.27	0.19	0.33	1.82	0.3	<0.20	0.19	0.16	0.13	0.14
Metals in Tissue	Zinc	mg/kg wet	0.5	6.6	8.2	17.8	15.3	6.8	28.9	27.5	20.5	5.1	7.9	32.1	62.2	34.8

5101732-29	5101732-30	5101732-36	5101732-37	5101732-38	5101732-39	5101732-40	5101732-46	5101732-47	5101732-48	5101732-49	5101732-50	5101732-60	5101732-61
ERO-EXP-2-4-BenTC	ERO-EXP-2-5-BenTC	ERO-EXP-3-1-BenTC	ERO-EXP-3-2-BenTS	ERO-EXP-3-3-BenTC	ERO-EXP-3-4-BenTC	ERO-EXP-3-5-BenTC	ERO-CRADT-3-1-BenTC	ERO-CRADT-3-2-BenTS	ERO-CRADT-3-3-BenTC	ERO-CRADT-3-4-BenTC	ERO-CRADT-3-5-BenTS	ERO-EXP-4-1-BenTS	ERO-EXP-4-2-BenTS
16-Oct-15	16-Oct-15	16-Oct-15	26-Oct-15	16-Oct-15	17-Oct-15	17-Oct-15	16-Oct-15	16-Oct-15	16-Oct-15	16-Oct-15	16-Oct-15	18-Oct-15	18-Oct-15
26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15
Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)
84	87.6	92.6	60.3	85.9	84.8	91.8	92.4	69.8	94.1	84.4	66.5	61.2	61.4
41.3	51.7	18.2	52.2	77.4	56	71.2	36.1	9.9	34.1	29.5	10	22.8	18.9
0.339	0.419	0.124	0.149	0.071	0.045	0.043	0.113	0.323	0.227	0.137	0.209	0.084	0.091
0.356	0.257	0.214	0.402	0.153	0.142	0.088	0.32	0.45	0.192	0.262	0.527	0.29	0.293
19.7	5.73	1.58	52.1	8.37	7.05	4.63	1.44	19.5	1.67	2.98	22.1	32.5	29.6
<0.003	<0.005	<0.027	<0.002	<0.005	<0.003	<0.005	<0.020	<0.020	<0.020	<0.041	<0.020	<0.020	<0.020
0.04	<0.05	0.28	<0.02	<0.05	<0.03	<0.05	<0.20	<0.20	<0.20	<0.41	<0.20	<0.20	<0.20
<0.2	<0.3	<1.3	<0.1	<0.3	<0.2	<0.3	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
2.01	0.638	1.87	1.51	0.211	0.72	0.107	2.38	3.08	0.539	1.98	2.71	0.303	0.247
187	153	144	105000	243	160	385	117	107000	154	171	105000	150000	154000
0.18	0.12	<0.13	0.12	0.21	0.14	0.23	0.12	<0.10	0.16	<0.20	<0.10	0.11	<0.10
0.132	0.142	0.183	0.072	0.093	0.115	0.088	0.152	0.086	0.128	0.148	0.126	0.056	0.05
4.07	2.62	11.1	19.7	2.61	3.11	1.69	4.68	33.9	6.6	6.11	92.6	7.32	11.4
79	82	53	108	126	99	130	71	59	117	67	53	89	72
15.3	11.2	17.9	4.04	2.08	2.71	1.17	8.41	9.67	6.23	5.22	5.23	1.74	2.62
200	167	138	369	159	152	128	92	319	83	194	335	371	405
84.1	84.4	47.8	38.1	60.6	62.7	39.9	43	26.3	24.7	64.2	22.9	27.2	27.7
0.03	0.018	<0.027	0.021	0.006	0.006	<0.005	<0.020	0.021	<0.020	<0.041	0.036	<0.020	<0.020
0.26	0.17	0.15	0.06	0.18	0.21	0.11	0.48	<0.10	0.15	0.36	<0.10	<0.10	<0.10
0.62	0.33	0.38	0.31	0.58	0.55	0.38	0.3	0.24	0.29	0.46	0.5	0.2	0.22
795	599	802	855	554	682	417	569	715	523	1060	864	761	806
895	663	920	580	609	742	414	538	480	595	1180	572	497	539
0.33	0.21	<0.27	0.09	0.13	0.17	0.07	<0.20	<0.20	<0.20	<0.41	<0.20	<0.20	<0.20
0.09	0.06	<0.13	0.13	0.03	0.02	<0.03	<0.10	0.13	<0.10	<0.20	0.35	<0.10	<0.10
187	192	333	1070	151	185	129	160	990	221	276	1160	1330	1200
1.15	1.09	0.61	294	1.27	1.1	1.42	0.69	158	0.68	0.97	161	230	203
0.089	0.05	0.042	0.073	0.004	0.013	<0.003	0.035	0.11	0.017	0.025	0.13	<0.010	<0.010
0.8	0.9	0.5	0.2	0.8	0.4	0.4	0.3	<0.2	0.5	0.8	<0.2	<0.2	<0.2
4.04	3.26	1.33	4.25	4.21	5.11	5.61	2	0.73	2.13	2.11	0.65	1.46	1.09
0.059	0.034	0.039	0.069	0.063	0.04	0.041	0.138	0.028	0.058	0.043	0.055	0.047	0.04
0.14	0.14	<0.27	0.14	0.25	0.19	0.25	<0.20	<0.20	<0.20	<0.41	<0.20	<0.20	<0.20
58.7	27.4	33.7	17.2	25.9	31.4	12.1	34.7	19.3	24.8	43	13	10.7	9

5101732-62	5101732-63	5101732-64	5101732-65	5101732-66	5101732-67	5101732-68	5101732-75	5101732-76	5101732-77	5101732-78	5101732-79	5101732-80
ERO-EXP-4-3-BenTS	ERO-EXP-4-4-BenTC	ERO-EXP-4-5-BenTS	ERO-EXP-3-6-BenTC	ERO-EXP-4-7-BenTC	ERO-EXP-4-8-BenTC	ERO-EXP-4-9-BenTC	ERO-EXP-5-1-BenTS	ERO-EXP-5-2-BenTC	ERO-EXP-5-3-BenTComp	ERO-EXP-5-4-BenTS	ERO-EXP-5-5-BenTS	ERO-EXP-5-6-BenTC
18-Oct-15	18-Oct-15	18-Oct-15	18-Oct-15	18-Oct-15	18-Oct-15	18-Oct-15	18-Oct-15	18-Oct-15	17-Oct-15	17-Oct-15	17-Oct-15	18-Oct-15
26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15	26-Oct-15
Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)	Tissue (wet)
67.5	90.7	72.9	90.9	93	91.4	91	65.3	81.6	80	66.5	69	91
11.1	49.1	24.1	42.2	68.3	69.5	64.8	32.9	40.3	51	13.8	13.6	46.2
0.069	0.039	0.059	0.046	0.071	0.08	0.067	0.099	0.094	0.066	0.105	0.101	0.039
0.322	0.116	0.329	0.126	0.158	0.172	0.113	0.361	0.218	0.199	0.361	0.241	0.105
25.8	2.32	21.3	2.81	2.46	3.37	4.36	25.6	5.71	15.4	24.5	28.7	3.94
<0.020	<0.026	<0.020	<0.020	<0.043	<0.025	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
<0.20	<0.26	<0.20	<0.20	<0.43	<0.25	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
<1.0	<1.3	<1.0	<1.0	<2.2	<1.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
0.509	0.164	0.626	0.351	0.377	0.379	0.243	0.364	0.588	0.724	0.828	0.341	0.255
114000	137	94800	133	152	131	153	119000	171	67500	118000	118000	149
<0.10	0.18	<0.10	0.13	<0.22	0.22	0.26	0.11	0.16	0.18	<0.10	<0.10	0.21
0.063	0.138	0.073	0.112	0.158	0.194	0.17	0.09	0.135	0.127	0.078	0.041	0.112
16.9	3.06	23.3	2.83	3.25	4.26	4.94	21.5	5.22	24.2	40.9	21.3	3.74
47	105	78	107	144	202	282	127	92	152	69	67	82
1.62	1.47	2.02	2.1	3.05	3.26	1.56	1.45	1.47	1.37	1.28	1.11	1.08
350	112	290	104	124	156	119	408	172	166	316	294	111
22.3	47.6	18	35.1	39.7	54.8	43.8	28.4	59.2	14.7	22.5	22.3	38.6
<0.020	<0.026	0.029	<0.020	<0.043	<0.025	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
<0.10	<0.13	<0.10	0.15	<0.22	0.16	0.15	<0.10	0.29	<0.10	<0.10	<0.10	0.14
0.34	0.53	0.38	0.57	0.51	0.67	0.5	0.42	0.8	0.43	0.44	0.22	0.73
749	733	668	684	713	850	701	870	1010	405	760	618	709
512	840	438	763	862	995	773	560	1370	250	469	342	832
<0.20	<0.26	<0.20	<0.20	<0.43	<0.25	<0.20	<0.20	0.22	<0.20	<0.20	<0.20	<0.20
<0.10	<0.13	0.1	<0.10	<0.22	<0.13	<0.10	<0.10	<0.10	0.1	0.18	<0.10	<0.10
1090	313	901	211	239	344	257	1160	283	570	1090	934	256
162	0.63	132	0.74	0.68	0.75	0.96	177	0.89	93.1	170	170	0.75
<0.010	<0.013	0.032	0.013	<0.022	<0.013	<0.010	0.016	<0.010	0.025	0.035	0.016	<0.010
<0.2	0.9	<0.2	0.8	1.4	1.2	0.9	<0.2	0.5	<0.2	<0.2	<0.2	0.4
0.62	3.63	1.78	2.71	4.7	4.09	3.94	1.78	2.67	3.23	0.68	0.83	1.76
0.044	0.031	0.054	0.031	0.03	0.051	0.031	0.047	0.044	0.066	0.058	0.023	0.036
<0.20	<0.26	<0.20	<0.20	<0.43	0.28	0.22	<0.20	<0.20	0.21	<0.20	<0.20	<0.20
8.9	15.3	10.5	22.9	22.1	27.2	29.8	11.4	48.9	17	10.7	7.5	21.3

APPENDIX J

Small-bodied fish Tissue Metals and Condition

Sample No.	Date	Area	Site	Bank	Species	Total Length (mm)	Fork Length (mm)	Weight (g)	Sex (m/f/u)	Preserved
1	26-Apr-16	Koot-Ref		Left	CRH	100		13.00	U	Y
2	26-Apr-16	Koot-Ref		Left	CCN	82		9.00	F	N
3	26-Apr-16	Koot-Ref		Left	CRH	74		4.00	U	Y
4	26-Apr-16	Koot-Ref		Left	CRH	88		10.00	F	Y
5	26-Apr-16	Koot-Ref		Left	CRH	99		12.00	M	Y
6	26-Apr-16	Koot-Ref		Left	CCN	93		13.00	F	N
7	26-Apr-16	Koot-Ref		Left	CRH	116		20.00	M	Y
8	26-Apr-16	Koot-Ref		Left	CRH	80		8.00	F	Y
9	26-Apr-16	Koot-Ref		Left	CRH	97		14.00	M	Y
10	26-Apr-16	Koot-Ref		Left	CCN	90		12.00	M	N
11	26-Apr-16	Koot-Ref		Left	CRH	70		4.00	U	Y
12	26-Apr-16	Koot-Ref		Left	CRH	68		3.00	U	Y
13	26-Apr-16	Koot-Ref		Left	CHU	90		9.00	M	N
14	26-Apr-16	Koot-Ref		Left	CRH	109		18.00	F	Y
15	26-Apr-16	Koot-Ref		Left	CAS	91		11.00	F	Y
16	26-Apr-16	Koot-Ref		Left	CHU	87		8.00	M	Y
17	26-Apr-16	Koot-Ref		Left	CRH	68		3.00	U	Y
18	26-Apr-16	Koot-Ref		Left	CRH	80		6.00	M	Y
19	26-Apr-16	Koot-Ref		Left	CRH	86		10.00	M	Y
20	26-Apr-16	Koot-Ref		Left	CRH	78		5.00	M	Y
21	26-Apr-16	Koot-Ref		Left	CCN	90		11.00	F	N
22	26-Apr-16	Koot-Ref		Left	CRH	75		4.00	U	Y
23	26-Apr-16	Koot-Ref		Left	CHU	77		7.00	F	Y
24	26-Apr-16	Koot-Ref		Left	CRH	67		2.00	F	Y
25	26-Apr-16	Koot-Ref		Left	CCN	79		7.00	M	N
26	26-Apr-16	Koot-Ref		Left	CRH	75		5.00	F	Y
27	26-Apr-16	Koot-Ref		Left	CRH	77		6.00	M	Y
28	26-Apr-16	Koot-Ref		Left	CRH	68		2.00	U	Y
29	26-Apr-16	Koot-Ref		Left	CRH	68		3.00	M	Y
30	26-Apr-16	Koot-Ref		Left	CRH	54		0.90	U	Y
31	26-Apr-16	Koot-Ref		Left	CCN	81		6.00	F	N
32	26-Apr-16	Koot-Ref		Left	CCN	70		3.00	F	N
33	26-Apr-16	Koot-Ref		Left	CHU	72		5.00	F	Y
34	26-Apr-16	Koot-Ref		Left	CCN	68		3.00	F	N
35	26-Apr-16	Koot-Ref		Left	CAS	69		2.00	M	Y
36	26-Apr-16	Koot-Ref		Left	CCN	84		8.00	F	N
37	26-Apr-16	Koot-Ref		Left	CAS	85		5.00	M	Y
38	26-Apr-16	Koot-Ref		Left	NPC		82	3.00	-	N
39	26-Apr-16	Koot-Ref		Left	CCN	64		1.00	U	N
40	26-Apr-16	Koot-Ref		Left	NPC		93	5.00	-	N
41	26-Apr-16	Koot-Ref		Left	CCN	62		6.00	M	N
42	26-Apr-16	Koot-Ref		Left	NPC		96	8.00	-	N
43	26-Apr-16	Koot-Ref		Left	CCN	62		2.00	F	N
44	26-Apr-16	Koot-Ref		Left	CHU	67		3.00	F	Y
45	26-Apr-16	Koot-Ref		Left	CAS	58		1.00	U	Y
46	26-Apr-16	Koot-Ref		Left	CRH	50		0.80	U	Y
47	26-Apr-16	Koot-Ref		Left	NPC		52	0.80	-	N
48	26-Apr-16	Koot-Ref		Left	CRH	48		0.70	U	Y
49	26-Apr-16	Koot-Ref		Left	CRH	47		0.70	U	Y
50	26-Apr-16	Koot-Ref		Left	CRH	40		<0.5	U	N
51	26-Apr-16	Koot-Ref		Left	CRH	40		<0.5	U	N
52	26-Apr-16	Koot-Ref		Left	NPC		50	0.70	M	N
53	27-Apr-16	Ero-Ref-3		Both	CHU	70		5.09	M	N
54	27-Apr-16	Ero-Ref-3		Both	CCN	96		11.98	M	N
55	27-Apr-16	Ero-Ref-3		Both	CRH	71		4.92	M	Y
56	27-Apr-16	Ero-Ref-3		Both	CRH	68		4.06	U	Y
57	27-Apr-16	Ero-Ref-3		Both	CRH	67		3.77	U	Y
58	27-Apr-16	Ero-Ref-3		Both	CCN	72		5.08	F	N
59	27-Apr-16	Ero-Ref-3		Both	CCN	73		5.48	F	N
60	27-Apr-16	Ero-Ref-3		Both	CHU	60		2.48	U	N
61	27-Apr-16	Ero-Ref-3		Both	CHU	62		3.26	M	N
62	27-Apr-16	Ero-Ref-3		Both	CHU	76		6.30	F	Y
63	27-Apr-16	Ero-Ref-3		Both	CCN	67		4.55	U	N
64	27-Apr-16	Ero-Ref-3		Both	CHU	78		5.39	M	Y
65	27-Apr-16	Ero-Ref-3		Both	LNC		35	0.65	-	N
66	27-Apr-16	Ero-Ref-3		Both	LNC		35	0.65	-	N
67	27-Apr-16	Ero-Ref-3		Both	LNC		35	0.65	-	N
68	27-Apr-16	Ero-Ref-3		Both	CCN	40		1.05	U	N
69	27-Apr-16	Ero-Ref-3		Both	CHU	70		4.08	F	N
70	27-Apr-16	Ero-Ref-3		Both	CCN	64		3.53	U	N
71	27-Apr-16	Ero-Ref-3		Both	CCN	71		5.10	U	N
72	27-Apr-16	Ero-Ref-3		Both	CCN	74		5.29	M	N
73	27-Apr-16	Ero-Ref-3		Both	CCN	62		3.25	U	N
74	27-Apr-16	Ero-Ref-3		Both	CCN	64		3.78	U	N

Sample No.	Date	Area	Site	Bank	Species	Total Length (mm)	Fork Length (mm)	Weight (g)	Sex (m/f/u)	Preserved
75	27-Apr-16	Ero-Ref-3		Both	CHU	72		5.26	F	N
76	27-Apr-16	Ero-Ref-3		Both	CCN	64		3.72	U	N
77	27-Apr-16	Ero-Ref-3		Both	CCN	64		3.70	U	N
78	27-Apr-16	Ero-Ref-3		Both	CHU	62		3.30	U	Y
79	27-Apr-16	Ero-Ref-3		Both	CHU	70		4.42	U	Y
80	27-Apr-16	Ero-Ref-3		Both	CCN	68		3.84	U	N
81	27-Apr-16	Ero-Ref-3		Both	CRH	47		1.17	U	Y
82	27-Apr-16	Ero-Ref-3		Both	CHU	65		3.14	U	N
83	27-Apr-16	Ero-Ref-3		Both	CCN	63		3.46	F	N
84	27-Apr-16	Ero-Ref-3		Both	CCN	68		4.15	M	N
85	27-Apr-16	Ero-Ref-3		Both	CCN	35		0.65	-	N
86	27-Apr-16	Ero-Ref-3		Both	CCN	35		0.65	-	N
87	27-Apr-16	Ero-Ref-3		Both	CCN	35		0.65	-	N
88	27-Apr-16	Ero-Ref-3		Both	CCN	35		0.65	-	N
89	27-Apr-16	Ero-Ref-3		Both	CCN	35		0.65	-	N
90	27-Apr-16	Ero-Ref-3		Both	CCN	35		0.65	-	N
91	27-Apr-16	Ero-Ref-3		Both	CHU	35		1.50	U	N
92	27-Apr-16	Ero-Ref-3		Both	CCN	54		3.15	U	N
93	27-Apr-16	Ero-Ref-3		Both	CRH	105		15.56	F	Y
94	27-Apr-16	Ero-Ref-3		Both	CRH	75		5.21	U	Y
95	27-Apr-16	Ero-Ref-3		Both	CCN	89		10.73	M	N
96	27-Apr-16	Ero-Ref-3		Both	CCN	82		9.46	M	N
97	27-Apr-16	Ero-Ref-3		Both	CHU	75		6.70	F	Y
98	27-Apr-16	Ero-Ref-3		Both	CRH	71		4.28	U	Y
99	27-Apr-16	Ero-Ref-3		Both	CHU	83		7.62	M	Y
100	27-Apr-16	Ero-Ref-3		Both	CCN	78		7.63	M	N
101	27-Apr-16	Ero-Ref-3		Both	CCN	80		7.60	F	N
102	27-Apr-16	Ero-Ref-3		Both	CCN	69		5.34	F	N
103	27-Apr-16	Ero-Ref-3		Both	CHU	85		9.28	M	Y
104	27-Apr-16	Ero-Ref-3		Both	CHU	74		6.37	M	Y
105	27-Apr-16	Ero-Ref-3		Both	CHU	74		5.71	F	Y
106	27-Apr-16	Ero-Ref-3		Both	CCN	82		7.72	M	N
107	27-Apr-16	Ero-Ref-3		Both	CHU	62		3.52	F	N
108	27-Apr-16	Ero-Ref-3		Both	CRH	49		1.21	U	Y
109	27-Apr-16	Ero-Ref-3		Both	CHU	69		4.81	F	Y
110	27-Apr-16	Ero-Ref-3		Both	CCN	84		8.27	F	N
111	27-Apr-16	Ero-Ref-3		Both	CCN	83		9.24	F	N
112	27-Apr-16	Ero-Ref-3		Both	CCN	79		6.64	M	N
113	27-Apr-16	Ero-Ref-3		Both	CHU	80		6.78	M	Y
114	27-Apr-16	Ero-Ref-3		Both	CCN	84		9.82	M	N
115	27-Apr-16	Ero-Ref-3		Both	CCN	79		8.76	F	N
116	27-Apr-16	Ero-Ref-3		Both	CCN	68		5.98	F	N
117	27-Apr-16	Ero-Ref-3		Both	CHU	58		2.48	U	N
118	27-Apr-16	Ero-Ref-3		Both	CCN	75		6.94	M	N
119	27-Apr-16	Ero-Ref-3		Both	CCN	82		8.08	M	N
120	27-Apr-16	Ero-Ref-3		Both	CCN	79		6.83	M	N
121	27-Apr-16	Ero-Ref-3		Both	CHU	67		4.02	F	Y
122	27-Apr-16	Ero-Ref-3		Both	CHU	71		4.89	M	Y
123	27-Apr-16	Ero-Ref-3		Both	CCN	60		3.66	F	N
124	27-Apr-16	Ero-Ref-3		Both	CCN	66		5.08	F	N
125	27-Apr-16	Ero-Ref-3		Both	CCN	76		7.19	MJ	N
126	27-Apr-16	Ero-Ref-3		Both	CCN	63		3.08	M	N
127	27-Apr-16	Ero-Ref-3		Both	CCN	65		3.81	F	N
128	27-Apr-16	Ero-Ref-3		Both	CCN	68		5.00	M	N
129	27-Apr-16	Ero-Ref-3		Both	CRH	39		0.56	U	N
130	27-Apr-16	Ero-Ref-3		Both	CRH	39		0.56	U	N
131	27-Apr-16	Ero-Ref-3		Both	CRH	39		0.56	U	N
132	27-Apr-16	Ero-Ref-3		Both	CRH	39		0.56	U	N
133	27-Apr-16	Ero-Ref-3		Both	CRH	39		0.56	U	N
134	27-Apr-16	Ero-Ref-3		Both	CRH	39		0.56	U	N
135	27-Apr-16	Ero-Ref-3		Both	CCN	68		3.55	F	N
136	27-Apr-16	Ero-Ref-3		Both	CRH	76		6.01	M	Y
137	27-Apr-16	Ero-Ref-3		Both	CRH	81		6.52	F	Y
138	27-Apr-16	Ero-Ref-3		Both	CHU	89		10.93	F	Y
139	27-Apr-16	Ero-Ref-3		Both	CHU	72		4.84	F	Y
140	27-Apr-16	Ero-Ref-3		Both	CCN	65		4.26	F	N
141	27-Apr-16	Ero-Ref-3		Both	CHU	63		2.38	M	Y
142	27-Apr-16	Ero-Ref-3		Both	CRH	66		3.75	M	Y
143	27-Apr-16	Ero-Ref-3		Both	CCN	84		9.13	M	N
144	27-Apr-16	Ero-Ref-3		Both	CCN	83		8.70	M	N
145	27-Apr-16	Ero-Ref-3		Both	CCN	83		8.72	M	N
146	27-Apr-16	Ero-Ref-3		Both	CCN	89		9.14	M	N
147	27-Apr-16	Ero-Ref-3		Both	CCN	84		7.33	M	N
148	27-Apr-16	Ero-Ref-3		Both	CHU	56		7.33	U	N

Sample No.	Date	Area	Site	Bank	Species	Total Length (mm)	Fork Length (mm)	Weight (g)	Sex (m/f/u)	Preserved
149	27-Apr-16	Ero-Ref-3		Both	CCN	84		7.62	M	N
150	27-Apr-16	Ero-Ref-3		Both	CHU	56		4.00	M	Y
151	27-Apr-16	Ero-Ref-3		Both	CCN	84		6.08	M	N
152	27-Apr-16	Ero-Ref-3		Both	CHU	68		4.37	U	Y
153	27-Apr-16	Ero-Ref-3		Both	CCN	77		2.62	U	N
154	27-Apr-16	Ero-Ref-3		Both	CCN	73		2.62	U	N
155	27-Apr-16	Ero-Ref-3		Both	CCN	55		2.62	U	N
156	27-Apr-16	Ero-Ref-3		Both	CCN	55		2.62	U	N
157	27-Apr-16	Ero-Ref-3		Both	CCN	55		2.62	U	N
158	27-Apr-16	Ero-Ref-3		Both	CCN	55		2.62	U	N
159	27-Apr-16	Ero-Ref-3		Both	CCN	55		2.62	U	N
160	27-Apr-16	Ero-Ref-3		Both	CCN	55		2.62	U	N
161	27-Apr-16	Ero-Ref-3		Both	CRH	32		0.35	U	N
162	27-Apr-16	Ero-Ref-3		Both	CRH	32		0.35	U	N
163	27-Apr-16	Ero-Ref-3		Both	CRH	32		0.35	U	N
164	27-Apr-16	Ero-Ref-3		Both	LNC		40	0.80	U	N
165	27-Apr-16	Ero-Ref-2		Both	CRH	125		28.30	M	Y
166	27-Apr-16	Ero-Ref-2		Both	CRH	108		19.75	F	Y
167	27-Apr-16	Ero-Ref-2		Both	CRH	129		34.30	M	Y
168	27-Apr-16	Ero-Ref-2		Both	CRH	124		33.95	F	Y
169	27-Apr-16	Ero-Ref-2		Both	CRH	118		29.42	M	Y
170	27-Apr-16	Ero-Ref-2		Both	CRH	105		22.10	F	Y
171	27-Apr-16	Ero-Ref-2		Both	CRH	97		12.58	M	Y
172	27-Apr-16	Ero-Ref-2		Both	CRH	77		5.59	U	Y
173	27-Apr-16	Ero-Ref-2		Both	CRH	102		18.21	M	Y
174	27-Apr-16	Ero-Ref-2		Both	CHU	86		9.53	M	Y
175	27-Apr-16	Ero-Ref-2		Both	CRH	122		27.89	M	Y
176	27-Apr-16	Ero-Ref-2		Both	CRH	72		4.45	U	Y
177	27-Apr-16	Ero-Ref-2		Both	CRH	78		6.95	U	Y
178	27-Apr-16	Ero-Ref-2		Both	CRH	77		6.73	M	Y
179	27-Apr-16	Ero-Ref-2		Both	CRH	65		3.16	U	Y
180	27-Apr-16	Ero-Ref-2		Both	CRH	85		7.60	F	Y
181	27-Apr-16	Ero-Ref-2		Both	CRH	75		4.62	U	Y
182	27-Apr-16	Ero-Ref-2		Both	CHU	115		21.73	M	Y
183	27-Apr-16	Ero-Ref-2		Both	CCN	94		13.40	M	N
184	27-Apr-16	Ero-Ref-2		Both	CCN	99		15.45	M	N
185	27-Apr-16	Ero-Ref-2		Both	CCN	82		8.69	M	N
186	27-Apr-16	Ero-Ref-2		Both	CCN	78		8.21	M	N
187	27-Apr-16	Ero-Ref-2		Both	CHU	91		11.34	M	Y
188	27-Apr-16	Ero-Ref-2		Both	CHU	89		10.84	F	Y
189	27-Apr-16	Ero-Ref-2		Both	CCN	84		7.41	M	N
190	27-Apr-16	Ero-Ref-2		Both	CCN	96		15.05	M	N
191	27-Apr-16	Ero-Ref-2		Both	CCN	89		11.46	U	N
192	27-Apr-16	Ero-Ref-2		Both	CCN	93		11.04	M	N
193	27-Apr-16	Ero-Ref-2		Both	CHU	80		7.92	F	Y
194	27-Apr-16	Ero-Ref-2		Both	CAS	102		10.94	M	Y
195	27-Apr-16	Ero-Ref-2		Both	CCN	95		12.40	F	N
196	27-Apr-16	Ero-Ref-2		Both	CCN	88		10.73	M	N
197	27-Apr-16	Ero-Ref-2		Both	CHU	87		10.50	F	Y
198	27-Apr-16	Ero-Ref-2		Both	CRH	86		7.80	U	Y
199	27-Apr-16	Ero-Ref-2		Both	CCN	92		13.38	M	N
200	27-Apr-16	Ero-Ref-2		Both	CCN	93		13.91	M	N
201	27-Apr-16	Ero-Ref-2		Both	CCN	95		13.28	M	N
202	27-Apr-16	Ero-Ref-2		Both	CCN	89		11.41	M	N
203	27-Apr-16	Ero-Ref-2		Both	CHU	79		8.95	F	N
204	27-Apr-16	Ero-Ref-2		Both	CHU	94		13.27	F	N
205	27-Apr-16	Ero-Ref-2		Both	CAS	98		9.99	F	Y
206	27-Apr-16	Ero-Ref-2		Both	CRH	80		6.41	U	Y
207	27-Apr-16	Ero-Ref-2		Both	CCN	80		9.72	M	N
208	27-Apr-16	Ero-Ref-2		Both	CCN	98		13.69	M	N
209	27-Apr-16	Ero-Ref-2		Both	CCN	84		11.66	M	N
210	27-Apr-16	Ero-Ref-2		Both	CCN	89		11.47	M	N
211	27-Apr-16	Ero-Ref-2		Both	CCN	80		10.79	M	N
212	27-Apr-16	Ero-Ref-2		Both	CHU	73		4.98	F	N
213	27-Apr-16	Ero-Ref-2		Both	CCN	91		10.97	M	N
214	27-Apr-16	Ero-Ref-2		Both	CCN	90		11.51	M	N
215	27-Apr-16	Ero-Ref-2		Both	CCN	90		11.81	M	N
216	27-Apr-16	Ero-Ref-2		Both	CHU	88		9.44	F	Y
217	27-Apr-16	Ero-Ref-2		Both	CCN	85		9.41	M	N
218	27-Apr-16	Ero-Ref-2		Both	CHU	82		7.89	F	N
219	27-Apr-16	Ero-Ref-2		Both	CCN	77		7.20	M	N
220	27-Apr-16	Ero-Ref-2		Both	CCN	80		6.81	M	N
221	27-Apr-16	Ero-Ref-2		Both	CCN	87		9.40	M	N
222	27-Apr-16	Ero-Ref-2		Both	CAS	92		9.43	F	Y

Sample No.	Date	Area	Site	Bank	Species	Total Length (mm)	Fork Length (mm)	Weight (g)	Sex (m/f/u)	Preserved
223	27-Apr-16	Ero-Ref-2		Both	CHU	86		9.26	F	N
224	27-Apr-16	Ero-Ref-2		Both	CHU	77		5.61	U	N
225	27-Apr-16	Ero-Ref-2		Both	CHU	77		7.02	F	N
226	27-Apr-16	Ero-Ref-2		Both	CCN	82		7.41	M	N
227	27-Apr-16	Ero-Ref-2		Both	CCN	90		9.49	M	N
228	27-Apr-16	Ero-Ref-2		Both	CHU	64		4.18	U	N
229	27-Apr-16	Ero-Ref-2		Both	CCN	84		9.10	M	N
230	27-Apr-16	Ero-Ref-2		Both	CCN	70		5.04	U	N
231	27-Apr-16	Ero-Ref-2		Both	CHU	65		3.57	U	N
232	27-Apr-16	Ero-Ref-2		Both	CHU	68		5.57	F	N
233	27-Apr-16	Ero-Ref-2		Both	CHU	68		4.11	F	N
234	27-Apr-16	Ero-Ref-2		Both	CCN	70		6.90	F	N
235	27-Apr-16	Ero-Ref-2		Both	CCN	72		6.81	F	N
236	27-Apr-16	Ero-Ref-2		Both	CCN	77		5.99	U	N
237	27-Apr-16	Ero-Ref-2		Both	CHU	55		3.02	F	N
238	27-Apr-16	Ero-Ref-2		Both	CCN	70		5.46	U	N
239	27-Apr-16	Ero-Ref-2		Both	CCN	70		4.82	U	N
240	27-Apr-16	Ero-Ref-2		Both	CAS	70		4.07	U	Y
241	27-Apr-16	Ero-Ref-2		Both	CHU	70		4.58	U	N
242	27-Apr-16	Ero-Ref-2		Both	CCN	75		5.30	U	N
243	27-Apr-16	Ero-Ref-2		Both	CCN	76		6.27	U	N
244	27-Apr-16	Ero-Ref-2		Both	CHU	52		2.62	U	N
245	27-Apr-16	Ero-Ref-2		Both	CCN	54		2.84	U	N
246	27-Apr-16	Ero-Ref-2		Both	CHU	64		3.78	U	N
247	27-Apr-16	Ero-Ref-2		Both	CHU	51		1.83	U	N
248	27-Apr-16	Ero-Ref-2		Both	LNC		60	2.24	-	N
249	27-Apr-16	Ero-Ref-2		Both	LNC		38	0.60	-	N
250	27-Apr-16	Ero-Ref-2		Both	CRH	34		0.48	U	N
251	27-Apr-16	Ero-Ref-2		Both	CHU	58		3.60	U	N
252	27-Apr-16	Ero-Ref-2		Both	CHU	58		3.60	U	N
253	27-Apr-16	Ero-Ref-2		Both	CHU	58		3.60	U	N
254	27-Apr-16	Ero-Ref-2		Both	CHU	58		3.60	U	N
255	27-Apr-16	Ero-Ref-2		Both	CHU	58		3.60	U	N
256	27-Apr-16	Ero-Ref-2		Both	CHU	58		3.60	U	N
257	27-Apr-16	Ero-Ref-2		Both	CHU	60		3.60	U	N
258	27-Apr-16	Ero-Ref-2		Both	CRH	80		7.02	F	Y
259	27-Apr-16	Ero-Ref-2		Both	CCN	80		11.18	M	N
260	27-Apr-16	Ero-Ref-2		Both	CCN	85		10.01	M	N
261	27-Apr-16	Ero-Ref-2		Both	CCN	93		11.55	M	N
262	27-Apr-16	Ero-Ref-2		Both	CCN	75		5.08	M	N
263	27-Apr-16	Ero-Ref-2		Both	CCN	80		7.40	F	N
264	27-Apr-16	Ero-Ref-2		Both	CCN	81		8.15	M	N
265	27-Apr-16	Ero-Ref-2		Both	CCN	75		5.48	M	N
266	27-Apr-16	Ero-Ref-2		Both	CCN	68		4.24	M	N
267	27-Apr-16	Ero-Ref-2		Both	CCN	78		5.98	M	N
268	27-Apr-16	Ero-Ref-2		Both	CCN	71		5.03	M	N
269	27-Apr-16	Ero-Ref-2		Both	CCN	60		2.78	U	N
270	27-Apr-16	Ero-Ref-2		Both	CHU	66		4.26	U	N
271	27-Apr-16	Ero-Ref-2		Both	CHU	66		4.26	U	N
272	27-Apr-16	Ero-Ref-2		Both	CHU	66		4.26	U	N
273	27-Apr-16	Ero-Ref-2		Both	CHU	66		4.26	U	N
274	27-Apr-16	Ero-Ref-2		Both	CHU	66		4.26	U	N
275	27-Apr-16	Ero-Ref-2		Both	CHU	66		4.26	U	N
276	27-Apr-16	Ero-Ref-2		Both	CHU	66		4.26	U	N
277	27-Apr-16	Ero-Ref-2		Both	CHU	66		4.26	U	N
278	27-Apr-16	Ero-Ref-2		Both	CHU	66		4.26	U	N
279	27-Apr-16	Ero-Ref-2		Both	CHU	66		4.26	U	N
280	27-Apr-16	Ero-Ref-2		Both	CHU	66		4.26	U	N
281	27-Apr-16	Ero-Ref-2		Both	CHU	66		4.26	U	N
282	27-Apr-16	Ero-Ref-2		Both	CHU	66		4.26	U	N
283	27-Apr-16	Ero-Ref-2		Both	CRH	44		1.16	U	Y
284	27-Apr-16	Ero-Ref-2		Both	CCN	73		5.41	M	N
285	27-Apr-16	Ero-Ref-2		Both	CCN	64		3.64	F	N
286	27-Apr-16	Ero-Ref-2		Both	CCN	66		3.78	U	N
287	27-Apr-16	Ero-Ref-2		Both	CCN	58		2.30	U	N
288	27-Apr-16	Ero-Ref-2		Both	CCN	58		2.30	U	N
289	27-Apr-16	Ero-Ref-2		Both	CCN	58		2.30	U	N
290	27-Apr-16	Ero-Ref-2		Both	CCN	58		2.30	U	N
291	27-Apr-16	Ero-Ref-2		Both	CCN	58		2.30	U	N
292	27-Apr-16	Ero-Ref-2		Both	CCN	58		2.30	U	N
293	27-Apr-16	Ero-Ref-2		Both	CHU	52		1.76	U	N
294	27-Apr-16	Ero-Ref-2		Both	CHU	52		1.76	U	N
295	27-Apr-16	Ero-Ref-2		Both	CRH	39		0.91	U	N
296	27-Apr-16	Ero-Ref-2		Both	CHU	95		11.38	M	N

Sample No.	Date	Area	Site	Bank	Species	Total Length (mm)	Fork Length (mm)	Weight (g)	Sex (m/f/u)	Preserved
297	27-Apr-16	Ero-Ref-2		Both	CCN	80		8.32	M	N
298	27-Apr-16	Ero-Ref-2		Both	CCN	89		9.12	M	N
299	27-Apr-16	Ero-Ref-2		Both	CHU	68		4.84	F	N
300	27-Apr-16	Ero-Ref-2		Both	CCN	87		9.51	M	N
301	27-Apr-16	Ero-Ref-2		Both	CCN	77		6.12	FM	N
302	27-Apr-16	Ero-Ref-2		Both	CHU	52		1.82	U	N
303	27-Apr-16	Ero-Ref-2		Both	CCN	79		6.85	M	N
304	27-Apr-16	Ero-Ref-2		Both	CCN	71		4.90	M	N
305	27-Apr-16	Ero-Ref-2		Both	CCN	65		3.75	U	N
306	27-Apr-16	Ero-Ref-2		Both	CCN	65		3.75	U	N
307	27-Apr-16	Ero-Ref-2		Both	CCN	65		3.75	U	N
308	27-Apr-16	Ero-Ref-2		Both	CCN	65		3.75	U	N
309	27-Apr-16	Ero-Ref-2		Both	CCN	65		3.75	U	N
310	27-Apr-16	Ero-Ref-2		Both	CCN	65		3.75	U	N
311	27-Apr-16	Ero-Ref-2		Both	CCN	65		3.75	U	N
312	27-Apr-16	Ero-Ref-2		Both	CCN	88		10.08	M	N
313	27-Apr-16	Ero-Ref-2		Both	CCN	92		12.73	M	N
314	27-Apr-16	Ero-Ref-2		Both	CHU	82		9.01	F	N
315	27-Apr-16	Ero-Ref-2		Both	CHU	91		10.01	M	N
316	27-Apr-16	Ero-Ref-2		Both	CCN	89		10.11	M	N
317	27-Apr-16	Ero-Ref-2		Both	CCN	80		7.98	M	N
318	27-Apr-16	Ero-Ref-2		Both	CCN	80		6.70	M	N
319	27-Apr-16	Ero-Ref-2		Both	CCN	71		5.77	M	N
320	27-Apr-16	Ero-Ref-2		Both	CCN	80		6.33	M	N
321	27-Apr-16	Ero-Ref-2		Both	CCN	64		4.65	U	N
322	27-Apr-16	Ero-Ref-2		Both	LNC		38	0.65	-	N
323	27-Apr-16	Ero-Ref-2		Both	CCN	62		3.55	F	N
324	27-Apr-16	Ero-Ref-2		Both	CCN	62		3.55	F	N
325	27-Apr-16	Ero-Ref-2		Both	CCN	62		3.55	F	N
326	27-Apr-16	Ero-Ref-2		Both	CCN	62		3.55	F	N
327	27-Apr-16	Ero-Ref-2		Both	CCN	63		3.04	M	N
328	27-Apr-16	Ero-Ref-2		Both	CCN	57		2.20	M	N
329	27-Apr-16	Ero-Ref-2		Both	CCN	57		2.20	M	N
330	27-Apr-16	Ero-Ref-2		Both	CCN	60		3.07	F	N
331	27-Apr-16	Ero-Ref-2		Both	CCN	60		3.07	F	N
332	27-Apr-16	Ero-Ref-2		Both	CCN	65		3.81	M	N
333	27-Apr-16	Ero-Ref-2		Both	CHU	57		2.60	U	N
334	27-Apr-16	Ero-Ref-2		Both	CHU	57		2.60	U	N
335	27-Apr-16	Ero-Ref-2		Both	CRH	70		5.90	F	Y
336	27-Apr-16	Ero-Ref-2		Both	CRH	75		5.21	U	Y
337	27-Apr-16	Ero-Ref-2		Both	CCN	91		11.71	M	N
338	27-Apr-16	Ero-Ref-2		Both	CHU	69		5.27	F	Y
339	27-Apr-16	Ero-Ref-2		Both	CCN	81		8.23	F	N
340	27-Apr-16	Ero-Ref-2		Both	CHU	65		4.07	F	Y
341	27-Apr-16	Ero-Ref-2		Both	CCN	85		8.59	M	N
342	27-Apr-16	Ero-Ref-2		Both	CHU	80		7.95	F	Y
343	27-Apr-16	Ero-Ref-2		Both	CCN	80		7.42	M	N
344	27-Apr-16	Ero-Ref-2		Both	CHU	59		2.51	U	Y
345	27-Apr-16	Ero-Ref-2		Both	CCN	71		5.90	F	N
346	27-Apr-16	Ero-Ref-2		Both	CCN	76		6.79	M	N
347	27-Apr-16	Ero-Ref-2		Both	CCN	72		6.30	F	N
348	27-Apr-16	Ero-Ref-2		Both	CCN	79		8.36	M	N
349	27-Apr-16	Ero-Ref-2		Both	CCN	75		6.07	F	N
350	27-Apr-16	Ero-Ref-2		Both	CCN	66		4.32	M	N
351	27-Apr-16	Ero-Ref-2		Both	CCN	68		3.55	F	N
352	27-Apr-16	Ero-Ref-2		Both	CHU	62		2.66	U	Y
353	27-Apr-16	Ero-Ref-2		Both	CHU	64		3.09	U	Y
354	27-Apr-16	Ero-Ref-2		Both	CCN	66		3.85	M	N
355	27-Apr-16	Ero-Ref-2		Both	CHU	54		2.03	U	N
356	27-Apr-16	Ero-Ref-2		Both	CHU	54		2.03	U	N
357	27-Apr-16	Ero-Ref-2		Both	CHU	54		2.03	U	N
358	27-Apr-16	Ero-Ref-2		Both	CHU	54		2.03	U	N
359	27-Apr-16	Ero-Exp-1		Right	CRH	150		54.92	F	Y
360	27-Apr-16	Ero-Exp-1		Right	CRH	114		21.63	M	Y
361	27-Apr-16	Ero-Exp-1		Right	CRH	125		31.74	M	Y
362	27-Apr-16	Ero-Exp-1		Right	CRH	137		49.11	M	Y
363	27-Apr-16	Ero-Exp-1		Right	CRH	109		17.98	M	Y
364	27-Apr-16	Ero-Exp-1		Right	CRH	88		8.02	U	Y
365	27-Apr-16	Ero-Exp-1		Right	CRH	75		5.15	M	Y
366	27-Apr-16	Ero-Exp-1		Right	CHU	99		13.86	M	Y
367	27-Apr-16	Ero-Exp-1		Right	CCN	98		14.78	M	N
368	27-Apr-16	Ero-Exp-1		Right	CHU	92		10.38	M	Y
369	27-Apr-16	Ero-Exp-1		Right	CCN	92		12.15	M	N
370	27-Apr-16	Ero-Exp-1		Right	CHU	90		10.99	F	Y

Sample No.	Date	Area	Site	Bank	Species	Total Length (mm)	Fork Length (mm)	Weight (g)	Sex (m/f/u)	Preserved
371	27-Apr-16	Ero-Exp-1		Right	CHU	80		6.96	M	N
372	27-Apr-16	Ero-Exp-1		Right	CCN	96		14.23	F	N
373	27-Apr-16	Ero-Exp-1		Right	CCN	83		8.50	F	N
374	27-Apr-16	Ero-Exp-1		Right	CRH	65		3.26	U	Y
375	27-Apr-16	Ero-Exp-1		Right	CCN	97		13.10	F	N
376	27-Apr-16	Ero-Exp-1		Right	CHU	82		7.86	F	Y
377	27-Apr-16	Ero-Exp-1		Right	CHU	80		7.76	F	N
378	27-Apr-16	Ero-Exp-1		Right	CCN	94		13.12	M	N
379	27-Apr-16	Ero-Exp-1		Right	CCN	95		13.41	M	N
380	27-Apr-16	Ero-Exp-1		Right	CCN	93		9.98	M	N
381	27-Apr-16	Ero-Exp-1		Right	CCN	92		12.07	M	N
382	27-Apr-16	Ero-Exp-1		Right	CCN	84		7.23	M	N
383	27-Apr-16	Ero-Exp-1		Right	CHU	90		9.41	M	Y
384	27-Apr-16	Ero-Exp-1		Right	CHU	87		8.72	F	Y
385	27-Apr-16	Ero-Exp-1		Right	CCN	87		9.82	M	N
386	27-Apr-16	Ero-Exp-1		Right	CCN	86		8.13	M	N
387	27-Apr-16	Ero-Exp-1		Right	CHU	80		7.03	F	Y
388	27-Apr-16	Ero-Exp-1		Right	CCN	87		8.64	F	N
389	27-Apr-16	Ero-Exp-1		Right	CCN	101		8.28	M	N
390	27-Apr-16	Ero-Exp-1		Right	CHU	70		5.04	M	N
391	27-Apr-16	Ero-Exp-1		Right	CHU	80		7.06	M	Y
392	27-Apr-16	Ero-Exp-1		Right	CCN	91		11.84	M	N
393	27-Apr-16	Ero-Exp-1		Right	CRH	76		4.79	M	Y
394	27-Apr-16	Ero-Exp-1		Right	CCN	80		8.16	F	N
395	27-Apr-16	Ero-Exp-1		Right	CHU	84		7.91	M	Y
396	27-Apr-16	Ero-Exp-1		Right	CCN	66		4.45	F	N
397	27-Apr-16	Ero-Exp-1		Right	CHU	77		6.28	F	Y
398	27-Apr-16	Ero-Exp-1		Right	CHU	84		7.26	F	Y
399	27-Apr-16	Ero-Exp-1		Right	CCN	83		7.11	M	N
400	27-Apr-16	Ero-Exp-1		Right	CHU	68		3.97	M	N
401	27-Apr-16	Ero-Exp-1		Right	CHU	69		3.76	M	N
402	27-Apr-16	Ero-Exp-1		Right	CHU	72		5.04	M	Y
403	27-Apr-16	Ero-Exp-1		Right	CCN	75		5.37	F	N
404	27-Apr-16	Ero-Exp-1		Right	CCN	71		5.72	F	N
405	27-Apr-16	Ero-Exp-1		Right	CCN	67		3.46	F	N
406	27-Apr-16	Ero-Exp-1		Right	CHU	68		4.23	M	Y
407	27-Apr-16	Ero-Exp-1		Right	CHU	71		5.04	U	N
408	27-Apr-16	Ero-Exp-1		Right	CHU	50		1.46	U	N
409	27-Apr-16	Ero-Exp-1		Right	CAS	68		3.36	M	Y
410	27-Apr-16	Ero-Exp-1		Right	CCN	77		4.92	M	N
411	27-Apr-16	Ero-Exp-1		Right	CHU	69		3.93	F	N
412	27-Apr-16	Ero-Exp-1		Right	CHU	71		4.26	M	N
413	27-Apr-16	Ero-Exp-1		Right	CHU	60		2.58	M	N
414	27-Apr-16	Ero-Exp-1		Right	CHU	63		3.96	U	N
415	27-Apr-16	Ero-Exp-1		Right	CCN	60		2.78	U	N
416	27-Apr-16	Ero-Exp-1		Right	CCN	72		5.33	F	N
417	27-Apr-16	Ero-Exp-1		Right	CRH	49		1.30	U	N
418	27-Apr-16	Ero-Exp-1		Right	CCN	64		3.52	M	N
419	27-Apr-16	Ero-Exp-1		Right	CHU	63		3.11	U	N
420	27-Apr-16	Ero-Exp-1		Right	CCN	70		5.49	F	N
421	27-Apr-16	Ero-Exp-1		Right	CHU	58		2.70	U	N
422	27-Apr-16	Ero-Exp-1		Right	CHU	60		2.47	U	N
423	27-Apr-16	Ero-Exp-1		Right	CHU	64		2.78	U	N
424	27-Apr-16	Ero-Exp-1		Right	CHU	63		2.55	U	N
425	27-Apr-16	Ero-Exp-1		Right	CCN	60		2.44	U	N
426	27-Apr-16	Ero-Exp-1		Right	CCN	59		2.78	F	N
427	27-Apr-16	Ero-Exp-1		Right	CHU	55		1.97	U	N
428	27-Apr-16	Ero-Exp-1		Right	CHU	62		2.70	U	N
429	27-Apr-16	Ero-Exp-1		Right	CHU	48		1.23	U	N
430	27-Apr-16	Ero-Exp-1		Right	CHU	50		1.82	U	N
431	27-Apr-16	Ero-Exp-1		Right	CRH	35		0.56	U	N
432	27-Apr-16	Ero-Exp-1		Right	CHU	60		2.41	U	N
433	27-Apr-16	Ero-Exp-1		Right	CCN	47		1.09	U	N
434	27-Apr-16	Ero-Exp-1		Right	CHU	60		2.36	U	N
435	27-Apr-16	Ero-Exp-1		Right	CHU	27		0.25	U	N
436	27-Apr-16	Ero-Exp-1		Right	CCN	40		0.71	U	N
437	27-Apr-16	Ero-Exp-1		Right	LNC		30	0.53	-	N
438	27-Apr-16	Ero-Exp-1		Right	LNC		30	0.53	-	N
439	27-Apr-16	Ero-Exp-1		Right	CRH	35		0.66	U	N
440	27-Apr-16	Ero-Exp-1		Right	CRH	28		0.25	U	N
441	27-Apr-16	Ero-Exp-1		Right	CHU	30		0.49	U	N
442	28-Apr-16	Ero-Exp-2		Right	CHU	85		8.33	F	Y
443	28-Apr-16	Ero-Exp-2		Right	CRH	61		2.74	F	Y
444	28-Apr-16	Ero-Exp-2		Right	CCN	85		8.01	M	N

Sample No.	Date	Area	Site	Bank	Species	Total Length (mm)	Fork Length (mm)	Weight (g)	Sex (m/f/u)	Preserved
445	28-Apr-16	Ero-Exp-2		Right	CHU	92		8.91	M	Y
446	28-Apr-16	Ero-Exp-2		Right	CCN	88		8.98	M	N
447	28-Apr-16	Ero-Exp-2		Right	CCN	82		8.59	M	N
448	28-Apr-16	Ero-Exp-2		Right	CHU	89		10.35	M	Y
449	28-Apr-16	Ero-Exp-2		Right	CCN	70		3.74	F	N
450	28-Apr-16	Ero-Exp-2		Right	CCN	85		8.05	M	N
451	28-Apr-16	Ero-Exp-2		Right	CCN	86		7.68	M	N
452	28-Apr-16	Ero-Exp-2		Right	CHU	65		3.54	F	Y
453	28-Apr-16	Ero-Exp-2		Right	CHU	86		7.98	F	Y
454	28-Apr-16	Ero-Exp-2		Right	CRH	79		5.69	F	Y
455	28-Apr-16	Ero-Exp-2		Right	CHU	78		6.82	F	Y
456	28-Apr-16	Ero-Exp-2		Right	CRH	90		10.92	F	Y
457	28-Apr-16	Ero-Exp-2		Right	CHU	90		10.35	M	Y
458	28-Apr-16	Ero-Exp-2		Right	CHU	72		5.79	F	Y
459	28-Apr-16	Ero-Exp-2		Right	CHU	87		8.64	M	Y
460	28-Apr-16	Ero-Exp-2		Right	CHU	70		5.34	F	Y
461	28-Apr-16	Ero-Exp-2		Right	CHU	82		7.98	F	Y
462	28-Apr-16	Ero-Exp-2		Right	CHU	75		5.58	M	Y
463	28-Apr-16	Ero-Exp-2		Right	CHU	70		5.41	F	Y
464	28-Apr-16	Ero-Exp-2		Right	CHU	77		6.76	M	Y
465	28-Apr-16	Ero-Exp-2		Right	CHU	74		6.81	M	N
466	28-Apr-16	Ero-Exp-2		Right	CHU	93		11.37	M	N
467	28-Apr-16	Ero-Exp-2		Right	CHU	94		12.02	M	N
468	28-Apr-16	Ero-Exp-2		Right	CHU	72		5.52	F	N
469	28-Apr-16	Ero-Exp-2		Right	CHU	55		2.00	F	N
470	28-Apr-16	Ero-Exp-2		Right	CCN	68		3.64	F	N
471	28-Apr-16	Ero-Exp-2		Right	CHU	79		6.53	F	Y
472	28-Apr-16	Ero-Exp-2		Right	CHU	68		3.30	M	Y
473	28-Apr-16	Ero-Exp-2		Right	CHU	69		4.14	M	Y
474	28-Apr-16	Ero-Exp-2		Right	CCN	70		4.17	F	N
475	28-Apr-16	Ero-Exp-2		Right	CCN	89		8.20	M	N
476	28-Apr-16	Ero-Exp-2		Right	CCN	69		3.79	M	N
477	28-Apr-16	Ero-Exp-2		Right	CCN	54		1.95	F	N
478	28-Apr-16	Ero-Exp-2		Right	CCN	72		5.54	F	N
479	28-Apr-16	Ero-Exp-2		Right	CCN	62		3.14	M	N
480	28-Apr-16	Ero-Exp-2		Right	CCN	70		3.53	F	N
481	28-Apr-16	Ero-Exp-2		Right	CCN	71		4.80	M	N
482	28-Apr-16	Ero-Exp-2		Right	CCN	68		4.20	F	N
483	28-Apr-16	Ero-Exp-2		Right	CCN	70		3.83	M	N
484	28-Apr-16	Ero-Exp-2		Right	CCN	54		1.70	U	N
485	28-Apr-16	Ero-Exp-2		Right	CCN	55		2.76	F	N
486	28-Apr-16	Ero-Exp-2		Right	CCN	68		3.66	F	N
487	28-Apr-16	Ero-Exp-2		Right	CHU	44		1.02	U	N
488	28-Apr-16	Ero-Exp-2		Right	CCN	85		6.65	M	N
489	28-Apr-16	Ero-Exp-2		Right	CCN	80		5.31	M	N
490	28-Apr-16	Ero-Exp-2		Right	CHU	67		2.75	F	Y
491	28-Apr-16	Ero-Exp-2		Right	CHU	69		3.81	F	Y
492	28-Apr-16	Ero-Exp-2		Right	CHU	71		4.94	F	Y
493	28-Apr-16	Ero-Exp-2		Right	CCN	80		7.43	M	N
494	28-Apr-16	Ero-Exp-2		Right	CCN	80		6.94	M	N
495	28-Apr-16	Ero-Exp-2		Right	CCN	80		6.73	M	N
496	28-Apr-16	Ero-Exp-2		Right	CCN	67		3.38	F	N
497	28-Apr-16	Ero-Exp-2		Right	CCN	65		3.28	M	N
498	28-Apr-16	Ero-Exp-2		Right	CHU	67		4.14	F	Y
499	28-Apr-16	Ero-Exp-2		Right	CHU	58		2.10	F	Y
500	28-Apr-16	Ero-Exp-2		Right	CHU	60		2.98	F	Y
501	28-Apr-16	Ero-Exp-2		Right	CHU	54		2.11	U	Y
502	28-Apr-16	Ero-Exp-2		Right	CCN	79		5.52	M	N
503	28-Apr-16	Ero-Exp-2		Right	CHU	40		0.60	U	N
504	28-Apr-16	Ero-Exp-2		Right	CHU	40		0.60	U	N
505	28-Apr-16	Ero-Exp-2		Right	CHU	40		0.60	U	N
506	28-Apr-16	Ero-Exp-2		Right	CHU	40		0.60	U	N
507	28-Apr-16	Ero-Exp-2		Right	CHU	40		0.60	U	N
508	28-Apr-16	Ero-Exp-2		Right	CHU	40		0.60	U	N
509	28-Apr-16	Ero-Exp-2		Right	CHU	40		0.60	U	N
510	28-Apr-16	Ero-Exp-2		Right	CHU	40		0.60	U	N
511	28-Apr-16	Ero-Exp-2		Right	CHU	40		0.60	U	N
512	28-Apr-16	Ero-Exp-2		Right	CHU	40		0.60	U	N
513	28-Apr-16	Ero-Exp-2		Right	CHU	40		0.60	U	N
514	28-Apr-16	Ero-Exp-2		Right	CHU	40		0.60	U	N
515	28-Apr-16	Ero-Exp-2		Right	CHU	40		0.60	U	N
516	28-Apr-16	Ero-Exp-2		Right	CHU	40		0.60	U	N
517	28-Apr-16	Ero-Exp-2		Right	CHU	40		0.60	U	N
518	28-Apr-16	Ero-Exp-2		Right	CHU	40		0.60	U	N

Sample No.	Date	Area	Site	Bank	Species	Total Length (mm)	Fork Length (mm)	Weight (g)	Sex (m/f/u)	Preserved
519	28-Apr-16	Ero-Exp-2		Right	CHU	40		0.60	U	N
520	28-Apr-16	Ero-Exp-2		Right	CHU	40		0.60	U	N
521	28-Apr-16	Ero-Exp-2		Right	CHU	40		0.60	U	N
522	28-Apr-16	Ero-Exp-2		Right	CHU	55		2.26	U	Y
523	28-Apr-16	Ero-Exp-2		Right	CHU	68		4.74	F	Y
524	28-Apr-16	Ero-Exp-2		Right	CCN	74		5.40	F	N
525	28-Apr-16	Ero-Exp-2		Right	CHU	60		2.82	F	Y
526	28-Apr-16	Ero-Exp-2		Right	CCN	65		3.13	F	N
527	28-Apr-16	Ero-Exp-2		Right	CCN	55		1.95	F	N
528	28-Apr-16	Ero-Exp-2		Right	CCN	65		3.08	F	N
529	28-Apr-16	Ero-Exp-2		Right	CHU	38		0.55	U	N
530	28-Apr-16	Ero-Exp-2		Right	CHU	38		0.55	U	N
531	28-Apr-16	Ero-Exp-2		Right	CHU	38		0.55	U	N
532	28-Apr-16	Ero-Exp-2		Right	CHU	38		0.55	U	N
533	28-Apr-16	Ero-Exp-2		Right	CHU	38		0.55	U	N
534	28-Apr-16	Ero-Exp-2		Right	CCN	68		4.88	F	N
535	28-Apr-16	Ero-Exp-2		Right	CCN	65		4.69	F	N
536	28-Apr-16	Ero-Exp-2		Right	CCN	58		2.41	M	N
537	28-Apr-16	Ero-Exp-2		Right	CCN	64		3.52	M	N
538	28-Apr-16	Ero-Exp-2		Right	CCN	54		2.48	F	N
539	28-Apr-16	Ero-Exp-2		Right	CCN	63		3.02	F	N
540	28-Apr-16	Ero-Exp-2		Right	CCN	55		2.84	U	N
541	28-Apr-16	Ero-Exp-2		Right	CHU	54		3.24	F	N
542	28-Apr-16	Ero-Exp-2		Right	CHU	38		0.80	U	N
543	28-Apr-16	Ero-Exp-2		Right	CHU	38		0.80	U	N
544	28-Apr-16	Ero-Exp-2		Right	CHU	38		0.80	U	N
545	28-Apr-16	Ero-Exp-2		Right	CHU	38		0.80	U	N
546	28-Apr-16	Ero-Exp-2		Right	CHU	38		0.80	U	N
547	28-Apr-16	Ero-Exp-2		Right	CHU	38		0.80	U	N
548	28-Apr-16	Ero-Exp-2		Right	CHU	56		2.57	U	N
549	28-Apr-16	Ero-Exp-2		Right	CHU	58		2.26	U	N
550	28-Apr-16	Ero-Exp-2		Right	CHU	44		1.39	U	N
551	28-Apr-16	Ero-Exp-2		Right	CCN	68		4.45	F	N
552	28-Apr-16	Ero-Exp-2		Right	CCN	46		1.46	U	N
553	28-Apr-16	Ero-Exp-2		Right	CCN	52		2.02	U	N
554	28-Apr-16	Ero-Exp-2		Right	CCN	52		2.02	U	N
555	28-Apr-16	Ero-Exp-2		Right	CCN	52		2.02	U	N
556	28-Apr-16	Ero-Exp-2		Right	CCN	52		2.02	U	N
557	28-Apr-16	Ero-Exp-2		Right	CCN	52		2.02	U	N
558	28-Apr-16	Ero-Exp-2		Right	CHU	51		2.31	U	N
559	28-Apr-16	Ero-Exp-2		Right	CCN	68		3.99	M	N
560	28-Apr-16	Ero-Exp-2		Right	CCN	65		3.28	F	N
561	28-Apr-16	Ero-Exp-2		Right	CHU	55		2.45	F	N
562	28-Apr-16	Ero-Exp-2		Right	CHU	55		1.88	U	N
563	28-Apr-16	Ero-Exp-2		Right	CCN	62		3.01	U	N
564	28-Apr-16	Ero-Exp-2		Right	CCN	62		3.78	F	N
565	28-Apr-16	Ero-Exp-2		Right	CHU	58		2.09	U	N
566	28-Apr-16	Ero-Exp-2		Right	CHU	35		0.51	U	N
567	28-Apr-16	Ero-Exp-2		Right	CHU	35		0.51	U	N
568	28-Apr-16	Ero-Exp-2		Right	CHU	35		0.51	U	N
569	28-Apr-16	Ero-Exp-2		Right	CHU	35		0.51	U	N
570	28-Apr-16	Ero-Exp-2		Right	CHU	35		0.51	U	N
571	28-Apr-16	Ero-Exp-2		Right	CHU	35		0.51	U	N
572	28-Apr-16	Ero-Exp-2		Right	CCN	69		4.26	M	N
573	28-Apr-16	Ero-Exp-2		Right	CHU	35		0.55	U	N
574	28-Apr-16	Ero-Exp-2		Right	CHU	35		0.55	U	N
575	28-Apr-16	Ero-Exp-2		Right	CHU	35		0.55	U	N
576	28-Apr-16	Ero-Exp-2		Right	CHU	35		0.55	U	N
577	28-Apr-16	Ero-Exp-2		Right	CHU	35		0.55	U	N
578	28-Apr-16	Ero-Exp-2		Right	CHU	35		0.55	U	N
579	28-Apr-16	Ero-Exp-2		Right	CHU	35		0.55	U	N
580	28-Apr-16	Ero-Exp-2		Right	CHU	35		0.55	U	N
581	28-Apr-16	Ero-Exp-2		Right	CHU	35		0.55	U	N
582	28-Apr-16	Ero-Exp-2		Right	CHU	35		0.55	U	N
583	28-Apr-16	Ero-Exp-2		Right	CHU	35		0.55	U	N
584	28-Apr-16	Ero-Exp-2		Right	CHU	35		0.55	U	N
585	28-Apr-16	Ero-Exp-2		Right	CHU	35		0.55	U	N
586	28-Apr-16	Ero-Exp-2		Right	CHU	35		0.55	U	N
587	28-Apr-16	Ero-Exp-2		Right	CHU	35		0.55	U	N
588	28-Apr-16	Ero-Exp-2		Right	CHU	35		0.55	U	N
589	28-Apr-16	Ero-Exp-2		Right	CHU	35		0.55	U	N
590	28-Apr-16	Ero-Exp-2		Right	CHU	35		0.55	U	N
591	28-Apr-16	Ero-Exp-2		Right	CHU	35		0.55	U	N
592	28-Apr-16	Ero-Exp-2		Right	CCN	68		3.27	U	N

Sample No.	Date	Area	Site	Bank	Species	Total Length (mm)	Fork Length (mm)	Weight (g)	Sex (m/f/u)	Preserved
593	28-Apr-16	Ero-Exp-2		Right	CCN	59		2.93	U	N
594	28-Apr-16	Ero-Exp-2		Right	CCN	51		1.65	U	N
595	28-Apr-16	Ero-Exp-2		Right	CCN	35		0.61	U	N
596	28-Apr-16	Ero-Exp-3	2	Right	CHU	89		10.33	F	Y
597	28-Apr-16	Ero-Exp-3	2	Right	CHU	95		12.66	M	Y
598	28-Apr-16	Ero-Exp-3	2	Right	CHU	72		5.07	M	Y
599	28-Apr-16	Ero-Exp-3	2	Right	CHU	87		7.06	M	Y
600	28-Apr-16	Ero-Exp-3	2	Right	CRH	76		5.81	F	Y
601	28-Apr-16	Ero-Exp-3	2	Right	CRH	57		2.09	U	Y
602	28-Apr-16	Ero-Exp-3	2	Right	CHU	71		4.89	F	Y
603	28-Apr-16	Ero-Exp-3	2	Right	CRH	67		3.58	M	Y
604	28-Apr-16	Ero-Exp-3	2	Right	CHU	66		4.04	F	Y
605	28-Apr-16	Ero-Exp-3	2	Right	CHU	87		8.57	M	Y
606	28-Apr-16	Ero-Exp-3	2	Right	CHU	78		6.32	F	Y
607	28-Apr-16	Ero-Exp-3	2	Right	CHU	72		5.36	F	Y
608	28-Apr-16	Ero-Exp-3	2	Right	CHU	74		5.13	M	Y
609	28-Apr-16	Ero-Exp-3	2	Right	CHU	79		6.26	M	Y
610	28-Apr-16	Ero-Exp-3	2	Right	CCN	82		8.52	M	N
611	28-Apr-16	Ero-Exp-3	2	Right	CCN	75		6.78	M	N
612	28-Apr-16	Ero-Exp-3	2	Right	CCN	74		6.08	M	N
613	28-Apr-16	Ero-Exp-3	2	Right	CCN	81		8.72	M	N
614	28-Apr-16	Ero-Exp-3	2	Right	CCN	72		5.65	F	N
615	28-Apr-16	Ero-Exp-3	2	Right	CHU	75		5.20	M	Y
616	28-Apr-16	Ero-Exp-3	2	Right	CCN	81		8.50	F	N
617	28-Apr-16	Ero-Exp-3	2	Right	CCN	86		9.81	M	N
618	28-Apr-16	Ero-Exp-3	2	Right	CCN	69		4.02	M	N
619	28-Apr-16	Ero-Exp-3	2	Right	CCN	76		7.18	F	N
620	28-Apr-16	Ero-Exp-3	2	Right	CHU	57		2.17	U	N
621	28-Apr-16	Ero-Exp-3	2	Right	CHU	60		2.96	U	N
622	28-Apr-16	Ero-Exp-3	2	Right	CCN	71		5.47	F	N
623	28-Apr-16	Ero-Exp-3	2	Right	CCN	60		3.30	F	N
624	28-Apr-16	Ero-Exp-3	2	Right	CCN	69		4.08	M	N
625	28-Apr-16	Ero-Exp-3	2	Right	CCN	60		3.46	F	N
626	28-Apr-16	Ero-Exp-3	2	Right	CHU	68		4.65	F	N
627	28-Apr-16	Ero-Exp-3	2	Right	CHU	60		3.28	F	N
628	28-Apr-16	Ero-Exp-3	2	Right	CHU	60		2.06	U	N
629	28-Apr-16	Ero-Exp-3	2	Right	CHU	59		2.18	F	N
630	28-Apr-16	Ero-Exp-3	2	Right	CCN	57		2.25	F	N
631	28-Apr-16	Ero-Exp-3	2	Right	CCN	68		3.36	M	N
632	28-Apr-16	Ero-Exp-3	2	Right	CCN	75		6.69	M	N
633	28-Apr-16	Ero-Exp-3	2	Right	CHU	70		4.86	F	N
634	28-Apr-16	Ero-Exp-3	2	Right	CHU	60		2.64	F	N
635	28-Apr-16	Ero-Exp-3	2	Right	CCN	60		2.13	M	N
636	28-Apr-16	Ero-Exp-3	2	Right	CHU	62		3.15	M	N
637	28-Apr-16	Ero-Exp-3	2	Right	CHU	58		3.06	F	N
638	28-Apr-16	Ero-Exp-3	2	Right	CHU	59		2.70	U	N
639	28-Apr-16	Ero-Exp-3	2	Right	CCN	60		2.48	F	N
640	28-Apr-16	Ero-Exp-3	2	Right	CHU	46		1.21	U	N
641	28-Apr-16	Ero-Exp-3	2	Right	CHU	30		0.51	U	N
642	28-Apr-16	Ero-Exp-3	2	Right	CHU	30		0.51	U	N
643	28-Apr-16	Ero-Exp-3	2	Right	CHU	30		0.51	U	N
644	28-Apr-16	Ero-Exp-3	2	Right	CHU	30		0.51	U	N
645	28-Apr-16	Ero-Exp-3	2	Right	CHU	30		0.51	U	N
646	28-Apr-16	Ero-Exp-3	2	Right	CHU	30		0.51	U	N
647	28-Apr-16	Ero-Exp-3	2	Right	CHU	30		0.51	U	N
648	28-Apr-16	Ero-Exp-3	2	Right	CHU	30		0.51	U	N
649	28-Apr-16	Ero-Exp-3	2	Right	CHU	30		0.51	U	N
650	28-Apr-16	Ero-Exp-3	2	Right	CHU	30		0.51	U	N
651	28-Apr-16	Ero-Exp-3	2	Right	CHU	30		0.51	U	N
652	28-Apr-16	Ero-Exp-3	2	Right	CHU	30		0.51	U	N
653	28-Apr-16	Ero-Exp-3	2	Right	CHU	30		0.51	U	N
654	29-Apr-16	Ero-Exp-3	1	Right	CHU	81		9.91	M	Y
655	29-Apr-16	Ero-Exp-3	1	Right	CHU	74		6.98	F	Y
656	29-Apr-16	Ero-Exp-3	1	Right	CHU	92		11.34	M	Y
657	29-Apr-16	Ero-Exp-3	1	Right	CHU	79		7.21	F	Y
658	29-Apr-16	Ero-Exp-3	1	Right	CHU	87		9.56	M	Y
659	29-Apr-16	Ero-Exp-3	1	Right	CHU	89		9.69	M	Y
660	29-Apr-16	Ero-Exp-3	1	Right	CHU	79		8.36	F	Y
661	29-Apr-16	Ero-Exp-3	1	Right	CHU	80		6.34	M	Y
662	29-Apr-16	Ero-Exp-3	1	Right	CHU	68		4.96	F	Y
663	29-Apr-16	Ero-Exp-3	1	Right	CHU	64		3.15	U	Y
664	29-Apr-16	Ero-Exp-3	1	Right	CHU	60		2.71	U	Y
665	29-Apr-16	Ero-Exp-3	1	Right	CHU	70		5.15	F	Y
666	29-Apr-16	Ero-Exp-3	1	Right	CHU	70		3.96	M	Y

Sample No.	Date	Area	Site	Bank	Species	Total Length (mm)	Fork Length (mm)	Weight (g)	Sex (m/f/u)	Preserved
667	29-Apr-16	Ero-Exp-3	1	Right	CCN	90		11.55	M	N
668	29-Apr-16	Ero-Exp-3	1	Right	CCN	92		12.24	M	N
669	29-Apr-16	Ero-Exp-3	1	Right	CHU	76		7.06	M	Y
670	29-Apr-16	Ero-Exp-3	1	Right	CCN	81		9.77	M	N
671	29-Apr-16	Ero-Exp-3	1	Right	CCN	64		3.65	U	N
672	29-Apr-16	Ero-Exp-3	1	Right	CCN	69		4.69	F	N
673	29-Apr-16	Ero-Exp-3	1	Right	CHU	58		1.93	U	Y
674	29-Apr-16	Ero-Exp-3	1	Right	CCN	56		2.45	U	N
675	29-Apr-16	Ero-Exp-3	1	Right	CCN	68		3.74	F	N
676	29-Apr-16	Ero-Exp-3	1	Right	CCN	60		3.17	F	N
677	29-Apr-16	Ero-Exp-3	1	Right	CCN	60		3.17	F	N
678	29-Apr-16	Ero-Exp-3	1	Right	CHU	30		0.86	U	N
679	29-Apr-16	Ero-Exp-3	1	Right	CHU	30		0.86	U	N
680	29-Apr-16	Ero-Exp-3	1	Right	CHU	30		0.86	U	N
681	29-Apr-16	Ero-Exp-3	1	Right	CHU	30		0.86	U	N
682	29-Apr-16	Ero-Exp-3	1	Right	CHU	30		0.86	U	N
683	29-Apr-16	Ero-Exp-3	1	Right	CHU	30		0.86	U	N
684	29-Apr-16	Ero-Exp-3	1	Right	CHU	30		0.86	U	N
685	29-Apr-16	Ero-Exp-3	1	Right	CHU	30		0.86	U	N
686	29-Apr-16	Ero-Exp-3	1	Right	CCN	52		1.81	U	N
687	29-Apr-16	Ero-Exp-3	1	Right	CCN	52		1.81	U	N
688	29-Apr-16	Ero-Exp-3	1	Right	LNC		45	0.82	-	N
689	29-Apr-16	Ero-Exp-3	1	Left	CRH	136		35.68	M	Y
690	29-Apr-16	Ero-Exp-3	1	Left	CRH	102		22.82	M	Y
691	29-Apr-16	Ero-Exp-3	1	Left	CHU	89		9.98	M	Y
692	29-Apr-16	Ero-Exp-3	1	Left	CHU	98		13.52	M	Y
693	29-Apr-16	Ero-Exp-3	1	Left	CHU	97		12.97	M	Y
694	29-Apr-16	Ero-Exp-3	1	Left	CHU	66		3.87	F	Y
695	29-Apr-16	Ero-Exp-3	1	Left	CHU	73		5.78	F	Y
696	29-Apr-16	Ero-Exp-3	1	Left	CHU	69		4.41	F	Y
697	29-Apr-16	Ero-Exp-3	1	Left	CHU	70		4.78	F	Y
698	29-Apr-16	Ero-Exp-3	1	Left	CHU	64		2.61	U	Y
699	29-Apr-16	Ero-Exp-3	1	Left	CHU	89		8.57	F	Y
700	29-Apr-16	Ero-Exp-3	1	Left	CHU	65		3.53	U	Y
701	29-Apr-16	Ero-Exp-3	1	Left	CHU	65		4.30	F	Y
702	29-Apr-16	Ero-Exp-3	1	Left	CCN	93		11.43	M	N
703	29-Apr-16	Ero-Exp-3	1	Left	CCN	93		12.05	M	N
704	29-Apr-16	Ero-Exp-3	1	Left	CCN	95		16.28	M	N
705	29-Apr-16	Ero-Exp-3	1	Left	CCN	102		16.03	M	N
706	29-Apr-16	Ero-Exp-3	1	Left	LNC		110	19.83	-	N
707	29-Apr-16	Ero-Exp-3	1	Left	CCN	87		10.78	M	N
708	29-Apr-16	Ero-Exp-3	1	Left	CCN	69		5.04	F	N
709	29-Apr-16	Ero-Exp-3	1	Left	RB		104	14.06	-	N
710	29-Apr-16	Ero-Exp-3	1	Left	CHU	59		3.40	F	Y
711	29-Apr-16	Ero-Exp-3	1	Left	CHU	60		2.56	U	Y
712	29-Apr-16	Ero-Exp-3	1	Left	CCN	86		8.92	M	N
713	29-Apr-16	Ero-Exp-3	1	Left	CCN	80		7.17	M	N
714	29-Apr-16	Ero-Exp-3	1	Left	CCN	79		7.52	F	N
715	29-Apr-16	Ero-Exp-3	1	Left	CCN	60		2.61	U	N
716	29-Apr-16	Ero-Exp-3	1	Left	CHU	52		1.79	U	N
717	29-Apr-16	Ero-Exp-3	1	Left	CCN	72		4.74	M	N
718	29-Apr-16	Ero-Exp-3	1	Left	CCN	72		5.94	M	N
719	29-Apr-16	Ero-Exp-3	1	Left	CCN	63		3.94	U	N
720	29-Apr-16	Ero-Exp-3	1	Left	CHU	62		3.20	U	N
721	29-Apr-16	Ero-Exp-3	1	Left	CCN	60		2.50	M	N
722	29-Apr-16	Ero-Exp-3	1	Left	CHU	59		2.97	F	N
723	29-Apr-16	Ero-Exp-3	1	Left	CHU	50		1.66	U	N
724	29-Apr-16	Ero-Exp-3	1	Left	CHU	50		1.66	U	N
725	29-Apr-16	Ero-Exp-3	1	Left	CHU	50		1.66	U	N
726	29-Apr-16	Ero-Exp-3	1	Left	CHU	50		1.66	U	N
727	29-Apr-16	Ero-Exp-3	1	Left	CHU	50		1.66	U	N
728	29-Apr-16	Ero-Exp-3	1	Left	CHU	50		1.66	U	N
729	29-Apr-16	Ero-Exp-3	1	Left	CHU	50		1.66	U	N
730	29-Apr-16	Ero-Exp-3	1	Left	CHU	50		1.66	U	N
731	29-Apr-16	Ero-Exp-3	1	Left	CHU	50		1.66	U	N
732	29-Apr-16	Ero-Exp-3	1	Left	CHU	50		1.66	U	N
733	29-Apr-16	Ero-Exp-3	1	Left	CCN	52		2.01	U	N
734	29-Apr-16	Ero-Exp-3	2	Left	CHU	90		12.74	F	Y
735	29-Apr-16	Ero-Exp-3	2	Left	CRH	100		14.59	M	Y
736	29-Apr-16	Ero-Exp-3	2	Left	CHU	85		9.34	M	Y
737	29-Apr-16	Ero-Exp-3	2	Left	CAS	75		4.20	U	Y
738	29-Apr-16	Ero-Exp-3	2	Left	CHU	67		4.49	F	Y
739	29-Apr-16	Ero-Exp-3	2	Left	CHU	90		12.83	M	Y
740	29-Apr-16	Ero-Exp-3	2	Left	CHU	65		4.73	F	Y

Sample No.	Date	Area	Site	Bank	Species	Total Length (mm)	Fork Length (mm)	Weight (g)	Sex (m/f/u)	Preserved
741	29-Apr-16	Ero-Exp-3	2	Left	CHU	79		7.24	U	Y
742	29-Apr-16	Ero-Exp-3	2	Left	CCN	100		14.16	M	Y
743	29-Apr-16	Ero-Exp-3	2	Left	CCN	74		6.03	F	N
744	29-Apr-16	Ero-Exp-3	2	Left	CHU	74		4.49	M	Y
745	29-Apr-16	Ero-Exp-3	2	Left	CCN	89		10.62	M	N
746	29-Apr-16	Ero-Exp-3	2	Left	RB		128	25.80	-	N
747	29-Apr-16	Ero-Exp-3	2	Left	RB		92	9.83	-	N
748	29-Apr-16	Ero-Exp-3	2	Left	CHU	40		0.87	U	N
749	29-Apr-16	Ero-Exp-3	2	Left	LNC		40	0.44	-	N
750	29-Apr-16	Ero-Exp-3	3	Left	CHU	80		7.93	F	Y
751	29-Apr-16	Ero-Exp-3	3	Left	CHU	88		10.65	M	Y
752	29-Apr-16	Ero-Exp-3	3	Left	CHU	76		7.38	M	Y
753	29-Apr-16	Ero-Exp-3	3	Left	CHU	76		5.95	F	Y
754	29-Apr-16	Ero-Exp-3	3	Left	CHU	84		10.74	F	Y
755	29-Apr-16	Ero-Exp-3	3	Left	CHU	80		8.78	F	Y
756	29-Apr-16	Ero-Exp-3	3	Left	CHU	89		9.93	F	Y
757	29-Apr-16	Ero-Exp-3	3	Left	CHU	85		9.42	,	Y
758	29-Apr-16	Ero-Exp-3	3	Left	CHU	80		7.49	F	Y
759	29-Apr-16	Ero-Exp-3	3	Left	CHU	97		13.35	M	Y
760	29-Apr-16	Ero-Exp-3	3	Left	CHU	75		7.36	F	N
761	29-Apr-16	Ero-Exp-3	3	Left	CCN	100		16.51	M	N
762	29-Apr-16	Ero-Exp-3	3	Left	CCN	87		10.03	F	N
763	29-Apr-16	Ero-Exp-3	3	Left	CCN	88		9.86	M	N
764	29-Apr-16	Ero-Exp-3	3	Left	CCN	90		13.25	M	N
765	29-Apr-16	Ero-Exp-3	3	Left	CHU	82		7.40	F	N
766	29-Apr-16	Ero-Exp-3	3	Left	CCN	79		6.75	M	N
767	29-Apr-16	Ero-Exp-3	3	Left	CCN	84		9.73	M	N
768	29-Apr-16	Ero-Exp-3	3	Left	CCN	80		8.42	F	N
769	29-Apr-16	Ero-Exp-3	3	Left	CCN	84		9.42	M	N
770	29-Apr-16	Ero-Exp-3	3	Left	CCN	96		13.71	M	N
771	29-Apr-16	Ero-Exp-3	3	Left	CCN	85		10.05	M	N
772	29-Apr-16	Ero-Exp-3	3	Left	CCN	85		9.84	M	N
773	29-Apr-16	Ero-Exp-3	3	Left	CCN	89		9.36	M	N
774	29-Apr-16	Ero-Exp-3	3	Left	CCN	88		9.66	M	N
775	29-Apr-16	Ero-Exp-3	3	Left	CHU	75		6.04	M	N
776	29-Apr-16	Ero-Exp-3	3	Left	CCN	90		11.20	M	N
777	29-Apr-16	Ero-Exp-3	3	Left	CCN	81		8.43	M	N
778	29-Apr-16	Ero-Exp-3	3	Left	CHU	58		2.38	F	N
779	29-Apr-16	Ero-Exp-3	3	Left	CHU	61		1.73	U	N
780	29-Apr-16	Ero-Exp-3	3	Left	CCN	65		3.46	M	N
781	29-Apr-16	Ero-Exp-3	3	Left	CCN	65		4.37	F	N
782	29-Apr-16	Ero-Exp-3	3	Left	CHU	41		1.05	U	N
783	29-Apr-16	Ero-Exp-3	3	Right	CHU	83		8.18	F	Y
784	29-Apr-16	Ero-Exp-3	3	Right	CRH	83		7.90	F	Y
785	29-Apr-16	Ero-Exp-3	3	Right	CHU	84		9.98	F	Y
786	29-Apr-16	Ero-Exp-3	3	Right	CHU	69		3.84	M	Y
787	29-Apr-16	Ero-Exp-3	3	Right	CRH	70		4.24	F	Y
788	29-Apr-16	Ero-Exp-3	3	Right	CAS	80		5.90	M	Y
789	29-Apr-16	Ero-Exp-3	3	Right	CHU	81		9.96	F	Y
790	29-Apr-16	Ero-Exp-3	3	Right	CHU	62		3.56	F	Y
791	29-Apr-16	Ero-Exp-3	3	Right	CHU	65		3.04	M	Y
792	29-Apr-16	Ero-Exp-3	3	Right	CHU	60		2.31	M	Y
793	29-Apr-16	Ero-Exp-3	3	Right	CHU	63		3.18	M	Y
794	29-Apr-16	Ero-Exp-3	3	Right	CHU	66		3.73	U	Y
795	29-Apr-16	Ero-Exp-3	3	Right	CHU	61		3.57	U	Y
796	29-Apr-16	Ero-Exp-3	3	Right	CHU	57		2.30	U	Y
797	29-Apr-16	Ero-Exp-3	3	Right	CHU	58		2.64	U	Y
798	29-Apr-16	Ero-Exp-3	3	Right	CCN	93		11.48	M	N
799	29-Apr-16	Ero-Exp-3	3	Right	CCN	78		7.81	F	N
800	29-Apr-16	Ero-Exp-3	3	Right	CHU	53		1.87	U	N
801	29-Apr-16	Ero-Exp-3	3	Right	CHU	68		1.87	U	N
802	29-Apr-16	Ero-Exp-3	3	Right	CHU	68		1.87	U	N
803	29-Apr-16	Ero-Exp-3	3	Right	CHU	68		1.87	U	N
804	29-Apr-16	Ero-Exp-3	3	Right	CHU	68		1.87	U	N
805	30-Apr-16	Ero-Exp-3	4	Left	CHU	75		6.50	F	Y
806	30-Apr-16	Ero-Exp-3	4	Left	CHU	88		9.94	F	Y
807	30-Apr-16	Ero-Exp-3	4	Left	CHU	104		16.73	M	Y
808	30-Apr-16	Ero-Exp-3	4	Left	CHU	95		11.32	M	Y
809	30-Apr-16	Ero-Exp-3	4	Left	CHU	98		12.91	M	Y
810	30-Apr-16	Ero-Exp-3	4	Left	CHU	74		6.43	M	Y
811	30-Apr-16	Ero-Exp-3	4	Left	CHU	77		6.48	F	Y
812	30-Apr-16	Ero-Exp-3	4	Left	CHU	83		7.53	M	Y
813	30-Apr-16	Ero-Exp-3	4	Left	CHU	85		9.03	M	Y
814	30-Apr-16	Ero-Exp-3	4	Left	CHU	82		8.73	F	Y

Sample No.	Date	Area	Site	Bank	Species	Total Length (mm)	Fork Length (mm)	Weight (g)	Sex (m/f/u)	Preserved
815	30-Apr-16	Ero-Exp-3	4	Left	CCN	92		11.25	M	N
816	30-Apr-16	Ero-Exp-3	4	Left	CHU	95		9.98	M	N
817	30-Apr-16	Ero-Exp-3	4	Left	CCN	78		6.41	F	N
818	30-Apr-16	Ero-Exp-3	4	Left	CHU	75		5.33	M	N
819	30-Apr-16	Ero-Exp-3	4	Left	CCN	86		9.24	M	N
820	30-Apr-16	Ero-Exp-3	4	Left	CHU	81		7.37	F	N
821	30-Apr-16	Ero-Exp-3	4	Left	CCN	79		7.82	M	N
822	30-Apr-16	Ero-Exp-3	4	Left	CHU	69		4.85	F	N
823	30-Apr-16	Ero-Exp-3	4	Left	CHU	61		2.70	U	N
824	30-Apr-16	Ero-Exp-3	4	Left	CCN	78		6.09	F	N
825	30-Apr-16	Ero-Exp-3	4	Left	CHU	60		2.52	U	N
826	30-Apr-16	Ero-Exp-3	4	Left	CCN	80		7.33	M	N
827	30-Apr-16	Ero-Exp-3	4	Left	CHU	58		2.83	U	N
828	30-Apr-16	Ero-Exp-3	4	Left	CCN	65		3.98	F	N
829	30-Apr-16	Ero-Exp-3	4	Left	CHU	61		2.80	F	N
830	30-Apr-16	Ero-Exp-3	4	Left	CHU	75		5.26	M	N
831	30-Apr-16	Ero-Exp-3	4	Left	CHU	64		3.92	F	N
832	30-Apr-16	Ero-Exp-3	4	Left	CHU	54		1.93	U	N
833	30-Apr-16	Ero-Exp-3	4	Left	CHU	54		1.93	U	N
834	30-Apr-16	Ero-Exp-3	4	Left	CHU	54		1.93	U	N
835	30-Apr-16	Ero-Exp-3	4	Left	CHU	54		1.93	U	N
836	30-Apr-16	Ero-Exp-3	4	Left	CCN	85		8.76	M	N
837	30-Apr-16	Ero-Exp-3	4	Left	CHU	70		4.18	M	N
838	30-Apr-16	Ero-Exp-3	4	Left	CHU	70		4.02	M	N
839	30-Apr-16	Ero-Exp-3	4	Left	CHU	75		5.66	M	N
840	30-Apr-16	Ero-Exp-3	4	Left	CHU	60		2.68	M	N
841	30-Apr-16	Ero-Exp-3	4	Left	CHU	60		3.29	F	N
842	30-Apr-16	Ero-Exp-3	4	Left	CHU	60		3.29	F	N
843	30-Apr-16	Ero-Exp-3	4	Left	CHU	60		2.02	M	N
844	30-Apr-16	Ero-Exp-3	4	Left	CHU	65		4.10	M	N
845	30-Apr-16	Ero-Exp-3	4	Left	CHU	60		2.68	M	N
846	30-Apr-16	Ero-Exp-3	4	Left	CHU	59		2.65	U	N
847	30-Apr-16	Ero-Exp-3	4	Right	CRH	100		13.14	F	Y
848	30-Apr-16	Ero-Exp-3	4	Right	CHU	95		13.74	F	Y
849	30-Apr-16	Ero-Exp-3	4	Right	CRH	80		7.22	F	Y
850	30-Apr-16	Ero-Exp-3	4	Right	CRH	86		8.56	F	Y
851	30-Apr-16	Ero-Exp-3	4	Right	CRH	67		3.68	U	Y
852	30-Apr-16	Ero-Exp-3	4	Right	CHU	97		10.36	F	Y
853	30-Apr-16	Ero-Exp-3	4	Right	CRH	90		9.98	U	Y
854	30-Apr-16	Ero-Exp-3	4	Right	CRH	60		2.92	U	Y
855	30-Apr-16	Ero-Exp-3	4	Right	CHU	95		10.39	M	Y
856	30-Apr-16	Ero-Exp-3	4	Right	CAS	89		7.30	U	Y
857	30-Apr-16	Ero-Exp-3	4	Right	CHU	68		3.48	U	Y
858	30-Apr-16	Ero-Exp-3	4	Right	CHU	89		9.21	M	Y
859	30-Apr-16	Ero-Exp-3	4	Right	CHU	61		2.99	M	Y
860	30-Apr-16	Ero-Exp-3	4	Right	CHU	54		1.86	U	Y
861	30-Apr-16	Ero-Exp-3	4	Right	CHU	74		6.03	M	Y
862	30-Apr-16	Ero-Exp-3	4	Right	CCN	83		8.28	M	N
863	30-Apr-16	Ero-Exp-3	4	Right	LNC		116	23.65	-	N
864	30-Apr-16	Ero-Exp-3	4	Right	CCN	54		2.13	F	N
865	30-Apr-16	Ero-Exp-3	4	Right	CCN	64		4.17	M	N
866	30-Apr-16	Ero-Exp-3	4	Right	CCN	63		3.55	F	N
867	30-Apr-16	Ero-Exp-3	4	Right	CHU	31		0.37	U	N
868	30-Apr-16	Ero-Exp-3	4	Right	CHU	31		0.37	U	N
869	30-Apr-16	Ero-Exp-3	4	Right	CHU	31		0.37	U	N
870	30-Apr-16	Ero-Exp-3	4	Right	CHU	31		0.37	U	N
871	30-Apr-16	Ero-Exp-3	4	Right	CHU	31		0.37	U	N
872	30-Apr-16	Ero-Exp-3	4	Right	CHU	31		0.37	U	N
873	30-Apr-16	Ero-Exp-3	4	Right	CHU	31		0.37	U	N
874	30-Apr-16	Ero-Exp-3	4	Right	CHU	31		0.37	U	N
875	30-Apr-16	Ero-Exp-3	4	Right	CHU	31		0.37	U	N
876	30-Apr-16	Ero-Exp-3	4	Right	CHU	31		0.37	U	N
877	30-Apr-16	Ero-Exp-4	5	Right	CHU	74		6.04	F	Y
878	30-Apr-16	Ero-Exp-4	5	Right	CHU	81		7.31	M	Y
879	30-Apr-16	Ero-Exp-4	5	Right	CHU	99		3.11	M	Y
880	30-Apr-16	Ero-Exp-4	5	Right	CHU	80		7.75	M	Y
881	30-Apr-16	Ero-Exp-4	5	Right	CHU	90		10.77	M	Y
882	30-Apr-16	Ero-Exp-4	5	Right	CRH	91		8.44	U	Y
883	30-Apr-16	Ero-Exp-4	5	Right	CHU	86		10.83	F	Y
884	30-Apr-16	Ero-Exp-4	5	Right	CHU	84		7.77	F	Y
885	30-Apr-16	Ero-Exp-4	5	Right	CHU	85		8.96	M	Y
886	30-Apr-16	Ero-Exp-4	5	Right	CHU	77		5.30	M	Y
887	30-Apr-16	Ero-Exp-4	5	Right	CHU	83		8.73	M	Y
888	30-Apr-16	Ero-Exp-4	5	Right	CHU	75		5.36	M	Y

Sample No.	Date	Area	Site	Bank	Species	Total Length (mm)	Fork Length (mm)	Weight (g)	Sex (m/f/u)	Preserved
889	30-Apr-16	Ero-Exp-4	5	Right	CHU	68		4.16	F	Y
890	30-Apr-16	Ero-Exp-4	5	Right	CHU	69		3.71	M	Y
891	30-Apr-16	Ero-Exp-4	5	Right	CHU	96		13.13	F	Y
892	30-Apr-16	Ero-Exp-4	5	Right	CCN	84		10.09	F	N
893	30-Apr-16	Ero-Exp-4	5	Right	CCN	89		9.28	M	N
894	30-Apr-16	Ero-Exp-4	5	Right	CCN	83		8.63	M	N
895	30-Apr-16	Ero-Exp-4	5	Right	CCN	78		7.13	M	N
896	30-Apr-16	Ero-Exp-4	5	Right	CCN	78		5.43	M	N
897	30-Apr-16	Ero-Exp-4	5	Right	CCN	72		4.25	M	N
898	30-Apr-16	Ero-Exp-4	5	Right	CHU	81		7.25	M	N
899	30-Apr-16	Ero-Exp-4	5	Right	CCN	71		4.21	M	N
900	30-Apr-16	Ero-Exp-4	5	Right	CHU	64		3.09	M	N
901	30-Apr-16	Ero-Exp-4	5	Right	CRH	50		1.38	U	N
902	30-Apr-16	Ero-Exp-4	5	Right	CHU	63		3.14	M	N
903	30-Apr-16	Ero-Exp-4	5	Right	CCN	58		2.63	F	N
904	30-Apr-16	Ero-Exp-4	5	Right	CHU	55		2.19	M	N
905	30-Apr-16	Ero-Exp-4	5	Right	CHU	55		2.19	M	N
906	30-Apr-16	Ero-Exp-4	5	Right	CHU	55		2.19	M	N
907	30-Apr-16	Ero-Exp-4	5	Right	CHU	55		2.19	M	N
908	30-Apr-16	Ero-Exp-4	5	Right	CHU	55		2.19	M	N
909	30-Apr-16	Ero-Exp-4	5	Left	CRH	105		17.49	M	Y
910	30-Apr-16	Ero-Exp-4	5	Left	CHU	79		6.57	M	Y
911	30-Apr-16	Ero-Exp-4	5	Left	CRH	85		7.21	M	Y
912	30-Apr-16	Ero-Exp-4	5	Left	CRH	84		8.11	F	Y
913	30-Apr-16	Ero-Exp-4	5	Left	CRH	75		5.87	F	Y
914	30-Apr-16	Ero-Exp-4	5	Left	CHU	73		5.47	F	Y
915	30-Apr-16	Ero-Exp-4	5	Left	CHU	73		5.04	M	Y
916	30-Apr-16	Ero-Exp-4	5	Left	CHU	84		7.49	M	Y
917	30-Apr-16	Ero-Exp-4	5	Left	CHU	65		3.09	F	Y
918	30-Apr-16	Ero-Exp-4	5	Left	CHU	83		6.35	M	Y
919	30-Apr-16	Ero-Exp-4	5	Left	CHU	77		5.91	M	Y
920	30-Apr-16	Ero-Exp-4	5	Left	CHU	80		7.50	F	Y
921	30-Apr-16	Ero-Exp-4	5	Left	CHU	71		5.44	F	Y
922	30-Apr-16	Ero-Exp-4	5	Left	CHU	70		4.01	M	Y
923	30-Apr-16	Ero-Exp-4	5	Left	CHU	80		7.15	M	Y
924	30-Apr-16	Ero-Exp-4	5	Left	CCN	83		8.50	M	N
925	30-Apr-16	Ero-Exp-4	5	Left	CCN	80		7.63	F	N
926	30-Apr-16	Ero-Exp-4	5	Left	CCN	78		7.31	F	N
927	30-Apr-16	Ero-Exp-4	5	Left	CHU	80		8.42	F	N
928	30-Apr-16	Ero-Exp-4	5	Left	CCN	85		9.66	M	N
929	30-Apr-16	Ero-Exp-4	5	Left	CHU	76		6.69	F	N
930	30-Apr-16	Ero-Exp-4	5	Left	LNC		105	17.05	-	N
931	30-Apr-16	Ero-Exp-4	5	Left	CCN	76		7.66	F	N
932	30-Apr-16	Ero-Exp-4	5	Left	CCN	75		6.63	F	N
933	30-Apr-16	Ero-Exp-4	5	Left	CCN	71		5.86	F	N
934	30-Apr-16	Ero-Exp-4	5	Left	CCN	70		4.53	M	N
935	30-Apr-16	Ero-Exp-4	5	Left	CCN	71		5.31	F	N
936	30-Apr-16	Ero-Exp-4	5	Left	CCN	62		3.13	M	N
937	30-Apr-16	Ero-Exp-4	5	Left	CCN	60		3.42	F	N
938	30-Apr-16	Ero-Exp-4	5	Left	CCN	73		5.33	M	N
939	30-Apr-16	Ero-Exp-4	5	Left	CCN	71		4.90	F	N
940	30-Apr-16	Ero-Exp-4	5	Left	CHU	70		4.19	M	N
941	30-Apr-16	Ero-Exp-4	5	Left	CHU	60		2.50	U	N
942	30-Apr-16	Ero-Exp-4	5	Left	CCN	70		3.59	M	N
943	30-Apr-16	Ero-Exp-4	5	Left	CHU	69		3.58	M	N
944	30-Apr-16	Ero-Exp-4	5	Left	CHU	70		3.76	M	N
945	30-Apr-16	Ero-Exp-4	5	Left	CCN	67		3.61	M	N
946	30-Apr-16	Ero-Exp-4	5	Left	CCN	63		4.29	F	N
947	30-Apr-16	Ero-Exp-4	5	Left	CHU	42		1.05	U	N
948	30-Apr-16	Ero-Exp-4	5	Left	CCN	66		3.86	M	N
949	30-Apr-16	Ero-Exp-4	5	Left	CHU	55		1.79	M	N
950	30-Apr-16	Ero-Exp-4	5	Left	CCN	59		3.18	F	N
951	30-Apr-16	Ero-Exp-4	5	Left	CCN	60		2.28	M	N
952	30-Apr-16	Ero-Exp-4	5	Left	CRH	44		1.05	U	N
953	30-Apr-16	Ero-Exp-4	5	Left	CCN	57		1.79	-	N
954	30-Apr-16	Ero-Exp-4	5	Left	CCN	58		2.37	U	N
955	30-Apr-16	Ero-Exp-4	5	Left	CRH	48		1.38	U	N
956	30-Apr-16	Ero-Exp-5		Both	CRH	81		5.78	M	Y
957	30-Apr-16	Ero-Exp-5		Both	CRH	67		3.95	F	Y
958	30-Apr-16	Ero-Exp-5		Both	CRH	73		4.32	M	Y
959	30-Apr-16	Ero-Exp-5		Both	CHU	70		5.60	F	Y
960	30-Apr-16	Ero-Exp-5		Both	CHU	95		13.61	F	Y
961	30-Apr-16	Ero-Exp-5		Both	CRH	92		9.93	M	Y
962	30-Apr-16	Ero-Exp-5		Both	CHU	75		7.00	F	Y

Sample No.	Date	Area	Site	Bank	Species	Total Length (mm)	Fork Length (mm)	Weight (g)	Sex (m/f/u)	Preserved
963	30-Apr-16	Ero-Exp-5		Both	CHU	70		4.40	M	Y
964	30-Apr-16	Ero-Exp-5		Both	CHU	85		9.46	F	Y
965	30-Apr-16	Ero-Exp-5		Both	CHU	84		8.50	F	Y
966	30-Apr-16	Ero-Exp-5		Both	CRH	85		7.50	M	Y
967	30-Apr-16	Ero-Exp-5		Both	CRH	65		3.28	F	Y
968	30-Apr-16	Ero-Exp-5		Both	CHU	68		4.08	F	Y
969	30-Apr-16	Ero-Exp-5		Both	CHU	71		4.71	F	Y
970	30-Apr-16	Ero-Exp-5		Both	CHU	68		4.39	F	Y
971	30-Apr-16	Ero-Exp-5		Both	CHU	77		6.50	M	Y
972	30-Apr-16	Ero-Exp-5		Both	CHU	68		4.62	F	Y
973	30-Apr-16	Ero-Exp-5		Both	CCN	82		7.69	M	Y
974	30-Apr-16	Ero-Exp-5		Both	CCN	90		12.13	M	N
975	30-Apr-16	Ero-Exp-5		Both	CHU	72		4.81	M	Y
976	30-Apr-16	Ero-Exp-5		Both	CHU	75		6.50	F	Y
977	30-Apr-16	Ero-Exp-5		Both	CHU	72		6.24	F	Y
978	30-Apr-16	Ero-Exp-5		Both	CHU	61		2.83	M	Y
979	30-Apr-16	Ero-Exp-5		Both	CHU	71		6.05	F	Y
980	30-Apr-16	Ero-Exp-5		Both	CHU	71		4.28	M	Y
981	30-Apr-16	Ero-Exp-5		Both	CCN	65		4.18	M	N
982	30-Apr-16	Ero-Exp-5		Both	CHU	68		5.35	F	Y
983	30-Apr-16	Ero-Exp-5		Both	CHU	63		3.46	F	N
984	30-Apr-16	Ero-Exp-5		Both	CCN	72		6.70	M	N
985	30-Apr-16	Ero-Exp-5		Both	CCN	72		5.87	M	N
986	30-Apr-16	Ero-Exp-5		Both	CHU	67		3.80	F	Y
987	30-Apr-16	Ero-Exp-5		Both	CHU	63		2.86	M	N
988	30-Apr-16	Ero-Exp-5		Both	CHU	60		2.59	M	N
989	30-Apr-16	Ero-Exp-5		Both	CCN	55		2.23	F	N
990	30-Apr-16	Ero-Exp-5		Both	CCN	61		3.35	F	N
991	30-Apr-16	Ero-Exp-5		Both	CHU	56		2.13	F	N
992	30-Apr-16	Ero-Exp-5		Both	CCN	69		2.93	M	N
993	30-Apr-16	Ero-Exp-5		Both	CHU	39		0.79	U	N
994	30-Apr-16	Ero-Exp-5		Both	CHU	39		0.79	U	N
995	30-Apr-16	Ero-Exp-5		Both	CHU	39		0.79	U	N
996	30-Apr-16	Ero-Exp-5		Both	CHU	39		0.79	U	N
997	30-Apr-16	Ero-Exp-5		Both	CHU	63		2.94	M	N
998	30-Apr-16	Ero-Exp-5		Both	CHU	63		3.30	M	N
999	30-Apr-16	Ero-Exp-5		Both	CHU	69		3.25	M	N
1000	30-Apr-16	Ero-Exp-5		Both	CHU	59		2.20	M	N
1001	30-Apr-16	Ero-Exp-5		Both	CHU	56		2.34	F	N
1002	30-Apr-16	Ero-Exp-5		Both	CHU	54		2.01	M	N
1003	30-Apr-16	Ero-Exp-5		Both	CHU	58		2.50	U	N
1004	30-Apr-16	Ero-Exp-5		Both	CHU	49		1.60	U	N
1005	30-Apr-16	Ero-Exp-5		Both	CHU	49		1.60	U	N
1006	30-Apr-16	Ero-Exp-5		Both	CHU	49		1.60	U	N
1007	30-Apr-16	Ero-Exp-5		Both	LNC		41	0.78	-	N
1008	30-Apr-16	Ero-Exp-5		Both	CHU	71		4.18	M	Y
1009	30-Apr-16	Ero-Exp-5		Both	CHU	85		9.01	M	Y
1010	30-Apr-16	Ero-Exp-5		Both	CRH	81		7.03	F	Y
1011	30-Apr-16	Ero-Exp-5		Both	CHU	64		4.14	F	Y
1012	30-Apr-16	Ero-Exp-5		Both	CHU	70		4.67	M	N
1013	30-Apr-16	Ero-Exp-5		Both	CHU	78		6.12	M	N
1014	30-Apr-16	Ero-Exp-5		Both	CHU	58		2.24	M	N
1015	30-Apr-16	Ero-Exp-5		Both	CHU	70		4.58	M	Y
1016	30-Apr-16	Ero-Exp-5		Both	CCN	77		7.77	M	N
1017	30-Apr-16	Ero-Exp-5		Both	CCN	85		9.13	M	N
1018	30-Apr-16	Ero-Exp-5		Both	CCN	79		8.14	M	N
1019	30-Apr-16	Ero-Exp-5		Both	CCN	67		5.46	F	N
1020	30-Apr-16	Ero-Exp-5		Both	CCN	75		6.60	M	N
1021	30-Apr-16	Ero-Exp-5		Both	CCN	75		6.39	M	N
1022	30-Apr-16	Ero-Exp-5		Both	CHU	72		4.79	M	Y
1023	30-Apr-16	Ero-Exp-5		Both	CCN	73		5.40	M	N
1024	30-Apr-16	Ero-Exp-5		Both	CCN	68		4.90	M	N
1025	30-Apr-16	Ero-Exp-5		Both	CHU	95		0.65	U	N
1026	30-Apr-16	Ero-Exp-5		Both	CHU	66		3.40	M	N
1027	30-Apr-16	Ero-Exp-5		Both	CHU	66		3.57	M	N
1028	30-Apr-16	Ero-Exp-5		Both	CHU	72		5.44	F	N
1029	30-Apr-16	Ero-Exp-5		Both	CHU	80		5.93	M	N
1030	30-Apr-16	Ero-Exp-5		Both	CHU	62		2.82	U	N
1031	30-Apr-16	Ero-Exp-5		Both	CCN	60		2.99	F	N
1032	30-Apr-16	Ero-Exp-5		Both	CHU	76		4.89	M	N
1033	30-Apr-16	Ero-Exp-5		Both	CHU	65		4.65	F	N
1034	30-Apr-16	Ero-Exp-5		Both	LNC		43	0.91	-	N
1035	30-Apr-16	Ero-Exp-5		Both	CHU	72		4.84	M	N
1036	30-Apr-16	Ero-Exp-5		Both	CHU	69		4.48	F	N

Sample No.	Date	Area	Site	Bank	Species	Total Length (mm)	Fork Length (mm)	Weight (g)	Sex (m/f/u)	Preserved
1037	30-Apr-16	Ero-Exp-5		Both	CHU	53		2.18	F	N
1038	30-Apr-16	Ero-Exp-5		Both	CHU	47		1.52	U	N
1039	30-Apr-16	Ero-Exp-5		Both	CCN	62		3.71	F	N
1040	30-Apr-16	Ero-Exp-5		Both	CHU	60		3.13	F	N
1041	30-Apr-16	Ero-Exp-5		Both	CCN	77		5.96	F	N
1042	30-Apr-16	Ero-Exp-5		Both	CCN	77		7.44	M	N
1043	30-Apr-16	Ero-Exp-5		Both	CHU	64		3.12	M	N
1044	30-Apr-16	Ero-Exp-5		Both	CCN	72		4.68	M	N
1045	30-Apr-16	Ero-Exp-5		Both	CHU	56		2.14	F	N
1046	30-Apr-16	Ero-Exp-5		Both	CCN	65		4.70	F	N
1047	30-Apr-16	Ero-Exp-5		Both	CRH	49		1.35	U	N
1048	30-Apr-16	Ero-Exp-5		Both	CHU	59		2.28	M	N
1049	30-Apr-16	Ero-Exp-5		Both	CHU	39		0.73	U	N
1050	30-Apr-16	Ero-Exp-5		Both	CHU	66		4.00	M	N
1051	30-Apr-16	Ero-Exp-5		Both	CHU	65		3.61	F	N
1052	30-Apr-16	Ero-Exp-5		Both	CHU	62		2.32	M	N
1053	30-Apr-16	Ero-Exp-5		Both	CHU	41		0.74	U	N
1054	30-Apr-16	Ero-Exp-5		Both	CHU	61		3.01	F	N
1055	30-Apr-16	Ero-Exp-5		Both	CHU	64		4.87	F	N
1056	30-Apr-16	Ero-Exp-5		Both	CHU	55		2.38	F	N
1057	30-Apr-16	Ero-Exp-5		Both	CCN	69		4.18	F	N
1058	30-Apr-16	Ero-Exp-5		Both	CCN	72		5.69	M	N
1059	30-Apr-16	Ero-Exp-5		Both	CHU	54		2.47	M	N
1060	30-Apr-16	Ero-Exp-5		Both	CHU	65		3.67	M	N
1061	30-Apr-16	Ero-Exp-5		Both	CHU	71		5.28	F	N
1062	30-Apr-16	Ero-Exp-5		Both	CHU	32		0.52	U	N
1063	30-Apr-16	Ero-Exp-5		Both	CHU	64		4.33	F	N
1064	30-Apr-16	Ero-Exp-5		Both	CHU	62		3.44	F	N
1065	30-Apr-16	Ero-Exp-5		Both	CCN	61		3.29	F	N
1066	30-Apr-16	Ero-Exp-5		Both	CHU	51		1.92	U	N
1067	30-Apr-16	Ero-Exp-5		Both	CHU	31		0.44	U	N
1068	30-Apr-16	Ero-Exp-5		Both	CCN	40		0.85	U	N
1069	30-Apr-16	Ero-Exp-5		Both	CHU	64		3.11	M	N
1070	30-Apr-16	Ero-Exp-5		Both	CCN	61		3.81	F	N
1071	30-Apr-16	Ero-Exp-5		Both	CCN	79		6.39	M	N
1072	30-Apr-16	Ero-Exp-5		Both	CCN	71		5.50	M	N
1073	30-Apr-16	Ero-Exp-5		Both	CHU	54		2.58	F	N
1074	30-Apr-16	Ero-Exp-5		Both	CHU	53		2.72	F	N
1075	30-Apr-16	Ero-Exp-5		Both	CCN	62		3.43	M	N
1076	30-Apr-16	Ero-Exp-5		Both	CCN	70		5.05	M	N
1077	30-Apr-16	Ero-Exp-5		Both	CHU	56		2.59	F	N

Summary of analyte, Units, and MRL

General Method	Analyte	Units	MRL
General Parameters	Moisture	% wet	0.1
General Parameters	Total Lipids	% wet	0.1
Metals in Tissue	Aluminum	mg/kg wet	0.4
Metals in Tissue	Antimony	mg/kg wet	0.002
Metals in Tissue	Arsenic	mg/kg wet	0.005
Metals in Tissue	Barium	mg/kg wet	0.01
Metals in Tissue	Beryllium	mg/kg wet	0.002
Metals in Tissue	Bismuth	mg/kg wet	0.02
Metals in Tissue	Boron	mg/kg wet	0.1
Metals in Tissue	Cadmium	mg/kg wet	0.002
Metals in Tissue	Calcium	mg/kg wet	2
Metals in Tissue	Chromium	mg/kg wet	0.01
Metals in Tissue	Cobalt	mg/kg wet	0.004
Metals in Tissue	Copper	mg/kg wet	0.01
Metals in Tissue	Iron	mg/kg wet	1
Metals in Tissue	Lead	mg/kg wet	0.004
Metals in Tissue	Magnesium	mg/kg wet	2
Metals in Tissue	Manganese	mg/kg wet	0.02
Metals in Tissue	Mercury	mg/kg wet	0.002
Metals in Tissue	Molybdenum	mg/kg wet	0.01
Metals in Tissue	Nickel	mg/kg wet	0.01
Metals in Tissue	Phosphorus	mg/kg wet	5
Metals in Tissue	Potassium	mg/kg wet	10
Metals in Tissue	Selenium	mg/kg wet	0.02
Metals in Tissue	Silver	mg/kg wet	0.01
Metals in Tissue	Sodium	mg/kg wet	2
Metals in Tissue	Strontium	mg/kg wet	0.01
Metals in Tissue	Thallium	mg/kg wet	0.001
Metals in Tissue	Tin	mg/kg wet	0.02
Metals in Tissue	Titanium	mg/kg wet	0.05
Metals in Tissue	Uranium	mg/kg wet	0.001
Metals in Tissue	Vanadium	mg/kg wet	0.02
Metals in Tissue	Zinc	mg/kg wet	0.1

Sample ID	Label	Area	treatment2	Site	Dist_frm_CII.m.	Bank	Date	Species	Total.Length..mm.	Field.Weight..g.	Lab.Weight..g.	Liver.Weight..g.	Gut.Weight..g.	Gonad.Weight..g.	Preserved	otolith.Taken	Sex..m.f.u.	Sex_Verified	Age	Condition	Liversomatic.Index
1	Koot-Ref-1	Koot-Ref	Ref	1	-29350	Left	4/26/2016	CRH	100	13.00	12.333	0.133	0.662	0.128	Y	Y	U	M	>2	1.2333	1.078407525
3	Koot-Ref-1	Koot-Ref	Ref	1	-29350	Left	4/26/2016	CRH	74	4.00	4.758	0.063	0.417	0.013	Y	Y	U	F	2	1.1741654	1.32408575
4	Koot-Ref-1	Koot-Ref	Ref	1	-29350	Left	4/26/2016	CRH	88	10.00	9.246	0.232	0.209	1.669	Y	Y	F	F	3	1.356768877	2.509193165
5	Koot-Ref-1	Koot-Ref	Ref	1	-29350	Left	4/26/2016	CRH	99	12.00	10.965	0.127	1.025	0.186	Y	Y	M	M	4	1.130064032	1.158230734
7	Koot-Ref-1	Koot-Ref	Ref	1	-29350	Left	4/26/2016	CRH	116	20.00	18.366	0.294	0.741	0.211	Y	Y	M	M	4	1.176631883	1.600784057
8	Koot-Ref-1	Koot-Ref	Ref	1	-29350	Left	4/26/2016	CRH	80	8.00	7.499	0.171	0.240	1.743	Y	Y	F	F	3	1.464648438	2.280304041
9	Koot-Ref-1	Koot-Ref	Ref	1	-29350	Left	4/26/2016	CRH	97	14.00	12.875	0.195	0.738	0.136	Y	Y	M	M	3	1.410691452	1.514563107
11	Koot-Ref-1	Koot-Ref	Ref	1	-29350	Left	4/26/2016	CRH	70	4.00	3.767	0.052	0.327	0.007	Y	Y	U	F	2	1.098250729	1.380408813
12	Koot-Ref-1	Koot-Ref	Ref	1	-29350	Left	4/26/2016	CRH	68	3.00	3.395	0.055	0.244	NA	Y	Y	U	U	2	1.07972471	1.620029455
14	Koot-Ref-1	Koot-Ref	Ref	1	-29350	Left	4/26/2016	CRH	109	18.00	18.518	0.433	1.074	3.905	Y	Y	F	F	4	1.429929368	2.338265471
15	Koot-Ref-1	Koot-Ref	Ref	1	-29350	Left	4/26/2016	CRH	91	11.00	10.889	0.134	0.650	0.112	Y	Y	F	M	3	1.444986604	1.230599688
16	Koot-Ref-1	Koot-Ref	Ref	1	-29350	Left	4/26/2016	CHU	87	8.00	7.964	0.118	0.304	0.127	Y	Y	M	M	3	1.209409828	1.481667504
17	Koot-Ref-1	Koot-Ref	Ref	1	-29350	Left	4/26/2016	CRH	68	3.00	4.149	0.051	0.283	0.015	Y	Y	U	M	2	1.319522186	1.229211858
18	Koot-Ref-1	Koot-Ref	Ref	1	-29350	Left	4/26/2016	CRH	80	6.00	6.709	0.056	1.135	0.058	Y	Y	M	M	2	1.310351563	0.834699657
19	Koot-Ref-1	Koot-Ref	Ref	1	-29350	Left	4/26/2016	CRH	86	10.00	10.212	0.122	1.448	0.086	Y	Y	M	M	2	1.605519011	1.194672934
20	Koot-Ref-1	Koot-Ref	Ref	1	-29350	Left	4/26/2016	CRH	78	5.00	5.878	0.071	0.509	0.075	Y	Y	M	M	2	1.238641919	1.207893841
22	Koot-Ref-1	Koot-Ref	Ref	1	-29350	Left	4/26/2016	CRH	75	4.00	4.696	0.051	0.312	NA	Y	Y	U	U	2	1.113125926	1.086030664
23	Koot-Ref-1	Koot-Ref	Ref	1	-29350	Left	4/26/2016	CHU	77	7.00	7.607	0.184	0.221	1.158	Y	Y	F	F	3	1.666254137	2.418824767
24	Koot-Ref-1	Koot-Ref	Ref	1	-29350	Left	4/26/2016	CRH	67	2.00	3.005	0.092	1.158	0.005	Y	Y	F	M	2	0.999125557	3.06156406
26	Koot-Ref-1	Koot-Ref	Ref	1	-29350	Left	4/26/2016	CRH	75	5.00	4.791	0.047	0.297	0.017	Y	Y	F	F	2	1.135644444	0.981006053
27	Koot-Ref-1	Koot-Ref	Ref	1	-29350	Left	4/26/2016	CRH	77	6.00	6.762	0.048	0.172	0.087	Y	Y	M	M	3	1.481163465	0.709849157
28	Koot-Ref-1	Koot-Ref	Ref	1	-29350	Left	4/26/2016	CRH	68	2.00	3.530	0.025	0.239	0.011	Y	Y	U	M	2	1.122659271	0.708215297
29	Koot-Ref-1	Koot-Ref	Ref	1	-29350	Left	4/26/2016	CRH	68	3.00	3.791	0.052	0.245	0.033	Y	Y	M	M	2	1.20566609	1.371669744
30	Koot-Ref-1	Koot-Ref	Ref	1	-29350	Left	4/26/2016	CRH	54	0.90	1.638	0.037	0.131	0.008	Y	Y	U	M	1	1.040237769	2.258852259
33	Koot-Ref-1	Koot-Ref	Ref	1	-29350	Left	4/26/2016	CHU	72	5.00	6.280	0.159	0.136	1.317	Y	Y	F	F	3	1.682527435	2.531847134
35	Koot-Ref-1	Koot-Ref	Ref	1	-29350	Left	4/26/2016	CAS	69	2.00	3.153	0.032	0.150	0.038	Y	Y	M	F	3	0.959791056	1.014906438
37	Koot-Ref-1	Koot-Ref	Ref	1	-29350	Left	4/26/2016	CAS	85	5.00	5.857	0.083	0.280	0.017	Y	Y	M	M	3	0.953714635	1.417107734
44	Koot-Ref-1	Koot-Ref	Ref	1	-29350	Left	4/26/2016	CHU	67	3.00	4.157	0.119	0.124	0.561	Y	Y	F	F	2	1.382151395	2.862641328
45	Koot-Ref-1	Koot-Ref	Ref	1	-29350	Left	4/26/2016	CAS	58	1.00	1.993	0.026	0.094	NA	Y	Y	U	M	2	1.021464595	1.304565981
46	Koot-Ref-1	Koot-Ref	Ref	1	-29350	Left	4/26/2016	CRH	50	0.80	1.150	0.012	0.086	NA	Y	Y	U	U	1	0.92	1.043478261
48	Koot-Ref-1	Koot-Ref	Ref	1	-29350	Left	4/26/2016	CRH	48	0.70	1.115	0.012	0.053	NA	Y	Y	U	U	1	1.008210359	1.076233184
49	Koot-Ref-1	Koot-Ref	Ref	1	-29350	Left	4/26/2016	CRH	47	0.70	1.034	0.019	0.105	NA	Y	Y	U	U	1	0.995925758	1.837524178
55	Ero-Ref-3	Ero-Ref-3	Ref	2	-13350	Both	4/27/2016	CHU	71	4.92	4.081	0.048	0.163	0.017	Y	Y	M	M	3	1.140227598	1.176182308
56	Ero-Ref-3	Ero-Ref-3	Ref	2	-13350	Both	4/27/2016	CHU	68	4.06	3.315	0.240	0.160	NA	Y	Y	U	M	3	1.054282007	7.239819005
57	Ero-Ref-3	Ero-Ref-3	Ref	2	-13350	Both	4/27/2016	CRH	67	3.77	3.141	0.059	0.164	NA	Y	Y	U	U	2	1.044343885	1.878382681
62	Ero-Ref-3	Ero-Ref-3	Ref	2	-13350	Both	4/27/2016	CHU	76	6.30	5.378	0.135	0.230	0.572	Y	Y	F	F	4	1.225123925	2.51022685
64	Ero-Ref-3	Ero-Ref-3	Ref	2	-13350	Both	4/27/2016	CHU	78	5.39	6.551	0.104	0.234	0.135	Y	Y	M	M	4	1.380459886	1.587543886
78	Ero-Ref-3	Ero-Ref-3	Ref	2	-13350	Both	4/27/2016	CHU	62	3.30	2.510	0.017	0.177	0.005	Y	Y	U	F	3	1.053170421	0.677290837
79	Ero-Ref-3	Ero-Ref-3	Ref	2	-13350	Both	4/27/2016	CHU	70	4.42	3.794	0.042	0.256	NA	Y	Y	U	U	2	1.106122449	1.10701107
81	Ero-Ref-3	Ero-Ref-3	Ref	2	-13350	Both	4/27/2016	CRH	47	1.17	0.896	0.012	0.081	NA	Y	Y	U	U	1	0.863007233	1.339285714
93	Ero-Ref-3	Ero-Ref-3	Ref	2	-13350	Both	4/27/2016	CRH	105	15.56	14.118	0.413	0.932	1.004	Y	Y	F	M	5	1.219565922	2.925343533
94	Ero-Ref-3	Ero-Ref-3	Ref	2	-13350	Both	4/27/2016	CRH	75	5.21	4.392	0.063	0.317	0.019	Y	Y	U	M	3	1.041066667	1.43442623
97	Ero-Ref-3	Ero-Ref-3	Ref	2	-13350	Both	4/27/2016	CHU	75	6.70	6.519	0.137	0.131	1.512	Y	Y	F	F	4	1.545244444	2.101549317
98	Ero-Ref-3	Ero-Ref-3	Ref	2	-13350	Both	4/27/2016	CHU	71	4.28	3.805	0.031	0.210	NA	Y	Y	U	M	3	1.063113456	0.814717477
99	Ero-Ref-3	Ero-Ref-3	Ref	2	-13350	Both	4/27/2016	CHU	83	7.62	6.313	0.010	0.248	0.080	Y	Y	M	M	4	1.104082464	0.158403295
103	Ero-Ref-3	Ero-Ref-3	Ref	2	-13350	Both	4/27/2016	CHU	85	9.28	8.015	0.067	0.279	0.189	Y	Y	M	M	4	1.305108895	0.835932626
104	Ero-Ref-3	Ero-Ref-3	Ref	2	-13350	Both	4/27/2016	CHU	74	6.37	5.942	0.046	0.217	0.640	Y	Y	M	M	3	1.466349476	0.774150118
105	Ero-Ref-3	Ero-Ref-3	Ref	2	-13350	Both	4/27/2016	CHU	74	5.71	5.203	0.221	0.065	0.956	Y	Y	F	F	3	1.283981205	4.247549491
108	Ero-Ref-3	Ero-Ref-3	Ref	2	-13350	Both	4/27/2016	CRH	49	1.21	0.846	0.010	0.053	NA	Y	Y	U	U	1	0.719088135	1.182033097
109	Ero-Ref-3	Ero-Ref-3	Ref	2	-13350	Both	4/27/2016	CHU	69	4.81	4.246	0.072	0.166	0.677	Y	Y	F	F	4	1.292506446	1.695713613
113	Ero-Ref-3	Ero-Ref-3	Ref	2	-13350	Both	4/27/2016	CHU	80	6.78	5.602	0.033	0.228	0.083	Y	Y	M	M	3	1.094140625	0.58907533
121	Ero-Ref-3	Ero-Ref-3	Ref	2	-13350	Both	4/27/2016	CHU	67	4.02	3.060	0.075	0.117	0.583	Y	Y	F	F	3	1.017412381	2.450980392
122	Ero-Ref-3	Ero-Ref-3	Ref	2	-13350	Both	4/27/2016	CHU	71	4.89	4.014	0.083	0.144	0.540	Y	Y	M	F	4	1.121507861	2.06776283
136	Ero-Ref-3	Ero-Ref-3	Ref	2	-13350	Both	4/27/2016	CRH	76	6.01	5.040	0.067	0.678	NA	Y	Y	M	M	3	1.148126549	1.329365079
137	Ero-Ref-3	Ero-Ref-3	Ref	2	-13350	Both	4/27/2016	CRH	81	6.52	5.522	0.077	0.511	0.566	Y	Y	F	F	4	1.039061721	1.394422311
138	Ero-Ref-3	Ero-Ref-3	Ref	2	-13350	Both	4/27/2016	CHU	89	10.93	9.495	0.074	0.871	0.163	Y	Y	F	M	4	1.346867735	0.779357557
139	Ero-Ref-3	Ero-Ref-3	Ref	2	-13350	Both	4/27/2016	CHU	72	4.84	4.174	0.036	0.358	NA	Y	Y	F	U	3	1.118291324	0.862482032
141	Ero-Ref-3	Ero-Ref-3	Ref	2	-13350	Both	4/27/2016	CHU	63	2.38	2.130	0.009	0.101	NA	Y	Y	M	U	2	0.851839854	0.422535211
142	Ero-Ref-3	Ero-Ref-3	Ref	2	-13350	Both	4/27/2016	CRH	66	3.75	2.960	0.032	0.548	0.006	Y	Y	M	M	3	1.029579542	1.081081081
148	Ero-Ref-3	Ero-Ref-3	Ref	2	-13350	Both	4/27/2016	CHU	56	2.33	1.973	0.013	0.101	NA	Y	Y	U	U	2	1.123473943	0.658895084
150	Ero-Ref-3	Ero-Ref-3	Ref	2	-13350	Both	4/27/2016	CHU	56	4.00	3.465	0.034	0.144	0.021	Y	Y	M	M	3	1.973054847	0.981240981
152	Ero-Ref-3	Ero-Ref-3	Ref	2	-13350	Both	4/27/2016	CHU	68	4.37	3.802	0.058	0.156	0.002	Y	Y	U	M	3	1.209164462	1.525512888
165	Ero-Ref-2-4	Ero-Ref-2	Ref	4	-9073		4/27/2016	CRH	125	28.30	26.419	0.427	1.336	0.322	Y	Y	M	M	3	1.3526528	1.616261024
166	Ero-Ref-2-4	Ero-Ref-2	Ref	4	-9073		4/27/2016	CRH	108	19.75	18.651	0.689	0.799	3.328	Y	Y	F	F	5	1.480576513	3.694171894
167	Ero-Ref-2-4	Ero-Ref-2	Ref	4	-9073		4/27/2016	CRH	129	34.30	31.929	1.023	1.550	0.537	Y	Y	M	M	5	1.487360302	3.203983839
168	Ero-Ref-2-4	Ero-Ref-2	Ref	4	-9073		4/27/2016	CRH	124	33.95	32.603	0.618	0.996	7.444	Y	Y	F	M	5	1.709985818	1.895531086
169	Ero-Ref-2-4	Ero-Ref-2	Ref	4	-9073		4/27/2016	CRH	118	29.42	25.980	0.943	1.443	0.256	Y	Y	M	M	5	1.581223007	3.629715166
170	Ero-Ref-2-4	Ero-Ref-2	Ref	4	-9073		4/27/2016	CRH	105	22.10	19.352	0.628	1.475	3.217	Y	Y	F	F	4	1.671698521	3.245142621
171	Ero-Ref-2-4	Ero-Ref-2	Ref	4	-9073		4/27/2016	CRH	97	12.58	10.238	0.119	0.560	0.136	Y	Y	M	M	4	1.121759929	1.162336394
172	Ero-Ref-2-4	Ero-Ref-2	Ref	4	-9073		4/27/2016	CRH	77	5.59	4.920	0.080	0.307	NA	Y	Y	U	U	2	1.077687703	1.62601626
173	Ero-Ref-2-4	Ero-Ref-2	Ref	4	-9073		4/27/2016	CRH	102	18.21	15.975	0.256	1.728	0.189	Y	Y	M	M	3	1.505359929	1.602503912
174	Ero-Ref-2-4	Ero-Ref-2	Ref	4	-9073		4/27/2016	CHU	86	9.53	8.044	0.191	0.308	1.159	Y	Y	M	F	4	1.26466852	2.374440577
175	Ero-Ref-2-4	Ero-Ref-2	Ref	4	-9073		4/27/2016	CRH	122	27.89	24.391	0.522	1.214	0.150	Y	Y	M	M	4	1.343229169	2.140133656
176	Ero-Ref-2-4	Ero-Ref-2	Ref	4	-9073		4/27/2016	CRH	72	4.45	3.912	0.077	0.272	NA	Y	Y	U	U	2	1.048096708	1.968302658
177	Ero-Ref-2-4	Ero-Ref-2	Ref	4	-9073		4/27/2016	CRH	78	6.95	5.804	0.065	0.320	NA	Y	Y	U	F	2	1.223048264	1.119917298
178	Ero-Ref-2-4	Ero-Ref-2	Ref	4	-9073		4/27/2016	CRH	77	6.73	5.760	0.078	0.387	NA	Y	Y	M	U	3	1.261683164	1.354166667
179	Ero-Ref-2-4	Ero-Ref-2	Ref	4	-9073		4/27/2016	CRH	65	3.16	2.652	0.029	0.291	NA	Y	Y	U	U	3	0.965680473	1.093514329
180	Ero-Ref-2-4	Ero-Ref-2	Ref	4	-9073		4/27/2016	CRH	85	7.60	7.314	0.173	0.307	0.945	Y	Y	F	F	3	1.190962752	2.365326771
181	Ero-Ref-2-4	Ero-Ref-2	Ref	4	-9073		4/27/2016	CRH	75	4.62	4.106	0.039	0.223	0.029	Y	Y	U	F	3	0.973274074	0.949829518
182	Ero-Ref-2-4	Ero-Ref-2	Ref	4	-9073		4/27/2016	CHU	115	21.73	19.525	0.161	1.164	0.405	Y	Y	M	M	5	1.283800444	0.824583867
187	Ero-Ref-2-4	Ero-Ref-2	Ref	4	-9073		4/27/2016	CHU	91	11.34	10.115	0.079	0.394	0.235	Y	Y	M	M	4	1.342275645	0.78101829
188	Ero-Ref-2-4	Ero-Ref-2	Ref	4	-9073		4/27/2016	CHU	89	10.84	10.476	0.268	0.358	1.589	Y	Y	F	F	4	1.48602279	2.558228331
193	Ero-Ref-2-4	Ero-Ref-2	Ref	4	-9073		4/27/2016	CHU	80	7.92	6.599	0.126	0.229	0.877	Y	Y	F	F	3	1.288867188	1.909380209

Sample ID	Label	Area	treatment2	Site	Dist_frm_CII.m.	Bank	Date	Species	Total.Length..mm.	Field.Weight..g.	Lab.Weight..g.	Liver.Weight..g.	Gut.Weight..g.	Gonad.Weight..g.	Preserved	otolith.Taken	Sex..m.f.u.	Sex_Verified	Age	Condition	Liversomatic.Index
194	Ero-Ref-2-4	Ero-Ref-2	Ref	4	-9073		4/27/2016	CAS	102	10.94	9.250	0.221	0.509	0.447	Y	Y	M	F	4	0.871648159	2.389189189
197	Ero-Ref-2-4	Ero-Ref-2	Ref	4	-9073		4/27/2016	CHU	87	10.50	8.762	0.169	0.261	1.437	Y	Y	F	F	3	1.330593786	1.928783383
198	Ero-Ref-2-4	Ero-Ref-2	Ref	4	-9073		4/27/2016	CRH	86	7.80	7.050	0.202	0.271	1.110	Y	Y	U	F	3	1.108392972	2.865248227
205	Ero-Ref-2-4	Ero-Ref-2	Ref	4	-9073		4/27/2016	CAS	98	9.99	8.979	0.203	0.640	0.545	Y	Y	F	F	4	0.954003009	2.260830827
206	Ero-Ref-2-4	Ero-Ref-2	Ref	4	-9073		4/27/2016	CRH	80	6.41	5.349	0.066	0.380	NA	Y	Y	U	U	2	1.044726563	1.233875491
216	Ero-Ref-2-4	Ero-Ref-2	Ref	4	-9073		4/27/2016	CHU	88	9.44	8.552	0.132	0.209	1.493	Y	Y	F	F	4	1.254930503	1.543498597
222	Ero-Ref-2-4	Ero-Ref-2	Ref	4	-9073		4/27/2016	CAS	92	9.43	8.343	0.150	0.434	1.053	Y	Y	F	F	4	1.071417564	1.797914419
240	Ero-Ref-2-4	Ero-Ref-2	Ref	4	-9073		4/27/2016	CAS	70	4.07	3.194	0.032	0.170	0.026	Y	Y	U	M	3	0.931195335	1.001878522
258	Ero-Ref-2-4	Ero-Ref-2	Ref	4	-9073		4/27/2016	CRH	80	7.02	5.769	0.081	0.499	NA	Y	Y	F	M	3	1.126757813	1.404056162
335	Ero-Exp-1-1	Ero-Exp-1	Exp	1	-2078		4/27/2016	CRH	70	5.90	5.270	0.129	0.477	0.748	Y	Y	F	F	3	1.536443149	2.447817837
336	Ero-Exp-1-1	Ero-Exp-1	Exp	1	-2078		4/27/2016	CRH	75	5.21	4.405	0.052	0.425	NA	Y	Y	U	U	2	1.044148148	1.180476731
338	Ero-Exp-1-1	Ero-Exp-1	Exp	1	-2078		4/27/2016	CHU	69	5.27	4.638	0.150	0.093	0.940	Y	Y	F	F	3	1.411833466	3.234152652
340	Ero-Exp-1-1	Ero-Exp-1	Exp	1	-2078		4/27/2016	CHU	65	4.07	3.590	0.078	0.113	0.573	Y	Y	F	F	3	1.307237142	2.17270195
342	Ero-Exp-1-1	Ero-Exp-1	Exp	1	-2078		4/27/2016	CHU	80	7.95	7.159	0.160	0.218	1.167	Y	Y	F	F	3	1.398242188	2.234949015
344	Ero-Exp-1-1	Ero-Exp-1	Exp	1	-2078		4/27/2016	CHU	59	2.51	2.017	0.020	0.100	NA	Y	Y	U	U	2	0.982086776	0.991571641
352	Ero-Exp-1-1	Ero-Exp-1	Exp	1	-2078		4/27/2016	CHU	62	2.66	2.074	0.011	0.150	NA	Y	Y	U	U	3	0.870229264	0.530376085
353	Ero-Exp-1-1	Ero-Exp-1	Exp	1	-2078		4/27/2016	CHU	64	3.09	2.798	0.021	0.198	NA	Y	Y	U	U	3	1.067352295	0.750536097
359	Ero-Exp-1-2	Ero-Exp-1	Exp	2	-954		4/27/2016	CRH	150	54.92	52.339	1.524	4.905	8.280	Y	Y	F	F	6	1.550785185	2.911786622
360	Ero-Exp-1-2	Ero-Exp-1	Exp	2	-954		4/27/2016	CRH	114	21.63	19.478	0.360	0.981	0.292	Y	Y	M	M	4	1.314709519	1.848239039
361	Ero-Exp-1-2	Ero-Exp-1	Exp	2	-954		4/27/2016	CRH	125	31.74	29.891	0.354	1.294	0.463	Y	Y	M	M	5	1.5304192	1.184302967
362	Ero-Exp-1-2	Ero-Exp-1	Exp	2	-954		4/27/2016	CRH	137	49.11	45.913	1.209	1.828	0.540	Y	Y	M	M	6	1.785558031	2.63324113
363	Ero-Exp-1-2	Ero-Exp-1	Exp	2	-954		4/27/2016	CRH	109	17.98	16.583	0.372	0.830	0.201	Y	Y	M	M	4	1.280511865	2.243261171
364	Ero-Exp-1-2	Ero-Exp-1	Exp	2	-954		4/27/2016	CRH	88	8.02	6.813	0.112	0.513	0.031	Y	Y	U	M	2	0.999747605	1.643916043
365	Ero-Exp-1-2	Ero-Exp-1	Exp	2	-954		4/27/2016	CRH	75	5.15	4.369	0.047	0.283	NA	Y	Y	M	U	2	1.035614815	1.075761044
366	Ero-Exp-1-2	Ero-Exp-1	Exp	2	-954		4/27/2016	CHU	99	13.86	12.575	0.163	0.516	0.273	Y	Y	M	M	4	1.295992266	1.296222664
368	Ero-Exp-1-2	Ero-Exp-1	Exp	2	-954		4/27/2016	CHU	92	10.38	9.399	0.102	0.406	0.461	Y	Y	M	M	3	1.207030287	1.085221832
370	Ero-Exp-1-2	Ero-Exp-1	Exp	2	-954		4/27/2016	CHU	90	10.99	10.338	0.137	0.384	1.424	Y	Y	F	F	4	1.418106996	1.325207971
374	Ero-Exp-1-2	Ero-Exp-1	Exp	2	-954		4/27/2016	CHU	65	3.26	2.772	0.030	0.180	NA	Y	Y	U	U	2	1.009376422	1.082251082
376	Ero-Exp-1-2	Ero-Exp-1	Exp	2	-954		4/27/2016	CHU	82	7.86	7.376	0.146	0.299	1.245	Y	Y	F	F	3	1.337763526	1.979392625
383	Ero-Exp-1-2	Ero-Exp-1	Exp	2	-954		4/27/2016	CHU	90	9.41	8.578	0.073	0.409	0.145	Y	Y	M	M	4	1.176680384	0.851014222
384	Ero-Exp-1-2	Ero-Exp-1	Exp	2	-954		4/27/2016	CHU	87	8.72	7.746	0.168	0.374	0.926	Y	Y	F	F	4	1.176304436	2.168861348
387	Ero-Exp-1-2	Ero-Exp-1	Exp	2	-954		4/27/2016	CHU	80	7.03	6.286	0.100	0.243	1.229	Y	Y	F	F	4	1.227734375	1.59083678
391	Ero-Exp-1-2	Ero-Exp-1	Exp	2	-954		4/27/2016	CHU	80	7.06	5.980	0.053	0.279	NA	Y	Y	M	M	3	1.16796875	0.886287625
393	Ero-Exp-1-2	Ero-Exp-1	Exp	2	-954		4/27/2016	CHU	76	4.79	4.000	0.039	0.150	0.026	Y	Y	M	M	3	0.911211547	0.975
395	Ero-Exp-1-2	Ero-Exp-1	Exp	2	-954		4/27/2016	CHU	84	7.91	7.225	0.079	0.360	0.138	Y	Y	M	M	3	1.21898958	1.093425606
397	Ero-Exp-1-2	Ero-Exp-1	Exp	2	-954		4/27/2016	CHU	77	6.28	5.388	0.097	0.165	0.680	Y	Y	F	F	3	1.18019946	1.800296956
398	Ero-Exp-1-2	Ero-Exp-1	Exp	2	-954		4/27/2016	CHU	84	7.26	6.600	0.099	0.143	1.742	Y	Y	F	F	4	1.113540654	1.5
402	Ero-Exp-1-2	Ero-Exp-1	Exp	2	-954		4/27/2016	CHU	72	5.04	4.009	0.025	0.204	0.075	Y	Y	M	M	3	1.074084791	0.623596907
406	Ero-Exp-1-2	Ero-Exp-1	Exp	2	-954		4/27/2016	CHU	68	4.23	3.610	0.026	0.192	NA	Y	Y	M	U	2	1.148101974	0.720221607
409	Ero-Exp-1-2	Ero-Exp-1	Exp	2	-954		4/27/2016	CAS	68	3.36	2.941	0.035	0.241	NA	Y	Y	M	U	3	0.93533737	1.190071404
442	Ero-Exp-2	Ero-Exp-2	Exp		-394		4/28/2016	CHU	85	8.33	7.766	0.156	0.347	1.156	Y	Y	F	F	4	1.264563403	2.008756116
443	Ero-Exp-2	Ero-Exp-2	Exp		-394		4/28/2016	CRH	61	2.74	2.349	0.043	0.370	NA	Y	Y	F	U	2	1.034888383	1.830566198
445	Ero-Exp-2	Ero-Exp-2	Exp		-394		4/28/2016	CHU	92	8.91	8.562	0.094	0.396	0.130	Y	Y	M	M	3	1.099541793	1.097874328
448	Ero-Exp-2	Ero-Exp-2	Exp		-394		4/28/2016	CHU	89	10.35	9.013	0.117	0.392	0.179	Y	Y	M	M	3	1.278495934	1.298124931
452	Ero-Exp-2	Ero-Exp-2	Exp		-394		4/28/2016	CHU	65	3.54	2.969	0.035	0.247	0.037	Y	Y	F	M	2	1.081110605	1.178848097
453	Ero-Exp-2	Ero-Exp-2	Exp		-394		4/28/2016	CHU	86	7.98	7.238	0.153	0.195	1.942	Y	Y	F	F	4	1.137950118	2.113843603
454	Ero-Exp-2	Ero-Exp-2	Exp		-394		4/28/2016	CRH	79	5.69	5.318	0.082	0.633	0.040	Y	Y	F	F	3	1.078616499	1.541933058
455	Ero-Exp-2	Ero-Exp-2	Exp		-394		4/28/2016	CHU	78	6.82	6.201	0.175	0.170	1.525	Y	Y	F	F	4	1.306706114	2.822125464
456	Ero-Exp-2	Ero-Exp-2	Exp		-394		4/28/2016	CRH	90	10.92	9.887	0.190	1.189	0.026	Y	Y	F	M	3	1.356241427	1.921715384
457	Ero-Exp-2	Ero-Exp-2	Exp		-394		4/28/2016	CHU	90	10.35	9.572	0.091	0.436	0.216	Y	Y	M	M	4	1.31303155	0.950689511
458	Ero-Exp-2	Ero-Exp-2	Exp		-394		4/28/2016	CHU	72	5.79	5.397	0.151	0.121	1.398	Y	Y	F	F	4	1.445955504	2.797850658
459	Ero-Exp-2	Ero-Exp-2	Exp		-394		4/28/2016	CHU	87	8.64	8.009	0.122	0.860	0.121	Y	Y	M	M	4	1.21624351	1.523286303
460	Ero-Exp-2	Ero-Exp-2	Exp		-394		4/28/2016	CHU	70	5.34	4.894	0.102	0.172	1.343	Y	Y	F	F	3	1.426822157	2.084184716
461	Ero-Exp-2	Ero-Exp-2	Exp		-394		4/28/2016	CHU	82	7.98	7.054	0.160	0.282	1.419	Y	Y	F	F	4	1.279363329	2.268216615
462	Ero-Exp-2	Ero-Exp-2	Exp		-394		4/28/2016	CHU	75	5.58	5.153	0.060	0.193	0.089	Y	Y	M	M	2	1.221451852	1.16437027
463	Ero-Exp-2	Ero-Exp-2	Exp		-394		4/28/2016	CHU	70	5.41	4.186	0.105	0.210	0.772	Y	Y	F	F	2	1.220408163	2.508361204
464	Ero-Exp-2	Ero-Exp-2	Exp		-394		4/28/2016	CHU	77	6.76	6.152	0.073	0.173	0.111	Y	Y	M	M	3	1.347547713	1.186605982
471	Ero-Exp-2	Ero-Exp-2	Exp		-394		4/28/2016	CHU	79	6.53	7.550	0.085	0.179	2.307	Y	Y	F	F	3	1.531319023	1.125827815
472	Ero-Exp-2	Ero-Exp-2	Exp		-394		4/28/2016	CHU	68	3.30	3.474	0.043	0.211	NA	Y	Y	M	U	2	1.104849379	1.237766264
473	Ero-Exp-2	Ero-Exp-2	Exp		-394		4/28/2016	CHU	69	4.14	3.871	0.038	0.341	0.065	Y	Y	M	M	2	1.178354322	0.981658486
490	Ero-Exp-2	Ero-Exp-2	Exp		-394		4/28/2016	CHU	67	2.75	3.737	0.087	0.199	0.696	Y	Y	F	F	2	1.242506558	2.328070645
491	Ero-Exp-2	Ero-Exp-2	Exp		-394		4/28/2016	CHU	69	3.81	3.386	0.067	0.140	0.351	Y	Y	F	F	3	1.030717575	1.978735972
492	Ero-Exp-2	Ero-Exp-2	Exp		-394		4/28/2016	CHU	71	4.94	4.589	0.121	0.151	0.751	Y	Y	F	F	2	1.282162325	2.636740031
498	Ero-Exp-2	Ero-Exp-2	Exp		-394		4/28/2016	CHU	67	4.14	3.723	0.080	0.104	0.909	Y	Y	F	F	2	1.23785173	2.148804727
499	Ero-Exp-2	Ero-Exp-2	Exp		-394		4/28/2016	CHU	58	2.10	1.875	0.028	0.074	0.312	Y	Y	F	F	2	0.96098651	1.493333333
500	Ero-Exp-2	Ero-Exp-2	Exp		-394		4/28/2016	CHU	60	2.98	2.596	0.040	0.180	0.291	Y	Y	F	F	2	1.201851852	1.540832049
501	Ero-Exp-2	Ero-Exp-2	Exp		-394		4/28/2016	CHU	54	2.11	1.844	0.054	0.078	0.247	Y	Y	U	F	2	1.171061322	2.928416486
522	Ero-Exp-2	Ero-Exp-2	Exp		-394		4/28/2016	CHU	55	2.26	1.997	0.042	0.080	0.283	Y	Y	U	F	2	1.200300526	2.103154732
523	Ero-Exp-2	Ero-Exp-2	Exp		-394		4/28/2016	CHU	68	4.74	4.267	0.068	0.090	1.048	Y	Y	F	F	3	1.357050173	1.593625498
525	Ero-Exp-2	Ero-Exp-2	Exp		-394		4/28/2016	CHU	60	2.82	2.538	0.061	0.074	0.535	Y	Y	F	F	3	1.175	2.403467297
596	Ero-Exp-3-2-R	Ero-Exp-3	Exp	2-R	435	Right	4/28/2016	CHU	89	10.33	9.357	0.196	0.315	1.048	Y	Y	F	F	4	1.327292406	2.094688469
597	Ero-Exp-3-2-R	Ero-Exp-3	Exp	2-R	435	Right	4/28/2016	CHU	95	12.66	11.958	0.146	0.445	0.263	Y	Y	M	M	4	1.394722263	1.220939957
598	Ero-Exp-3-2-R	Ero-Exp-3	Exp	2-R	435	Right	4/28/2016	CHU	72	5.07	4.743	0.073	0.168	0.103	Y	Y	M	M	3	1.270736883	1.539110268
599	Ero-Exp-3-2-R	Ero-Exp-3	Exp	2-R	435	Right	4/28/2016	CHU	87	7.06	6.473	0.070	0.396	0.120	Y	Y	M	M	4	0.982987169	1.081415109
600	Ero-Exp-3-2-R	Ero-Exp-3	Exp	2-R	435	Right	4/28/2016	CHU	76	5.81	4.827	0.050	0.318	0.013	Y	Y	F	M	2	1.099604534	1.035840066
601	Ero-Exp-3-2-R	Ero-Exp-3	Exp	2-R	435	Right	4/28/2016	CRH	57	2.09	1.662	0.037	0.172	0.013	Y	Y	U	M	2	0.897442128	2.226233454
602	Ero-Exp-3-2-R	Ero-Exp-3	Exp	2-R	435	Right	4/28/2016	CHU	71	4.89	4.434	0.069	0.310	0.076	Y	Y	F	M	3	1.23885547	1.556156969
603	Ero-Exp-3-2-R	Ero-Exp-3	Exp	2-R	435	Right	4/28/2016	CRH	67	3.58	3.194	0.056	0.315	0.011	Y	Y	M	M	2	1.061965734	1.753287414
604	Ero-Exp-3-2-R	Ero-Exp-3	Exp	2-R	435	Right	4/28/2016	CHU	66	4.04	3.660	0.121	0.172	0.569	Y	Y	F	F	3	1.27306119	3.306010929
605	Ero-Exp-3-2-R	Ero-Exp-3	Exp	2-R	435	Right	4/28/2016	CHU	87	8.57	8.061	0.165	0.267	0.633	Y	Y	M	F	3	1.224140209	2.046892445
606	Ero-Exp-3-2-R	Ero-Exp-3	Exp	2-R	435	Right	4/28/2016	CHU	78	6.32	5.992	0.150	0.204	0.940	Y	Y	F	F	3	1.262664576	2.503337784
607	Ero-Exp-3-2-R	Ero-Exp-3	Exp	2-R	435	Right	4/28/2016	CHU	72	5.36	4.891	0.123	0.174	0.822	Y	Y	F	F	3	1.310388803	2.514823145

Sample ID	Label	Area	treatment2	Site	Dist_frm_CII.m.	Bank	Date	Species	Total.Length..mm.	Field.Weight..g.	Lab.Weight..g.	Liver.Weight..g.	Gut.Weight..g.	Gonad.Weight..g.	Preserved	otolith.Taken	Sex..m.f.u.	Sex_Verified	Age	Condition	Liversomatic.Index
608	Ero-Exp-3-2-R	Ero-Exp-3	Exp	2-R	435	Right	4/28/2016	CHU	74	5.13	4.491	0.068	0.348	NA	Y	Y	M	M	3	1.108275917	1.51413939
609	Ero-Exp-3-2-R	Ero-Exp-3	Exp	2-R	435	Right	4/28/2016	CHU	79	6.26	5.780	0.053	0.249	0.122	Y	Y	M	M	3	1.172321054	0.916955017
615	Ero-Exp-3-2-R	Ero-Exp-3	Exp	2-R	435	Right	4/28/2016	CHU	75	5.20	4.792	0.067	0.372	0.062	Y	Y	M	M	3	1.135881481	1.398163606
654	Ero-Exp-3-1-R	Ero-Exp-3	Exp	1-R	180	Right	4/29/2016	CHU	81	9.91	9.160	0.120	0.549	0.185	Y	Y	M	M	3	1.723615604	1.310043668
655	Ero-Exp-3-1-R	Ero-Exp-3	Exp	1-R	180	Right	4/29/2016	CHU	74	6.98	6.425	0.174	0.153	1.181	Y	Y	F	F	3	1.585542811	2.708171206
656	Ero-Exp-3-1-R	Ero-Exp-3	Exp	1-R	180	Right	4/29/2016	CHU	92	11.34	10.241	0.111	0.393	0.202	Y	Y	M	M	4	1.315160886	1.083878527
657	Ero-Exp-3-1-R	Ero-Exp-3	Exp	1-R	180	Right	4/29/2016	CHU	79	7.21	6.632	0.171	0.280	0.909	Y	Y	F	F	3	1.345126856	2.57840772
658	Ero-Exp-3-1-R	Ero-Exp-3	Exp	1-R	180	Right	4/29/2016	CHU	87	9.56	8.797	0.112	0.359	0.202	Y	Y	M	M	4	1.335908872	1.273161305
659	Ero-Exp-3-1-R	Ero-Exp-3	Exp	1-R	180	Right	4/29/2016	CHU	89	9.69	9.156	0.101	0.410	0.204	Y	Y	M	M	4	1.298780514	1.103101791
660	Ero-Exp-3-1-R	Ero-Exp-3	Exp	1-R	180	Right	4/29/2016	CHU	79	8.36	7.903	0.250	0.236	1.621	Y	Y	F	F	3	1.602915794	3.163355688
661	Ero-Exp-3-1-R	Ero-Exp-3	Exp	1-R	180	Right	4/29/2016	CHU	80	6.34	5.936	0.103	0.268	0.680	Y	Y	M	F	3	1.159375	1.735175202
662	Ero-Exp-3-1-R	Ero-Exp-3	Exp	1-R	180	Right	4/29/2016	CHU	68	4.96	4.590	0.110	0.112	0.875	Y	Y	F	F	3	1.459775087	2.396514161
663	Ero-Exp-3-1-R	Ero-Exp-3	Exp	1-R	180	Right	4/29/2016	CHU	64	3.15	2.855	0.072	0.151	0.348	Y	Y	U	F	3	1.089096069	2.521891419
664	Ero-Exp-3-1-R	Ero-Exp-3	Exp	1-R	180	Right	4/29/2016	CHU	60	2.71	2.404	0.030	0.177	NA	Y	Y	U	U	2	1.112962963	1.247920133
665	Ero-Exp-3-1-R	Ero-Exp-3	Exp	1-R	180	Right	4/29/2016	CHU	70	5.15	4.711	0.142	0.130	0.838	Y	Y	F	F	3	1.373469388	3.014222034
666	Ero-Exp-3-1-R	Ero-Exp-3	Exp	1-R	180	Right	4/29/2016	CHU	70	3.96	3.749	0.030	0.178	NA	Y	Y	M	U	2	1.093002915	0.80021339
669	Ero-Exp-3-1-R	Ero-Exp-3	Exp	1-R	180	Right	4/29/2016	CHU	76	7.06	6.578	0.061	0.213	0.099	Y	Y	M	M	3	1.498487389	0.927333536
673	Ero-Exp-3-1-R	Ero-Exp-3	Exp	1-R	180	Right	4/29/2016	CHU	58	1.93	1.603	0.039	0.092	0.103	Y	Y	U	F	2	0.821579401	2.432938241
689	Ero-Exp-3-1-L	Ero-Exp-3	Exp	1-L	162	Left	4/29/2016	CRH	136	35.68	33.382	0.462	1.482	0.338	Y	Y	M	M	5	1.327075488	1.38397939
690	Ero-Exp-3-1-L	Ero-Exp-3	Exp	1-L	162	Left	4/29/2016	CRH	102	22.82	21.346	0.667	0.930	0.120	Y	Y	M	M	5	2.011481255	3.124707205
691	Ero-Exp-3-1-L	Ero-Exp-3	Exp	1-L	162	Left	4/29/2016	CHU	89	9.98	9.241	0.170	0.217	0.211	Y	Y	M	M	4	1.310837782	1.839627746
692	Ero-Exp-3-1-L	Ero-Exp-3	Exp	1-L	162	Left	4/29/2016	CHU	98	13.52	12.345	0.233	0.332	0.244	Y	Y	M	M	4	1.311634608	1.887403807
693	Ero-Exp-3-1-L	Ero-Exp-3	Exp	1-L	162	Left	4/29/2016	CHU	97	12.97	12.057	0.141	0.375	0.274	Y	Y	M	M	4	1.321064609	1.169445136
694	Ero-Exp-3-1-L	Ero-Exp-3	Exp	1-L	162	Left	4/29/2016	CHU	66	3.87	3.588	0.075	0.099	0.659	Y	Y	F	F	3	1.248017364	2.090301003
695	Ero-Exp-3-1-L	Ero-Exp-3	Exp	1-L	162	Left	4/29/2016	CHU	73	5.78	5.282	0.109	0.147	0.655	Y	Y	F	F	3	1.357781279	2.063612268
696	Ero-Exp-3-1-L	Ero-Exp-3	Exp	1-L	162	Left	4/29/2016	CHU	69	4.41	3.822	0.082	0.105	0.670	Y	Y	F	F	2	1.163438445	2.145473574
697	Ero-Exp-3-1-L	Ero-Exp-3	Exp	1-L	162	Left	4/29/2016	CHU	70	4.78	4.506	0.092	0.131	0.857	Y	Y	F	F	3	1.313702624	2.041722148
698	Ero-Exp-3-1-L	Ero-Exp-3	Exp	1-L	162	Left	4/29/2016	CHU	64	2.61	2.440	0.024	0.118	0.015	Y	Y	U	M	2	0.930786133	0.983606557
699	Ero-Exp-3-1-L	Ero-Exp-3	Exp	1-L	162	Left	4/29/2016	CHU	89	8.57	8.320	0.187	0.293	1.219	Y	Y	F	F	3	1.180193739	2.247596154
700	Ero-Exp-3-1-L	Ero-Exp-3	Exp	1-L	162	Left	4/29/2016	CHU	65	3.53	2.696	0.035	0.149	NA	Y	Y	U	U	2	0.981702321	1.298219585
701	Ero-Exp-3-1-L	Ero-Exp-3	Exp	1-L	162	Left	4/29/2016	CHU	65	4.30	4.025	0.075	0.078	0.849	Y	Y	F	F	3	1.465634957	1.863354037
710	Ero-Exp-3-1-L	Ero-Exp-3	Exp	1-L	162	Left	4/29/2016	CHU	59	3.40	3.141	0.004	0.071	0.518	Y	N	F	F	-	1.529367657	0.127347978
711	Ero-Exp-3-1-L	Ero-Exp-3	Exp	1-L	162	Left	4/29/2016	CHU	60	2.56	2.266	0.019	0.089	0.006	Y	Y	U	M	2	1.049074074	0.838481906
734	Ero-Exp-3-2-L	Ero-Exp-3	Exp	2-L	510	Left	4/29/2016	CHU	90	12.74	11.974	0.297	0.566	1.463	Y	Y	F	F	4	1.642524005	2.480374144
735	Ero-Exp-3-2-L	Ero-Exp-3	Exp	2-L	510	Left	4/29/2016	CRH	100	14.59	13.477	0.269	0.656	0.111	Y	Y	M	M	4	1.3477	1.995993174
736	Ero-Exp-3-2-L	Ero-Exp-3	Exp	2-L	510	Left	4/29/2016	CHU	85	9.34	8.375	0.091	0.321	0.133	Y	Y	M	M	3	1.363728883	1.086567164
737	Ero-Exp-3-2-L	Ero-Exp-3	Exp	2-L	510	Left	4/29/2016	CAS	75	4.20	3.758	0.053	0.211	0.031	Y	Y	U	M	2	0.890785185	1.410324641
738	Ero-Exp-3-2-L	Ero-Exp-3	Exp	2-L	510	Left	4/29/2016	CHU	67	4.49	4.206	0.118	0.108	0.757	Y	Y	F	F	3	1.398443293	2.80551593
739	Ero-Exp-3-2-L	Ero-Exp-3	Exp	2-L	510	Left	4/29/2016	CHU	90	12.83	12.339	0.174	0.337	0.261	Y	Y	M	M	4	1.692592593	1.410162898
740	Ero-Exp-3-2-L	Ero-Exp-3	Exp	2-L	510	Left	4/29/2016	CHU	65	4.73	4.362	0.121	0.113	0.951	Y	Y	F	F	3	1.588347747	2.773956901
741	Ero-Exp-3-2-L	Ero-Exp-3	Exp	2-L	510	Left	4/29/2016	CHU	79	7.24	7.047	0.097	0.216	0.146	Y	Y	U	M	3	1.429298696	1.376472258
742	Ero-Exp-3-2-L	Ero-Exp-3	Exp	2-L	510	Left	4/29/2016	CRH	100	14.16	13.296	0.149	0.385	0.231	Y	Y	M	M	4	1.3296	1.120637786
744	Ero-Exp-3-2-L	Ero-Exp-3	Exp	2-L	510	Left	4/29/2016	CHU	74	4.49	5.868	0.093	0.168	0.097	Y	Y	M	M	3	1.448087971	1.584867076
750	Ero-Exp-3-3-L	Ero-Exp-3	Exp	3-L	1480	Left	4/29/2016	CHU	80	7.93	7.628	0.232	0.205	1.276	Y	Y	F	F	4	1.48984375	3.041426324
751	Ero-Exp-3-3-L	Ero-Exp-3	Exp	3-L	1480	Left	4/29/2016	CHU	88	10.65	9.881	0.113	0.382	0.203	Y	Y	M	M	4	1.449949521	1.143608946
752	Ero-Exp-3-3-L	Ero-Exp-3	Exp	3-L	1480	Left	4/29/2016	CHU	76	7.38	7.009	0.107	0.196	0.125	Y	Y	M	M	3	1.596670433	1.526608646
753	Ero-Exp-3-3-L	Ero-Exp-3	Exp	3-L	1480	Left	4/29/2016	CHU	76	5.95	5.504	0.122	0.202	0.768	Y	Y	F	F	3	1.253827088	2.216569767
754	Ero-Exp-3-3-L	Ero-Exp-3	Exp	3-L	1480	Left	4/29/2016	CHU	84	10.74	9.888	0.281	0.284	2.075	Y	Y	F	F	4	1.668286362	2.841828479
755	Ero-Exp-3-3-L	Ero-Exp-3	Exp	3-L	1480	Left	4/29/2016	CHU	80	8.78	7.958	0.066	0.230	2.031	Y	Y	F	F	5	1.554296875	0.829354109
756	Ero-Exp-3-3-L	Ero-Exp-3	Exp	3-L	1480	Left	4/29/2016	CHU	89	9.93	8.535	0.246	0.271	1.051	Y	Y	F	F	4	1.210691534	2.882249561
757	Ero-Exp-3-3-L	Ero-Exp-3	Exp	3-L	1480	Left	4/29/2016	CHU	85	9.42	8.638	0.093	0.497	0.145	Y	Y	M	M	4	1.40655404	1.076638111
758	Ero-Exp-3-3-L	Ero-Exp-3	Exp	3-L	1480	Left	4/29/2016	CHU	80	7.49	6.810	0.162	0.260	1.263	Y	Y	F	F	3	1.330078125	2.378854626
759	Ero-Exp-3-3-L	Ero-Exp-3	Exp	3-L	1480	Left	4/29/2016	CHU	97	13.35	12.580	0.117	0.363	0.198	Y	Y	M	M	5	1.378368813	0.930047695
783	Ero-Exp-3-3-R	Ero-Exp-3	Exp	3-R	1510	Right	4/29/2016	CHU	83	8.18	7.733	0.133	0.270	1.309	Y	Y	F	F	3	1.35242669	1.71990172
784	Ero-Exp-3-3-R	Ero-Exp-3	Exp	3-R	1510	Right	4/29/2016	CRH	83	7.90	6.878	0.126	0.921	0.041	Y	Y	F	F	3	1.202895484	1.831927886
785	Ero-Exp-3-3-R	Ero-Exp-3	Exp	3-R	1510	Right	4/29/2016	CHU	84	9.98	9.470	0.233	0.293	1.942	Y	Y	F	F	4	1.597762121	2.460401267
786	Ero-Exp-3-3-R	Ero-Exp-3	Exp	3-R	1510	Right	4/29/2016	CHU	69	3.84	3.419	0.042	0.251	NA	Y	Y	M	M	2	1.040762962	1.228429365
787	Ero-Exp-3-3-R	Ero-Exp-3	Exp	3-R	1510	Right	4/29/2016	CRH	70	4.24	3.845	0.073	0.528	0.017	Y	Y	F	M	2	1.120991254	1.898569571
788	Ero-Exp-3-3-R	Ero-Exp-3	Exp	3-R	1510	Right	4/29/2016	CAS	80	5.90	5.634	0.110	0.451	NA	Y	Y	M	M	3	1.100390625	1.952431665
789	Ero-Exp-3-3-R	Ero-Exp-3	Exp	3-R	1510	Right	4/29/2016	CHU	81	9.96	9.401	0.212	0.216	2.880	Y	Y	F	F	-	1.768964005	2.255079247
790	Ero-Exp-3-3-R	Ero-Exp-3	Exp	3-R	1510	Right	4/29/2016	CHU	62	3.56	3.242	0.074	0.079	0.514	Y	Y	F	F	2	1.360310161	2.282541641
791	Ero-Exp-3-3-R	Ero-Exp-3	Exp	3-R	1510	Right	4/29/2016	CHU	65	3.04	2.729	0.023	0.107	0.009	Y	Y	M	F	2	0.993718707	0.84279956
792	Ero-Exp-3-3-R	Ero-Exp-3	Exp	3-R	1510	Right	4/29/2016	CHU	60	2.31	2.093	0.013	0.075	0.008	Y	Y	M	M	2	0.968981481	0.621118012
793	Ero-Exp-3-3-R	Ero-Exp-3	Exp	3-R	1510	Right	4/29/2016	CHU	63	3.18	2.853	0.031	0.139	0.013	Y	Y	M	M	2	1.140985495	1.086575535
794	Ero-Exp-3-3-R	Ero-Exp-3	Exp	3-R	1510	Right	4/29/2016	CHU	66	3.73	3.370	0.035	0.125	0.013	Y	Y	U	M	2	1.172190222	1.038575668
795	Ero-Exp-3-3-R	Ero-Exp-3	Exp	3-R	1510	Right	4/29/2016	CHU	61	3.57	2.883	0.017	0.119	NA	Y	Y	U	U	2	1.270150365	0.589663545
796	Ero-Exp-3-3-R	Ero-Exp-3	Exp	3-R	1510	Right	4/29/2016	CHU	57	2.30	2.056	0.022	0.091	0.010	Y	Y	U	M	2	1.11019315	1.070038911
797	Ero-Exp-3-3-R	Ero-Exp-3	Exp	3-R	1510	Right	4/29/2016	CHU	58	2.64	2.338	0.072	0.047	0.301	Y	Y	U	F	2	1.198286113	3.079555175
805	Ero-Exp-3-4-L	Ero-Exp-3	Exp	4-L	2420	Left	4/30/2016	CHU	75	6.50	5.747	0.124	0.227	0.982	Y	Y	F	F	2	1.362251852	2.157647468
806	Ero-Exp-3-4-L	Ero-Exp-3	Exp	4-L	2420	Left	4/30/2016	CHU	88	9.94	9.514	0.211	0.272	1.839	Y	Y	F	F	3	1.396095511	2.217784318
807	Ero-Exp-3-4-L	Ero-Exp-3	Exp	4-L	2420	Left	4/30/2016	CHU	104	16.73	15.808	0.209	0.628	0.293	Y	Y	M	M	5	1.405325444	1.322115385
808	Ero-Exp-3-4-L	Ero-Exp-3	Exp	4-L	2420	Left	4/30/2016	CHU	95	11.32	10.346	0.102	0.565	0.180	Y	Y	M	M	4	1.206706517	0.985888266
809	Ero-Exp-3-4-L	Ero-Exp-3	Exp	4-L	2420	Left	4/30/2016	CHU	98	12.91	12.007	0.146	0.407	0.343	Y	Y	M	M	4	1.275722701	1.215957358
810	Ero-Exp-3-4-L	Ero-Exp-3	Exp	4-L	2420	Left	4/30/2016	CHU	74	6.43	5.878	0.121	0.184	0.977	Y	Y	M	F	3	1.450555742	2.058523307
811	Ero-Exp-3-4-L	Ero-Exp-3	Exp	4-L	2420	Left	4/30/2016	CHU	77	6.48	5.976	0.145	0.268	1.077	Y	Y	F	F	2	1.308996283	2.426372155
812	Ero-Exp-3-4-L	Ero-Exp-3	Exp	4-L	2420	Left	4/30/2016	CHU	83	7.53	6.885	0.082	0.305	0.167	Y	Y	M	M	3	1.204119716	1.190994916
813	Ero-Exp-3-4-L	Ero-Exp-3	Exp	4-L	2420	Left	4/30/2016	CHU	85	9.03	8.114	0.093	0.343	0.132	Y	Y	M	M	4	1.321229391	1.146167119
814	Ero-Exp-3-4-L	Ero-Exp-3	Exp	4-L	2420	Left	4/30/2016	CHU	82	8.73	8.303	0.204	0.339	1.257	Y	Y	F	F	3	1.505890803	2.456943274
847	Ero-Exp-3-4-R	Ero-Exp-3	Exp	4-R	2597	Right	4/30/2016	CRH	100	13.14	12.695	0.396	0.681	2.453	Y	Y	F	F	3	1.2695	3.119338322
848	Ero-Exp-3-4-R	Ero-Exp-3	Exp	4-R	2597	Right	4/30/2016	CHU	95	13.74	13.228	0.336	0.553	2.355	Y	Y	F	F	6	1.542848812	2.540066526
849	Ero-Exp-3-4-R	Ero-Exp-3	Exp	4-R	2597	Right	4/30/2016	CRH	80	7.22	6.783	0.157	0.366	1.369	Y	Y	F	F	3	1.324804688	2.314610055
850	Ero-Exp-3-4-R	Ero-Exp-3	Exp	4-R	2597	Right	4/30/2016	CRH	86	8.56	7.764	0.102	0.853	0.032	Y	Y	F	F	4	1.220647239	1.313755796
851	Ero-Exp-3-4-R	Ero-Exp-3	Exp	4-R	2597	Right	4/30/2016	CRH	67	3.68	3.173	0.062	0.316	0.007	Y	Y	U	F	3	1.054983492	1.953986763

Sample ID	Label	Area	treatment2	Site	Dist_frm_CII.m.	Bank	Date	Species	Total.Length..mm.	Field.Weight..g.	Lab.Weight..g.	Liver.Weight..g.	Gut.Weight..g.	Gonad.Weight..g.	Preserved	otolith.Taken	Sex..m.f.u.	Sex_Verified	Age	Condition	Liversomatic.Index
852	Ero-Exp-3-4-R	Ero-Exp-3	Exp	4-R	2597	Right	4/30/2016	CHU	97	10.36	9.427	0.220	0.382	1.712	Y	Y	F	F	5	1.032900064	2.333722287
853	Ero-Exp-3-4-R	Ero-Exp-3	Exp	4-R	2597	Right	4/30/2016	CRH	90	9.98	8.984	0.209	0.585	0.049	Y	Y	U	M	2	1.232373114	2.32635797
854	Ero-Exp-3-4-R	Ero-Exp-3	Exp	4-R	2597	Right	4/30/2016	CRH	60	2.92	2.493	0.039	0.244	0.005	Y	Y	U	M	2	1.154166667	1.564380265
855	Ero-Exp-3-4-R	Ero-Exp-3	Exp	4-R	2597	Right	4/30/2016	CHU	95	10.39	9.665	0.137	0.383	0.170	Y	Y	M	M	4	1.127278029	1.417485773
856	Ero-Exp-3-4-R	Ero-Exp-3	Exp	4-R	2597	Right	4/30/2016	CAS	89	7.30	6.656	0.095	0.422	0.068	Y	Y	U	M	3	0.944154991	1.427283654
857	Ero-Exp-3-4-R	Ero-Exp-3	Exp	4-R	2597	Right	4/30/2016	CHU	68	3.48	3.037	0.041	0.128	0.014	Y	Y	U	F	2	0.965868614	1.350016464
858	Ero-Exp-3-4-R	Ero-Exp-3	Exp	4-R	2597	Right	4/30/2016	CHU	89	9.21	8.665	0.089	0.293	0.190	Y	Y	M	M	4	1.229132061	1.0271206
859	Ero-Exp-3-4-R	Ero-Exp-3	Exp	4-R	2597	Right	4/30/2016	CHU	61	2.99	2.347	0.031	0.085	0.023	Y	Y	M	M	2	1.034007252	1.320835109
860	Ero-Exp-3-4-R	Ero-Exp-3	Exp	4-R	2597	Right	4/30/2016	CHU	54	1.86	1.604	0.025	0.115	NA	Y	Y	U	U	2	1.018645532	1.558603491
861	Ero-Exp-3-4-R	Ero-Exp-3	Exp	4-R	2597	Right	4/30/2016	CHU	74	6.03	5.609	0.071	0.241	0.101	Y	Y	M	M	3	1.384172704	1.265822785
877	Ero-Exp-4-5-R	Ero-Exp-4	Exp	5-R	5197	Right	4/30/2016	CHU	74	6.04	5.933	0.136	0.260	0.944	Y	Y	F	F	3	1.464128482	2.29226361
878	Ero-Exp-4-5-R	Ero-Exp-4	Exp	5-R	5197	Right	4/30/2016	CHU	81	7.31	6.762	0.096	0.462	0.141	Y	Y	M	M	4	1.272389597	1.419698314
879	Ero-Exp-4-5-R	Ero-Exp-4	Exp	5-R	5197	Right	4/30/2016	CHU	99	3.11	12.475	0.129	0.356	0.263	Y	Y	M	M	5	1.285686165	1.034068136
880	Ero-Exp-4-5-R	Ero-Exp-4	Exp	5-R	5197	Right	4/30/2016	CHU	80	7.75	6.962	0.050	0.255	0.131	Y	Y	M	M	3	1.359765625	0.71818443
881	Ero-Exp-4-5-R	Ero-Exp-4	Exp	5-R	5197	Right	4/30/2016	CHU	90	10.77	10.017	0.113	0.552	0.198	Y	Y	M	M	4	1.374074074	1.12808226
882	Ero-Exp-4-5-R	Ero-Exp-4	Exp	5-R	5197	Right	4/30/2016	CRH	91	8.44	7.856	0.156	0.501	0.022	Y	Y	U	F	3	1.042502963	1.985743381
883	Ero-Exp-4-5-R	Ero-Exp-4	Exp	5-R	5197	Right	4/30/2016	CHU	86	10.83	10.106	0.225	0.354	1.415	Y	Y	F	F	4	1.588853812	2.226400158
884	Ero-Exp-4-5-R	Ero-Exp-4	Exp	5-R	5197	Right	4/30/2016	CHU	84	7.77	6.945	0.151	0.320	0.600	Y	Y	F	F	4	1.171748461	2.174226062
885	Ero-Exp-4-5-R	Ero-Exp-4	Exp	5-R	5197	Right	4/30/2016	CHU	85	8.96	8.118	0.125	0.374	0.131	Y	Y	M	M	3	1.321880725	1.539788125
886	Ero-Exp-4-5-R	Ero-Exp-4	Exp	5-R	5197	Right	4/30/2016	CHU	77	5.30	5.039	0.053	0.226	NA	Y	Y	M	M	3	1.103753726	1.051795991
887	Ero-Exp-4-5-R	Ero-Exp-4	Exp	5-R	5197	Right	4/30/2016	CHU	83	8.73	7.930	0.083	0.318	0.132	Y	Y	M	M	4	1.386880079	1.04665826
888	Ero-Exp-4-5-R	Ero-Exp-4	Exp	5-R	5197	Right	4/30/2016	CHU	75	5.36	5.035	0.049	0.201	NA	Y	Y	M	M	3	1.193481481	0.973187686
889	Ero-Exp-4-5-R	Ero-Exp-4	Exp	5-R	5197	Right	4/30/2016	CHU	68	4.16	3.886	0.104	0.141	0.409	Y	Y	F	F	3	1.2358793	2.676273803
890	Ero-Exp-4-5-R	Ero-Exp-4	Exp	5-R	5197	Right	4/30/2016	CHU	69	3.71	3.295	0.052	0.188	0.017	Y	Y	M	M	3	1.00301666	1.57814871
891	Ero-Exp-4-5-R	Ero-Exp-4	Exp	5-R	5197	Right	4/30/2016	CHU	96	13.13	12.528	0.290	0.645	1.560	Y	Y	F	F	4	1.416015625	2.314814815
909	Ero-Exp-4-5-L	Ero-Exp-4	Exp	5-L	5620	Left	4/30/2016	CRH	105	17.49	15.953	0.278	0.736	NA	Y	Y	M	F	4	1.378080121	1.742618943
910	Ero-Exp-4-5-L	Ero-Exp-4	Exp	5-L	5620	Left	4/30/2016	CHU	79	6.57	6.064	0.059	0.256	0.126	Y	Y	M	M	2	1.229922988	0.972955145
911	Ero-Exp-4-5-L	Ero-Exp-4	Exp	5-L	5620	Left	4/30/2016	CRH	85	7.21	6.577	0.119	0.508	0.030	Y	Y	M	M	2	1.07095461	1.809335563
912	Ero-Exp-4-5-L	Ero-Exp-4	Exp	5-L	5620	Left	4/30/2016	CRH	84	8.11	6.987	0.153	0.564	NA	Y	Y	F	M	2	1.178834629	2.189781022
913	Ero-Exp-4-5-L	Ero-Exp-4	Exp	5-L	5620	Left	4/30/2016	CRH	75	5.87	5.044	0.085	0.322	0.023	Y	Y	F	M	2	1.195614815	1.6851705
914	Ero-Exp-4-5-L	Ero-Exp-4	Exp	5-L	5620	Left	4/30/2016	CHU	73	5.47	4.899	0.127	0.173	0.674	Y	Y	F	F	3	1.259327999	2.592365789
915	Ero-Exp-4-5-L	Ero-Exp-4	Exp	5-L	5620	Left	4/30/2016	CHU	73	5.04	4.639	0.049	0.226	0.071	Y	Y	M	M	3	1.192492873	1.056262125
916	Ero-Exp-4-5-L	Ero-Exp-4	Exp	5-L	5620	Left	4/30/2016	CHU	84	7.49	6.599	0.039	0.259	0.112	Y	Y	M	M	3	1.113371936	0.590998636
917	Ero-Exp-4-5-L	Ero-Exp-4	Exp	5-L	5620	Left	4/30/2016	CHU	65	3.09	2.617	0.026	0.144	0.012	Y	Y	F	F	2	0.952935822	0.993504012
918	Ero-Exp-4-5-L	Ero-Exp-4	Exp	5-L	5620	Left	4/30/2016	CHU	83	6.35	5.873	0.055	0.247	0.143	Y	Y	M	M	3	1.027130732	0.936489018
919	Ero-Exp-4-5-L	Ero-Exp-4	Exp	5-L	5620	Left	4/30/2016	CHU	77	5.91	5.001	0.066	0.262	NA	Y	Y	M	M	3	1.095430122	1.319736053
920	Ero-Exp-4-5-L	Ero-Exp-4	Exp	5-L	5620	Left	4/30/2016	CHU	80	7.50	6.876	0.165	0.377	1.052	Y	Y	F	F	3	1.34296875	2.39965096
921	Ero-Exp-4-5-L	Ero-Exp-4	Exp	5-L	5620	Left	4/30/2016	CHU	71	5.44	5.065	0.114	0.192	0.892	Y	Y	F	F	3	1.415156282	2.250740375
922	Ero-Exp-4-5-L	Ero-Exp-4	Exp	5-L	5620	Left	4/30/2016	CHU	70	4.01	3.475	0.033	0.154	NA	Y	Y	M	U	2	1.013119534	0.949640288
923	Ero-Exp-4-5-L	Ero-Exp-4	Exp	5-L	5620	Left	4/30/2016	CHU	80	7.15	7.413	0.078	0.279	0.142	Y	Y	M	M	3	1.447851563	1.052205585
956	Ero-Exp-5	Ero-Exp-5	Exp		9397		4/30/2016	CRH	81	5.78	5.149	0.083	0.299	NA	Y	Y	F	F	2	0.96887519	1.611963488
957	Ero-Exp-5	Ero-Exp-5	Exp		9397		4/30/2016	CRH	67	3.95	3.239	0.072	0.390	NA	Y	Y	F	M	2	1.076927681	2.222908305
958	Ero-Exp-5	Ero-Exp-5	Exp		9397		4/30/2016	CRH	73	4.32	3.755	0.051	0.299	NA	Y	Y	M	M	3	0.965253447	1.358189081
959	Ero-Exp-5	Ero-Exp-5	Exp		9397		4/30/2016	CHU	70	5.60	5.186	0.109	0.110	1.300	Y	Y	F	F	4	1.511953353	2.101812572
960	Ero-Exp-5	Ero-Exp-5	Exp		9397		4/30/2016	CHU	95	13.61	12.739	0.240	0.445	2.491	Y	Y	F	F	5	1.485814259	1.883978334
961	Ero-Exp-5	Ero-Exp-5	Exp		9397		4/30/2016	CHU	92	9.93	9.047	0.070	0.476	0.176	Y	Y	M	M	4	1.161826046	0.77373715
962	Ero-Exp-5	Ero-Exp-5	Exp		9397		4/30/2016	CHU	75	7.00	6.603	0.186	0.180	1.192	Y	Y	F	F	4	1.565155556	2.816901408
963	Ero-Exp-5	Ero-Exp-5	Exp		9397		4/30/2016	CHU	70	4.40	4.001	0.031	0.155	0.100	Y	Y	M	M	2	1.166472303	0.774806298
964	Ero-Exp-5	Ero-Exp-5	Exp		9397		4/30/2016	CHU	85	9.46	8.501	0.222	0.333	1.464	Y	Y	F	F	4	1.384245878	2.611457476
965	Ero-Exp-5	Ero-Exp-5	Exp		9397		4/30/2016	CHU	84	8.50	7.572	0.067	0.216	0.231	Y	Y	F	M	4	1.277534823	0.88483888
966	Ero-Exp-5	Ero-Exp-5	Exp		9397		4/30/2016	CRH	85	7.50	7.001	0.022	0.540	0.032	Y	Y	M	F	3	1.139995929	0.314240823
967	Ero-Exp-5	Ero-Exp-5	Exp		9397		4/30/2016	CRH	65	3.28	2.701	0.052	0.368	NA	Y	Y	F	U	2	0.983522986	1.925212884
968	Ero-Exp-5	Ero-Exp-5	Exp		9397		4/30/2016	CHU	68	4.08	3.713	0.083	0.133	0.604	Y	Y	F	F	3	1.180859455	2.235389173
969	Ero-Exp-5	Ero-Exp-5	Exp		9397		4/30/2016	CHU	71	4.71	4.279	0.081	0.088	1.018	Y	Y	F	F	3	1.195548614	1.892965646
970	Ero-Exp-5	Ero-Exp-5	Exp		9397		4/30/2016	CHU	68	4.39	4.067	0.100	0.102	0.795	Y	Y	F	F	3	1.293443415	2.458814851
971	Ero-Exp-5	Ero-Exp-5	Exp		9397		4/30/2016	CHU	77	6.50	5.618	0.083	0.327	0.114	Y	Y	M	M	3	1.23057917	1.47739409
972	Ero-Exp-5	Ero-Exp-5	Exp		9397		4/30/2016	CHU	68	4.62	5.793	0.130	0.405	0.922	Y	Y	F	F	3	1.842369733	2.244087692
973	Ero-Exp-5	Ero-Exp-5	Exp		9397		4/30/2016	CHU	82	7.69	4.072	0.078	0.122	0.829	Y	Y	M	F	3	0.738526719	1.915520629
975	Ero-Exp-5	Ero-Exp-5	Exp		9397		4/30/2016	CHU	72	4.81	4.258	0.038	0.169	0.099	Y	Y	M	M	3	1.140796468	0.892437764
976	Ero-Exp-5	Ero-Exp-5	Exp		9397		4/30/2016	CHU	75	6.50	5.862	0.102	0.260	0.136	Y	Y	F	M	3	1.389511111	1.740020471
977	Ero-Exp-5	Ero-Exp-5	Exp		9397		4/30/2016	CHU	72	6.24	5.687	0.073	0.134	1.682	Y	Y	F	F	4	1.523651835	1.28362933
978	Ero-Exp-5	Ero-Exp-5	Exp		9397		4/30/2016	CHU	61	2.83	2.660	0.043	0.110	0.222	Y	Y	M	F	3	1.171904256	1.616541353
979	Ero-Exp-5	Ero-Exp-5	Exp		9397		4/30/2016	CHU	71	6.05	5.662	0.103	0.220	1.523	Y	Y	F	F	3	1.581957526	1.819145178
980	Ero-Exp-5	Ero-Exp-5	Exp		9397		4/30/2016	CHU	71	4.28	3.935	0.034	0.169	0.016	Y	Y	M	M	2	1.099435334	0.864040661
986	Ero-Exp-5	Ero-Exp-5	Exp		9397		4/30/2016	CHU	67	3.80	3.538	0.069	0.110	0.688	Y	Y	F	F	3	1.176341505	1.950254381
1008	Ero-Exp-5	Ero-Exp-5	Exp		9397		4/30/2016	CHU	71	4.18	3.796	0.052	0.188	NA	Y	Y	M	U	2	1.060598864	1.369863014
1009	Ero-Exp-5	Ero-Exp-5	Exp		9397		4/30/2016	CHU	85	9.01	8.235	0.082	0.261	0.200	Y	Y	M	M	5	1.340932221	0.995749848
1010	Ero-Exp-5	Ero-Exp-5	Exp		9397		4/30/2016	CRH	81	7.03	3.630	0.088	0.922	NA	Y	Y	F	U	3	0.683048542	2.424242424
1011	Ero-Exp-5	Ero-Exp-5	Exp		9397		4/30/2016	CHU	64	4.14	3.771	0.071	0.101	1.057	Y	Y	F	F	3	1.438522339	1.882789711
1015	Ero-Exp-5	Ero-Exp-5	Exp		9397		4/30/2016	CHU	70	4.58	4.078	0.054	0.233	0.308	Y	Y	M	M	3	1.188921283	1.324178519
1022	Ero-Exp-5	Ero-Exp-5	Exp		9397		4/30/2016	CHU	72	4.79	4.251	0.040	0.256	NA	Y	Y	M	U	3	1.138921039	0.940955069

Sample ID	Gonadosomatic.Index	Moisture	Total.Lipids	Aluminum	Antimony	Arsenic	Barium	Beryllium	Bismuth	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Phosphorus	Potassium	Rubidium	Selenium	Silver	Sodium
1	1.037865888	77.3	0.8	1.6	0.004	0.067	3.18	0.001	0.01	0.05	0.04	16100	0.01	0.017	0.57	13	0.177	472	2.05	0.026	0.01	0.02	12100	3520	NA	1	0.005	1590
3	0.273224044	76.1	0.8	2	0.004	0.066	4.95	0.0015	0.015	0.1	0.076	17800	0.02	0.027	0.89	14	0.24	469	3.54	0.014	0.02	0.05	12300	3380	NA	1.31	0.01	1510
4	18.0510491	68.3	1.4	1.6	0.004	0.045	5.23	0.001	0.01	0.05	0.035	14000	0.02	0.028	0.56	16	0.073	443	8.96	0.025	0.03	0.06	11800	3720	NA	0.87	0.005	1370
5	1.69630643	72	1	1.3	0.001	0.048	3.52	0.001	0.01	0.05	0.065	14800	0.02	0.018	0.83	9	0.2	494	2.56	0.02	0.01	0.02	12200	3690	NA	1.33	0.005	1480
7	1.148862028	75.3	1.4	0.8	0.001	0.028	4.99	0.001	0.01	0.05	0.031	19900	0.03	0.015	0.46	11	0.225	560	3.63	0.035	0.01	0.02	16400	3850	NA	1.11	0.005	1840
8	23.24309908	76.5	1	1.2	0.002	0.058	2.72	0.001	0.01	0.05	0.041	13000	0.01	0.021	0.59	12	0.183	432	2.76	0.024	0.02	0.02	11600	3740	NA	1.61	0.005	1580
9	1.05631068	77.9	1.3	0.8	0.001	0.038	3.22	0.001	0.01	0.05	0.032	11700	0.02	0.02	0.63	11	0.09	407	2.87	0.025	0.01	0.03	10300	3740	NA	0.82	0.005	1360
11	0.185824263	72.3	0.8	1.6	0.0025	0.046	8.2	0.0025	0.025	0.1	0.065	21600	0.01	0.02	0.75	10	0.331	569	4.96	0.014	0.01	0.03	14600	3330	NA	1	0.01	1550
12	NA	78	0.9	2.4	0.0025	0.072	4.01	0.0025	0.025	0.1	0.081	15900	0.08	0.05	0.71	18	0.282	465	3.13	0.02	0.01	0.07	10800	3310	NA	1.34	0.01	1480
14	21.08759045	70.4	2.4	1.6	0.001	0.04	4.02	0.001	0.01	0.05	0.056	15800	0.02	0.024	0.62	12	0.195	479	2.29	0.03	0.01	0.02	13700	3850	NA	1.44	0.005	1630
15	1.028560933	77	1.2	0.5	0.001	0.046	2.61	0.001	0.01	0.05	0.019	11900	0.05	0.013	0.44	8	0.062	392	2.17	0.014	0.01	0.03	10300	3450	NA	1.1	0.005	1570
16	1.594676042	70.5	1.3	1.3	0.004	0.037	8.93	0.001	0.01	0.05	0.032	20300	0.02	0.025	0.61	14	0.179	577	10.9	0.017	0.02	0.02	16900	3320	NA	0.97	0.005	1560
17	0.361532899	79.8	0.9	2	0.0025	0.093	4.85	0.0025	0.025	0.1	0.068	15300	0.04	0.026	0.61	14	0.221	470	3.19	0.023	0.01	0.04	11100	3240	NA	0.95	0.01	1290
18	0.864510359	76.5	0.7	1.2	0.001	0.066	5.83	0.001	0.01	0.05	0.048	16800	0.01	0.027	0.53	14	0.229	538	4.67	0.018	0.02	0.02	14500	3790	NA	1.13	0.005	1610
19	0.842146494	78.7	1	1.5	0.002	0.07	3.12	0.001	0.01	0.05	0.038	11400	0.04	0.021	0.58	11	0.11	449	2.94	0.019	0.01	0.02	10700	3800	NA	1.46	0.005	1390
20	1.275944199	78.8	0.7	1.7	0.001	0.057	3.42	0.001	0.01	0.05	0.055	14500	0.02	0.025	0.58	13	0.202	465	2.81	0.027	0.01	0.03	12600	3920	NA	1.33	0.005	1590
22	NA	79.8	0.8	2.3	0.0025	0.085	4.82	0.0025	0.025	0.1	0.074	20000	0.05	0.029	0.64	13	0.237	523	2.64	0.045	0.01	0.05	13300	3510	NA	0.95	0.01	1500
23	15.22282109	73.8	1.8	0.2	0.004	0.035	6.94	0.001	0.01	0.05	0.034	14000	0.01	0.028	0.54	17	0.114	448	7.79	0.013	0.03	0.02	12900	4040	NA	1.39	0.005	1520
24	0.166389351	74	0.8	3	0.005	0.097	3.82	0.005	0.05	0.25	0.11	13300	0.06	0.04	0.79	16	0.164	462	3.72	0.033	0.025	0.07	9480	3150	NA	0.9	0.025	1280
26	0.354831977	78.2	1.2	2	0.0025	0.057	4.61	0.0025	0.025	0.1	0.029	16800	0.01	0.02	0.49	14	0.203	458	3.08	0.015	0.01	0.03	12400	3190	NA	1.07	0.01	1420
27	1.286601597	72.8	1.1	0.4	0.006	0.045	6.75	0.001	0.01	0.05	0.034	17000	0.005	0.014	0.44	12	0.161	480	6.46	0.017	0.02	0.02	13100	3260	NA	1.02	0.005	1290
28	0.311614731	73.3	0.7	1.5	0.0025	0.082	5.04	0.0025	0.025	0.1	0.112	16300	0.12	0.024	0.79	12	0.332	442	2.66	0.018	0.01	0.04	10700	2940	NA	1.06	0.01	1370
29	0.870482722	71.6	0.7	1.4	0.0025	0.079	6.36	0.0025	0.025	0.1	0.084	18000	0.03	0.03	1.08	12	0.254	525	2.91	0.04	0.01	0.03	12300	3150	NA	1.17	0.01	1500
30	0.488400488	76	1.6	1	0.005	0.104	8.5	0.005	0.05	0.25	0.036	16500	0.025	0.032	0.57	10	0.298	504	4.11	0.016	0.025	0.025	11200	3050	NA	1.31	0.025	1000
33	20.97133758	72	1	1.4	0.003	0.061	3.26	0.001	0.01	0.05	0.033	11400	0.01	0.022	0.48	13	0.093	420	4.71	0.019	0.04	0.02	10300	3440	NA	1.35	0.005	1110
35	1.205201395	61	0.9	1.9	0.0025	0.071	4.65	0.0025	0.025	0.1	0.03	17500	0.01	0.014	0.56	13	0.144	533	2.32	0.04	0.01	0.01	12200	3390	NA	0.63	0.01	1250
37	0.290250982	74.3	2.3	0.7	0.001	0.123	3.97	0.001	0.01	0.05	0.037	9650	0.03	0.014	0.57	8	0.073	406	3.33	0.015	0.01	0.03	8340	3500	NA	0.79	0.005	972
44	13.49530912	72.2	1	1.4	0.005	0.059	7.74	0.0025	0.025	0.1	0.045	13200	0.01	0.019	0.44	11	0.156	448	13.1	0.015	0.03	0.01	10300	3490	NA	1.08	0.01	1110
45	NA	72.5	1.6	1	0.005	0.117	4.83	0.005	0.05	0.25	0.042	11700	0.025	0.021	0.66	12	0.349	418	3.06	0.023	0.025	0.025	8550	3670	NA	0.94	0.025	1070
46	NA	76	0.5	1	0.005	0.058	9.51	0.005	0.05	0.25	0.041	15500	0.025	0.01	0.51	11	0.268	431	5.96	0.016	0.025	0.025	10800	3240	NA	0.88	0.025	1170
48	NA	71.2	0.4	0.95	0.005	0.051	4.55	0.005	0.05	0.25	0.053	13100	0.025	0.027	0.65	13	0.295	416	3.5	0.016	0.025	0.025	9070	2890	NA	0.95	0.025	1150
49	NA	75.5	0.05	3	0.0045	0.098	8.07	0.0045	0.045	0.25	0.06	17800	0.025	0.021	0.54	14	0.34	521	9.01	0.015	0.025	0.025	12200	3510	NA	1.03	0.025	1280
55	0.416564568	75.7	1.2	0.7	0.004	0.059	9.01	0.001	0.01	0.05	0.074	19700	0.02	0.034	0.54	10	0.158	553	13.9	0.021	0.04	0.05	16300	3740	NA	0.65	0.005	1510
56	NA	72	0.5	1.3	0.005	0.056	15.5	0.0025	0.025	0.1	0.081	22300	0.01	0.043	0.59	16	0.127	515	16.9	0.022	0.03	0.06	15600	2950	NA	0.54	0.01	1440
57	NA	74.8	2.5	1	0.005	0.066	7.9	0.0025	0.025	0.1	0.116	16300	0.01	0.032	0.64	10	0.109	484	10.8	0.06	0.04	0.05	12000	3350	NA	0.55	0.01	1130
62	10.63592414	69.8	0.8	1	0.003	0.06	8.29	0.001	0.01	0.05	0.068	14700	0.01	0.034	0.55	16	0.087	440	9.66	0.021	0.04	0.04	11800	3120	NA	0.92	0.005	1230
64	2.060754083	73.4	1.1	0.2	0.002	0.073	5.67	0.001	0.01	0.1	0.034	13500	0.005	0.022	0.47	11	0.058	456	6.94	0.018	0.03	0.02	11900	3310	NA	0.99	0.005	1130
78	0.199203187	72.6	0.8	0.45	0.0025	0.058	9.85	0.0025	0.025	0.1	0.061	14900	0.01	0.033	0.51	12	0.079	414	11.2	0.014	0.04	0.06	10600	3180	NA	0.72	0.01	1110
79	NA	72.7	1.5	0.45	0.0025	0.047	9.41	0.0025	0.025	0.1	0.049	12900	0.01	0.02	0.51	10	0.045	403	10	0.01	0.01	0.04	9280	2680	NA	0.59	0.01	976
81	NA	73.5	0.05	1	0.005	0.107	9.93	0.005	0.05	0.25	0.257	18100	0.025	0.05	1.19	12	0.211	518	12.4	0.013	0.025	0.025	10900	2610	NA	0.58	0.025	846
93	7.111488879	70.8	1.4	1	0.001	0.026	4.07	0.001	0.01	0.05	0.02	14200	0.005	0.012	0.35	8	0.075	415	1.56	0.035	0.01	0.02	11000	3300	NA	0.85	0.005	1300
94	0.432604736	73.2	0.9	0.8	0.001	0.095	6.62	0.001	0.01	0.2	0.056	15400	0.01	0.018	0.51	10	0.237	455	3.82	0.016	0.03	0.05	12400	3260	NA	0.76	0.005	1370
97	23.19374137	69.4	0.6	0.5	0.004	0.035	5.44	0.001	0.01	0.05	0.049	19000	0.005	0.018	0.41	14	0.071	514	3.82	0.03	0.04	0.02	16000	2940	NA	1.34	0.005	1160
98	NA	69.6	0.9	1.8	0.0025	0.053	13.1	0.0025	0.025	0.1	0.075	22100	0.01	0.032	0.59	14	0.095	503	12.3	0.018	0.04	0.05	14900	2440	NA	0.5	0.01	1100
99	1.267226358	57.1	1.3	1.3	0.004	0.052	8.48	0.001	0.01	0.05	0.05	25700	0.01	0.03	0.46	14	0.243	654	7.44	0.051	0.03	0.04	20400	3100	NA	0.63	0.005	1780
103	2.358078603	70	1.8	1.2	0.004	0.029	8.28	0.001	0.01	0.05	0.036	18800	0.01	0.019	0.44	12	0.135	535	5.85	0.035	0.02	0.03	15400	3560	NA	0.9	0.005	1340
104	10.77078425	73.3	0.7	1.3	0.004	0.041	7.02	0.001	0.01	0.05	0.05	13600	0.01	0.019	0.41	13	0.091	409	6.89	0.021	0.02	0.03	11200	2460	NA	0.64	0.005	990
105	18.37401499	69.3	1.5	0.8	0.003	0.045	6.96	0.001	0.01	0.05	0.03	19300	0.01	0.025	0.44	13	0.088	543	8	0.021	0.02	0.03	16100	3410	NA	0.94	0.005	1300
108	NA	64.2	0.05	153	0.013	0.072	11.9	0.0045	0.045	0.25	0.075	16800	0.09	0.051	0.79	125	0.299	512	13.4	0.022	0.025	0.11	11200	2380	NA	0.49	0.025	900
109	15.94441828	72.6	1	2.1	0.003	0.052	9.32	0.001	0.01	0.05	0.068	14200	0.01	0.027	0.44	14	0.087	429	8.65	0.019	0.02	0.04	12200	3210	NA	0.94	0.005	1150
113	1.481613709	70	1.1	1.2	0.003	0.044	9.34	0.001	0.01	0.05	0.045	16800	0.005	0.023	0.44	13	0.088	543	10.5	0.019	0.03	0.05	14600	3640	NA	0.79	0.005	1220
121	19.05228758	63.5	1.9	1.4	0.0025	0.062	7.17	0.0025	0.025	0.1	0.083	14100	0.01	0.034	0.51	14	0.106	439	6.68	0.029	0.06	0.07	10800	2870	NA	0.93	0.01	1130
122	13.4529148	70.1	1.2	1.4	0.037	0.069	4.93	0.0025	0.025	0.1	0.066	14800	0.03	0.037	0.55	18	0.113	452	4.88	0.026	0.04	0.06	11200	3440	NA	0.77	0.01	1170
136	NA	71.5	2.4	1.2	0.003	0.068	6.88	0.001	0.01	0.05	0.096	13800	0.005	0.024	0.85	13	0.367	406	4.8	0.023	0.02	0.03	11500	2890	NA	0.74	0.005	1100
137	10.24990945	74.5	0.8	0.5	0.001	0.034	8.96	0.001	0.01	0.05	0.1	13700	0.005	0.016	0.49	12	0.07	394	6.25	0.016	0.02	0.03	10700	2740	NA	0.52	0.005	1050
138	1.716692996	69.9	1.5	0.8	0.002	0.039	6.93	0.001	0.01	0.05	0.035	13300	0.005	0.023	0.4	9	0.122	431	9.41	0.02	0.03	0.04	12000	3460	NA	0.71	0.005	1180
139	NA	65.2	1.2	1.6	0.006	0.056	6.67	0.0025	0.025	0.15	0.076	14900	0.015	0.038	0.51	12	0.153	494	5.63	0.024	0.03	0.07	11100	3110	NA	0.69	0.015	1140
141	NA	61.6	0.7	2.7	0.0025	0.062	16.8	0.0025	0.025	0.15	0.075	21500	0.015	0.026	0.58	12	0.086	581	14.3	0.014	0.03	0.04	16100	3160	NA	0.59	0.015	1400
142	0.202702703	67.3	1.2	4.1	0.0025	0.097	6.18	0.0025	0.025	0.1	0.125	17900	0.01	0.042	0.79	17	0.232	447	4.08	0.031	0.02	0.05	12900	3100	NA	0.73	0.01	1270
148	NA	64.2	2.2	1.7	0.0025	0.043	11.1	0.0025	0.025	0.1	0.062	16400	0.01	0.02	0.51	12	0.056	511	11.5	0.017	0.01	0.03	12600	3310	NA	0.82	0.01	1050
150	0.606060606	73.8	0.7	0.8	0.004	0.077	10.2	0.001	0.01	0.05	0.05	14500	0.005	0.024	0.45	11	0.056	430	9.86	0.019	0.03	0.03	11300	3310	NA	1.03	0.005	1080
152	0.052603893	75	1.5	1.1	0.003	0.067	7.75	0.001	0.01	0.05	0.072	16400	0.005	0.021	0.5	10	0.068	458	5.69	0.021	0.03	0.03	11700	2650	NA	0.96	0.005	1030
165	1.218819789	74.9	2.7	0.6	0.003	0.021	2.38	0.001	0.01	0.05	0.014	16600	0.01	0.013	0.49	10	0.051	518	1.37	0.035	0.005	0.03	15900	4200	NA	0.82	0.005	1790
166	17.84354726	71.9	1.9	0.8	0.002	0.031	2.8	0.001	0.01	0.05	0.016	15600	0.005	0.014	0.48	10	0.064	494	2.76	0.028	0.01	0.03	14900	4260	NA	1.02	0.005	1670
167	1.681856619	72	4.6	0.9	0.001	0.027	3.11	0.001	0.01	0.05	0.017	17400	0.005	0.011	0.42	10	0.123	555	2.14	0.036	0.01	0.03	16600	4370	NA	0.8	0.005	1650
168	22.8322547	72	1.2	12.7	0.006	0.049	3.12	0.001	0.01	0.05	0.022	19300	0.11	0.042	0.52	61	0.119	563	3.58	0.044	0.01	0.1	17900	4580	NA	0.9	0.005	1740
169	0.985373364	73.4	3.9	0.5	0.001	0.021	3.08	0.001	0.01	0.05	0.019	14700	0.005	0.011	0.53	8	0.093	496	1.45	0.053	0.005	0.03	13500	4280	NA	0.87	0.005	1620
170	16.6236048	70.8	1.4	0.9	0.021	0.028	3.68	0.001	0.01	0.05	0.022	19000	0.03	0.022	0.49	10	0.082	581	4.15	0.026	0.01	0.09	17900	4270	NA	1.07	0.005	1680
171	1.32838445	76.8	0.8	0.5	0.003	0.037	5.36	0.001	0.01	0.05	0.034	15100	0.005	0.024	0.58	11	0.082	528	6.21	0.02	0.01	0.06	13400	4380	NA	0.79	0.005	1620
172	NA	75	1	0.5	0.0025	0.061	4.3	0.0025	0.025	0.1	0.093	16200	0.01	0.03	0.72	11	0.18	485	5.9	0.018	0.01	0.1	12000	3870	NA	0.61	0.01	1320
173	1.183098592	72.5	1.5	1.9	0.004	0.037	5.77	0.001	0.01	0.05	0.025	25500	0.005	0.015	0.51	9	0.13	679	4.69	0.05	0.01	0.05	22100	4520	NA	0.79	0.005	1810
174	14.4082546	74.5	0.8	0.45	0.006	0.053	9.95	0.0025	0.025	0.1	0.052	19400	0.01	0.029	0.51	14	0.176	529	9.52	0.025	0.01	0.08	14300	4000	NA	0.79	0.01	1480
175	0.614980936	72.6	2.9	1.1	0.001	0.021	4.29	0.001	0.01	0.05	0.021	23000	0.005	0.017	0.56	12	0.121	628	3.36	0.05	0.01	0.05	20300	4300	NA	0.72	0.005	1870
176	NA	75.7	1	1.8	0.0025	0.076	8.05	0.0025	0.025	0.1	0.105	21300	0.01	0.034	0.77	12	0.213	577	8.42	0.024	0.04	0.13	14900	3630	NA	0.52	0.01	1390
177	NA	77.9	1.2	0.5	0.007	0.045	6.88	0.0025	0.025	0.1	0.052	14500	0.01	0.024	0.61	12	0.111	418	5.76	0.022	0.01	0.09	10500	3830	NA	0.58	0.01	1360
178	NA	75.3	1.4	1.7	0.001	0.089	5.29	0.001	0.01	0.05	0.069	16700	0.005	0.034	0.66	16	0.142	498	5.41	0.022	0.02	0.08	14400	4580	NA	0.69	0.005	1500
179	NA	76.2	0.4	3.3	0.008	0.093	3.55	0.004	0.04	0.2	0.116	13000	0.02	0.037	0.71	10	0.241	406	6.18	0.03	0.02	0.14	8820	3190	NA	0.51	0.02	1230
180	12.92042658	76.5	0.5	1.6	0.002	0.048	8.08	0.001	0.01	0.1	0.064	19400	0.01	0.046	0.56	15	0.412	610	5.94	0.024	0.02	0.08	16100	4330	NA	0.78	0.005	1790
181	0.706283488	65.3	0.4	2.4	0.006	0.049	10.1	0.0025	0.025	0.1	0.093	28700	0.01	0.037	0.65	15	0.418	682	8.9	0.02	0.03	0.11	19000	3820	NA	0.57	0.01	1730
182	2.074263764	74.8	1	2	0.002	0.144	2.99	0.001	0.01	0.05	0.045	15300	0.005	0.012	0.59	10	0.116	503	1.43	0.048	0.02	0.05	14000	4930	NA	0.45	0.005	1330
187	2.323282254	72	0.5	0.7	0.003	0.047	5.21	0.001	0.01	0.05	0.036	20500	0.02	0.04	0.5	15	0.113	654	5.06	0.04	0.03	0.07	18300	4410	NA	0.74	0.005	1750
188	15.16800305	73.6	0.7	1	0.004	0.044	9.54	0.001	0.01	0.05	0.045	18100	0.01	0.028	0.47	16	0.122	508	9.36	0.02	0.03	0.06	15300	4430	NA	0.77	0.005	1590
193	13.28989241	73.5	0.6	0.8	0.003	0.051	9.25	0.001	0.01	0.05	0.049	19300	0.005	0.036	0.48	20	0.151	624	10.9	0.018	0.04	0.08	16300	4620	NA	0.87	0.005	1540

Sample ID	Gonadosomatic.Index	Moisture	Total.Lipids	Aluminum	Antimony	Arsenic	Barium	Beryllium	Bismuth	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Phosphorus	Potassium	Rubidium	Selenium	Silver	Sodium
194	4.832432432	74.7	0.8	1.4	0.015	0.168	3.34	0.001	0.01	0.05	0.093	17200	0.005	0.024	0.6	17	0.448	543	2.76	0.03	0.03	0.05	13900	4900	NA	0.61	0.005	1290
197	16.40036521	73.3	0.7	0.9	0.005	0.041	5.74	0.001	0.01	0.05	0.048	17000	0.005	0.027	0.44	11	0.127	492	6.89	0.028	0.03	0.07	14300	4820	NA	0.9	0.005	1560
198	15.74468085	74.2	1	0.7	0.001	0.062	6.32	0.001	0.01	0.05	0.06	16000	0.02	0.022	0.55	13	0.154	474	5.39	0.02	0.03	0.08	12900	3990	NA	0.84	0.005	1430
205	6.069718231	73.2	0.8	1.5	0.003	0.157	3.47	0.001	0.01	0.05	0.106	15400	0.01	0.024	0.71	14	0.359	556	2.31	0.072	0.03	0.06	12500	4610	NA	0.58	0.005	1380
206	NA	73.2	0.2	2.1	0.003	0.086	5.7	0.001	0.01	0.05	0.16	22500	0.01	0.043	0.69	16	0.289	567	7.38	0.027	0.04	0.1	17700	4370	NA	0.68	0.005	1530
216	17.45790458	71.9	1.4	1.2	0.004	0.049	8.44	0.001	0.01	0.05	0.035	18200	0.02	0.029	0.42	13	0.138	515	10.8	0.023	0.04	0.08	14600	4270	NA	0.8	0.005	1340
222	12.62135922	71.8	0.9	1.8	0.003	0.159	3.35	0.001	0.01	0.05	0.061	16000	0.02	0.021	0.6	15	0.139	513	2.18	0.038	0.02	0.05	13000	4870	NA	0.71	0.005	1300
240	0.814026299	75	0.9	1.8	0.002	0.135	4.08	0.002	0.02	0.1	0.08	13500	0.01	0.024	0.62	14	0.12	385	1.94	0.018	0.02	0.08	9430	4020	NA	0.47	0.01	1120
258	NA	73.7	0.7	3.6	0.003	0.218	6.17	0.001	0.01	0.1	0.119	18400	0.01	0.053	0.8	14	0.206	497	6.58	0.022	0.03	0.13	13800	3920	NA	0.71	0.005	1370
335	14.19354839	74.7	0.7	1.6	0.014	0.088	9.42	0.0025	0.025	0.15	0.152	16600	0.015	0.041	0.62	11	0.509	385	11.7	0.025	0.04	0.1	10700	3490	NA	0.68	0.015	1090
336	NA	76.7	0.4	2.8	0.034	0.219	6.66	0.002	0.02	0.1	0.148	21700	0.01	0.03	0.7	15	1.36	512	4.12	0.026	0.03	0.09	13900	3550	NA	0.81	0.01	1370
338	20.26735662	68.8	1.2	0.45	0.006	0.066	4.35	0.0025	0.025	0.1	0.065	15600	0.01	0.033	0.55	15	0.285	454	7.53	0.021	0.04	0.08	11400	3960	NA	1.09	0.01	1160
340	15.96100279	71	1.4	0.45	0.011	0.071	4.68	0.0025	0.025	0.1	0.078	15500	0.01	0.026	0.51	14	0.349	437	4.84	0.024	0.01	0.08	11100	4150	NA	1.07	0.01	1110
342	16.30115938	67.9	0.9	1.1	0.041	0.091	8.28	0.0025	0.025	0.1	0.193	33900	0.01	0.032	0.52	17	1.87	646	7.78	0.05	0.05	0.1	21600	3940	NA	0.93	0.01	1720
344	NA	67.9	0.7	0.95	0.021	0.08	16	0.0045	0.045	0.25	0.152	29200	0.025	0.061	0.62	14	1.09	777	20.1	0.022	0.08	0.14	17500	3880	NA	0.75	0.025	1170
352	NA	72.4	0.4	0.85	0.016	0.088	10.9	0.0045	0.045	0.2	0.092	24700	0.02	0.059	0.71	17	0.628	527	16.4	0.027	0.05	0.15	14500	3300	NA	0.61	0.02	1190
353	NA	70.5	0.8	0.8	0.061	0.275	8.22	0.004	0.04	0.2	0.114	29100	0.02	0.053	0.56	21	3.67	566	9.5	0.098	0.02	0.14	16700	3650	NA	0.72	0.02	1430
359	15.81994306	76.3	0.9	1.4	0.004	0.024	2.39	0.001	0.01	0.05	0.025	14100	0.02	0.012	0.37	9	0.84	379	1.42	0.14	0.01	0.01	10500	3690	NA	0.78	0.005	1680
360	1.49912722	73	2.2	0.8	0.005	0.066	3.62	0.001	0.01	0.05	0.043	16500	0.005	0.014	0.39	10	1.33	415	3.23	0.035	0.005	0.01	12400	3730	NA	0.9	0.005	1410
361	1.548961226	73.6	2	0.7	0.008	0.082	4	0.001	0.01	0.05	0.049	16500	0.005	0.012	0.45	7	2.54	428	1.86	0.067	0.005	0.01	12100	3730	NA	0.83	0.005	1490
362	1.176137477	74.9	4.6	1.8	0.006	0.02	3.97	0.001	0.01	0.05	0.027	19500	0.005	0.013	0.41	10	0.836	465	2.06	0.061	0.005	0.02	14000	3620	NA	0.65	0.005	1520
363	1.212084665	77.3	0.8	1	0.012	0.03	5.91	0.001	0.01	0.05	0.038	18300	0.005	0.023	0.54	11	1.22	444	4.24	0.035	0.01	0.03	12400	3920	NA	0.68	0.005	1300
364	0.455012476	76	1.4	0.9	0.083	0.308	3.22	0.001	0.01	0.05	0.25	14000	0.005	0.039	1.03	13	2.08	366	3.54	0.072	0.03	0.05	9810	4020	NA	0.9	0.005	1180
365	NA	77.2	0.5	1	0.035	0.142	10.3	0.0025	0.025	0.1	0.129	23700	0.01	0.032	0.57	12	2.95	534	6.94	0.047	0.05	0.04	13900	3720	NA	0.68	0.01	1260
366	2.170974155	74.4	0.7	0.9	0.007	0.043	8.18	0.001	0.01	0.05	0.036	22400	0.005	0.02	0.36	11	1.14	504	7.89	0.032	0.02	0.04	15200	4160	NA	0.6	0.005	1380
368	4.904777104	72.7	1.2	0.8	0.202	0.105	5.52	0.001	0.01	0.05	0.102	18100	0.005	0.044	1.47	15	2.33	476	10.3	0.025	0.04	0.05	12000	4130	NA	0.66	0.005	1270
370	13.77442445	76.2	0.6	0.5	0.003	0.083	7.15	0.001	0.01	0.05	0.064	16600	0.005	0.035	0.48	13	0.128	411	6.51	0.021	0.02	0.05	11300	3750	NA	0.75	0.005	1250
374	NA	76.2	0.4	1.4	0.019	0.128	8.63	0.0025	0.025	0.1	0.129	21600	0.01	0.075	0.84	17	1.46	499	10.7	0.026	0.04	0.07	12800	3760	NA	0.59	0.01	1240
376	16.87906725	76.2	0.6	1	0.104	0.106	7.81	0.001	0.01	0.05	0.178	17000	0.005	0.065	0.7	15	2.18	388	13	0.018	0.06	0.06	11700	4050	NA	0.7	0.005	1180
383	1.690370716	76.2	0.5	0.9	0.016	0.099	6.1	0.001	0.01	0.05	0.057	16600	0.005	0.035	0.49	11	1.08	450	9.57	0.053	0.03	0.06	11100	3920	NA	0.7	0.005	1310
384	11.95455719	71.9	0.8	0.9	0.026	0.097	6.05	0.001	0.01	0.05	0.12	18900	0.005	0.037	0.55	14	2.51	438	6.35	0.064	0.03	0.05	12700	3820	NA	0.87	0.005	1300
387	19.55138403	70.7	0.5	1	0.044	0.046	9.83	0.001	0.01	0.05	0.081	29800	0.005	0.031	0.41	15	0.641	637	11.2	0.047	0.06	0.07	20600	4480	NA	0.77	0.005	1540
391	NA	77	0.3	1	0.006	0.109	9.76	0.001	0.01	0.05	0.075	17500	0.01	0.031	0.49	15	0.323	356	10.5	0.036	0.02	0.05	11000	3720	NA	0.77	0.005	1130
393	0.65	72.4	1.1	0.5	0.008	0.058	11.7	0.0025	0.025	0.15	0.054	19700	0.015	0.021	0.37	9	0.46	522	11.3	0.055	0.015	0.03	11300	3440	NA	0.58	0.015	1120
395	1.910034602	75	0.7	1	0.031	0.14	6.38	0.001	0.01	0.05	0.058	15200	0.005	0.025	0.45	11	0.52	393	6.17	0.024	0.03	0.03	10300	3840	NA	0.7	0.005	1170
397	12.62063846	76.7	0.6	1.1	0.013	0.086	11.7	0.001	0.01	0.05	0.055	18500	0.005	0.027	0.37	12	1.63	414	10.4	0.024	0.03	0.04	11800	3740	NA	0.69	0.005	1150
398	26.39393939	73	0.6	0.5	0.017	0.07	6.58	0.001	0.01	0.05	0.045	25600	0.005	0.015	0.38	19	0.738	461	4.65	0.056	0.03	0.03	16000	3630	NA	1.21	0.005	1400
402	1.870790721	80.4	0.3	1.5	0.011	0.057	6.77	0.0025	0.025	0.15	0.047	12500	0.015	0.027	0.41	11	0.734	393	8.74	0.022	0.015	0.04	7770	3090	NA	0.52	0.015	956
406	NA	73	0.8	1.1	0.012	0.106	10.4	0.0025	0.025	0.1	0.077	19500	0.01	0.041	0.64	13	1.06	376	12.4	0.019	0.04	0.05	11700	3360	NA	0.67	0.01	1050
409	NA	68.6	0.9	4.2	0.033	0.264	7.51	0.005	0.05	0.25	0.422	24400	0.08	0.045	0.67	24	8.23	502	5.11	0.076	0.025	0.025	13700	3380	NA	0.75	0.025	892
442	14.88539789	73.8	0.5	1.4	0.02	0.088	9.66	0.001	0.01	0.05	0.149	22200	0.005	0.036	0.47	13	1.35	427	7.63	0.043	0.03	0.05	14600	3380	NA	0.84	0.005	1240
443	NA	74.5	0.6	9.5	0.022	0.126	6.34	0.005	0.05	0.25	0.194	18800	0.025	0.027	0.6	8	5.99	420	3.7	0.034	0.025	0.025	11000	3080	NA	1	0.025	918
445	1.518336837	72.8	0.9	1.5	0.034	0.161	10.1	0.001	0.01	0.05	0.244	24600	0.01	0.043	0.52	13	7.23	430	11.2	0.041	0.03	0.06	15800	3300	NA	0.92	0.01	1270
448	1.986020193	76.1	0.7	1.1	0.038	0.221	3.93	0.002	0.02	0.1	0.155	11800	0.01	0.03	0.55	9	4.01	303	4.32	0.049	0.01	0.01	7750	3310	NA	1.17	0.01	930
452	1.246210845	79.7	0.6	0.8	0.049	0.275	6.24	0.004	0.04	0.2	0.314	13500	0.02	0.044	0.77	9	4.23	327	9.79	0.029	0.02	0.02	8010	2970	NA	0.93	0.02	857
453	26.83061619	74.5	0.6	1.2	0.051	0.173	6.52	0.0025	0.025	0.1	0.199	22500	0.01	0.037	0.51	15	12.5	431	5.64	0.083	0.04	0.03	12900	3190	NA	1.32	0.08	1210
454	0.752162467	76	0.5	1.5	0.112	0.148	5.24	0.0025	0.025	0.1	0.086	16500	0.01	0.019	0.55	11	1.27	352	7.21	0.031	0.01	0.01	9400	2890	NA	0.65	0.01	971
455	24.59280761	72.7	0.8	1.1	0.045	0.201	4.69	0.0025	0.025	0.1	0.222	20500	0.01	0.044	0.52	16	4.42	368	3.86	0.059	0.03	0.04	12000	3100	NA	1.31	0.01	1180
456	0.262971579	76.2	0.6	0.9	0.072	0.227	2.88	0.001	0.01	0.05	0.179	14800	0.005	0.019	0.41	7	5.76	313	2.88	0.034	0.005	0.02	9670	3290	NA	1.12	0.005	955
457	2.256581697	73.3	0.4	0.4	0.051	0.207	6.28	0.001	0.01	0.05	0.173	21600	0.01	0.028	0.56	11	6.46	443	4.99	0.058	0.03	0.05	14200	3430	NA	1.45	0.03	1150
458	25.9032796	70	0.7	0.5	0.061	0.12	10.8	0.0025	0.025	0.1	0.278	30200	0.01	0.039	0.5	13	10.5	525	10.7	0.052	0.04	0.05	16900	3280	NA	1.28	0.01	1290
459	1.51080035	74.1	0.7	0.8	0.084	0.206	11.9	0.001	0.01	0.05	0.255	21200	0.005	0.046	0.62	13	8.52	435	12.8	0.052	0.02	0.06	13600	3290	NA	0.97	0.01	1150
460	27.44176543	69.2	0.8	0.95	0.051	0.121	6.72	0.005	0.05	0.25	0.271	23600	0.025	0.036	0.6	15	6.41	496	6.83	0.046	0.025	0.025	13500	3030	NA	1.4	0.06	1080
461	20.1162461	73.1	0.9	1	0.064	0.173	5.84	0.0025	0.025	0.1	0.299	27700	0.01	0.039	0.43	14	8.51	453	5.04	0.067	0.04	0.04	15500	2830	NA	1.18	0.04	1250
462	1.727149233	72.2	0.5	0.45	0.031	0.197	8.96	0.0025	0.025	0.1	0.209	24100	0.01	0.03	0.57	12	10.3	411	11.8	0.037	0.04	0.03	13800	3320	NA	1.3	0.01	1030
463	18.44242714	71.2	0.8	0.5	0.023	0.118	5.05	0.0025	0.025	0.1	0.086	18100	0.01	0.031	0.41	9	3.3	355	5.89	0.038	0.01	0.03	11400	3290	NA	1.21	0.01	1050
464	1.804291287	73.4	0.6	0.45	0.052	0.217	7.41	0.0025	0.025	0.1	0.17	21300	0.01	0.037	0.46	11	8.45	394	10.6	0.032	0.03	0.03	12100	3150	NA	1.32	0.01	1010
471	30.55629139	78.1	0.8	0.5	0.012	0.083	2.43	0.0025	0.025	0.1	0.074	11600	0.01	0.034	0.5	11	2.23	344	3.11	0.035	0.01	0.06	8730	2650	NA	1.7	0.01	1400
472	NA	74.6	0.8	2.2	0.05	0.258	5.94	0.002	0.02	0.1	0.225	20600	0.02	0.075	0.92	16	9.75	574	18.6	0.027	0.03	0.11	13600	3160	NA	1.31	0.01	1260
473	1.679152674	75.8	0.3	0.75	0.062	0.255	6.25	0.004	0.04	0.2	0.196	18500	0.02	0.061	0.86	11	12.7	556	16.8	0.029	0.02	0.12	11800	3030	NA	1.08	0.02	1250
490	18.62456516	72.4	1.1	2.3	0.039	0.123	5.6	0.0045	0.045	0.2	0.226	20300	0.02	0.05	0.65	14	5.49	520	8.39	0.036	0.02	0.11	13200	2890	NA	1.41	0.02	1220
491	10.36621382	75.5	0.1	1	0.032	0.16	5.56	0.0025	0.025	0.1	0.147	20600	0.01	0.045	0.6	14	6.8	517	10.2	0.038	0.01	0.1	13000	2910	NA	1.07	0.01	1500
492	16.36522118	70.4	1.2	0.5	0.026	0.098	7.18	0.0025	0.025	0.15	0.126	27700	0.015	0.036	0.54	13	4.35	609	8.37	0.035	0.015	0.1	17600	3190	NA	1.8	0.015	1460
498	24.41579371	73.6	0.4	0.45	0.025	0.147	4.89	0.0025	0.025	0.1	0.223	20900	0.01	0.064	0.59	14	4.51	530	9.11	0.047	0.01	0.1	13600	2990	NA	1.53	0.01	1410
499	16.64	72.9	0.4	1.05	0.033	0.22	4.72	0.005	0.05	0.7	0.188	18100	0.025	0.053	0.62	54	6.06	537	8.97	0.039	0.025	0.12	11700	2920	NA	1.36	0.025	1210
500	11.20955316	72.7	0.6	0.9	0.036	0.28	6.47	0.0045	0.045	0.25	0.25	15900	0.06	0.053	0.92	13	5.57	508	19.2	0.028	0.05	0.12	10700	2740	NA	1.23	0.025	1010
501	13.39479393	75	1.4	0.85	0.026	0.199	6.7	0.004	0.04	0.2	0.273	21900	0.02	0.053	0.87	11	7.17	624	15.5	0.038	0.04	0.1	13900	3060	NA	1.45	0.02	1240
522	14.17125689	77.6	1	1	0.028	0.139	2.81	0.005	0.05	0.25	0.098	12000	0.025	0.037	0.49	9	2.21	502	5.35	0.029	0.025	0.08	8440	3070	NA	1.27	0.025	1070
523	24.5605812	73.5	1.1	1	0.029	0.282	2.13	0.005	0.05	0.25	0.219	13700	0.025	0.033	0.64	14	3.99	403	5.19	0.072	0.025	0.1	9460	2830	NA	2	0.025	1270
525	21.07959023	72.9	0.5	0.85	0.029	0.128	7.35	0.004	0.04	0.2	0.123	28900	0.02	0.043	0.48	11	6.49	639	12.8	0.037	0.05	0.1	17900	3000	NA	1.44	0.02	1470
596	11.20017099	72.7	1.5	1	0.048	0.058	2.99	0.001	0.01	0.05	0.068	16400	0.03	0.054	0.62	14	1.42	446	7.6	0.02	0.05	0.05	11100	3600	NA	0.65	0.005	1270
597	2.199364442	75.6	1.5	1.3	0.035	0.052	3.98	0.001	0.01	0.05	0.076	20900	0.02	0.068	0.27	7	0.535	593	7.4	0.022	0.04	0.05	15200	4210	NA	0.65	0.005	1880
598	2.171621337	71.6	2.2	0.6	0.014	0.05	3.84	0.001	0.01	0.05	0.079	16700	0.005	0.034	0.2	6	0.627	483	5.07	0.011	0.02	0.02	12500	3250	NA	0.84	0.005	1240
599	1.853854472	75.8	1	1.3	0.045	0.091	5.29	0.001	0.01	0.05	0.207	30100	0.03	0.047	0.76	13	1.66	695	8.62	0.035	0.03	0.05	20600	4310	NA	0.78	0.005	2170
600	0.269318417	73	1.2	0.7	0.03	0.062	4.11	0.001	0.01	0.05	0.144	13700	0.02	0.035	0.84	9	0.419	364	6.85	0.014	0.02	0.03	9360	2350	NA	0.5	0.005	936
601	0.782190132	75	1.2	0.8	0.012	0.038	1.77	0.001	0.01	0.05	0.085	5230	0.005	0.02	0.42	4	0.306	143	2.02	0.008	0.005	0.01	3500	873	NA	0.18	0.005	312
602	1.714027966	74.2	1.5	0.7	0.038	0.071	1.8	0.001	0.01	0.05	0.142	9470	0.02	0.042	0.77	8	1.27	255	3.54	0.01	0.02	0.03	6440	1810	NA	0.48	0.005	665
603	0.344395742	76.2	1.3	0.9	0.023	0.078	1.38	0.001	0.01	0.05	0.156	9230	0.01	0.032	0.56	6	0.718	207	2.31	0.012	0.02	0.02	5850	1030	NA	0.27	0.005	502
604	15.54644809	43.4	1	1	0.047	0.11	2.07	0.001	0.01	0.05	0.254	8180	0.01	0.056	0.71	6	1.49	278	6.08	0.012	0.02	0.04	6590	2560	NA	0.58	0.005	831
605	7.852623744	74.7	2	1.3	0.305	0.111	4.51	0.001	0.01	0.05	0.434	19800	0.02	0.065	5.04	21	4.11	486	7.84	0.053	0.04	0.05	13900	3580	NA	0.67	0.01	1640
606	15.68758344	75.1	2	1	0.127	0.101	2.97	0.001	0.01	0.05	0.174	13400	0.01	0.04	0.6	12	2.82	388	6.35	0.019	0.03	0.03	9890	3150	NA	0.64	0.005	1160
607	16.80637906	73.8	1.5	0.2	0.067	0.157	2.4	0.001	0.01	0.05	0.112	9330	0.005	0.069	0.51	0	0.355	354	4.5	0.005	0.04	0.04	7540	3000	NA	0.52	0.005	1080

Sample ID	Gonadosomatic.Index	Moisture	Total.Lipids	Aluminum	Antimony	Arsenic	Barium	Beryllium	Bismuth	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Phosphorus	Potassium	Rubidium	Selenium	Silver	Sodium
608	NA	74.1	1.8	1.2	0.017	0.072	4.03	0.001	0.01	0.05	0.143	13500	0.005	0.041	0.6	9	0.575	363	7.4	0.016	0.02	0.04	9300	2540	NA	0.48	0.005	966
609	2.110726644	77.7	0.8	0.7	0.183	0.116	4.92	0.001	0.01	0.05	0.197	17500	0.005	0.062	0.77	10	2.22	504	9.8	0.03	0.02	0.05	12300	3460	NA	0.62	0.005	1370
615	1.293823038	74.7	2	1	0.069	0.071	3.38	0.001	0.01	0.05	0.173	11800	0.01	0.043	0.46	8	0.827	305	7.62	0.019	0.02	0.04	8140	2070	NA	0.44	0.005	834
654	2.019650655	72.6	2.6	0.6	0.01	0.068	4.97	0.001	0.01	0.05	0.144	13400	0.005	0.034	0.46	8	0.265	402	6.79	0.016	0.01	0.03	11200	3120	NA	1.1	0.005	1000
655	18.38132296	74.2	1.5	2.3	0.012	0.059	5.87	0.001	0.01	0.05	0.107	14500	0.01	0.021	0.45	13	0.923	408	5.19	0.026	0.03	0.02	11400	3240	NA	1.16	0.005	1090
656	1.972463627	73.9	1.6	0.4	0.298	0.111	5.54	0.001	0.01	0.05	0.192	16000	0.005	0.044	0.64	13	4.3	422	6.7	0.039	0.03	0.02	12200	3210	NA	1.04	0.005	1120
657	13.70627262	72.5	2.4	0.6	0.153	0.125	4.7	0.001	0.01	0.05	0.193	10700	0.01	0.039	0.96	14	1.99	329	5.77	0.02	0.05	0.03	9020	3350	NA	1.18	0.005	955
658	2.296237354	75	1.5	0.6	0.304	0.157	7.98	0.001	0.01	0.05	0.344	15900	0.005	0.052	1.37	13	9.3	414	10.9	0.029	0.04	0.05	12300	3130	NA	0.78	0.005	1090
659	2.228047182	75.7	1.9	0.9	0.287	0.142	6.32	0.001	0.01	0.05	0.94	12700	0.005	0.065	1.54	13	6.59	406	7.76	0.029	0.03	0.03	11100	3280	NA	0.77	0.005	1140
660	20.51119828	71	1.7	0.2	0.016	0.068	4.29	0.001	0.01	0.05	0.215	12200	0.005	0.034	0.42	10	1.04	365	4.52	0.032	0.03	0.02	10400	3380	NA	1.37	0.005	1010
661	11.45552561	73.4	1.4	0.5	0.081	0.089	10.1	0.001	0.01	0.05	0.166	14100	0.01	0.047	0.77	11	1.4	404	12.7	0.019	0.05	0.05	11300	3430	NA	1.1	0.005	1000
662	19.06318083	71.5	2.5	0.2	0.01	0.048	7.31	0.001	0.01	0.05	0.064	13000	0.005	0.022	0.42	12	0.612	384	7.38	0.024	0.02	0.02	11100	3300	NA	1.41	0.005	1050
663	12.18914186	73.1	1.6	0.45	0.159	0.198	5.65	0.0025	0.025	0.1	0.849	12900	0.01	0.077	1.68	15	4.21	366	9.97	0.02	0.04	0.05	9670	3170	NA	0.94	0.01	922
664	NA	74.8	1.9	1	0.122	0.232	5.19	0.0025	0.025	0.1	0.758	12500	0.01	0.075	1.77	11	4.7	408	11.5	0.021	0.02	0.03	9330	3240	NA	0.77	0.01	879
665	17.78815538	70.3	1.9	0.4	0.009	0.061	7.81	0.001	0.01	0.05	0.095	13100	0.005	0.021	0.5	10	0.731	399	7.58	0.023	0.03	0.02	11500	3290	NA	1.46	0.005	1020
666	NA	74.7	1.1	1.5	5.61	0.791	9.09	0.001	0.01	0.05	0.225	14200	0.02	0.047	9.07	17	11.5	405	10	0.019	0.04	0.13	11100	3020	NA	0.8	0.03	919
669	1.505016722	72.2	1.5	0.2	0.038	0.086	7.69	0.001	0.01	0.05	0.071	15800	0.005	0.023	0.41	9	0.517	461	7.06	0.018	0.02	0.02	13000	3500	NA	1.1	0.005	1080
673	6.425452277	73.1	0.9	0.95	0.179	0.442	10.2	0.005	0.05	0.25	0.775	24300	0.025	0.111	1.53	22	20.3	536	22.7	0.05	0.06	0.025	14900	3110	NA	0.9	0.025	1150
689	1.012521718	72	2.2	1	0.007	0.028	3.48	0.001	0.01	0.05	0.051	12500	0.005	0.013	0.43	9	0.449	357	2.12	0.04	0.005	0.01	10200	2920	NA	0.8	0.005	1060
690	0.562166214	75.8	2.1	1	0.005	0.036	3.05	0.001	0.01	0.05	0.076	9390	0.005	0.011	0.37	8	0.624	292	1.65	0.052	0.005	0.01	7800	3140	NA	1	0.005	1090
691	2.283302673	74	2	0.5	0.011	0.045	6.44	0.001	0.01	0.05	0.03	12800	0.005	0.018	0.38	9	0.523	403	7.4	0.026	0.02	0.02	11200	3200	NA	1.26	0.005	961
692	1.976508708	73.5	1.4	0.2	0.003	0.046	4.87	0.001	0.01	0.05	0.023	20200	0.01	0.031	0.49	17	0.211	630	8.21	0.018	0.03	0.04	13600	3960	NA	1.23	0.005	1800
693	2.272538774	70.7	1.6	0.5	0.002	0.036	5.11	0.001	0.01	0.05	0.013	25500	0.02	0.023	0.44	13	0.244	666	6.71	0.023	0.03	0.04	15000	4030	NA	0.9	0.005	1780
694	18.36677815	67.9	1.5	0.45	0.008	0.063	6.04	0.0025	0.025	0.1	0.034	23500	0.01	0.039	0.49	13	0.319	583	12.1	0.012	0.06	0.07	13700	3620	NA	0.93	0.01	1470
695	12.40060583	74	1.4	1.1	0.012	0.067	5.13	0.001	0.01	0.05	0.052	16300	0.01	0.028	0.5	10	0.617	496	9.32	0.012	0.03	0.05	10900	3720	NA	1.09	0.005	1350
696	17.53008896	74.4	0.9	0.7	0.006	0.054	7	0.001	0.01	0.05	0.038	17700	0.01	0.037	0.45	13	0.357	474	12.4	0.017	0.04	0.08	11500	3880	NA	1.14	0.005	1560
697	19.01908566	72.1	1	0.5	0.0025	0.042	5.34	0.0025	0.025	0.1	0.059	16700	0.01	0.042	0.57	12	0.868	474	7.53	0.014	0.03	0.05	10400	3650	NA	1.21	0.01	1360
698	0.614754098	78.4	0.9	0.5	0.006	0.042	8.59	0.0025	0.025	0.1	0.016	18900	0.01	0.023	0.45	9	0.099	502	11.7	0.009	0.04	0.05	10200	3110	NA	0.64	0.01	1210
699	14.65144231	73.9	0.9	1.1	0.004	0.044	5.47	0.001	0.01	0.05	0.027	16900	0.02	0.026	0.46	14	0.224	471	6.46	0.014	0.02	0.05	11000	3740	NA	0.89	0.005	1380
700	NA	78.6	0.6	0.5	0.006	0.05	6.36	0.0025	0.025	0.15	0.066	18000	0.015	0.035	0.53	9	0.236	422	10.4	0.01	0.015	0.08	9760	2820	NA	0.55	0.015	1220
701	21.0931677	69.2	1.3	0.5	0.0025	0.053	4.48	0.0025	0.025	0.1	0.024	15600	0.01	0.025	0.42	12	0.138	456	9.34	0.014	0.03	0.05	9560	3360	NA	1.05	0.01	1180
710	16.4915632	70.8	1.4	0.5	0.006	0.039	6.72	0.0025	0.025	0.15	0.037	18000	0.015	0.02	0.48	12	0.108	481	8.71	0.014	0.015	0.04	10600	3050	NA	1	0.015	1090
711	0.26478376	74	0.8	0.5	0.0025	0.033	8.45	0.0025	0.025	0.1	0.031	18300	0.01	0.021	0.42	8	0.183	471	12.3	0.012	0.01	0.05	10000	3060	NA	0.58	0.01	1140
734	12.2181393	73.1	1.3	0.8	0.015	0.065	5.22	0.001	0.01	0.05	0.053	15400	0.02	0.032	0.51	13	0.753	430	7.2	0.02	0.03	0.07	10100	3680	NA	1.03	0.005	1350
735	0.823625436	72	1	0.6	0.003	0.036	4.54	0.001	0.01	0.05	0.043	21000	0.005	0.022	0.6	10	0.836	493	4.49	0.02	0.02	0.03	12800	3360	NA	0.9	0.005	1490
736	1.588059701	73.5	1.2	0.8	0.005	0.037	5.47	0.001	0.01	0.05	0.015	14700	0.005	0.017	0.44	11	0.173	443	7.39	0.013	0.01	0.04	9860	3570	NA	1.02	0.005	1270
737	0.824906865	72.7	1.6	0.5	0.046	0.127	3.98	0.0025	0.025	0.15	0.047	14700	0.015	0.017	0.58	10	3.26	453	3.52	0.016	0.03	0.04	8660	3460	NA	0.4	0.03	967
738	17.99809796	72.6	1	0.45	0.012	0.037	7.77	0.0025	0.025	0.1	0.048	21600	0.01	0.027	0.49	17	0.466	542	8.83	0.024	0.03	0.04	12300	3660	NA	1	0.01	1360
739	2.115244347	74.1	1	0.9	0.003	0.048	3.82	0.001	0.01	0.05	0.016	15500	0.005	0.023	0.39	9	0.193	435	4.22	0.02	0.02	0.04	9760	3510	NA	0.9	0.005	1330
740	21.80192572	71.1	1	0.2	0.018	0.057	6.53	0.001	0.01	0.05	0.053	17200	0.005	0.024	0.41	10	1.23	455	7.18	0.014	0.02	0.04	11700	3650	NA	1.47	0.005	1240
741	2.071803604	74.2	1.7	0.2	0.003	0.048	5.87	0.001	0.01	0.05	0.018	14300	0.005	0.02	0.4	8	0.119	439	7.22	0.012	0.01	0.04	9810	3490	NA	1.06	0.005	1240
742	1.737364621	73.3	1.2	0.6	0.058	0.07	3.01	0.001	0.01	0.05	0.047	13100	0.005	0.056	1.12	17	0.73	415	4.98	0.035	0.06	0.04	9820	2960	NA	0.89	0.005	1260
744	1.653033401	72.3	2.3	0.2	0.009	0.042	3.01	0.001	0.01	0.05	0.062	15600	0.005	0.017	0.44	9	0.286	483	4.64	0.016	0.01	0.02	12800	3030	NA	1.42	0.005	1190
750	16.72784478	76.1	0.9	0.6	0.007	0.041	3.37	0.001	0.01	0.05	0.041	17100	0.005	0.02	0.53	16	0.321	494	4.58	0.035	0.03	0.03	13700	3300	NA	1.37	0.005	1470
751	2.05444793	71.7	1	0.6	0.031	0.058	3.29	0.001	0.01	0.05	0.03	14700	0.005	0.025	0.47	11	0.575	472	4.48	0.023	0.02	0.03	12400	3370	NA	0.98	0.005	1290
752	1.783421315	70.6	1.4	1.9	0.008	0.038	4.05	0.001	0.01	0.05	0.014	14200	0.01	0.019	0.4	11	0.235	470	6.2	0.015	0.01	0.02	12300	3260	NA	1.17	0.005	1240
753	13.95348837	73.8	1	1	0.017	0.076	4.62	0.001	0.01	0.05	0.058	14400	0.03	0.04	0.56	20	0.46	458	6.74	0.014	0.03	0.04	11500	3240	NA	0.94	0.005	1230
754	20.98503236	71.3	1	1	0.013	0.071	3.97	0.001	0.01	0.05	0.033	19800	0.005	0.024	0.5	16	0.337	514	3.45	0.041	0.03	0.03	15600	3390	NA	1.29	0.005	1420
755	25.52148781	72.8	0.6	0.9	0.019	0.062	5.55	0.001	0.01	0.05	0.04	17900	0.01	0.019	0.46	12	0.876	489	4.86	0.058	0.04	0.03	14500	2920	NA	1.11	0.005	1350
756	12.31400117	72.9	1	0.6	0.006	0.048	6.71	0.001	0.01	0.1	0.058	19700	0.005	0.033	0.55	15	0.704	472	9.68	0.035	0.03	0.05	14700	2940	NA	0.93	0.005	1490
757	1.678629312	72.8	0.7	0.5	0.017	0.151	5.3	0.001	0.01	0.05	0.057	16100	0.005	0.043	0.71	13	0.681	480	11.5	0.015	0.04	0.06	12900	3290	NA	0.83	0.005	1420
758	18.54625551	73.5	0.8	0.6	0.051	0.086	5.43	0.001	0.01	0.05	0.064	15900	0.005	0.044	0.64	13	0.439	459	9.27	0.014	0.04	0.05	12700	3080	NA	0.85	0.005	1280
759	1.573926868	72.3	1.3	0.6	0.019	0.037	6.12	0.001	0.01	0.05	0.046	18300	0.005	0.023	0.41	11	1.04	522	7.43	0.042	0.03	0.04	14200	3300	NA	0.97	0.005	1520
783	16.92745377	72.2	0.7	0.6	0.018	0.108	3.92	0.001	0.01	0.2	0.189	12000	0.005	0.081	0.75	13	0.566	376	6.75	0.012	0.04	0.05	10600	3250	NA	1.01	0.005	1230
784	0.596103518	74.4	1.3	0.8	0.018	0.149	2.79	0.001	0.01	0.05	0.155	12000	0.005	0.042	0.78	13	1.02	395	4.51	0.022	0.03	0.04	9960	3320	NA	0.84	0.005	1150
785	20.50686378	74.6	0.9	0.7	0.018	0.047	3.99	0.001	0.01	0.05	0.138	16600	0.005	0.047	0.44	14	0.852	425	6.14	0.029	0.03	0.03	13200	2900	NA	0.97	0.005	1290
786	NA	65.8	1	0.5	0.013	0.056	6.13	0.0025	0.025	0.1	0.141	13600	0.01	0.052	1.03	13	0.632	419	9.92	0.015	0.02	0.06	9700	3280	NA	0.68	0.01	1090
787	0.44213264	76.6	1.3	3.2	0.026	0.148	3.08	0.0025	0.025	0.1	0.277	14700	0.04	0.073	0.96	23	1.28	434	6.23	0.029	0.03	0.07	10300	3200	NA	0.92	0.01	1150
788	NA	74.3	3	1	0.021	0.147	1.88	0.0025	0.025	0.1	0.06	8520	0.01	0.034	0.78	16	0.457	375	1.55	0.022	0.01	0.03	6900	3340	NA	0.54	0.01	841
789	30.63503883	72.2	0.6	0.6	0.026	0.054	2.3	0.001	0.01	0.05	0.114	12900	0.005	0.04	0.4	10	0.69	399	3.55	0.039	0.05	0.03	11000	3030	NA	1.04	0.005	1350
790	15.85441086	70.4	1.3	2.6	0.015	0.065	3.36	0.0025	0.025	0.1	0.032	9990	0.01	0.018	0.45	11	0.354	382	5.16	0.02	0.01	0.03	8290	3140	NA	1.24	0.01	1040
791	0.329791132	72.4	0.05	0.5	0.009	0.061	8.26	0.0025	0.025	0.15	0.17	19000	0.015	0.049	0.84	13	0.648	440	13.1	0.016	0.03	0.06	12000	2550	NA	0.71	0.015	1270
792	0.382226469	76	0.4	1	0.014	0.049	4.53	0.005	0.05	0.25	0.104	14200	0.025	0.032	0.46	9	0.547	374	8.91	0.018	0.025	0.025	8630	2660	NA	0.51	0.025	956
793	0.455660708	78.4	1	0.5	0.048	0.068	7.93	0.0025	0.025	0.1	0.105	17300	0.01	0.025	0.52	8	0.528	379	12	0.013	0.03	0.03	10800	2270	NA	0.52	0.01	987
794	0.385756677	76.4	1	0.45	0.012	0.054	5.56	0.0025	0.025	0.1	0.075	14500	0.01	0.036	0.61	8	0.498	371	9.45	0.013	0.03	0.03	9490	2760	NA	0.58	0.01	999
795	NA	76.3	1.6	1.2	0.092	0.051	8.14	0.0025	0.025	0.15	0.081	15100	0.015	0.026	0.61	11	0.412	396	10.4	0.011	0.04	0.03	9720	2810	NA	0.63	0.015	963
796	0.486381323	75	1.4	1.05	0.019	0.086	5.2	0.005	0.05	0.25	0.142	16000	0.025	0.055	0.79	11	0.956	414	9.4	0.012	0.05	0.05	9870	2760	NA	0.65	0.025	1010
797	12.8742515	73.3	2.6	0.5	0.009	0.041	6.21	0.0025	0.025	0.1	0.095	18400	0.02	0.015	0.45	12	0.59	464	11.2	0.021	0.01	0.03	12200	2560	NA	1.05	0.01	970
805	17.08717592	73.4	2	0.7	0.006	0.055	5.49	0.001	0.01	0.05	0.073	13000	0.005	0.027	0.53	10	0.431	350	7.28	0.015	0.04	0.04	10100	2750	NA	0.8	0.005	944
806	19.32940929	74.6	1.2	0.7	0.01	0.043	6.54	0.001	0.01	0.05	0.029	18000	0.005	0.021	0.41	12	0.435	399	7.74	0.026	0.03	0.03	12700	2560	NA	0.9	0.005	1080
807	1.853491903	74.8	2.3	1	0.018	0.044	4.93	0.001	0.01	0.05	0.046	16200	0.005	0.027	0.43	11	1.41	385	6.3	0.042	0.03	0.05	11100	2580	NA	0.59	0.005	1140
808	1.739802822	76.7	0.7	1	0.04	0.045	7.47	0.001	0.01	0.05	0.071	18500	0.005	0.033	0.45	19	1.47	412	6.17	0.035	0.02	0.04	12800	2670	NA	0.55	0.005	1290
809	2.856666944	72.2	1.9	0.6	0.025	0.047	6	0.001	0.01	0.05	0.054	17300	0.01	0.025	0.5	15	0.593	428	5.86	0.03	0.03	0.03	11800	2510	NA	0.92	0.005	1190
810	16.62129976	73.4	1	0.5	0.009	0.046	4.77	0.001	0.01	0.05	0.048	10100	0.005	0.023	0.51	10	0.263	298	6.11	0.013	0.03	0.05	8630	2830	NA	0.92	0.005	1020
811	18.02208835	74.1	1.5	0.6	0.009	0.065	6.77	0.001	0.01	0.05	0.073	14300	0.005	0.036	0.55	12	0.353	381	7.31	0.014	0.04	0.05	10800	2880	NA	0.83	0.005	1090
812	2.425562818	75	1.6	1.4	0.024	0.05	6.08	0.001	0.01	0.05	0.047	14500	0.01	0.025	0.58	15	0.506	388	6.29	0.015	0.03	0.05	11100	2840	NA	0.59	0.005	1060
813	1.626817846	73.7	1.6	1.5	0.017	0.047	3.34	0.001	0.01	0.05	0.037	12600	0.005	0.026	0.51	11	0.398	356	4.72	0.016	0.03	0.04	9470	2740	NA	0.8	0.005	947
814	15.13910635	75.2	1.6	2.1	0.028	0.07	3.88	0.001	0.01	0.05	0.056	12400	0.01	0.038	0.48	16	0.705	327	5.08	0.023	0.03	0.05	9050	2610	NA	0.69	0.005	983
847	19.32256794	74.9	1.6	0.8	0.006	0.05	2.7	0.001	0.01	0.05	0.073	12900	0.005	0.031	0.57	11	0.594	323	2.01	0.024	0.02	0.02	9710	2760	NA	0.69	0.005	1110
848	17.80314484	73.2	1.1	1.1	0.053	0.119	3.06	0.001	0.01	0.05	0.267	11500	0.005	0.051	0.55	21	1.88	317	3.88	0.051	0.05	0.04	9050	2670	NA	1.09	0.005	1070
849	20.18280997	73.9	2.2	0.7	0.014	0.092	3.96	0.001	0.01	0.05	0.102	12000	0.005	0.025	0.55	9	1.59	320	6.25	0.017	0.06	0.03	9010	2800	NA	0.79	0.005	935
850	0.412158681	76.5	1.1	1.8	0.019	0.118	5.71	0.001	0.01	0.05	0.165	20300	0.005	0.046	0.93	13	2.6	461	4.96	0.043	0.05	0.04	13100	2840	NA	0.81	0.005	1370
851	0.220611409	74.9	0.7	0.8	0.02	0.109	5.82	0.0015	0.015	0.05	0.205	16300	0.02	0.045	0.74	9	1.58	392	8.17	0.019	0.04	0.04	10800	2510	NA	0.83	0.005	956

Sample ID	Gonadosomatic.Index	Moisture	Total.Lipids	Aluminum	Antimony	Arsenic	Barium	Beryllium	Bismuth	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Phosphorus	Potassium	Rubidium	Selenium	Silver	Sodium
852	18.16060252	69.7	1.9	1.1	0.038	0.05	8.12	0.001	0.01	0.05	0.164	22900	0.005	0.036	0.4	16	2.05	454	7.07	0.052	0.05	0.03	15500	2520	NA	1.28	0.005	1230
853	0.545414069	74.5	2.6	0.2	0.009	0.076	2.97	0.001	0.01	0.05	0.159	10200	0.005	0.035	0.68	8	0.56	280	2.32	0.012	0.02	0.03	7410	2660	NA	0.95	0.005	909
854	0.200561572	75	0.4	0.9	0.042	0.139	3.65	0.0015	0.015	0.1	0.158	14600	0.01	0.038	0.7	12	1.35	375	2.68	0.021	0.03	0.03	9650	2620	NA	0.85	0.01	888
855	1.758923952	73.4	1.7	0.8	0.065	0.109	5	0.001	0.01	0.05	0.087	19600	0.005	0.033	0.46	11	1.06	406	4.44	0.055	0.03	0.04	12700	2450	NA	0.9	0.005	1150
856	1.021634615	74.8	2.9	0.5	0.019	0.139	1.87	0.0025	0.025	0.1	0.082	5760	0.01	0.023	1.31	12	0.242	276	1.25	0.027	0.01	0.01	4640	2860	NA	0.66	0.01	653
857	0.460981231	73.2	0.3	0.7	0.016	0.071	6.97	0.001	0.01	0.1	0.106	14700	0.005	0.036	0.53	9	0.577	372	7.79	0.013	0.04	0.03	10000	2710	NA	0.76	0.005	882
858	2.192729371	72.7	1	0.2	0.02	0.039	5.78	0.001	0.01	0.05	0.055	22300	0.005	0.023	0.44	11	0.364	488	4.39	0.03	0.02	0.03	15000	2430	NA	0.88	0.005	1090
859	0.979974435	74.5	3	0.5	0.012	0.039	4.63	0.0025	0.025	0.1	0.065	11800	0.01	0.021	0.42	11	0.375	331	6.92	0.016	0.01	0.03	7870	2820	NA	0.86	0.01	825
860	NA	74.5	0.6	1.6	0.028	0.112	4.24	0.0025	0.025	0.15	0.15	14900	0.015	0.036	0.5	13	1.05	371	8.39	0.023	0.04	0.04	9390	2400	NA	0.68	0.015	818
861	1.800677483	73.4	2.5	0.2	0.009	0.043	4.64	0.001	0.01	0.05	0.043	12800	0.005	0.016	0.39	9	0.219	360	4.37	0.019	0.02	0.02	9420	2800	NA	1.11	0.005	873
877	15.91100624	74	2.5	2.3	0.886	0.213	5.11	0.001	0.01	0.05	0.067	11000	0.01	0.029	2.59	14	0.99	285	5.28	0.013	0.03	0.03	8130	2480	NA	1.01	0.005	762
878	2.085181899	73.6	3.4	0.5	0.046	0.065	4.4	0.001	0.01	0.05	0.071	13700	0.005	0.038	0.64	17	0.537	332	6.84	0.017	0.04	0.05	10000	2830	NA	0.98	0.005	857
879	2.108216433	75.8	1.4	0.4	0.062	0.047	3.86	0.001	0.01	0.05	0.052	13300	0.005	0.036	0.45	9	0.69	341	3.4	0.033	0.03	0.04	8940	2660	NA	0.87	0.005	973
880	1.881643206	73.3	2.2	0.5	0.022	0.055	8.88	0.001	0.01	0.05	0.072	17500	0.005	0.029	0.45	10	0.687	360	11	0.015	0.04	0.03	11500	2410	NA	0.7	0.005	923
881	1.976639712	73.1	1.6	0.5	0.052	0.062	6.47	0.001	0.01	0.05	0.093	19600	0.005	0.036	0.49	19	0.538	368	7.18	0.021	0.04	0.04	12300	2490	NA	0.72	0.005	1030
882	0.280040733	74.7	2.4	0.9	0.013	0.096	6.7	0.001	0.01	0.05	0.045	12100	0.005	0.021	0.64	10	0.483	285	4.35	0.02	0.02	0.02	8230	2430	NA	0.57	0.005	872
883	14.00158322	74.7	1.1	0.5	0.04	0.048	3.71	0.001	0.01	0.05	0.117	10600	0.01	0.036	0.54	16	0.424	295	5.26	0.028	0.04	0.04	8140	2700	NA	0.92	0.005	877
884	8.639308855	72.1	3.2	0.7	0.044	0.057	6.28	0.001	0.01	0.05	0.125	16700	0.005	0.037	0.62	18	0.686	343	7.97	0.017	0.04	0.06	11200	2510	NA	0.89	0.005	907
885	1.613697955	74.6	2	0.2	0.04	0.097	6.69	0.001	0.01	0.1	0.07	16900	0.005	0.05	0.77	12	0.567	513	8.25	0.017	0.03	0.06	12000	4280	NA	1.07	0.005	1560
886	NA	77	2.6	0.45	0.063	0.08	2.78	0.002	0.02	0.1	0.064	11300	0.01	0.052	0.84	17	0.398	327	4.42	0.023	0.04	0.07	6900	2970	NA	0.64	0.01	1090
887	1.664564943	74.6	1.8	0.2	0.022	0.06	6.38	0.001	0.01	0.05	0.066	14400	0.01	0.037	0.5	10	0.317	424	8.41	0.018	0.04	0.05	10200	3480	NA	0.87	0.005	1300
888	NA	75.2	2	0.45	0.023	0.055	7.95	0.0025	0.025	0.1	0.071	18500	0.01	0.039	0.55	11	0.414	451	9.47	0.021	0.04	0.07	10900	3300	NA	0.68	0.01	1420
889	10.5249614	74.3	0.9	0.5	0.022	0.094	6.73	0.0025	0.025	0.1	0.107	18900	0.01	0.058	0.57	16	0.352	457	8.9	0.016	0.03	0.07	11400	3230	NA	0.8	0.01	1390
890	0.515933232	75.9	1.8	1.3	0.046	0.102	4.63	0.0025	0.025	0.1	0.129	18700	0.01	0.055	0.94	16	0.481	435	7.29	0.017	0.04	0.07	10700	2790	NA	0.62	0.01	1090
891	12.45210728	81.2	1.3	0.7	0.034	0.075	4.43	0.001	0.01	0.05	0.151	15400	0.005	0.058	0.58	20	0.434	406	5.64	0.022	0.04	0.07	10300	3610	NA	0.89	0.005	1320
909	NA	75.6	1.1	1	0.009	0.026	3.91	0.001	0.01	0.05	0.057	25900	0.005	0.021	0.47	16	0.409	527	1.96	0.048	0.02	0.03	15300	3030	NA	0.81	0.005	1630
910	2.077836412	77.1	1.3	0.2	0.029	0.077	7.21	0.001	0.01	0.05	0.037	15500	0.005	0.032	0.52	10	0.346	410	8.31	0.009	0.04	0.05	10300	3340	NA	0.75	0.005	1300
911	0.456135016	74.2	2.5	1	0.014	0.061	4.35	0.001	0.01	0.05	0.065	15200	0.005	0.04	0.73	11	0.416	419	4.41	0.011	0.03	0.04	10600	3530	NA	0.8	0.005	1210
912	NA	74.3	2.2	1.4	0.048	0.123	4.98	0.001	0.01	0.05	0.212	17500	0.005	0.054	1.06	13	0.786	445	3.59	0.02	0.05	0.06	11500	3310	NA	0.84	0.005	1370
913	0.455987312	75.8	1.6	0.7	0.031	0.113	3.25	0.001	0.01	0.05	0.056	17000	0.005	0.037	0.82	11	0.492	448	2.29	0.021	0.02	0.04	11500	3610	NA	1.02	0.005	1410
914	13.75790978	76.6	1.6	1.8	0.039	0.048	7	0.0025	0.025	0.1	0.119	17400	0.03	0.045	0.58	18	0.462	448	8.38	0.015	0.03	0.08	11100	3440	NA	0.85	0.01	1290
915	1.530502263	74.3	2.3	0.5	0.022	0.05	7.77	0.0025	0.025	0.1	0.048	15000	0.01	0.036	0.6	11	0.425	454	6.94	0.014	0.03	0.05	9950	3560	NA	0.73	0.01	1260
916	1.697226853	76.1	1	0.7	0.024	0.046	7.5	0.001	0.01	0.05	0.048	15300	0.01	0.04	0.45	16	0.353	439	8.13	0.017	0.03	0.06	10600	3510	NA	0.7	0.005	1280
917	0.458540313	75.5	0.8	1	0.023	0.056	10.1	0.0025	0.025	0.15	0.07	20600	0.015	0.034	0.67	12	0.671	531	10.4	0.013	0.04	0.07	12700	3490	NA	0.57	0.015	1460
918	2.434871446	75.4	0.8	0.6	0.026	0.052	8.54	0.001	0.01	0.05	0.052	18900	0.005	0.042	0.53	16	0.239	500	7.23	0.016	0.04	0.06	13400	3490	NA	0.85	0.005	1530
919	NA	77.7	2.2	1.3	0.026	0.061	7.09	0.0025	0.025	0.1	0.055	18600	0.01	0.05	0.74	15	0.359	495	8.6	0.016	0.04	0.09	11800	3510	NA	0.7	0.01	1370
920	15.29959279	74.9	1.3	0.7	0.048	0.143	5.06	0.001	0.01	0.05	0.069	13500	0.005	0.071	0.6	12	0.901	402	8.62	0.021	0.06	0.09	9880	3610	NA	0.9	0.005	1240
921	17.61105627	74.3	2.5	0.5	0.022	0.054	8.67	0.0025	0.025	0.1	0.06	19400	0.01	0.038	0.44	12	0.475	486	9.58	0.014	0.06	0.07	12700	3490	NA	0.88	0.01	1250
922	NA	75.7	1.8	0.5	0.044	0.052	8.33	0.0025	0.025	0.1	0.054	18500	0.01	0.039	0.6	14	0.182	512	11	0.01	0.04	0.08	12200	3660	NA	0.68	0.01	1480
923	1.915553757	76.2	1.2	0.2	0.017	0.052	5.66	0.001	0.01	0.05	0.043	15500	0.005	0.03	0.45	11	0.218	466	7.41	0.015	0.02	0.05	11100	3860	NA	0.8	0.005	1440
956	NA	74.5	0.9	2.2	0.02	0.079	5.26	0.0025	0.025	0.1	0.104	16200	0.01	0.042	0.94	13	0.373	456	5.35	0.015	0.01	0.08	10900	2930	NA	0.91	0.01	1200
957	NA	78.9	1.4	0.9	0.101	0.083	3.38	0.0045	0.045	0.2	0.063	17000	0.02	0.031	0.71	17	0.757	434	3.94	0.019	0.02	0.09	10600	2400	NA	0.88	0.02	1020
958	NA	74.5	0.9	2.7	0.038	0.082	5.45	0.005	0.05	0.25	0.16	23600	0.025	0.058	1.06	18	1.18	513	5.87	0.032	0.025	0.1	13600	2460	NA	0.72	0.025	1320
959	25.06748939	67.6	2.4	0.5	0.036	0.071	5.23	0.0025	0.025	0.1	0.099	22600	0.01	0.035	0.46	17	0.583	615	6.97	0.034	0.01	0.08	15400	3540	NA	1.42	0.01	1550
960	19.55412513	77.2	1.1	1	0.024	0.043	3.3	0.001	0.01	0.05	0.105	12400	0.005	0.049	0.43	16	0.56	353	4.57	0.026	0.03	0.08	9740	3140	NA	1.02	0.005	1310
961	1.945396264	71.1	1.6	1.2	0.018	0.047	4.84	0.001	0.01	0.05	0.063	17000	0.005	0.053	0.68	20	0.395	520	7.11	0.016	0.04	0.1	12900	3540	NA	1.13	0.005	1370
962	18.05240042	69.5	1.4	0.5	0.013	0.066	5.2	0.0025	0.025	0.1	0.073	18900	0.01	0.021	0.62	16	0.282	553	7.5	0.033	0.01	0.09	13400	3750	NA	1.49	0.01	1430
963	2.499375156	75.9	0.8	0.85	0.023	0.037	6.76	0.0045	0.045	0.2	0.049	22600	0.02	0.023	0.45	14	0.37	547	9.57	0.011	0.02	0.02	14100	2860	NA	0.81	0.02	1190
964	17.22150335	75.4	0.7	0.9	0.037	0.106	4.28	0.001	0.01	0.05	0.291	16900	0.005	0.042	0.52	10	0.908	427	6.65	0.04	0.04	0.05	12200	2970	NA	0.9	0.005	1320
965	3.050713154	73	1.4	0.6	0.041	0.042	4.27	0.001	0.01	0.05	0.072	19400	0.005	0.024	0.49	15	0.442	516	7.27	0.022	0.02	0.06	14500	3400	NA	1.08	0.005	1330
966	0.45707756	73.3	1.2	1.3	0.043	0.063	3.57	0.001	0.01	0.05	0.107	21300	0.005	0.035	0.76	15	0.734	494	3.62	0.033	0.03	0.06	15100	3360	NA	0.77	0.005	1310
967	NA	77	0.8	2.1	0.042	0.073	10.5	0.004	0.04	0.2	0.153	19800	0.02	0.023	0.82	15	0.843	535	9.49	0.019	0.02	0.11	12800	2710	NA	0.61	0.02	1030
968	16.2671694	75.9	0.2	0.95	0.023	0.049	4.8	0.0045	0.045	0.25	0.069	12900	0.025	0.031	0.46	14	0.385	422	8.27	0.022	0.025	0.11	8870	3220	NA	0.78	0.025	1160
969	23.79060528	72.7	0.9	0.9	0.014	0.029	5.64	0.0045	0.045	0.25	0.054	24000	0.025	0.009	0.45	13	0.236	591	6.38	0.034	0.025	0.07	15000	2930	NA	0.95	0.025	1250
970	19.54757807	70.5	1.2	0.8	0.013	0.028	6.81	0.004	0.04	0.2	0.05	33100	0.02	0.008	0.36	12	0.206	828	8.21	0.016	0.02	0.07	20700	3310	NA	1	0.02	1310
971	2.029191883	70.5	2.8	0.45	0.018	0.043	7.2	0.002	0.02	0.1	0.073	29300	0.01	0.018	0.46	13	0.254	675	10.6	0.013	0.01	0.07	19800	3490	NA	1.02	0.01	1320
972	15.9157604	75	1.2	1.4	0.009	0.044	4.26	0.002	0.02	0.1	0.111	12400	0.03	0.047	0.53	15	0.289	383	5.88	0.016	0.01	0.08	9220	3170	NA	1.08	0.01	1110
973	20.35854617	74.3	0.6	1	0.019	0.062	5.18	0.002	0.02	0.1	0.087	15400	0.01	0.053	0.47	12	0.351	452	10.1	0.021	0.05	0.09	11000	3370	NA	0.86	0.01	1170
975	2.325035228	74	1.7	0.5	0.011	0.054	3.98	0.0025	0.025	0.1	0.072	16900	0.01	0.024	0.47	12	0.248	537	6.97	0.018	0.01	0.08	11600	3370	NA	1.16	0.01	1070
976	2.320027294	73.8	1.1	1.1	0.02	0.057	5.22	0.0025	0.025	0.1	0.119	15000	0.01	0.046	0.66	11	0.338	440	10.8	0.021	0.03	0.09	10500	3510	NA	0.91	0.01	1160
977	29.57622648	72.6	0.7	1.6	0.051	0.052	4.94	0.0025	0.025	0.1	0.095	18800	0.01	0.024	0.6	20	0.813	467	3.66	0.04	0.05	0.07	13100	2960	NA	1.16	0.01	1420
978	8.345864662	72.5	0.9	1	0.085	0.062	10.8	0.005	0.05	0.25	0.078	23600	0.025	0.032	0.53	21	1.23	531	13.7	0.013	0.025	0.1	14700	2820	NA	0.55	0.025	1190
979	26.89862239	72.9	0.7	0.7	0.031	0.046	4.6	0.001	0.01	0.05	0.066	18700	0.005	0.022	0.47	15	0.314	505	6.04	0.026	0.03	0.05	14600	3350	NA	1.27	0.005	1410
980	0.40660737	76.7	0.8	2.1	0.01	0.036	5.06	0.0025	0.025	0.1	0.068	12400	0.01	0.03	0.45	14	0.135	386	8.06	0.013	0.01	0.08	8570	3120	NA	0.74	0.01	1140
986	19.4460147	72.1	0.7	2.8	0.034	0.101	7.07	0.0025	0.025	0.1	0.089	24500	0.03	0.038	0.45	17	0.468	621	8.3	0.034	0.04	0.08	16200	3300	NA	1.12	0.01	1390
1008	NA	73.6	1.3	0.95	0.023	0.07	4.88	0.0045	0.045	0.25	0.058	16800	0.025	0.026	0.52	9	0.171	405	7.92	0.014	0.025	0.08	11000	3240	NA	0.76	0.025	1030
1009	2.428658166	70.2	1.4	0.45	0.042	0.042	4.68	0.002	0.02	0.1	0.07	24600	0.01	0.025	0.48	12	0.72	645	4.24	0.048	0.02	0.06	15800	3360	NA	1.08	0.01	1520
1010	NA	75.2	1.7	2.3	0.011	0.042	5.97	0.0025	0.025	0.1	0.092	16600	0.03	0.024	0.63	14	0.413	401	7.22	0.035	0.01	0.05	10800	3190	NA	0.63	0.01	1170
1011	28.02970034	72.7	1.7	3.1	0.031	0.055	6.76	0.0045	0.045	0.25	0.064	21000	0.025	0.021	0.51	10	0.389	541	4.95	0.041	0.025	0.06	13300	3060	NA	0.98	0.025	1350
1015	7.552721923	73.8	1.2	6.6	0.031	0.041	5.33	0.0025	0.025	0.1	0.091	18400	0.01	0.027	0.5	17	0.469	398	7.78	0.052	0.01	0.06	11900	3160	NA	0.63	0.01	1190
1022	NA	77	1.6	1.8	0.037	0.11	5.13	0.0025	0.025	0.1	0.192	16300	0.01	0.064	0.91	14	0.485	386	7.28	0.04	0.03	0.1	10300	3010	NA	0.83	0.01	1250

Sample ID	Strontium	Thallium	Tin	Titanium	Uranium	Vanadium	Zinc	local_id	year
1	30.6	0.002	0.01	0.99	0.004	0.05	26	Kootenay River	2016
3	33.1	0.004	0.015	1	0.009	0.08	28.1	Kootenay River	2016
4	33.7	0.003	0.01	0.9	0.004	0.03	20.4	Kootenay River	2016
5	28.1	0.004	0.01	0.98	0.006	0.06	28.5	Kootenay River	2016
7	40	0.001	0.01	1.26	0.005	0.06	27.2	Kootenay River	2016
8	25.5	0.003	0.01	0.87	0.006	0.08	22.2	Kootenay River	2016
9	29	0.003	0.01	0.76	0.004	0.03	20	Kootenay River	2016
11	43.1	0.004	0.025	1.11	0.015	0.09	28.8	Kootenay River	2016
12	31.5	0.005	0.025	0.87	0.012	0.1	32.4	Kootenay River	2016
14	35.2	0.004	0.01	1.11	0.009	0.04	20.2	Kootenay River	2016
15	22.2	0.003	0.01	0.74	0.003	0.03	18.5	Kootenay River	2016
16	42.9	0.002	0.01	1.23	0.01	0.09	24.7	Kootenay River	2016
17	31.1	0.007	0.025	0.88	0.008	0.06	31.7	Kootenay River	2016
18	36.4	0.003	0.01	1.06	0.01	0.1	33.3	Kootenay River	2016
19	25.7	0.003	0.01	0.81	0.004	0.04	24.5	Kootenay River	2016
20	32	0.004	0.01	0.93	0.008	0.11	31	Kootenay River	2016
22	37	0.006	0.025	1.09	0.013	0.09	30.1	Kootenay River	2016
23	31.7	0.003	0.01	0.86	0.004	0.04	20.8	Kootenay River	2016
24	29	0.01	0.05	0.87	0.014	0.05	26.7	Kootenay River	2016
26	35.5	0.001	0.025	0.95	0.006	0.06	23.1	Kootenay River	2016
27	40.1	0.002	0.01	0.87	0.013	0.04	33.2	Kootenay River	2016
28	35.8	0.006	0.025	0.75	0.013	0.12	31.6	Kootenay River	2016
29	40.2	0.009	0.025	0.8	0.017	0.12	27.6	Kootenay River	2016
30	36.2	0.008	0.05	0.78	0.012	0.16	31.6	Kootenay River	2016
33	25.2	0.003	0.01	0.72	0.005	0.06	21.9	Kootenay River	2016
35	39.4	0.008	0.025	0.82	0.015	0.05	25.9	Kootenay River	2016
37	20.9	0.01	0.01	0.53	0.008	0.02	24.2	Kootenay River	2016
44	30.8	0.003	0.025	0.76	0.007	0.05	27.6	Kootenay River	2016
45	22.8	0.01	0.05	0.6	0.016	0.1	29	Kootenay River	2016
46	37.4	0.0025	0.05	0.74	0.011	0.14	32.5	Kootenay River	2016
48	29.6	0.0025	0.05	0.68	0.009	0.14	34.4	Kootenay River	2016
49	41.2	0.0025	0.045	0.89	0.016	0.045	35	Kootenay River	2016
55	59.8	0.004	0.01	1.04	0.009	0.05	31.1	Genelle	2016
56	67.8	0.003	0.025	1.02	0.01	0.05	38.8	Genelle	2016
57	53	0.004	0.025	0.81	0.007	0.025	28.3	Genelle	2016
62	52.4	0.005	0.01	0.72	0.007	0.05	30.6	Genelle	2016
64	41.6	0.006	0.01	0.69	0.004	0.08	32	Genelle	2016
78	50.1	0.006	0.025	0.66	0.009	0.05	33.2	Genelle	2016
79	42.8	0.005	0.025	0.59	0.004	0.025	25.7	Genelle	2016
81	51.2	0.008	0.05	0.73	0.015	0.05	38.8	Genelle	2016
93	37	0.003	0.01	0.76	0.003	0.02	23.2	Genelle	2016
94	49.5	0.011	0.01	0.84	0.011	0.05	28.9	Genelle	2016
97	53.7	0.003	0.01	1.09	0.005	0.1	28.1	Genelle	2016
98	71.5	0.006	0.025	1.06	0.012	0.07	29.4	Genelle	2016
99	76.2	0.004	0.01	1.35	0.012	0.17	37.8	Genelle	2016
103	57.3	0.005	0.01	1.02	0.011	0.1	29.8	Genelle	2016
104	46.9	0.006	0.01	0.79	0.007	0.05	27.4	Genelle	2016
105	58.9	0.005	0.01	1.09	0.006	0.07	24.6	Genelle	2016
108	50.2	0.019	0.045	6.49	0.02	0.31	30.4	Genelle	2016
109	50.8	0.004	0.01	0.87	0.008	0.05	29.1	Genelle	2016
113	53.3	0.007	0.01	0.98	0.014	0.1	30.6	Genelle	2016
121	42.2	0.005	0.025	0.78	0.017	0.08	31.9	Genelle	2016
122	44.2	0.005	0.025	0.8	0.008	0.025	36	Genelle	2016
136	39.7	0.009	0.01	0.8	0.013	0.1	31.7	Genelle	2016
137	46.6	0.005	0.01	0.71	0.004	0.06	29.2	Genelle	2016
138	42.1	0.007	0.01	0.81	0.008	0.05	25.1	Genelle	2016
139	45	0.01	0.025	0.79	0.02	0.08	28.2	Genelle	2016
141	71	0.004	0.025	1.03	0.007	0.07	39.9	Genelle	2016
142	53.7	0.01	0.025	1.01	0.012	0.05	40.5	Genelle	2016
148	54.3	0.006	0.025	0.89	0.006	0.09	29.1	Genelle	2016
150	45	0.006	0.01	0.72	0.008	0.03	26.9	Genelle	2016
152	59.7	0.003	0.01	0.71	0.009	0.07	29.6	Genelle	2016
165	42.6	0.002	0.01	1.52	0.002	0.02	17.6	Birchbank	2016
166	39.5	0.003	0.01	1.44	0.004	0.04	22.3	Birchbank	2016
167	44	0.004	0.01	1.63	0.003	0.03	24.3	Birchbank	2016
168	45.7	0.005	0.01	2.35	0.02	0.07	24.3	Birchbank	2016
169	39.4	0.003	0.01	1.32	0.004	0.01	18.7	Birchbank	2016
170	47.7	0.005	0.01	1.79	0.004	0.03	25.6	Birchbank	2016
171	37.7	0.005	0.01	1.31	0.003	0.06	24.4	Birchbank	2016
172	38.8	0.013	0.025	1.21	0.01	0.05	29.8	Birchbank	2016
173	67.3	0.006	0.01	2.33	0.007	0.06	29	Birchbank	2016
174	55.5	0.004	0.025	1.46	0.007	0.08	33.9	Birchbank	2016
175	58.9	0.003	0.01	2.16	0.005	0.06	24.9	Birchbank	2016
176	52.7	0.012	0.025	1.59	0.017	0.09	36.3	Birchbank	2016
177	37	0.009	0.025	1.12	0.006	0.025	29.6	Birchbank	2016
178	42.3	0.016	0.01	1.5	0.006	0.05	33.2	Birchbank	2016
179	30.6	0.009	0.04	1.19	0.012	0.11	28.9	Birchbank	2016
180	56	0.008	0.01	1.71	0.009	0.11	35.2	Birchbank	2016
181	71.8	0.006	0.025	2.03	0.017	0.09	42.9	Birchbank	2016
182	28.4	0.012	0.01	1.54	0.008	0.04	23.4	Birchbank	2016
187	52.9	0.007	0.01	1.9	0.009	0.12	31.8	Birchbank	2016
188	49.7	0.005	0.01	1.58	0.007	0.08	24.7	Birchbank	2016
193	56.7	0.007	0.01	1.7	0.007	0.07	32.2	Birchbank	2016

Sample ID	Strontium	Thallium	Tin	Titanium	Uranium	Vanadium	Zinc	local_id	year
194	32.1	0.021	0.01	1.54	0.012	0.07	32.8	Birchbank	2016
197	43.9	0.006	0.01	1.52	0.01	0.08	29.1	Birchbank	2016
198	41.3	0.008	0.01	1.36	0.008	0.05	24.4	Birchbank	2016
205	29.4	0.017	0.01	1.37	0.019	0.09	31.3	Birchbank	2016
206	61.8	0.011	0.01	1.98	0.014	0.14	36.9	Birchbank	2016
216	57	0.004	0.01	1.61	0.011	0.07	28.2	Birchbank	2016
222	29.5	0.01	0.01	1.48	0.018	0.08	25	Birchbank	2016
240	24.2	0.012	0.02	1.11	0.012	0.07	25.6	Birchbank	2016
258	50.1	0.014	0.01	1.56	0.019	0.18	33.7	Birchbank	2016
335	45.9	0.004	0.025	1.32	0.012	0.05	30.6	Stoney Creek	2016
336	53	0.013	0.02	1.75	0.013	0.11	41.1	Stoney Creek	2016
338	44.4	0.006	0.025	1.25	0.004	0.09	25.4	Stoney Creek	2016
340	39.8	0.006	0.025	1.25	0.006	0.08	33.2	Stoney Creek	2016
342	93.2	0.005	0.025	2.46	0.021	0.18	35.2	Stoney Creek	2016
344	75.9	0.01	0.045	2.01	0.015	0.22	43	Stoney Creek	2016
352	64.9	0.007	0.045	1.69	0.014	0.13	42.9	Stoney Creek	2016
353	73.3	0.006	0.04	2.02	0.014	0.1	52	Stoney Creek	2016
359	35	0.003	0.01	1.18	0.003	0.04	18.9	Stoney Creek	2016
360	42.5	0.005	0.01	1.35	0.006	0.03	28	Stoney Creek	2016
361	42.9	0.002	0.1	1.34	0.007	0.04	27.9	Stoney Creek	2016
362	50.9	0.003	0.1	1.76	0.004	0.03	17.3	Stoney Creek	2016
363	42.9	0.006	0.1	1.41	0.003	0.04	26.8	Stoney Creek	2016
364	35.3	0.01	0.09	1.11	0.011	0.07	35.8	Stoney Creek	2016
365	61	0.01	0.3	1.68	0.019	0.08	33.4	Stoney Creek	2016
366	69.5	0.003	0.06	1.78	0.007	0.05	34	Stoney Creek	2016
368	48.9	0.021	0.06	1.37	0.014	0.07	31.5	Stoney Creek	2016
370	43.9	0.003	0.06	1.29	0.006	0.04	27.8	Stoney Creek	2016
374	59.5	0.01	0.2	1.6	0.02	0.09	42.7	Stoney Creek	2016
376	44.8	0.134	0.2	1.36	0.011	0.06	31.7	Stoney Creek	2016
383	44.1	0.007	0.04	1.33	0.009	0.06	32.3	Stoney Creek	2016
384	58.8	0.003	0.02	1.5	0.017	0.06	34.7	Stoney Creek	2016
387	85.8	0.007	0.1	2.64	0.016	0.15	36.3	Stoney Creek	2016
391	53.2	0.004	0.08	1.42	0.009	0.06	30	Stoney Creek	2016
393	57.8	0.004	0.5	1.56	0.005	0.025	34	Stoney Creek	2016
395	45.3	0.003	0.07	1.39	0.006	0.05	25.8	Stoney Creek	2016
397	52.6	0.005	0.2	1.61	0.01	0.06	24.9	Stoney Creek	2016
398	77.8	0.003	0.1	2.24	0.007	0.16	27.8	Stoney Creek	2016
402	35	0.007	0.025	1.28	0.01	0.06	22.2	Stoney Creek	2016
406	59.4	0.007	0.025	1.69	0.011	0.08	30.7	Stoney Creek	2016
409	45.8	0.029	0.05	2.26	0.022	0.1	37.9	Stoney Creek	2016
442	73	0.021	0.01	2.12	0.01	0.05	36	Adj_TTS	2016
443	42.7	0.389	0.05	1.84	0.007	0.05	22.5	Adj_TTS	2016
445	70.3	0.123	0.01	2.34	0.01	0.05	42.7	Adj_TTS	2016
448	29.7	0.363	0.02	1.21	0.003	0.06	27.7	Adj_TTS	2016
452	35.8	0.275	0.04	1.26	0.007	0.04	33.9	Adj_TTS	2016
453	58.1	0.33	0.2	2	0.009	0.13	34.7	Adj_TTS	2016
454	41.4	0.01	0.025	1.76	0.008	0.025	27.7	Adj_TTS	2016
455	52.2	0.489	0.025	1.94	0.009	0.13	25.2	Adj_TTS	2016
456	34.9	0.375	0.01	1.54	0.004	0.03	26.6	Adj_TTS	2016
457	55.3	0.801	0.01	2.26	0.007	0.13	36.4	Adj_TTS	2016
458	76.6	0.652	0.3	2.94	0.017	0.11	28.5	Adj_TTS	2016
459	59.4	0.346	0.08	2.34	0.009	0.07	41.6	Adj_TTS	2016
460	61.9	0.503	0.2	2.55	0.007	0.11	27.1	Adj_TTS	2016
461	70.1	0.335	0.06	2.87	0.011	0.12	29.7	Adj_TTS	2016
462	62.7	0.92	0.025	2.62	0.007	0.14	28.7	Adj_TTS	2016
463	49.1	0.278	0.025	2.12	0.005	0.08	26	Adj_TTS	2016
464	49.6	0.685	0.2	2.33	0.008	0.14	28.8	Adj_TTS	2016
471	23.9	0.189	0.025	0.55	0.004	0.07	31.4	Adj_TTS	2016
472	38.3	0.376	0.1	1.02	0.009	0.11	47.7	Adj_TTS	2016
473	34.5	0.412	0.04	0.8	0.009	0.09	45.7	Adj_TTS	2016
490	40.6	0.16	0.045	1.03	0.015	0.14	40.5	Adj_TTS	2016
491	41.3	0.351	0.025	0.86	0.015	0.07	35.2	Adj_TTS	2016
492	54.6	0.273	0.025	1.13	0.007	0.11	30.1	Adj_TTS	2016
498	39.2	0.68	0.025	0.89	0.006	0.13	27.8	Adj_TTS	2016
499	34	0.904	0.05	0.81	0.008	0.18	35.4	Adj_TTS	2016
500	32.3	0.267	0.045	0.73	0.007	0.045	44.7	Adj_TTS	2016
501	42.7	0.555	0.04	0.93	0.008	0.16	41.4	Adj_TTS	2016
522	23.9	0.352	0.05	0.57	0.0025	0.05	21.6	Adj_TTS	2016
523	22.6	0.403	0.05	0.64	0.0025	0.05	40	Adj_TTS	2016
525	54.7	0.528	0.04	1.18	0.015	0.14	41.8	Adj_TTS	2016
596	28.1	0.018	0.01	0.49	0.007	0.05	25	CRAAD	2016
597	40	0.023	0.01	0.64	0.006	0.06	29.6	CRAAD	2016
598	31.6	0.046	0.01	0.53	0.003	0.09	25.2	CRAAD	2016
599	56.4	0.018	0.01	0.95	0.009	0.08	59.1	CRAAD	2016
600	26.3	0.006	0.01	0.49	0.004	0.04	22.2	CRAAD	2016
601	10.8	0.03	0.01	0.24	0.002	0.01	13.3	CRAAD	2016
602	16.7	0.016	0.01	0.33	0.003	0.04	20.6	CRAAD	2016
603	16.2	0.028	0.01	0.31	0.003	0.07	25.2	CRAAD	2016
604	15.3	0.108	0.01	0.34	0.003	0.03	31.3	CRAAD	2016
605	38.4	0.032	0.01	0.65	0.006	0.06	45	CRAAD	2016
606	25.6	0.044	0.01	0.47	0.003	0.04	27.5	CRAAD	2016
607	20.2	0.06	0.01	0.31	0.002	0.05	25.4	CRAAD	2016

Sample ID	Strontium	Thallium	Tin	Titanium	Uranium	Vanadium	Zinc	local_id	year
608	28.5	0.02	0.01	0.47	0.006	0.04	33	CRAAD	2016
609	34.4	0.072	0.01	0.54	0.006	0.05	36.1	CRAAD	2016
615	23.2	0.016	0.01	0.42	0.004	0.04	29.2	CRAAD	2016
654	41.9	0.019	0.01	0.68	0.003	0.08	23.2	New Bridge	2016
655	45	0.009	0.01	0.69	0.005	0.07	25.3	New Bridge	2016
656	52.2	0.075	0.01	0.7	0.007	0.09	57.4	New Bridge	2016
657	32.4	0.067	0.01	0.56	0.008	0.04	28.8	New Bridge	2016
658	52.9	0.121	0.01	0.76	0.011	0.05	45.6	New Bridge	2016
659	41.5	0.221	0.01	0.69	0.005	0.04	38.6	New Bridge	2016
660	39.8	0.033	0.01	0.62	0.005	0.06	30	New Bridge	2016
661	48.9	0.066	0.01	0.69	0.008	0.04	27.5	New Bridge	2016
662	43	0.007	0.01	0.66	0.004	0.07	28.1	New Bridge	2016
663	38	0.145	0.025	0.64	0.005	0.025	40.7	New Bridge	2016
664	38.5	0.158	0.025	0.65	0.005	0.025	39.9	New Bridge	2016
665	42.2	0.005	0.01	0.68	0.005	0.07	25.3	New Bridge	2016
666	53	0.077	1.4	0.71	0.005	0.11	30	New Bridge	2016
669	54.2	0.036	0.01	0.79	0.005	0.11	25.3	New Bridge	2016
673	72.3	0.33	0.05	1.06	0.016	0.05	80	New Bridge	2016
689	38.8	0.004	0.01	0.64	0.004	0.03	24.7	New Bridge	2016
690	28.8	0.002	0.01	0.51	0.003	0.01	18.9	New Bridge	2016
691	42.5	0.008	0.01	0.67	0.004	0.07	25.4	New Bridge	2016
692	47	0.005	0.01	1.3	0.006	0.18	17.9	New Bridge	2016
693	61.3	0.006	0.01	1.49	0.007	0.14	25.1	New Bridge	2016
694	50.2	0.007	0.025	1.36	0.012	0.18	21.4	New Bridge	2016
695	37.9	0.008	0.01	1.09	0.006	0.06	20	New Bridge	2016
696	40.6	0.005	0.01	1.11	0.013	0.1	26.3	New Bridge	2016
697	38.4	0.064	0.025	1.06	0.004	0.08	22.3	New Bridge	2016
698	46.2	0.005	0.025	1.06	0.007	0.06	21.2	New Bridge	2016
699	41.2	0.004	0.01	1.18	0.006	0.05	17.5	New Bridge	2016
700	42	0.005	0.025	1.03	0.012	0.07	24.3	New Bridge	2016
701	41.9	0.007	0.025	0.98	0.005	0.1	26.4	New Bridge	2016
710	42.2	0.006	0.025	1.12	0.006	0.09	23	New Bridge	2016
711	48.2	0.003	0.025	1.04	0.007	0.05	18.3	New Bridge	2016
734	36.7	0.005	0.01	0.99	0.009	0.04	21.2	Opposite CRAAD	2016
735	48.2	0.002	0.01	1.34	0.005	0.03	20.3	Opposite CRAAD	2016
736	38.2	0.005	0.01	1.03	0.004	0.03	18.9	Opposite CRAAD	2016
737	26.6	0.008	0.025	0.97	0.012	0.09	22.8	Opposite CRAAD	2016
738	55.4	0.019	0.025	1.32	0.007	0.08	19	Opposite CRAAD	2016
739	38.2	0.007	0.01	1.06	0.006	0.07	15.7	Opposite CRAAD	2016
740	41.7	0.011	0.01	1.18	0.005	0.09	19.6	Opposite CRAAD	2016
741	36.4	0.008	0.01	0.97	0.007	0.09	16.3	Opposite CRAAD	2016
742	27.4	0.051	0.01	0.53	0.005	0.08	31.3	Opposite CRAAD	2016
744	34.8	0.013	0.01	0.67	0.003	0.08	24	Opposite CRAAD	2016
750	40	0.005	0.01	0.72	0.006	0.1	26.3	McAlister Creek	2016
751	33	0.007	0.01	0.66	0.006	0.08	25.3	McAlister Creek	2016
752	31.4	0.007	0.01	0.71	0.004	0.09	22.8	McAlister Creek	2016
753	33.5	0.008	0.01	0.65	0.005	0.04	25.9	McAlister Creek	2016
754	46.7	0.007	0.01	0.81	0.009	0.1	19.7	McAlister Creek	2016
755	43.2	0.004	0.01	0.78	0.015	0.13	36.6	McAlister Creek	2016
756	44.9	0.004	0.01	0.78	0.008	0.05	31.3	McAlister Creek	2016
757	39.4	0.004	0.01	0.7	0.008	0.06	28.9	McAlister Creek	2016
758	39.5	0.006	0.01	0.67	0.006	0.08	25.1	McAlister Creek	2016
759	46.4	0.005	0.01	0.74	0.011	0.13	37.2	McAlister Creek	2016
783	28.8	0.054	0.01	0.58	0.006	0.05	33.8	McAlister Creek	2016
784	27.1	0.072	0.01	0.56	0.006	0.08	34.9	McAlister Creek	2016
785	43.3	0.034	0.01	0.74	0.007	0.07	28.8	McAlister Creek	2016
786	35.5	0.035	0.025	0.6	0.006	0.025	29.8	McAlister Creek	2016
787	33.8	0.068	0.025	0.82	0.023	0.08	59.1	McAlister Creek	2016
788	14.1	0.078	0.025	0.43	0.007	0.025	22.4	McAlister Creek	2016
789	29	0.037	0.01	0.57	0.008	0.1	30.3	McAlister Creek	2016
790	23.3	0.006	0.025	0.56	0.003	0.06	23.3	McAlister Creek	2016
791	51.8	0.029	0.025	0.67	0.004	0.05	31.4	McAlister Creek	2016
792	36.3	0.024	0.05	0.48	0.0025	0.05	28.5	McAlister Creek	2016
793	47.1	0.02	0.025	0.64	0.005	0.06	26.6	McAlister Creek	2016
794	38.2	0.021	0.025	0.57	0.006	0.025	27.3	McAlister Creek	2016
795	41.3	0.013	0.025	0.59	0.004	0.025	26	McAlister Creek	2016
796	39.7	0.054	0.05	0.8	0.009	0.05	40.1	McAlister Creek	2016
797	46.4	0.011	0.025	0.71	0.005	0.09	33.8	McAlister Creek	2016
805	36.9	0.005	0.01	0.54	0.007	0.04	25.6	McAlister Creek	2016
806	47.1	0.003	0.01	0.69	0.006	0.04	21.3	McAlister Creek	2016
807	47.3	0.003	0.01	0.61	0.019	0.08	27.2	McAlister Creek	2016
808	51.5	0.004	0.01	0.65	0.011	0.07	26.9	McAlister Creek	2016
809	45.8	0.005	0.01	0.63	0.012	0.12	25.7	McAlister Creek	2016
810	28.4	0.004	0.01	0.49	0.004	0.04	22.9	McAlister Creek	2016
811	42	0.006	0.01	0.57	0.005	0.05	24.5	McAlister Creek	2016
812	46.1	0.003	0.01	0.65	0.007	0.06	21.8	McAlister Creek	2016
813	36	0.003	0.01	0.76	0.007	0.05	24.5	McAlister Creek	2016
814	36.8	0.004	0.01	0.59	0.009	0.07	26.8	McAlister Creek	2016
847	32.4	0.025	0.01	0.55	0.005	0.03	28.9	McAlister Creek	2016
848	36.6	0.027	0.01	0.51	0.014	0.06	52.3	McAlister Creek	2016
849	31.6	0.027	0.01	0.52	0.008	0.05	34.7	McAlister Creek	2016
850	54.7	0.036	0.01	0.74	0.015	0.06	54.8	McAlister Creek	2016
851	41.4	0.049	0.015	0.62	0.017	0.07	38.2	McAlister Creek	2016

Sample ID	Strontium	Thallium	Tin	Titanium	Uranium	Vanadium	Zinc	local_id	year
852	67.8	0.02	0.01	0.86	0.015	0.08	36.3	McAlister Creek	2016
853	27.3	0.018	0.01	0.4	0.005	0.03	27.7	McAlister Creek	2016
854	41.3	0.031	0.015	0.53	0.018	0.07	40.8	McAlister Creek	2016
855	53	0.03	0.01	0.71	0.012	0.1	35.7	McAlister Creek	2016
856	10.9	0.043	0.025	0.29	0.003	0.05	17.8	McAlister Creek	2016
857	45.6	0.038	0.01	0.63	0.005	0.05	27.4	McAlister Creek	2016
858	63.7	0.009	0.01	0.82	0.007	0.1	21.8	McAlister Creek	2016
859	32.8	0.011	0.025	0.49	0.004	0.025	21	McAlister Creek	2016
860	41.9	0.025	0.025	0.58	0.015	0.06	34.9	McAlister Creek	2016
861	41.6	0.012	0.01	0.54	0.006	0.07	17.8	McAlister Creek	2016
877	31.9	0.016	0.4	0.57	0.004	0.04	22.1	Maglios	2016
878	39.8	0.024	0.01	0.58	0.008	0.06	25.6	Maglios	2016
879	35.7	0.023	0.01	0.54	0.009	0.09	27.2	Maglios	2016
880	51.7	0.017	0.01	0.71	0.006	0.05	26.4	Maglios	2016
881	52.2	0.013	0.01	0.73	0.01	0.05	25.9	Maglios	2016
882	35.2	0.009	0.01	0.5	0.008	0.03	29	Maglios	2016
883	28.6	0.018	0.01	0.52	0.007	0.04	19.5	Maglios	2016
884	52.6	0.009	0.01	0.68	0.02	0.06	29.3	Maglios	2016
885	45.8	0.035	0.01	1.17	0.009	0.06	29.6	Maglios	2016
886	28.9	0.006	0.02	0.74	0.021	0.05	25.9	Maglios	2016
887	35.6	0.024	0.01	0.99	0.005	0.04	19.2	Maglios	2016
888	49.3	0.012	0.025	1.17	0.007	0.06	25.6	Maglios	2016
889	47.3	0.012	0.025	1.24	0.008	0.025	24.3	Maglios	2016
890	43.8	0.016	0.025	1.23	0.012	0.06	30.9	Maglios	2016
891	40	0.024	0.01	1.05	0.008	0.04	28.1	Maglios	2016
909	61.7	0.006	0.01	1.74	0.005	0.05	21	Maglios	2016
910	41.4	0.009	0.01	1.11	0.004	0.04	20.7	Maglios	2016
911	35.7	0.01	0.01	1.2	0.007	0.04	25.7	Maglios	2016
912	43.1	0.023	0.01	1.33	0.013	0.07	24.1	Maglios	2016
913	40.9	0.012	0.01	1.35	0.012	0.07	29.4	Maglios	2016
914	44	0.01	0.025	1.44	0.008	0.06	24.2	Maglios	2016
915	42.7	0.009	0.025	1.18	0.008	0.025	27.4	Maglios	2016
916	43	0.008	0.01	1.23	0.008	0.04	24.4	Maglios	2016
917	54.3	0.016	0.025	1.55	0.005	0.07	25.1	Maglios	2016
918	56.7	0.006	0.01	1.63	0.007	0.05	23.6	Maglios	2016
919	52.7	0.008	0.025	1.52	0.008	0.05	30.6	Maglios	2016
920	32.8	0.017	0.01	1.16	0.008	0.05	25.7	Maglios	2016
921	52.5	0.018	0.025	1.67	0.008	0.05	21.4	Maglios	2016
922	50.3	0.006	0.025	1.58	0.007	0.05	22	Maglios	2016
923	37.3	0.009	0.01	1.31	0.005	0.04	19	Maglios	2016
956	34.1	0.019	0.025	0.84	0.008	0.07	28.2	Casino Creek	2016
957	32.3	0.015	0.2	0.73	0.016	0.045	41.8	Casino Creek	2016
958	47.3	0.021	0.05	1	0.028	0.15	60.8	Casino Creek	2016
959	45.2	0.019	0.025	1.01	0.008	0.13	37.2	Casino Creek	2016
960	26.7	0.016	0.01	0.63	0.01	0.05	33.8	Casino Creek	2016
961	34.8	0.017	0.01	0.86	0.009	0.06	33.2	Casino Creek	2016
962	41.3	0.014	0.025	0.91	0.005	0.15	32	Casino Creek	2016
963	49.2	0.019	0.6	0.98	0.013	0.2	27.7	Casino Creek	2016
964	36.7	0.019	0.01	0.83	0.009	0.05	39.7	Casino Creek	2016
965	41.4	0.023	0.08	0.98	0.008	0.18	26.1	Casino Creek	2016
966	44.2	0.022	0.06	1.04	0.02	0.11	48.6	Casino Creek	2016
967	48	0.017	0.4	0.91	0.026	0.04	44.7	Casino Creek	2016
968	30.3	0.015	0.045	0.62	0.007	0.045	25.8	Casino Creek	2016
969	57.1	0.016	0.045	1.06	0.0025	0.045	24.5	Casino Creek	2016
970	81.1	0.019	0.09	1.43	0.007	0.1	24.2	Casino Creek	2016
971	67.6	0.027	0.3	1.37	0.007	0.15	37.3	Casino Creek	2016
972	28.4	0.017	0.1	0.67	0.006	0.02	29.7	Casino Creek	2016
973	36.4	0.028	0.02	0.74	0.007	0.05	32.2	Casino Creek	2016
975	37.7	0.021	0.2	0.8	0.005	0.12	31.3	Casino Creek	2016
976	32.7	0.021	0.1	0.74	0.011	0.06	33.6	Casino Creek	2016
977	43	0.016	0.1	0.93	0.016	0.15	25.4	Casino Creek	2016
978	60.3	0.016	0.4	1.06	0.014	0.05	37.6	Casino Creek	2016
979	43.1	0.019	0.06	0.97	0.008	0.14	25.6	Casino Creek	2016
980	29.9	0.012	0.3	0.67	0.005	0.05	25	Casino Creek	2016
986	55.5	0.018	0.2	1.22	0.009	0.14	31.9	Casino Creek	2016
1008	37.9	0.027	0.1	0.82	0.0025	0.13	22.9	Casino Creek	2016
1009	54.5	0.025	0.09	1.1	0.01	0.17	24.2	Casino Creek	2016
1010	39.6	0.018	0.025	0.94	0.011	0.05	29.2	Casino Creek	2016
1011	49.3	0.026	0.2	1.04	0.01	0.13	26.5	Casino Creek	2016
1015	44	0.011	0.025	1.53	0.009	0.06	35.8	Casino Creek	2016
1022	39.5	0.016	0.1	0.89	0.006	0.025	31.5	Casino Creek	2016

APPENDIX K

Large bodied fish Tissue Metals and Condition

Large Body Fish Field Data and Condition Metrics

Sample_No	Sample Type	Section	Date	Species	Fork Length (mm)	Field Weight (g)	Lab Weight (g)	Liver Weight (g)	Gut Weight (g)	Gonad Weight (g)	Fillet weight (g)	otolith Taken	Sex (m/f/u)	Age	Condition	Liversomatic Index	Gonadosomatic Index
2090	Whole/Gut	Upper	24-Oct-16	MW	228	149	144.5	0.328	14.192	0.163	na	2	f	1+	1.22	0.252	0.125
2091	Whole/Gut	Upper	24-Oct-16	RB	284	258	242.68	1.919	14.606	none	na	2	m	2+	1.06	0.841	
2092	Whole/Gut	Upper	24-Oct-16	MW	418	914	925	16.135	41.082	173.23	na	2	f	5+	1.27	1.825	19.598
2093	Fillet	Upper	24-Oct-16	RB	254	196	191.86	1.375	16.194	0.228	36.495	2	f	2+	1.17	0.783	0.130
2094	Whole/Gut	Upper	24-Oct-16	RB	264	213	206.96	22.222	15.526	0.097	na	2	u	2+	1.12	11.608	0.051
2095	Whole/Gut	Upper	24-Oct-16	RB	372	576	574	4.361	42.473	0.361	na	2	u	3+	1.12	0.820	0.068
2096	Whole/Gut	Upper	24-Oct-16	RB	378	561	575	4.141	34.391	0.45	na	2	u	3+	1.06	0.766	0.083
2097	Fillet	Upper	24-Oct-16	WP	482	1343	1352	10.92	69.173	72.3	242.68	2	m	7+	1.21	0.851	5.636
2098	Fillet	Upper	24-Oct-16	RB	414	759	768	7.023	32.954	18.812	118.557	2	m	3+	1.08	0.955	2.559
2099	Whole/Gut	Upper	24-Oct-16	WP	418	864	879	6.961	85.111	2.829	na	1	m	4+	1.20	0.877	0.356
2100	Whole/Gut	Upper	24-Oct-16	RB	422	945	960	10.028	25.983	74.214	na	2	f	4+	1.28	1.074	7.946
2101	Fillet	Upper	24-Oct-16	WP	412	919	930	12.245	131.029	3.068	165.9	2	m	5+	1.33	1.533	0.384
2102	Fillet	Upper	24-Oct-16	RB	448	944	955	8.336	23.06	45.527	158.148	2	f	4+	1.06	0.894	4.885
2103	Fillet	Upper	24-Oct-16	RB	560	548	535	2.976	16.558	0.59	85.953	2	m	4+	0.30	0.574	0.114
2104	Whole/Gut	Upper	24-Oct-16	MW	356	647	659	8.905	13.573	83.898	na	2	f	3+	1.46	1.380	12.999
2105	Fillet	Upper	24-Oct-16	WP	346	470	477	6.543	27.192	1.624	98.624	2	m	5+	1.15	1.455	0.361
2106	Fillet	Upper	24-Oct-16	MW	406	687	687	9.367	35.024	126.565	107.683	2	f	6+	1.03	1.437	19.413
2107	Whole/Gut	Upper	24-Oct-16	MW	232	168	162.78	0.809	10.696	0.165	na	2	f	1+	1.30	0.532	0.108
2108	Whole/Gut	Upper	24-Oct-16	RB	306	334	334	3.124	22.502	0.064	na	1	m	3+	1.17	1.003	0.021
2109	Whole/Gut	Upper	24-Oct-16	MW	430	1019	1042	20.473	28.878	165.5	na	2	f	7+	1.31	2.021	16.336
2110	Fillet	Upper	24-Oct-16	RB	201	96	90.89	0.515	4.278	none	14.966	2	u	1+	1.12	0.595	
2111	Fillet	Upper	24-Oct-16	MW	252	209	206.17	1.58	13.957	0.035	47.072	0	m	-	1.29	0.822	0.018
2112	Whole/Gut	Upper	24-Oct-16	RB	310	309	306	3.11	26.959	0.512	na	2	f	2+	1.03	1.115	0.183
2113	Fillet	Upper	24-Oct-16	MW	328	532	539	8.108	8.839	107.78	103.647	2	f	2+	1.53	1.529	20.330
2114	Whole/Gut	Upper	24-Oct-16	MW	264	234	234	1.868	18.851	0.324	na	2	f	2+	1.27	0.868	0.151
2115	Whole/Gut	Upper	24-Oct-16	MW	232	148	142.73	0.945	9.594	0.06	na	2	u	1+	1.14	0.710	0.045
2117	Whole/Gut	Upper	24-Oct-16	RB	356	489	489	3.198	34.765	0.119	na	2	m	2+	1.08	0.704	0.026
2118	Fillet	Upper	24-Oct-16	RB	280	256	255	2.044	19.713	0.314	55.776	2	f	3+	1.16	0.869	0.133
2119	Fillet	Upper	24-Oct-16	RB	290	293	282.06	2.066	19.71	0.052	68.309	2	m	2+	1.16	0.787	0.020
2120	Fillet	Upper	24-Oct-16	RB	304	336	333	3.271	24.631	0.342	60.361	2	f	2+	1.19	1.061	0.111
2121	Fillet	Upper	24-Oct-16	RB	328	416	416	2.714	28.321	0.11	84.806	2	m	2+	1.18	0.700	0.028
2122	Whole/Gut	Upper	24-Oct-16	RB	264	232	232	2.448	17.796	0.089	na	2	u	1+	1.26	1.143	0.042
2123	Whole/Gut	Upper	24-Oct-16	RB	426	1017	1028	9.779	40.969	72.517	na	2	f	4+	1.33	0.991	7.347
2124	Whole/Gut	Upper	24-Oct-16	WP	386	627	636	5.032	49.283	0.272	na	2	m	5+	1.11	0.858	0.046
2125	Fillet	Upper	24-Oct-16	MW	300	362	361	2.491	26.374	0.605	75.394	2	f	2+	1.34	0.744	0.181
2128	Fillet	Upper	24-Oct-16	MW	218	131	120.74	0.858	5.326	none	32.49	2	u	1+	1.17	0.743	
2129	Whole/Gut	Upper	24-Oct-16	RB	456	1072	1078	8.04	50.743	29.69	na	2	m	3+	1.14	0.783	2.890
2130	Fillet	Upper	24-Oct-16	WP	488	1366	1393	20.35	130.22	39.078	240.61	2	f	6+	1.20	1.612	3.095
2151	Fillet	Upper	24-Oct-16	MW	226	129	128.59	0.982	6.785	0.127	37.813	2	u	1+	1.11	0.806	0.104
2152	Fillet	Upper	24-Oct-16	MW	260	207	207	1.266	11.355	0.41	47.393	2	f	2+	1.18	0.647	0.210
2153	Fillet	Upper	24-Oct-16	MW	280	275	266	1.486	9.485	20.926	55.21	2	m	2+	1.21	0.579	8.158
2154	Fillet	Upper	24-Oct-16	MW	246	189	177.22	1.287	9.328	0.297	40.132	2	f	1+	1.19	0.767	0.177
2155	Fillet	Upper	24-Oct-16	MW	386	845	849	4.253	19.795	104.437	154.958	2	m	5+	1.48	0.513	12.595
2156	Whole/Gut	Upper	24-Oct-16	MW	232	147	132.28	0.705	7.805	none	na	2	u	1+	1.06	0.566	
2157	Whole/Gut	Upper	24-Oct-16	MW	240	192	180.48	0.984	11.062	none	na	2	u	1+	1.31	0.581	
2158	Whole/Gut	Upper	24-Oct-16	MW	260	207	196.38	1.197	11.961	0.295	na	2	f	2+	1.12	0.649	0.160
2159	Whole/Gut	Upper	24-Oct-16	WP	440	826	824	5.158	31.371	18.072	na	2	m	5+	0.97	0.651	2.280
2399	Fillet	Lower	26-Oct-16	WP	418	835	845	9.158	84.815	1.337	161.11	2	m	5+	1.16	1.205	0.176
2400	Whole/Gut	Lower	26-Oct-16	WP	330	387	387	3.992	21.658	3.896	na	2	m	4+	1.08	1.093	1.066
2401	Whole/Gut	Lower	26-Oct-16	WP	430	823	823	4.952	52.866	3.391	na	2	m	5+	1.04	0.643	0.440
2402	Whole/Gut	Lower	26-Oct-16	WP	390	567	571	4.962	26.28	1.615	na	2	m	4+	0.96	0.911	0.296
2403	Fillet	Lower	26-Oct-16	WP	356	488	488	6.045	30.665	12.15	81.063	2	m	4+	1.08	1.322	2.657
2404	Whole/Gut	Lower	26-Oct-16	WP	394	684	686	4.552	57.012	1.934	141.735	1.5	m	-	1.12	0.724	0.307
2405	Fillet	Lower	26-Oct-16	WP	386	624	624	3.758	53.813	2.534	123.062	1.5	m	4+	1.08	0.659	0.444
2406	Fillet	Lower	26-Oct-16	WP	382	643	641	6.077	48.348	16.499	127.12	2	m	4+	1.15	1.025	2.784
2407	Whole/Gut	Lower	26-Oct-16	MW	250	230	218.8	1.34	17.393	1.084	na	2	m	2+	1.40	0.665	0.538
2408	Fillet	Lower	26-Oct-16	RB	298	328	320	2.318	30.286	0.375	61.897	1	f	1+	1.21	0.800	0.129
2409	Whole/Gut	Lower	26-Oct-16	RB	268	241	234.44	1.89	23.205	0.234	na	1	u	1+	1.22	0.895	0.111
2410	Fillet	Lower	26-Oct-16	WP	354	516	505	7.045	39.862	0.19	96.539	2	m	4+	1.14	1.515	0.041
2411	Fillet	Lower	26-Oct-16	WP	412	703	716	6.856	43.221	18.5	112.748	2	f	4+	1.02	1.019	2.750

Large Body Fish Field Data and Condition Metrics

Sample_No	Sample Type	Section	Date	Species	Fork Length (mm)	Field Weight (g)	Lab Weight (g)	Liver Weight (g)	Gut Weight (g)	Gonad Weight (g)	Fillet weight (g)	otolith Taken	Sex (m/f/u)	Age	Condition	Liversomatic Index	Gonadosomatic Index
2412	Whole/Gut	Lower	26-Oct-16	RB	390	679	682	6.435	24.36	29.086	na	2	f	3+	1.15	0.978	4.423
2414	Whole/Gut	Lower	26-Oct-16	MW	236	181	166.4	0.831	9.012	0.082	na	1	m	1+	1.27	0.528	0.052
2416	Whole/Gut	Lower	26-Oct-16	RB	302	319	319	2.697	29.072	0.303	na	2	m	4+	1.16	0.930	0.105
2419	Fillet	Lower	26-Oct-16	WP	358	522	522	7.509	46.14	17.146	103.355	1	m	5+	1.14	1.578	3.603
2421	Fillet	Lower	26-Oct-16	MW	248	225	217.97	1.516	15.665	none	54.848	2	u	2+	1.43	0.749	
2422	Fillet	Lower	26-Oct-16	WP	308	297	297	4.274	13.316	1.027	36.025	2	m	3+	1.02	1.507	0.362
2423	Whole/Gut	Lower	26-Oct-16	WP	322	333	333	4.216	15.701	1.018	na	1.5	m	3+	1.00	1.329	0.321
2424	Whole/Gut	Lower	26-Oct-16	WP	336	380	380	6.259	23.033	0.227	na	2	m	3+	1.00	1.753	0.064
2425	Whole/Gut	Lower	26-Oct-16	WP	360	554	554	5.726	52.135	1.865	na	2	m	3+	1.19	1.141	0.372
2426	Fillet	Lower	26-Oct-16	WP	362	559	559	7.929	42.946	20.346	107.98	2	m	4+	1.18	1.536	3.943
2427	Whole/Gut	Lower	26-Oct-16	WP	358	534	535	5.562	42.257	15.573	na	2	m	3+	1.17	1.129	3.160
2430	Fillet	Lower	26-Oct-16	MW	226	159	141.21	1.015	7.068	none	38.479	2	u	1+	1.22	0.757	
2431	Whole/Gut	Lower	26-Oct-16	WP	362	530	525	6.508	46.652	1.712	na	2	m	4+	1.11	1.361	0.358
2432	Fillet	Lower	26-Oct-16	WP	392	638	630	6.201	38.529	1.761	135.932	2	m	6+	1.05	1.048	0.298
2433	Whole/Gut	Lower	26-Oct-16	WP	390	681	677	10.072	43.742	26.953	na	2	m	4+	1.14	1.591	4.256
2436	Fillet	Lower	26-Oct-16	MW	416	838	791	6.915	39.132	0.458	115.537	1.5	m	5+	1.10	0.920	0.061
2437	Fillet	Lower	26-Oct-16	MW	284	286	286	2.302	17.666	0.398	57.75	2	m	2+	1.25	0.858	0.148
2438	Fillet	Lower	26-Oct-16	RB	336	428	428	2.7	31.295	0.465	100.13	2	f	2+	1.13	0.681	0.117
2439	Whole/Gut	Lower	26-Oct-16	MW	228	146	146.21	1.451	10.508	none	na	2	u	1+	1.23	1.069	
2443	Fillet	Lower	26-Oct-16	MW	218	145	145	1.376	9.34	0.103	37.439	1	u	1+	1.40	1.014	0.076
2444	Fillet	Lower	26-Oct-16	RB	260	208	208	3.093	9.428	0.02	38.31	2	u	2+	1.18	1.558	0.010
2445	Whole/Gut	Lower	26-Oct-16	MW	256	220	220	1.211	20.613	0.3	na	2	f	2+	1.31	0.607	0.150
2447	Whole/Gut	Lower	26-Oct-16	RB	392	752	761	7.878	32.099	33.291	na	2	f	2+	1.26	1.081	4.567
2448	Fillet	Lower	26-Oct-16	MW	246	181	173.66	1.015	11.484	0.198	48.802	2	u	1+	1.17	0.626	0.122
2449	Whole/Gut	Lower	26-Oct-16	RB	388	752	752	6.182	46.687	0.17	na	2	m	2+	1.29	0.876	0.024
2452	Whole/Gut	Lower	26-Oct-16	RB	408	794	815	8.675	30.866	48.727	na	2	f	3+	1.20	1.106	6.214
2455	Whole/Gut	Lower	26-Oct-16	MW	272	256	243.22	2.62	16.169	0.243	na	2	m	2+	1.21	1.154	0.107
2456	Fillet	Lower	26-Oct-16	RB	474	1308	1318	14.287	45.414	103.957	255.54	2	f	4+	1.24	1.123	8.169
2458	Fillet	Lower	26-Oct-16	RB	392	702	702	4.23	56.915	0.759	143.904	1	f	-	1.17	0.656	0.118
2461	Fillet	Lower	26-Oct-16	RB	388	726	718	5.853	31.042	39.561	174.211	2	f	3+	1.23	0.852	5.759
2462	Fillet	Lower	26-Oct-16	RB	430	993	1001	10.818	39.835	60.006	213.204	2	f	3+	1.26	1.126	6.243
2463	Whole/Gut	Lower	26-Oct-16	RB	264	218	200.42	1.439	12.442	none	na	1	u	-	1.09	0.766	
2465	Fillet	Lower	26-Oct-16	MW	274	299	276.5	0.918	18.945	0.497	47.307	2	f	1+	1.34	0.356	0.193
2466	Whole/Gut	Lower	26-Oct-16	RB	390	711	696	6.753	47.803	14.888	na	1	f	2+	1.17	1.042	2.297
2467	Whole/Gut	Lower	26-Oct-16	MW	288	368	357	1.875	26.016	0.594	na	2	f	2+	1.49	0.566	0.179
2471	Fillet	Lower	26-Oct-16	RB	400	724	721	3.794	49.648	0.699	180.135	2	m	3+	1.13	0.565	0.104
2472	Whole/Gut	Lower	26-Oct-16	RB	280	297	234.41	3.27	30.441	0.092	na	1	m	1+	1.07	1.603	0.045
2476	Whole/Gut	Lower	26-Oct-16	RB	342	457	457	3.324	32.315	0.52	na	1	f	3+	1.14	0.783	0.122
2477	Fillet	Lower	26-Oct-16	RB	348	464	470	2.835	19.881	0.152	102.132	1	m	2+	1.12	0.630	0.034
2478	Whole/Gut	Lower	26-Oct-16	MW	248	241	241	1.411	14.504	0.355	na	2	f	3+	1.58	0.623	0.157
2479	Fillet	Lower	26-Oct-16	RB	340	480	480	2.933	26.431	0.311	116.798	1	m	2+	1.22	0.647	0.069
2502	Fillet	Lower	27-Oct-16	MW	204	116	116	0.677	7.416	0.085	23.561	1	u	1+	1.37	0.623	0.078
2509	Whole/Gut	Lower	27-Oct-16	MW	290	353	353	2.069	26.098	0.354	na	2	f	1+	1.45	0.633	0.108
2510	Whole/Gut	Lower	27-Oct-16	MW	230	153	145.43	1.014	10.739	0.17	na	2	u	1+	1.20	0.753	0.126
2522	Fillet	Lower	27-Oct-16	MW	304	434	434	2.99	36.595	0.435	97.156	2	f	2+	1.54	0.752	0.109
2536	Whole/Gut	Lower	27-Oct-16	MW	380	953	959	14.124	22.392	192.52	na	2	f	3+	1.75	1.508	20.555
2539	Fillet	Lower	27-Oct-16	MW	258	242	218.92	1.555	18.505	0.311	63.325	2	f	2+	1.27	0.776	0.155
3067	Whole/Gut	Upper	02-Nov-16	WP	496	1475	1511	23.976	101.72	64.289	na	2	f	8+	1.24	1.701	4.562
3068	Whole/Gut	Upper	02-Nov-16	RB	344	379	379	3.425	15.068	13.241	na	2	f	3+	0.93	0.941	3.638
3069	Fillet	Upper	02-Nov-16	RB	368	512	512	3.876	26.347	22.686	122.356	1	f	3+	1.03	0.798	4.671
3070	Fillet	Upper	02-Nov-16	RB	396	631	631	5.801	21.6	22.185	109.792	1	f	4+	1.02	0.952	3.640
3071	Fillet	Upper	02-Nov-16	RB	232	166	153.15	1.715	11.555	none	35.785	2	m	1+	1.23	1.211	
3072	Whole/Gut	Upper	02-Nov-16	RB	358	468	472	4.659	19.203	24.627	na	2	f	3+	1.03	1.029	5.439
3073	Fillet	Upper	02-Nov-16	RB	314	348	354	2.505	22.105	0.266	94.153	1	m	2+	1.14	0.755	0.080
3074	Whole/Gut	Upper	02-Nov-16	RB	280	238	225.11	1.416	11.324	0.821	na	2	m	2+	1.03	0.662	0.384

Summary of analyte, Units, and MRL

General Method	Analyte	Units	MRL
General Parameters	Moisture	% wet	0.1
General Parameters	Total Lipids	% wet	0.1
Metals in Tissue	Aluminum	mg/kg wet	0.4
Metals in Tissue	Antimony	mg/kg wet	0.002
Metals in Tissue	Arsenic	mg/kg wet	0.005
Metals in Tissue	Barium	mg/kg wet	0.01
Metals in Tissue	Beryllium	mg/kg wet	0.002
Metals in Tissue	Bismuth	mg/kg wet	0.02
Metals in Tissue	Boron	mg/kg wet	0.1
Metals in Tissue	Cadmium	mg/kg wet	0.002
Metals in Tissue	Calcium	mg/kg wet	2
Metals in Tissue	Chromium	mg/kg wet	0.01
Metals in Tissue	Cobalt	mg/kg wet	0.004
Metals in Tissue	Copper	mg/kg wet	0.01
Metals in Tissue	Iron	mg/kg wet	1
Metals in Tissue	Lead	mg/kg wet	0.004
Metals in Tissue	Magnesium	mg/kg wet	2
Metals in Tissue	Manganese	mg/kg wet	0.02
Metals in Tissue	Mercury	mg/kg wet	0.002
Metals in Tissue	Molybdenum	mg/kg wet	0.01
Metals in Tissue	Nickel	mg/kg wet	0.01
Metals in Tissue	Phosphorus	mg/kg wet	5
Metals in Tissue	Potassium	mg/kg wet	10
Metals in Tissue	Selenium	mg/kg wet	0.02
Metals in Tissue	Silver	mg/kg wet	0.01
Metals in Tissue	Sodium	mg/kg wet	2
Metals in Tissue	Strontium	mg/kg wet	0.01
Metals in Tissue	Thallium	mg/kg wet	0.001
Metals in Tissue	Tin	mg/kg wet	0.02
Metals in Tissue	Titanium	mg/kg wet	0.05
Metals in Tissue	Uranium	mg/kg wet	0.001
Metals in Tissue	Vanadium	mg/kg wet	0.02
Metals in Tissue	Zinc	mg/kg wet	0.1

Large Body Fish Tissue Metals Data

Sample_No	Tissue	Species	Moisture	Total Lipids	Aluminum	Antimony	Arsenic	Barium	Beryllium	Bismuth	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Phosphorus	Potassium	Selenium	Silver	Sodium	Strontium	Thallium	Tin	Titanium	Uranium	Vanadium	Zinc
2090	Whole	MW	73.2	5.3	<1.0	<0.005	0.017	0.2	<0.005	<0.05	<0.2	0.005	2860	<0.02	<0.010	0.39	10	0.015	284	0.78	0.019	<0.02	<0.02	3430	3190	0.62	<0.02	586	3.65	0.004	<0.05	0.14	<0.002	<0.05	11.4
2090	Gut	MW	60.8	14	204	0.006	0.135	7.34	0.009	<0.05	<0.2	0.127	253	0.88	0.151	2.92	409	0.445	258	40.7	0.014	0.15	1.15	1700	1690	0.76	<0.02	790	1.45	0.013	<0.05	15	0.203	0.66	57.7
2091	Whole	RB	73.7	3.5	<0.7	<0.004	0.013	0.51	<0.004	<0.04	<0.2	<0.004	3530	<0.02	<0.007	0.42	8	0.008	287	0.86	0.017	<0.02	<0.02	4050	3490	0.28	<0.02	687	5.27	0.005	<0.04	0.15	<0.002	<0.04	15.5
2091	Gut	RB	73.5	5.6	55.5	<0.005	0.08	5.17	<0.005	<0.05	<0.2	0.162	314	0.34	0.087	5.25	140	0.233	230	22.6	0.022	0.13	0.72	1840	2670	0.69	0.03	914	0.97	0.01	<0.05	4.58	0.076	0.23	160
2092	Whole	MW	67.3	9.5	<1.0	<0.005	0.048	0.22	<0.005	<0.05	<0.2	0.01	2590	<0.02	0.023	0.51	13	0.068	252	1.03	0.123	<0.02	<0.02	3250	2650	0.94	<0.02	898	2.59	0.003	<0.05	0.2	0.004	<0.05	12.5
2092	Gut	MW	61	10	549	0.01	0.24	7.48	0.023	<0.05	<0.3	0.13	626	8.15	0.497	2.25	1270	1.25	511	36.6	0.085	0.09	4.36	1560	1950	0.69	<0.03	1070	4.27	0.016	<0.05	47.7	0.202	2.08	73.3
2093	Fillet	RB	71.8	2.6	<1.0	<0.005	<0.012	0.3	<0.005	<0.05	<0.2	<0.005	1120	<0.02	<0.010	0.48	4	<0.010	276	0.23	0.026	<0.02	<0.02	2870	3770	0.21	<0.02	386	2.26	0.006	<0.05	0.13	<0.002	<0.05	9.6
2094	Whole	RB	72.5	1.5	<1.0	<0.005	0.014	0.58	<0.005	<0.05	<0.2	<0.005	8880	<0.02	<0.010	0.64	7	<0.010	342	1.29	0.033	<0.02	<0.02	6310	3350	0.32	<0.02	750	9.98	0.007	<0.05	0.3	<0.002	<0.05	17.8
2094	Gut	RB	78.3	2.3	50.8	<0.005	0.082	4.18	<0.005	<0.05	<0.2	0.148	308	0.35	0.079	4.45	120	0.277	195	19	0.026	0.12	0.71	1850	2360	0.66	<0.02	978	1	0.008	<0.05	4.09	0.071	0.17	98.9
2095	Whole	RB	73.9	2.5	<1.0	<0.005	<0.012	0.35	<0.005	<0.05	<0.2	<0.005	2430	<0.02	<0.010	0.99	7	<0.010	257	0.4	0.042	<0.02	<0.02	3100	3270	0.37	<0.02	628	3.48	0.006	<0.05	0.2	<0.002	<0.05	12.2
2095	Gut	RB	71.5	9.4	59.8	<0.005	0.095	4.69	<0.005	<0.05	<0.2	0.077	166	0.41	0.067	3.13	119	0.172	174	15.2	0.016	0.13	0.45	1620	1980	0.45	<0.02	807	0.84	0.008	<0.05	4.77	0.043	0.18	107
2096	Whole	RB	67.9	3	<1.0	<0.005	0.037	0.83	<0.005	<0.05	<0.2	<0.005	3900	0.07	<0.010	0.97	8	<0.010	282	0.84	0.031	<0.02	<0.02	3860	3080	0.39	<0.02	600	5.9	0.004	<0.05	0.23	<0.002	<0.05	14.6
2096	Gut	RB	66.6	14	22.5	<0.005	0.078	9.55	<0.005	<0.05	<0.2	0.112	194	0.26	0.044	2.29	75	0.107	154	8.46	0.024	0.06	0.45	1600	2080	0.57	<0.02	936	0.76	0.006	<0.05	1.65	0.031	0.06	145
2097	Fillet	WP	75.2	1.6	<1.0	<0.005	0.028	0.45	<0.005	<0.05	<0.2	<0.005	6700	<0.02	<0.010	0.28	3	<0.010	332	0.25	0.667	<0.02	<0.02	5560	3900	0.31	<0.02	534	6.37	0.008	<0.05	0.19	<0.002	<0.05	9.7
2098	Fillet	RB	71.9	1.7	<1.0	<0.005	0.066	0.37	<0.005	<0.05	<0.2	<0.005	1030	<0.02	0.011	0.65	7	<0.010	256	0.22	0.061	<0.02	<0.02	2750	3630	0.32	<0.02	447	1.99	0.009	<0.05	<0.12	<0.002	<0.05	11.1
2099	Whole	WP	75.1	3.1	<1.0	<0.005	0.026	0.29	<0.005	<0.05	<0.2	0.005	4500	<0.02	<0.010	0.19	5	<0.010	312	0.27	0.156	<0.02	<0.02	4200	3540	0.41	<0.02	664	3.94	0.008	<0.05	0.18	<0.002	<0.05	9.6
2099	Gut	WP	37.3	64	<1.0	<0.005	0.191	0.62	<0.005	<0.05	<0.3	0.05	883	<0.03	<0.010	0.37	11	<0.010	82	0.72	0.014	<0.03	<0.03	1450	1210	0.54	<0.03	530	2.35	0.008	<0.05	<0.13	<0.003	<0.05	9.3
2100	Whole	RB	70.5	3.9	<1.0	<0.005	0.024	0.36	<0.005	<0.05	<0.2	<0.005	2020	<0.02	<0.010	0.69	11	<0.010	272	0.52	0.021	<0.02	<0.02	3070	2930	0.69	<0.02	700	2.4	0.005	<0.05	0.13	<0.002	<0.05	12.1
2100	Gut	RB	63.7	14	5.8	<0.005	0.113	0.73	<0.005	<0.05	<0.2	0.036	171	0.07	0.02	0.77	77	0.03	138	1.06	0.014	0.03	0.04	1670	2290	0.88	<0.02	967	0.41	0.009	<0.05	0.67	0.025	<0.05	141
2101	Fillet	WP	75.6	1.1	<1.0	<0.005	0.024	0.49	<0.005	<0.05	<0.2	<0.005	3990	0.08	<0.010	0.28	<2	<0.010	297	0.34	0.146	<0.02	<0.02	4120	3940	0.36	<0.02	401	4.15	0.01	<0.05	0.14	<0.002	<0.05	7.3
2102	Fillet	RB	75.3	2	<1.0	<0.005	0.034	0.26	<0.005	<0.05	<0.2	<0.005	906	<0.02	<0.010	0.35	6	<0.010	244	0.22	0.065	<0.02	<0.02	2490	3480	0.38	<0.02	430	1.21	0.007	<0.05	<0.12	<0.002	<0.05	7
2103	Fillet	RB	83.9	0.4	<1.0	<0.005	0.028	0.42	<0.005	<0.05	<0.2	<0.005	1670	0.11	<0.010	0.31	15	<0.010	220	0.24	0.178	<0.02	0.05	2380	2440	0.23	<0.02	1100	2.5	0.009	<0.05	<0.12	<0.002	<0.05	15.9
2104	Whole	MW	64.4	3	<0.9	<0.005	0.049	0.18	<0.005	<0.05	<0.2	0.009	4480	<0.02	0.012	0.52	8	0.016	324	1.3	0.018	<0.02	<0.02	4720	3220	1.73	<0.02	659	4.59	0.012	<0.05	0.18	<0.002	<0.05	15.8
2104	Gut	MW	64.4	21	8	<0.004	0.132	0.75	<0.004	<0.04	<0.2	0.155	113	0.06	0.028	0.5	38	0.074	116	2.09	0.018	0.02	0.08	1420	1970	3.14	<0.02	935	0.22	0.022	<0.04	0.49	0.038	<0.04	217
2105	Fillet	WP	75.7	0.9	<1.0	<0.005	0.023	0.5	<0.005	<0.05	<0.2	<0.005	6370	<0.02	<0.010	0.25	<2	<0.010	358	0.65	0.105	<0.02	<0.02	5460	4060	0.6	<0.02	521	6.09	0.006	<0.05	0.18	<0.002	<0.05	8.2
2106	Fillet	MW	76.9	2	<1.0	<0.005	0.022	0.24	<0.005	<0.05	<0.2	<0.005	3820	<0.02	<0.010	0.38	10	0.044	277	0.67	0.148	<0.02	<0.02	3920	3350	0.29	<0.02	697	4.72	0.005	<0.05	0.15	0.008	<0.05	14.7
2107	Whole	MW	72.1	3	<0.9	<0.005	0.038	0.2	<0.005	<0.05	<0.2	<0.005	2190	<0.02	<0.009	0.38	6	<0.009	285	0.53	0.02	<0.02	<0.02	3230	3560	0.81	<0.02	524	2.09	0.003	<0.05	0.18	<0.002	<0.05	9.7
2107	Gut	MW	63.3	39	324	<0.004	0.177	1.45	0.014	<0.04	<0.2	0.057	138	0.56	0.297	1.65	774	0.426	356	15	0.018	0.03	1.04	1750	2340	2.11	<0.02	847	0.68	0.011	<0.04	11.5	0.036	0.86	77.3
2108	Whole	RB	70.2	2.3	<1.0	<0.005	0.015	0.5	<0.005	<0.05	<0.2	<0.005	4510	<0.02	<0.010	1.01	7	<0.010	306	0.98	0.022	<0.02	<0.02	4390	3470	0.41	<0.02	694	6.49	0.005	<0.05	0.23	<0.002	<0.05	13.9
2108	Gut	RB	72.1	10	56.3	<0.004	0.074	5.25	<0.004	<0.04	<0.2	0.107	174	0.3	0.071	3.67	116	0.324	194	13.1	0.017	0.11	0.64	1980	2060	0.72	<0.02	966	0.57	0.01	<0.04	5.76	0.132	0.2	112
2109	Whole	MW	66.4	5.5	<1.0	<0.005	0.043	0.16	<0.005	<0.05	<0.2	0.007	3130	<0.02	0.016	0.4	12	0.029	241	1.31	0.093	<0.02	0.02	3300	2220	0.89	<0.02	809	3.29	0.003	<0.05	0.15	0.007	<0.05	13.5
2109	Gut	MW	71.3	8.1	424	<0.005	0.091	8.25	0.008	<0.05	<0.2	0.074	257	1.3	0.199	1.25	637	0.328	379	19.4	0.082	0.03	0.76	1590	2260	1.1	<0.02	1170	1.58	0.029	<0.05	24.3	0.039	1.95	132
2110	Fillet	RB	75.5	2.4	<1.0	<0.005	<0.012	0.34	<0.005	<0.05	<0.2	<0.005	1140	0.12	<0.010	0.57	4	<0.010	273	0.35	0.025	<0.02	0.06	2740	3620	0.19	<0.02	334	2.18	0.004	<0.05	0.13	<0.002	<0.05	10.4
2111	Fillet	MW	75.8	4.5	<1.0	<0.005	<0.012	0.18	<0.005	<0.05	<0.2	<0.005	1460	<0.02	<0.010	0.35	3	<0.010	289	0.32	0.018	<0.02	<0.02	3100	3960	0.32	<0.02	359	1.83	0.003	<0.05	0.13	<0.002	<0.05	7
2112	Whole	RB	73.3	2.1	<0.9	<0.004	0.07	0.69	<0.004	<0.04	<0.2	0.006	5000	<0.02	<0.009	0.82	8	<0.009	305	0.9	0.041	<0.02	<0.02	4380	3170	0.51	<0.02	781	8.48	0.011	<0.04	0.24	<0.002	<0.04	16.7
2112	Gut	RB	72.3	9.4	<0.8	<0.004	0.079	0.36	<0.004	<0.04	<0.2	0.014	91	<0.02	<0.008	0.77	40	<0.008	157	0.37	0.017	<0.02	<0.02	2530	2840	0.63	<0.02	842	0.14	0.015	<0.04	0.16	<0.002	<0.04	84.2
2113	Fillet	MW	67.7	5.1	<1.0	<0.005	0.053	0.72	<0.005	<0.05	<0.2	<0.005	1630	0.06	<0.010	1.02	5	<0.010	281	0.44	0.027	<0.02	0.03	2870	3330	0.36	<0.02	425	1.96	0.003	<0.05	0.13	<0.002	<0.05	8.1
2114	Whole	MW	69.8	2.1	<0.8	<0.004	0.03	0.41	<0.004	<0.04	<0.2	<0.004	6400	<0.02	0.015	0.37	8	0.02	352	1.5	0.016	<0.02	0.02	5450	3620	0.54	<0.02	619	10	0.006	<0.04	0.29	0.002	<0.04	12.1
2114	Gut	MW	60.9	38	791	0.027	0.389	8.31	0.025	<0.05	<0.2	0.122	1290	4.98	0.776	9.72	1510	1.67	543	84.7	0.016	0.09	3.27	1720	2000	1.02	<0.02	841	5.49	0.015	0.09	37.3	0.097	2.72	92.4
2115	Whole	MW	72.3	1.1	<1.0	<0.005	0.026	0.3	<0.005	<0.05	<0.2	0.009	3770	<0.02	0.018	0.44	8	<0.010	300	1.04	0.011	<0.02	<0.02	3950	3410	0.69	<0.02	628	4.17	0.004	<0.05	0.24	<0.002	<0.05	15.1
2115	Gut	MW	52.1	13	1250	0.014	0.413	10.8	0.042	<0.04	<0.2	0.115	778	3.69	0.936	3.79	2930	1.64	1070	67.1	0.013	0.08	2.86	1750	2240	1.22	<0.02	674	3.43	0.024	0.06	71.7	0.159	5.83	46.3
2117	Whole	RB	70.9	3.5	<1.0	<0.005	0.032	0.73	<0.005	<0.05	<0.2	0.005	3990	<0.02	0.012	0.45	11	0.011	284	0.81	0.03	<0.02	<0.02	3890	3130	0.37	<0.02	724	5.7	0.008	<0.05	0.18	<0.002	<0.05	19.1
2117	Gut	RB	75.9	7.4	39.1	<0.005	0.098	4.36	<0.005	<0.05	<0.2	0.063	354	0.19	0.051	2.75	89	0.145	191	15.7	0.013	0.11	0.31	1900	2490	0.43	<0.02	760	0.97	0.008	<0.05	2.99	0.035	0.12	65.2
2118	Fillet	RB	75.3	1.5	<1.0	<0.005	0.021	0.21	<0.005	<0.05	<0.2	<0.005	381	0.12	<0.010	0.57	4	<0.010	260	0.26	0.034	<0.02	0.06	2530	3990	0.25	<0.02	363	0.69	0.004	<0.05	<0.12	<0.002	<0.05	10.4
2119	Fillet	RB	71.6	2.1	<1.0	<0.005	<0.012	0.37	<0.005	<0.05	<0.2	<0.005	1310	<0.02	0.012	0.5	4	<0.010	279	0.25	0.025	<0.02	<0.02	2960	3770	0.22	<0.02	385	2.6	0.005	<0.05	0.13	<0.002	<0.05	9.6
2120	Fillet	RB	71.8	2.6	<1.0	<0.005	0.018	0.19	<0.005	<0.05	<0.2	<0.005	1660	0.04	<0.010	0.76	4	<0.010	289	0.26	0.027	<0.02	<0.02	3210	3800	0.27	<0.02	376	2.81	0.005	<0.05	<0.12	<0.002	<0.05	10.8
2121	Fillet	RB	70.3	2.3	<1.0	<0.005	<0.012	0.5	<0.005	<0.05	<0.2	<0.005	1050	0.04	<0.010	0.53	12	<0.010	276	0.4	0.023	<0.02	<0.02	2870	3710	0.35	<0.02	334	2.21	0.004	0.07	0.13	<0.002	<0.05	9.6
2122	Whole	RB	72.7	2.2	<0.9	<0.005	0.013	0.32	<0.005	<0.05	<0.2	<0.005	2230	<0.02	<0.009	1.25	8	<0.009	262	0.53	0.022	<0.02	<0.02	3120	3370	0.32	<0.02	586	3.26	0.005	<0.05	0.2	<0.002	<0.05	11.8
2122	Gut	RB	58.5	15	20.7	<0.005	0.062	2.37	<0.005	<0.05	<0.2	0.11	195	0.56	0.059	6.15	59	0.085	155	8.38	0.014	0.07	0.64	1600	2110	0.78	<0.02	870	0.54	0.008	0.1	1.9	0.039	0.07	80.5
2123	Whole	RB	63.8	2.3	<0.9	<0.005	0.015	1.24	<0.005	<0.05	<0.2	0.007	9700	<0.02	0.013	1.27	16	0.048	419	1.38	0.023	<0.02	<0.02	7070	3170	0.91	<0.02	887	10.9	0.004	<0.05	0.32	0.007	<0.05	24.5
2123	Gut	RB	34.5	6.4	54.8	<0.005	0.104	5.15	<0.005	<0.05	<0.2	0.102	2610	0.4	0.074	3.23	122	0.214	195	25.1	0.012	0.12	0.56	1700	1960	0.62	<0.02	979	3.71	0.007	<0.05	4.67	0.082	0.2	159
2124	Whole	WP	62	1.5	<1.0	<0.005	0.032	2.15	<0.005	<0.05	<0.2	0.008	55400	<0.02	<0.010	0.28	7	0.04	1150	5.23	0.076	<0.02	<0.02	38600	3590	0.35	<0.02	2090	54.1	0.014	<0.05	1.4	<0.002	<0.05	24.2
2124	Gut	WP	38.5	35	1.5	<0.005	0.19	0.96	<0.005	<0.05	<0.2	0.075	418	0.19	0.021	1.2	23	0.01	87	0.52	0.019	<0.02	0.09	1120	1270	0.48	<0.02	578	1	0.009	<0.05	0.2	<0.002	<0.05	9.3
2125	Fillet	MW	68.6	6.3	<1.0	<0.005	0.039	0.42	<0.005	<0.05	<0.2	<0.005	2310	0.04	<0.010	0.48	4	0.013	303	0.65	0.02	<0.02	<0.02	3510	3470	0.43	<0.02	323	2.75	0.003	<0.05	0.13	<0.002	<0.05	9.8
2128	Fillet	MW	73.4	2.4	<1.0	<0.005	<0.012	0.18	<0.005	<0.05	<0.2	<0.005	2300	<0.02	<0.010	0.41	3	<0.010	303	0.6	0.017	<0.02	<0.02	3550	3790	0.36	<0.02	397	3.51	0.003	<0.05	0.13	<0.002	<0.05	9.5
2129	Whole	RB	71	2.1	<0.8	<0.004	0.034	0.67	<0.004	<0.04	<0.2	<0.004	3730	<0.02	0.011	0.58	11	<0.008	274	0.51	0.03	<0.02	<0.02	4050	2860	0.5	<0.02	727	5.61	0.006	<0.04	0.21	<0.002	<0.04	12.7
2129	Gut	RB	78.6	3.8	39.5	<0.004	0.074	2.51	<0.004	<0.04	<0.2	0.085	112	0.44	0.058	2.55	101	0.144	151	12.1	0.018	0.12	0.5	1700	2120	0.58	<0.02	897	0.36	0.01	<0.04	2.92	0.078	0.13	102
2130	Fillet	WP	74.6	1.2	<1.0	<0.005	0.031	0.44	<0.005	<0.05	<0.2	<0.005	6390	<0.02	<0.010	0.31	<2	<0.010	336	0.37	0.209	<0.02	<0.02	5380	3760	0.38	<0.02	452	6.67	0.008	<0.05	0.18	<0.002	<0.05	10
2151	Fillet	MW	72.4	2.8	<1.0	<0.005	0.034	0.36	<0.005	<0.05	<0.2	<0.005	1820	0.05	0.01	0.49	4	<0.010	274	0.47	0.02	<0.02	<0.02	2960	3500	0.46	<0.02	319	2.31	0.005	<0.05	0.13	<0.002	<0.05	10
2152	Fillet	MW	73.4	1.9	<0.9	<0.005	0.047	0.52	<0.005	<0.05	<0.2	<0.005	2330	<0.02	<0.009	0.46	3	<0.009	316	0.36	0.026	<0.02	<0.02	3540	3870	0.33	<0.02	347	3.63	0.007	<0.05	0.15	<0.002	<0.05	8.2
2153	Fillet	MW	71.8	3.4	<1.0	<0.005	0.055	0.33	<0.005	<0.05	<0.2	<0.005	1920	<0.02	0.01	0.61	4	<0.010	278	0.33	0.017	<0.02	<0.02	3050	3570	0.6	<0.02	372	2.39	0.004	<0.05	0.16	<0.002	<0.05	7.1
2154	Fillet	MW	71.9	1.8	<1.0	<0.005	0.013	0.4	<0.005	<0.05	<0.2	<0.005	1690	<0.02	<0.010	0.47	3	<0.010	286	0.4	0.015	<0.02	<0.02	3060	3580	0.47	<0.02	344	2.15	0.003	<0.05	0.15	<0.002	<0.05	8
2155	Fillet	MW	65.7	8.4	<1.0	<0.005	0.072	0.37	<0.005	<0.05	<0.2	<0.005	4830	<0.02	<0.010	0.62	7	0.013	305	0.79	0.038	<0.02	<0.02	4730	3180	0.5	<0.02	373	5.25	0.006	<0.05	0.17	0.003	<0.05	14.6
2156	Whole	MW	73	2.7	<0.9	<0.005	0.014	0.49	<0.005	<0.05	<0.2	<0.005	5450	<0.02	<0.009	0.36	6	<0.009	338	1.02	0.013	<0.02	<0.02	5080	3800	0.58	<0.02	646	7.27	0.005	<0.05	0.21	<0.002	<0.05	10.6
2156	Gut	MW	65.1	17	797	0.01	0.484	8.48	0.028	<0.05	<0.2	0.183	404	2.55	0.589	3.46	1680	0.613	703	74.7	0.011	0.12	2.73	1700	2030	1.24	<0.02	697	4.79	0.02	<0.05	41	0.091	4.56	72.8
2157	Whole	MW	69.6	4.5	<0.9	<0.005	0.024	0.31	<0.005	<0.05	<0.2	<0.005	3390	<0.02	0.01	0.42	9	<0.009	281	0.86	0.013	<0.02	<0.02	3820	3240	0.79	<0.02	543	4.56	0.003	<0.05	0.18	<0.002	<0.05	13
2157	Gut	MW	57.8	23	440	<0.005	0.188	5.51	0.014	<0.05	<0.2	0.094	275	2.18	0.321	1.98	941	0.31	430	34.5	0.011	0.06	1.78	1540	1850	1.86	<0.02	809	1.5	0.017	<0.05	25.4	0.071	1.66	130
2158	Whole	MW	68.9	4.4	<1.0	<0.005	0.02	0.24	<0.005	<0.05	<0.2	<0.005	3800	<0.02	<0.010	0.44	9	<0.010	302	0.96	0.013	<0.02	<0.02	4010	3250	0.89	<0.02	655	4.88	0.003	<0.05	0.19	<0.002	<0.05	12.5
2158	Gut	MW	65.7	53	186	<0.005	0.07	1.26	0.006	<0.05	<0.2	0.03	187	0.75	0.121	1.09	271	0.097	217	8.79	0.013	<0.02	0.47	1640	2030	1.64	<0.02	722	0.74	0.007	<0.05	11.8	0.015	0.55	50.2
2159	Whole	RB	74.4	1	<1.0	<0.005	0.041	0.66	<0.005	<0.05	<0.2	0.008	9550	<0.02	<0.010	0.25	7	0.011	322	0.82	0.137	<0.02	<0.02	6370	3230	0.32	<0.02	908	8.09	0.01	<0.05	0.29	<0.002	<0.05	13
2159	Gut	RB	58.3	23	1	<0.005	0.237	3.18	<0.005	<0.05	<0.2	0.079	678	0.18	0.023	1.2	36	<0.010	133	0.87	0.022	0.04	0.08	1650	2030	0.55	<0.02	1080	2.68	0.012	<0.05	0.17	0.003	<0.05	13.9
2399	Fillet	WP	76.7	0.8	<1.0	<0.005	0.027	0.19	<0.005	<0.05	<0.2	<0.005	2630	<0.02	<0.010	0.26	<2	<0.010	271	0.24	0.13	<0.02	<0.02	3220	3630	0.49	<0.02	492	2.57	0.009	<0.05	0.13	<0.002	<0.05	6.7
2400	Whole	WP	72.6	3.2	<1.0	<0.005	0.032	0.66	<0.005	<0.05	<0.2	0.018	10500	<0.02	<0.010	0.36	8	0.043	375	0.78	0.109	<0.02	<0.02	7380	3390	0.59	<0.02	849	9.17	0.018	<0.05	0.3	<0.002	<0.05	12.2
2400	Gut	WP	59.3	15	3.8	<0.005	0.093	5.66	<0.005	<0.05	<0.3	0.143	2090	0.18	0.03	1.33	19	0.111	166	2.18	0.02	0.03	0.09	2500	2340	0.84	<0.03	761	4.28	0.019	<0.05	0.41	0.004	<0.05	16.5
2401	Whole	WP	73	2.3	<1.0	<0.005	0.033	0.91	<0.005	<0.05	<0.2	0.024	10600	<0.02	<0.010	0.3	5	0.088	356	0.85	0.149	<0.02	<0.02	6810	3250	0.47	<0.02	953	8.78	0.015	<0.05	0.32	<0.002	<0.05	13.5
2401	Gut	WP	44.4	42	<1.0	<0.005	0.145	2.57	<0.005	<0.05	<0.2	0.216	154	0.14	0.023	1.24	15	<0.010	95	0.4	0.018	<0.02	0.06	1230	1760	0.71	<0.02	716	0.17	0.014	<0.05	0.15	<0.002	<0.05	11.3
2402	Whole	WP	71	2.1	<1.0	<0.005	0.092	1.72	<0.005	<0.05	<0.2	0.014	24500	<0.02	<0.010	0.25	6	0.046	587	2.2	0.077	<0.02	<0.02	15000	3680	0.47	<0.02	1080	21.6	0.028	<0.05	0.64	<0.002	<0.05	15.2
2402	Gut	WP	64.5	20	<1.0	<0.005	0.085	1.18	<0.005	<0.05	<0.3	0.134	391	0.27	0.036	0.94	17	0.036	145	0.77	0.019	0.03	0.13	1740	2270	0.89	<0.03	823	0.57

Large Body Fish Tissue Metals Data

Sample_No	Tissue	Species	Moisture	Total Lipids	Aluminum	Antimony	Arsenic	Barium	Beryllium	Bismuth	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Phosphorus	Potassium	Selenium	Silver	Sodium	Strontium	Thallium	Tin	Titanium	Uranium	Vanadium	Zinc
2425	Gut	WP	57.6	26	5.3	0.019	0.081	1.88	<0.005	<0.05	<0.2	0.164	3820	0.17	0.037	1.02	37	0.22	183	2.74	0.02	0.03	0.09	3300	1770	0.76	<0.02	892	8.8	0.017	<0.05	0.85	0.006	0.05	18.7
2426	Fillet	WP	78.9	0.8	<1.0	<0.005	0.028	0.48	<0.005	<0.05	<0.2	<0.005	3490	<0.02	<0.010	0.18	<2	0.014	308	0.4	0.177	<0.02	<0.02	3760	3860	0.41	<0.02	418	3.5	0.015	<0.05	0.13	<0.002	<0.05	7.4
2427	Whole	WP	76.8	4.1	<1.0	<0.005	<0.012	0.2	<0.005	<0.05	<0.2	0.007	1330	<0.02	0.013	0.7	8	0.03	222	0.28	0.025	<0.02	<0.02	2570	3020	0.6	<0.02	547	1.86	0.015	<0.05	<0.12	<0.002	<0.05	11.4
2427	Gut	WP	48.8	24	1.4	0.007	0.089	0.87	<0.005	<0.05	<0.2	0.085	2210	0.04	0.017	1.18	17	0.142	126	1.16	0.012	<0.02	<0.02	2380	1770	0.62	<0.02	530	5.07	0.011	<0.05	0.26	0.002	<0.05	13
2430	Fillet	MW	75.8	1.9	<1.0	<0.005	0.019	0.28	<0.005	<0.05	<0.2	0.006	1510	0.1	0.011	0.46	4	0.01	298	0.42	0.017	<0.02	0.05	3140	3850	0.56	<0.02	409	1.92	0.019	<0.05	<0.12	<0.002	<0.05	7.6
2431	Whole	WP	71.7	3	<1.0	<0.005	0.033	0.96	<0.005	<0.05	<0.2	0.007	16400	<0.02	<0.010	0.26	5	0.019	436	1.29	0.105	<0.02	<0.02	10200	3360	0.5	<0.02	825	15.5	0.011	<0.05	0.37	<0.002	<0.05	14.6
2431	Gut	WP	52.4	29	10	0.012	0.116	1.34	<0.005	<0.05	<0.2	0.101	3480	0.2	0.032	0.78	42	0.206	162	3.25	0.02	0.03	0.11	2980	1760	0.72	<0.02	596	8.26	0.013	<0.05	1.53	0.013	0.07	21.8
2432	Fillet	WP	77.1	1	<1.0	<0.005	0.079	0.72	<0.005	<0.05	<0.2	<0.005	8390	<0.02	<0.010	0.24	<2	0.011	362	1	0.163	<0.02	<0.02	6690	3890	0.46	<0.02	704	8.17	0.026	<0.05	0.21	<0.002	<0.05	10
2433	Whole	WP	74.9	2	<1.0	<0.005	0.03	0.33	<0.005	<0.05	<0.2	0.009	3550	<0.02	<0.010	0.25	6	<0.010	246	0.35	0.148	<0.02	<0.02	3700	3290	0.48	<0.02	655	3.76	0.012	<0.05	0.2	<0.002	<0.05	9.2
2433	Gut	WP	36.9	38	2.9	<0.005	0.105	1.5	<0.005	<0.05	<0.2	0.09	493	0.21	0.023	0.52	17	0.015	89	0.76	0.014	<0.02	0.1	1310	1660	0.57	<0.02	452	1.15	0.017	<0.05	0.35	<0.002	<0.05	9.1
2436	Fillet	MW	78.3	2.1	<0.9	<0.005	0.022	0.28	<0.005	<0.05	<0.2	0.025	642	<0.02	0.013	0.55	11	0.022	183	0.15	0.097	<0.02	0.03	1850	2840	0.75	<0.02	978	0.61	0.006	<0.05	<0.12	<0.002	<0.05	10.5
2437	Fillet	MW	70.5	8.2	<1.0	<0.005	0.032	0.32	<0.005	<0.05	<0.2	0.008	1180	0.06	0.022	0.5	5	<0.010	295	0.28	0.018	<0.02	0.03	2900	3650	0.54	<0.02	333	1.27	0.013	<0.05	<0.12	<0.002	<0.05	9.9
2438	Fillet	RB	70.5	4.4	<0.9	<0.005	0.035	0.43	<0.005	<0.05	<0.2	<0.005	1730	0.03	<0.009	0.52	4	0.018	297	0.31	0.025	<0.02	<0.02	3220	3520	0.51	<0.02	382	2.68	0.028	<0.05	0.12	<0.002	<0.05	12.7
2439	Whole	MW	73.7	4.8	<1.0	<0.005	0.021	0.25	<0.005	<0.05	<0.2	0.011	2750	<0.02	<0.010	0.37	6	<0.010	264	0.58	0.018	<0.02	<0.02	3270	3230	0.96	<0.02	516	4.37	0.012	<0.05	0.19	<0.002	<0.05	11.4
2439	Guts	MW	63.6	20	260	0.759	0.498	12.3	0.012	<0.05	0.3	0.886	369	2.05	0.424	15.2	967	2.36	277	33.8	0.02	0.19	1.25	1990	2490	1.55	0.17	815	1.79	0.069	0.9	23	0.195	0.77	157
2443	Fillet	MW	74.1	2.7	<1.0	<0.005	0.022	0.17	<0.005	<0.05	<0.2	<0.005	1370	<0.02	<0.010	0.51	3	<0.010	310	0.31	0.017	<0.02	<0.02	3210	4010	0.49	<0.02	369	1.75	0.016	<0.05	<0.12	<0.002	<0.05	8.6
2444	Fillet	RB	74.1	2.9	1.6	<0.005	0.025	347	<0.005	<0.05	<0.2	<0.005	1870	0.06	<0.009	0.58	5	<0.009	275	0.32	0.024	0.03	0.03	3190	3790	0.36	<0.02	538	8.27	0.007	<0.05	0.18	<0.002	<0.05	11.2
2445	Whole	MW	72.1	4	<1.0	<0.005	0.03	0.39	<0.005	<0.05	<0.2	0.013	8500	<0.02	0.013	0.42	7	0.04	357	1.81	0.014	<0.02	<0.02	6560	3260	1	<0.02	646	10	0.012	<0.05	0.26	<0.002	<0.05	13.2
2445	Gut	MW	54.7	28	110	0.189	0.212	6.62	0.005	<0.05	<0.2	0.354	291	0.45	0.177	5.39	432	1.95	193	36.3	0.012	0.11	0.47	1560	1850	1.49	<0.02	697	0.99	0.033	0.4	8.52	0.097	0.36	84.6
2447	Whole	RB	69.8	6.2	<1.0	<0.005	0.021	0.32	<0.005	<0.05	<0.2	0.01	3090	<0.02	0.011	1.11	13	0.091	252	0.87	0.021	<0.02	<0.02	3480	3010	0.63	<0.02	552	4.07	0.009	<0.05	0.21	0.003	<0.05	14.9
2447	Guts	RB	64.3	17	127	0.241	0.151	3.72	0.006	<0.05	<0.2	0.142	309	1.09	0.159	3.83	411	1.61	199	10.3	0.014	0.07	0.67	1650	2310	0.78	<0.02	852	2.05	0.02	0.3	16	0.13	0.45	84.5
2448	Fillet	MW	74.3	3.6	<1.0	<0.005	0.042	0.28	<0.005	<0.05	<0.2	<0.005	1800	0.04	0.011	0.56	4	0.018	297	0.44	0.019	<0.02	<0.02	3250	3630	0.55	<0.02	364	2.35	0.015	<0.05	0.12	<0.002	<0.05	9.4
2449	Whole	RB	71.1	5.4	<1.0	<0.005	<0.012	0.12	<0.005	<0.05	<0.2	0.006	926	<0.02	<0.010	0.4	8	0.025	249	0.16	0.052	<0.02	<0.02	2560	3220	0.65	<0.02	454	1.12	0.009	<0.05	<0.12	<0.002	<0.05	6.6
2449	Gut	RB	54.7	26	84.7	0.123	0.123	4.51	<0.005	<0.05	<0.2	0.179	7350	1.21	0.104	7.21	231	0.836	201	9.35	0.027	0.05	0.6	2890	1950	0.82	0.03	843	14	0.026	0.1	11.9	0.089	0.32	83.4
2452	Whole	RB	74.4	7.6	<1.0	<0.005	0.014	0.2	<0.005	<0.05	<0.3	0.009	1550	<0.03	0.012	1.91	16	0.043	246	0.39	0.019	<0.03	<0.03	2690	2730	0.79	<0.03	545	1.92	0.009	<0.05	<0.13	<0.003	<0.05	10.8
2452	Gut	RB	62.1	17	68.5	0.066	0.109	1.98	<0.005	<0.05	<0.2	0.377	550	0.94	0.182	3.96	214	0.747	184	10.6	0.012	0.07	0.65	1610	1990	0.78	<0.02	808	1.12	0.026	0.09	9.05	0.1	0.25	217
2455	Whole	MW	66.4	6	1.8	<0.005	0.041	0.42	<0.005	<0.05	<0.3	0.014	9690	<0.03	<0.010	0.43	7	0.022	360	1.02	0.015	<0.03	<0.03	7150	3290	0.69	<0.03	542	10.1	0.009	<0.05	0.38	<0.003	<0.05	14.7
2455	Gut	MW	60.5	23	657	1.18	0.805	34.2	0.03	<0.05	1.2	0.508	1470	3.17	1.05	38.3	4200	23.4	446	137	0.021	0.53	1.29	1820	2070	1.75	0.1	952	5.74	0.051	4.2	37.5	0.185	2.12	475
2456	Fillet	RB	73.1	2.6	<1.0	<0.005	0.016	0.19	<0.005	<0.05	<0.2	<0.005	674	<0.02	<0.010	0.6	5	0.036	278	0.16	0.039	<0.02	<0.02	2850	3920	0.49	<0.02	412	1.13	0.012	<0.05	<0.12	<0.002	<0.05	7.6
2458	Fillet	RB	71.4	4.3	<1.0	<0.005	0.028	0.29	<0.005	<0.05	<0.2	<0.005	1060	<0.02	<0.010	0.39	5	0.055	281	0.28	0.029	<0.02	<0.02	2930	3660	0.54	<0.02	378	1.83	0.01	<0.05	<0.12	<0.002	<0.05	8.4
2461	Fillet	RB	71.9	3.3	<1.0	<0.005	0.041	0.25	<0.005	<0.05	<0.2	<0.005	913	<0.02	0.011	0.55	5	0.023	258	0.21	0.027	<0.02	<0.02	2570	3300	0.51	<0.02	487	1.34	0.01	<0.05	<0.12	<0.002	<0.05	8.1
2462	Fillet	RB	71.3	3.8	<1.0	<0.005	0.037	0.23	<0.005	<0.05	<0.2	<0.005	1460	<0.02	<0.010	0.39	4	0.034	287	0.29	0.028	<0.02	<0.02	3100	3650	0.52	<0.02	401	1.82	0.017	<0.05	<0.12	<0.002	<0.05	8.5
2463	Whole	RB	72.6	3.6	<1.0	<0.005	0.039	0.5	<0.005	<0.05	<0.2	0.008	3980	<0.02	0.012	0.71	10	0.046	268	0.86	0.015	<0.02	<0.02	3820	3110	0.54	<0.02	588	5.17	0.013	<0.05	0.23	<0.002	<0.05	12.5
2463	Gut	RB	71.8	10	54.3	0.122	0.705	1.76	<0.005	<0.05	<0.2	0.456	228	0.51	0.147	8.27	201	1.35	243	8.63	0.017	0.08	0.51	2300	2810	0.99	0.03	951	0.71	0.025	0.2	7.56	0.074	0.2	113
2465	Fillet	MW	70.2	8.2	<1.0	<0.005	0.031	0.56	<0.005	<0.05	<0.2	0.005	2830	<0.02	0.014	0.54	4	0.011	314	0.48	0.019	<0.02	<0.02	3840	3520	0.48	<0.02	309	3.43	0.012	<0.05	0.19	<0.002	<0.05	13.9
2466	Whole	RB	68.8	3.9	<1.0	<0.005	0.027	0.44	<0.005	<0.05	<0.3	0.011	6580	<0.03	0.018	1.12	12	0.093	336	1.26	0.024	<0.03	0.03	5550	3320	0.78	<0.03	677	7.44	0.011	<0.05	0.23	0.003	<0.05	15.2
2466	Gut	RB	68.8	11	589	0.523	0.489	16.8	0.025	<0.05	0.3	0.343	1950	7.1	0.713	11.9	1860	8.71	576	69.6	0.013	0.22	3.83	2090	2090	0.66	0.03	842	5.22	0.039	1.1	73.8	0.58	2.01	202
2467	Whole	MW	63.4	8.4	<1.0	<0.005	0.046	0.29	<0.005	<0.05	<0.2	0.007	5820	<0.02	0.015	0.43	6	0.021	338	0.99	0.018	<0.02	<0.02	5120	3270	0.97	<0.02	532	6.28	0.012	<0.05	0.29	<0.002	<0.05	12.1
2467	Gut	MW	67.5	17	170	0.199	0.233	8.8	0.008	<0.05	<0.2	0.381	257	0.78	0.244	5.91	493	2.02	234	37.9	0.02	0.15	0.85	1730	1960	1.99	<0.02	1210	1.26	0.036	0.3	14.1	0.076	0.55	98.2
2471	Fillet	RB	67.5	7.3	<1.0	<0.005	0.05	0.27	<0.005	<0.05	<0.2	0.007	908	<0.02	<0.010	0.41	5	0.042	249	0.29	0.032	<0.02	0.03	2590	3220	0.51	<0.02	416	1.49	0.013	<0.05	<0.12	<0.002	<0.05	8.9
2472	Whole	RB	71.2	2.5	<1.0	<0.005	0.021	0.82	<0.005	<0.05	<0.2	0.012	16800	<0.02	<0.010	0.3	7	0.025	450	1.09	0.08	<0.02	<0.02	11100	3500	0.55	<0.02	980	14.5	0.016	<0.05	0.43	<0.002	<0.05	12.9
2472	Gut	RB	73.5	3.2	1.1	0.034	0.025	4.05	<0.005	<0.05	<0.2	0.108	17500	0.23	0.034	0.74	25	0.383	367	4.9	0.029	0.03	0.11	10900	2170	0.92	<0.02	924	40.7	0.025	<0.05	0.43	0.009	0.12	80.4
2476	Whole	RB	71.6	4	<1.0	<0.005	0.03	0.23	<0.005	<0.05	<0.2	0.015	1700	<0.02	0.016	0.48	10	0.048	247	0.44	0.019	<0.02	0.03	2880	3310	0.6	<0.02	579	2.33	0.009	<0.05	0.13	0.002	<0.05	10.9
2476	Gut	RB	66.1	12	695	2.05	0.568	17.7	0.031	<0.05	0.2	0.353	794	4.67	0.731	16.5	2270	7.75	603	65.5	0.01	0.28	2.73	2100	2260	0.59	0.08	858	3.71	0.042	1.9	82.3	0.758	2.41	218
2477	Fillet	RB	74.5	1.6	<1.0	<0.005	0.019	0.29	<0.005	<0.05	<0.2	<0.005	1140	<0.02	<0.010	0.4	4	0.017	262	0.19	0.025	<0.02	<0.02	2760	3770	0.45	<0.02	384	1.7	0.018	<0.05	0.14	<0.002	<0.05	6
2478	Whole	MW	70.8	5.4	<1.0	<0.005	0.029	0.23	<0.005	<0.05	<0.2	0.013	5700	<0.02	0.013	0.43	10	0.042	318	0.75	0.015	<0.02	<0.02	5160	3340	1.08	<0.02	613	5.99	0.009	<0.05	0.23	<0.002	<0.05	11.2
2478	Gut	MW	55.7	23	96.4	0.218	0.181	6.73	<0.005	<0.05	<0.2	0.282	257	0.56	0.202	4.81	483	1.37	186	27.9	0.013	0.1	0.43	1880	2080	1.96	<0.02	789	0.9	0.024	1.1	7.23	0.034	0.29	144
2479	Fillet	RB	71.9	2.9	<1.0	<0.005	0.029	0.95	<0.005	<0.05	<0.2	<0.005	910	<0.02	<0.010	0.42	5	0.021	257	0.21	0.024	<0.02	<0.02	2720	3760	0.45	<0.02	344	1.43	0.014	<0.05	0.12	<0.002	<0.05	7.7
2502	Fillet	MW	75.5	2	<1.0	<0.005	0.024	0.39	<0.005	<0.05	<0.2	<0.005	1730	<0.02	0.013	0.49	3	0.018	296	0.64	0.017	<0.02	<0.02	3090	3790	0.52	<0.02	328	2.11	0.02	<0.05	0.13	<0.002	<0.05	10.2
2509	Whole	MW	67.5	9.8	<0.9	<0.005	0.044	0.13	<0.005	<0.05	<0.2	0.023	2560	<0.02	0.02	0.44	8	0.024	268	0.48	0.017	<0.02	<0.02	3430	3160	1.22	<0.02	479	2.6	0.011	<0.05	0.14	<0.002	<0.05	9.7
2509	Gut	MW	71.1	24	362	0.689	0.52	17.9	0.015	<0.05	0.5	0.461	671	1.7	0.489	23.3	1970	9.31	311	58.2	0.014	0.25	1.18	1720	2010	1.58	0.04	1160	2.84	0.031	0.8	29.3	0.101	1.04	199
2510	Whole	MW	73.4	3	<0.9	<0.004	0.037	0.23	<0.004	<0.04	<0.2	0.035	3100	<0.02	0.029	0.42	8	0.027	273	0.97	0.017	<0.02	<0.02	3660	3590	0.93	<0.02	595	3.31	0.01	<0.04	0.16	<0.002	<0.04	13.4
2510	Gut	MW	71.6	14	175	0.192	0.449	12.5	0.009	<0.05	<0.2	1.58	454	0.62	0.258	6.87	663	11.5	237	44.5	0.017	0.18	0.62	1880	2050	1.66	0.04	845	1.65	0.044	0.4	13.2	0.143	0.54	133
2522	Fillet	MW	67.8	6.3	<1.0	<0.005	0.042	0.25	<0.005	<0.05	<0.3	0.01	2190	<0.03	0.019	0.51	4	0.02	312	0.53	0.019	<0.03	<0.03	3470	3480	0.6	<0.03	293	3.02	0.035	<0.05	0.16	<0.003	<0.05	9.1
2536	Whole	MW	63	8.1	<0.9	<0.005	0.055	0.07	<0.005	<0.05	<0.2	0.023	957	<0.02	0.025	0.55	10	0.013	250	1.37	0.023	<0.02	<0.02	2720	2590	1.81	<0.02	647	0.83	0.008	<0.05	0.15	<0.002	<0.05	13.3
2536	Gut	MW	63.6	12	484	0.561	0.383	17.9	0.021	<0.05	0.6	0.389	795	2.44	0.613	24.3	2250	4.72	436	56.7	0.022	0.26	1.24	1700	2050	1.17	0.1	1030	2.73	0.035	1.1	55.3	0.214	1.7	343
2539	Fillet	MW	70.7	3.7	<1.0	<0.005	0.028	0.3	<0.005	<0.05	<0.3	<0.005	2770	<0.03	<0.010	0.41	3	0.019	324	0.79	0.021	<0.03	<0.03	3740	3760	0.62	<0.03	326	3.45	0.011	<0.05	0.17	<0.003	<0.05	10.9
2609	Gut	RB	69.4	7.9	531	0.258	0.413	13.2	0.023	<0.04	<0.2	0.521	571	2.79	0.553	7.45	1300	5.63	548	54.2	0.016	0.16	2.23	2170	2560	0.71	0.03	937	4.07	0.056	0.5	69.7	0.785	1.87	124
3067	Whole	WP	75.2	1.1	<0.9	<0.005	0.029	0.27	<0.005	<0.05	<0.2	0.009	4680	<0.02	<0.009	0.31	7	<0.009	268	0.33	0.2	<0.02	<0.02	4040	3020	0.4	<0.02	746	3.93	0.006	<0.05	0.16	<0.002	<0.05	10.5
3067	Gut	WP	39.3	49	<0.9	<0.004	0.273	0.13	<0.004	<0.04	<0.2	0.038	270	0.05	<0.009	0.37	17	<0.009	90	0.45	0.02	<0.02	0.09	1210	1300	0.49	<0.02	601	0.41	0.009	<0.04	<0.11	<0.002	<0.04	9.1
3068	Whole	RB	74.1	0.9	<0.9	<0.004	0.093	0.55	<0.004	<0.04	<0.2	0.01	5990	<0.02	0.009	0.86	16	<0.009	320	0.75	0.065	<0.02	<0.02	5060	3110	0.48	<0.02	786	8.65	0.019	<0.04	0.2	<0.002	<0.04	22.5
3068	Gut	RB	74.7	2.4	169	0.008	0.197	8.02	0.007	<0.05	<0.2	0.12	8610	0.62	0.123	8.25	367	0.351	343	18.8	0.04	0.08	0.53	3830	2500	1.06	0.05	1200	24.4	0.035	<0.05	12.4	0.054	0.47	220
3069	Fillet	RB	73.4	1.5	<1.0	<0.005	0.076	0.31	<0.005	<0.05	<0.2	<0.005	1280	<0.02	<0.010	0.54	6	<0.010	265	0.27	0.073	<0.02	<0.02	2770	3560	0.33	<0.02	511	2.3	0.011	<0.05	0.12	<0.002	<0.05	12.4
3070	Fillet	RB	73.6	1.5	<1.0	<0.005	0.053	0.38	<0.005	<0.05	<0.2	<0.005	1190	<0.02	<0.010	0.45	7	<0.010	261	0.17	0.067	<0.02	<0.02	2750	3450	0.33	<0.02	344	2.2	0.01	<0.05	0.14	<0.002	<0.05	8.9
3071	Fillet	RB	74.2	1.6	<1.0	<0.005	0.036	0.26	<0.005	<0.05	<0.3	<0.005	985	<0.03	<0.010	0.4	3	<0.010	250	0.21	0.034	<0.03	<0.03	2690	3620	0.25	<0.03	356	1.75	0.004	<0.05	0.14	<0.003	<0.05	10.7
3072	Whole	RB	75.7	1	<1.0	<0.005	0.078	0.45	<0.005	<0.05	<0.2	0.009	3890	<0.02	<0.010	1.03	12	<0.010	278	0.63	0.08	<0.02	<0.02	3730	3040	0.41	<0.02	727	5.41	0.011	<0.05	0.19	<0.002	<0.05	18
3072	Gut	RB	82.1	1.7	8.8	<0.005	0.156	1.58	<0.005	<0.05	<0.2	0.129	823	0.12	0.016	2.5	66	0.132	191	2.06	0.03	0.06	0.08	2110	2540	0.63	<0.02	1190	2.65	0.016	<0.05	0.77	0.009	<0.05	211
3073	Fillet	RB	73.2	3.8	<1.0	<0.005	0.048	0.36	<0.005	<0.05	<0.2	<0.005	977	<0.02	<0.010	0.59	5	<0.010	230	0.18	0.03	<0.02	<0.02	2540	3630	0.36	<0.02	512	1.85	0.006	<0.05	0.12	<0.002	<0.05	9.4
3074	Whole	RB	70.1	4.6	<1.0	<0.005	0.048	0.86	<0.005	<0.05	<0.2	0.007	6410	<0.02	<0.010	0.48	8	<0.010	337	0.75	0.023	<0.02	<0.02	5390	3250	0.34	<0.02	691	11.8	0.007	<0.05	0.26	0.003	<0.05	21.4
3074	Gut	RB	72.2	10	14.1	<0.005	0.135	1.12	<0.005	<0.05	<0.2	0.14	1380	0.24	0.02	3.34	64	0.093	222	1.78	0.018	0.04	0.13	2280	3070	0.72	0.03	714	3.67	0.009	<0.05	1.21	0.007	<0.05	174
Duplicate 1 / Sample 2403	Fillet		76.6	0.7	<1.0	<0.005	0.053	0.37	<0.005	<0.05	<0.2	<0.005	4590	0.03	<0.010	0.33	<2	<0.010	318	0.43	0.189	<0.02	<0.02	4310	3700	0.47	<0.02	417	4.58	0.022	<0.05	0.15	<0.002	<0.05	7.1
Duplicate 2 / Sample 2443	Fillet		74.2	2.1	<1.0	<0.005	0.022	0.25	<0.005	<0.05	<0.2	<0.005	2460	<0.02	<0.010	0.45	3	<0.010	301	0.52	0.017	<0.02	<0.02	3510	3690	0.46	<0.02	344	3.32	0.017	<0.05	0.14	<0.002	<0.05	11.4
Duplicate 3 / Sample 2408	Fillet		74.9	2	<1.0	<0.005	0.025	0.33	<0.005	<0.05	<0.2	<0.005	793	<0.02	<0.010	0.45	3	0.049	248	0.22	0.024	<0.02	0.03	2560	3630	0.39	<0.02	328	1.4	0.01	<0.05	0.12	<0.002	<0.05	7.3
Duplicate 4 / Sample 2101	Fillet		75.9	1.3	<1.0	<0.005	0.022	0.45	<0.005	<0.05	<0.2	<0.005	4940	<0.02	<0.010	0.26	<2	<0.010	293	0.41	0.126	<0.02	<0.02	4460	3650	0.35	<0.02	386	5.22	0.011	<0.05	0.19	<0.002	<0.05	8.4
Duplicate 5 / Sample 2110	Fillet		76.9	1.6	<1.0	<0.005	<0.012	0.46	<0.005	<0.05	<0.2	<0.005	1140	0.06	<0.010	0.49	3	<0.010	278	0.39	0.019	<0.02	0.03	2790	3860	0.19	<0.02	363	2.21	0.004	<0.05	0.16	<0.002	<0.05	9.6
Duplicate 6 / Sample 2154	Fillet		73.2	4.5	<1.0	<0.005	<0.012	0.18	<0.005	<0.05	<0.2	<0.005	1040	0.05	<0.010	0.54	3	<0.010	207	0.31	0.011	<0.02	0.03	2080	2610	0.34	<0.02	269	1.37	<0.002	<0.05	0.17	<0.002	<0.05	6

Appendix L

Erosional Periphyton Statistical Outputs

Appendix A Periphyton Dredge Results

```
#TRANSFORMATIONS
master.data$log.chla=with(master.data,round(log10(chla),2))
master.data$log.tot.abun=with(master.data,log10(tot.abun))
master.data$log.tot.biov=with(master.data,log10(tot.biov))

quadratic                                =                                F
randomVariable                              =                             T


randomVariableTerms = c("site")
```

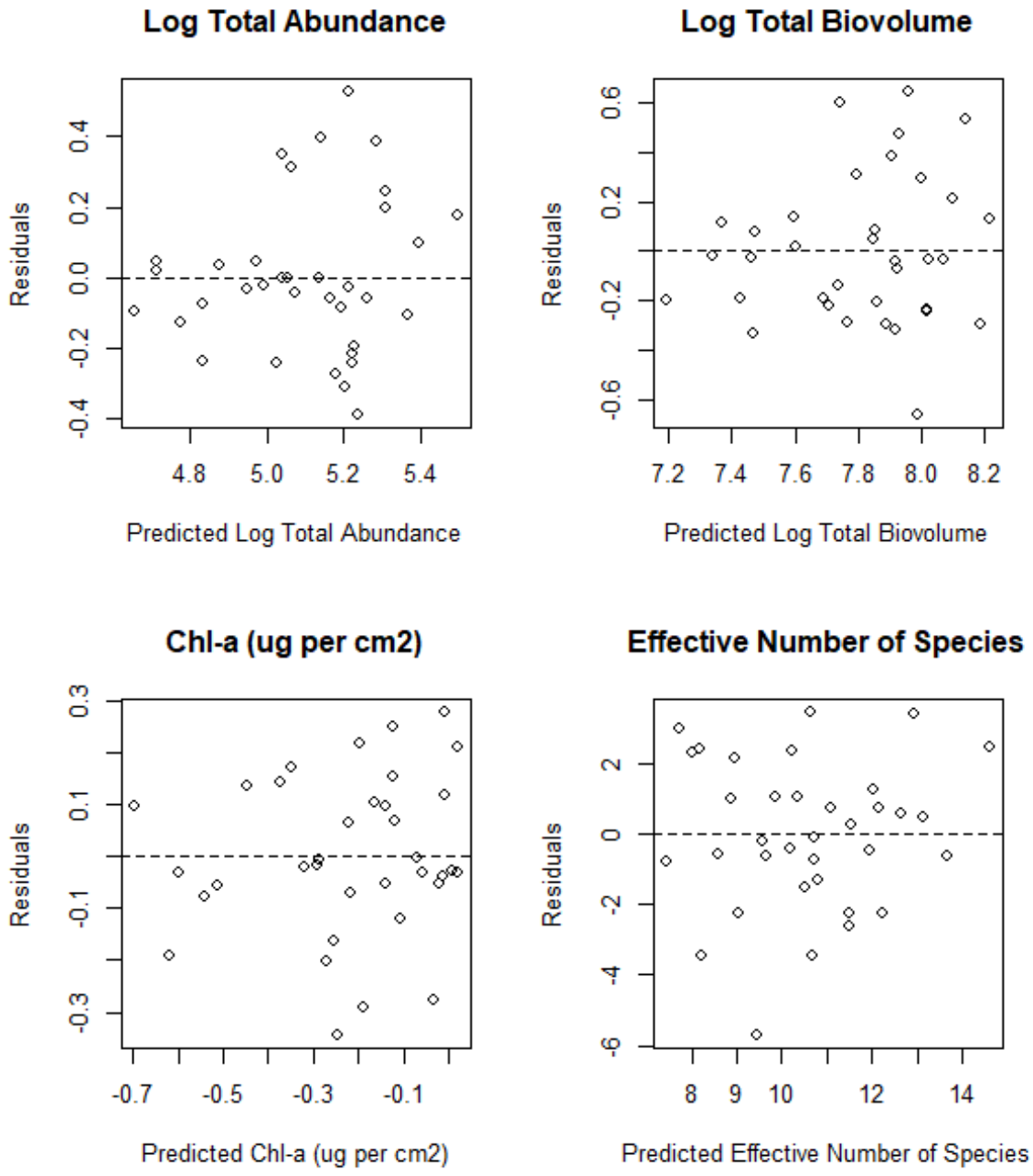


Figure A1. Residual Plots for Periphyton Models

1.1.1.1.1.1.1 Model average summaries of periphhyton models for all samples. The explanatory variables have standardized coefficients with 95% CLs.

response	variable	Estimate	Std.Error	lower.CI	upper.CI	rvi
Chl-a (ug per cm2)	D90	0.190	0.080	0.030	0.360	0.870
Chl-a (ug per cm2)	Distance to Hugh Keenleyside Dam (m)	-0.190	0.130	-0.460	0.090	0.390

response	variable	Estimate	Std.Error	lower.CI	upper.CI	rvi
Chl-a (ug per cm2)	Water Temperature	-0.130	0.090	-0.320	0.060	0.360
Chl-a (ug per cm2)	Average Velocity (m/s)	0.040	0.070	-0.110	0.190	0.200
Chl-a (ug per cm2)	Reference	0.020	0.200	-0.390	0.430	0.170
Chl-a (ug per cm2)	(Intercept)	-0.220	0.080	-0.380	-0.060	
Effective Number of Species	D90	1.940	0.950	0.020	3.870	0.720
Effective Number of Species	Average Velocity (m/s)	-1.720	0.890	-3.540	0.100	0.630
Effective Number of Species	Reference	-1.420	1.610	-4.700	1.870	0.250
Effective Number of Species	Water Temperature	0.570	1.150	-1.770	2.900	0.210
Effective Number of Species	Distance to Hugh Keenleyside Dam (m)	-0.830	1.410	-3.700	2.040	0.210
Effective Number of Species	(Intercept)	10.660	0.690	9.250	12.060	
Log Total Abundance	Average Velocity (m/s)	0.150	0.100	-0.060	0.360	0.460
Log Total Abundance	Water Temperature	-0.210	0.120	-0.460	0.030	0.440
Log Total Abundance	D90	0.120	0.110	-0.110	0.350	0.310
Log Total Abundance	Reference	-0.110	0.230	-0.570	0.360	0.180
Log Total Abundance	Distance to Hugh Keenleyside Dam (m)	-0.060	0.170	-0.420	0.300	0.150
Log Total Abundance	(Intercept)	5.100	0.090	4.910	5.290	
Log Total Biovolume	D90	0.270	0.150	-0.030	0.570	0.610
Log Total Biovolume	Average Velocity (m/s)	0.200	0.140	-0.090	0.480	0.400
Log Total Biovolume	Water Temperature	-0.270	0.160	-0.600	0.070	0.400
Log Total Biovolume	Reference	-0.050	0.270	-0.600	0.490	0.150
Log Total Biovolume	Distance to Hugh Keenleyside Dam (m)	-0.060	0.200	-0.470	0.360	0.140
Log Total Biovolume	(Intercept)	7.810	0.110	7.580	8.030	

1.1.1.1.1.1.2 Summary of the number of plausible models identified using model averaging (those with a AIC <3) and the range of pseudo-R2 values for selected models for all samples.

rows	minr2	maxr2	response
6	0.340	0.400	Chl-a (ug per cm2)
10	0.210	0.310	Effective Number of Species
11	0.100	0.240	Log Total Abundance
10	0.070	0.250	Log Total Biovolume

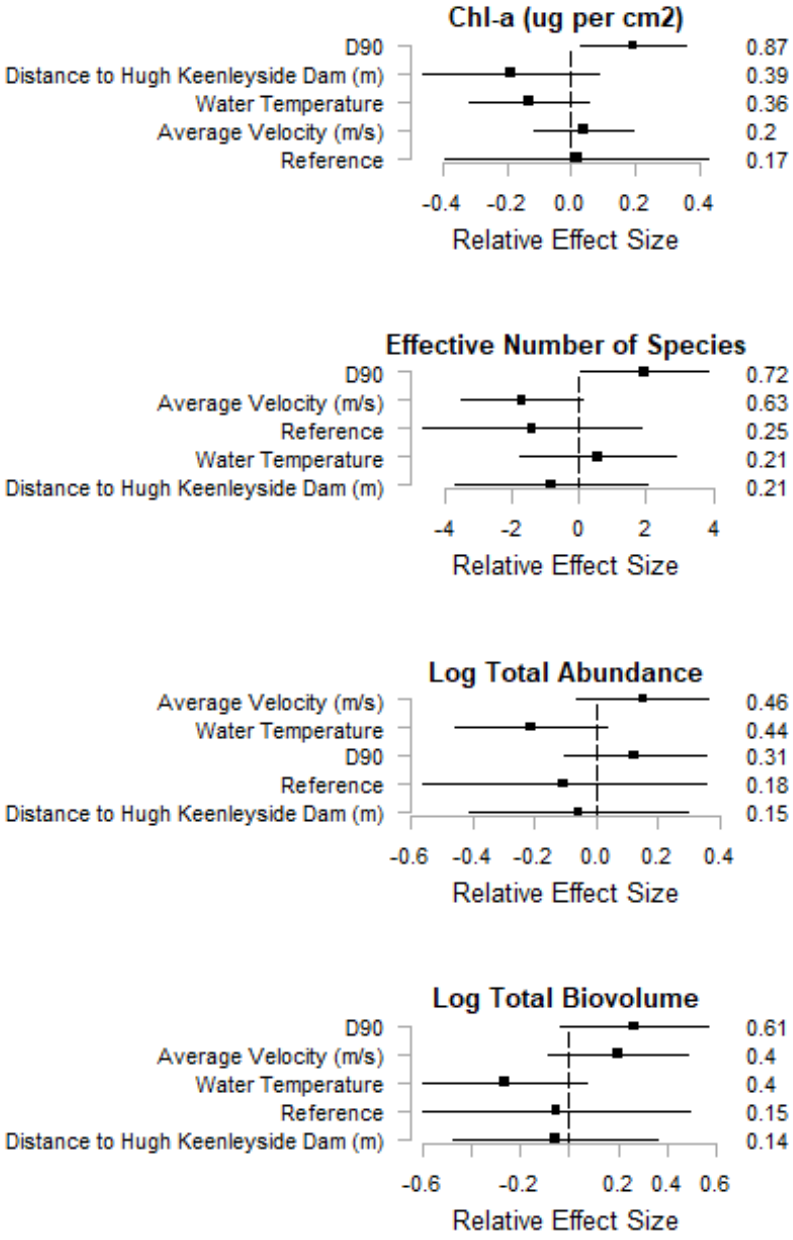


Figure A2. **The coefficients and their 95% CLs of standardized explanatory variables of periphyton production for all samplers except. Periphyton responses included abundance, chl-a, biovolume and effective number of species. Explanatory variables included total hours over 10 photons, velocity, depositional rate and cumulative submergence time. Coefficients were standardized to allow comparisons of the direction and size of effects, noting that variables with CLs that do not cross zero have an effect on the response variable. Key explanatory variables are those that have a relative variable importance (RVI) of greater than 0.6-0.7 and the RVI is shown on the right-hand side of each figure.**

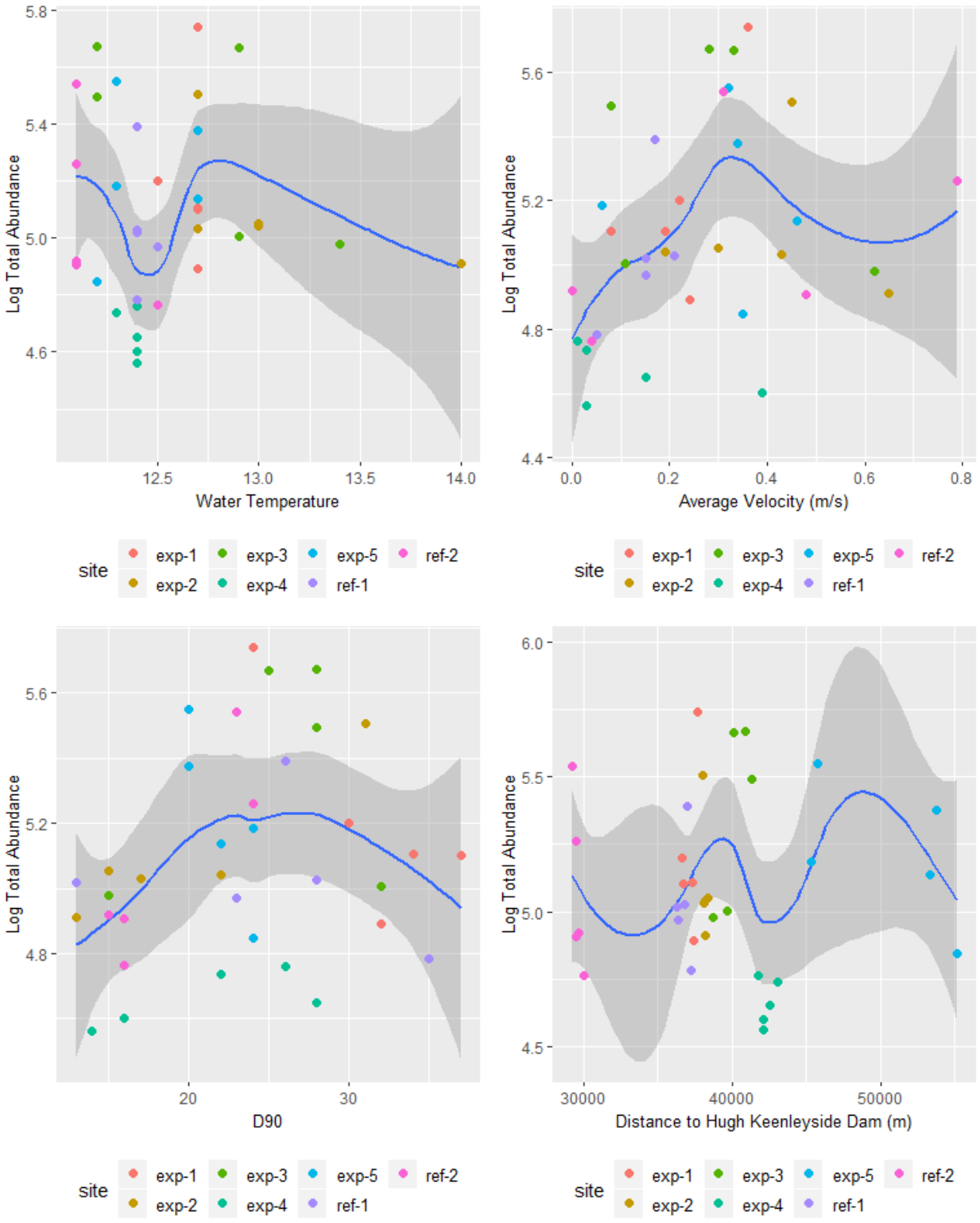


Figure A3. **Explanatory variables and log.tot.abun grouped by site for riverine samplers.**

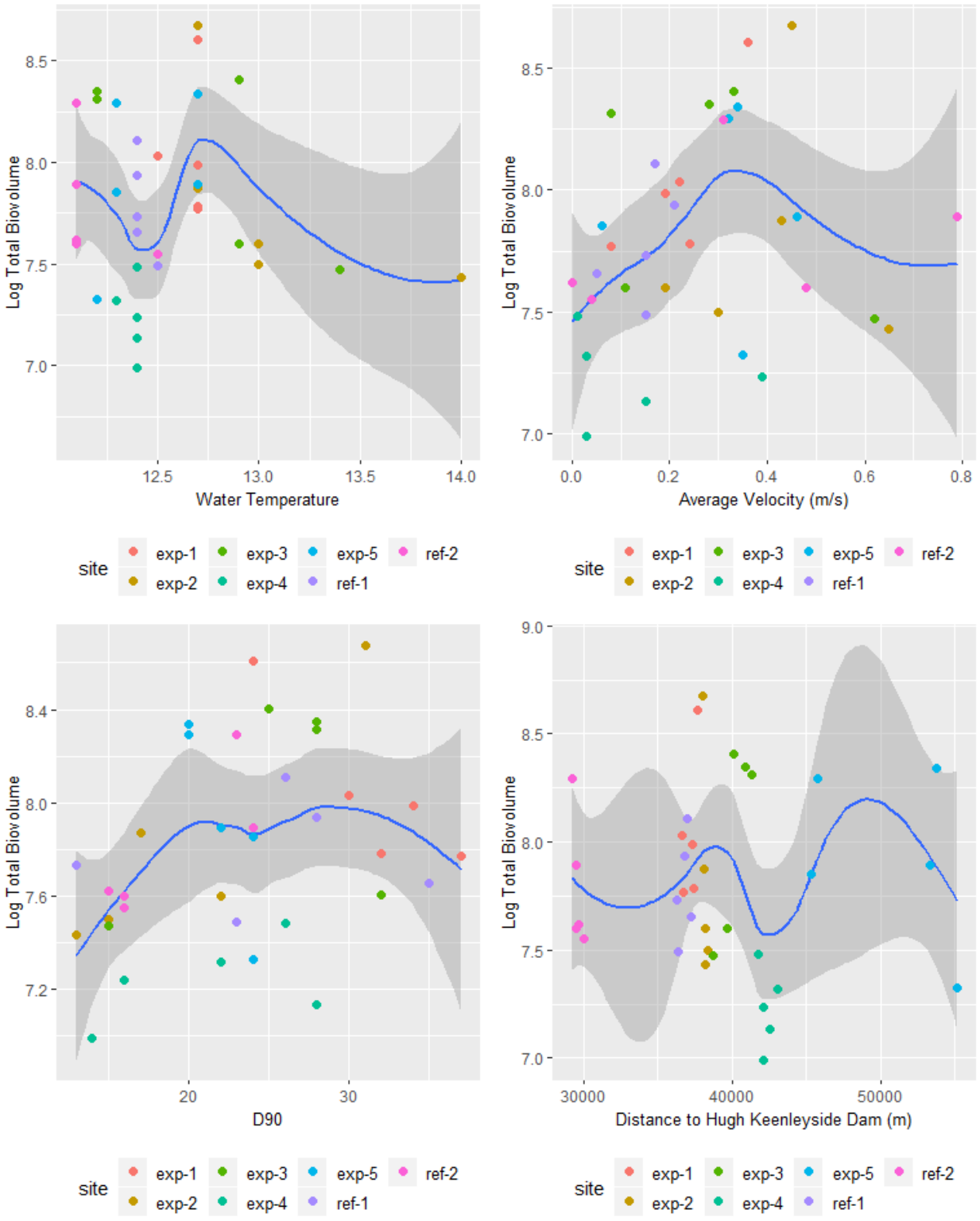


Figure A4. **Explanatory variables and log.tot.biov grouped by site for riverine samplers.**

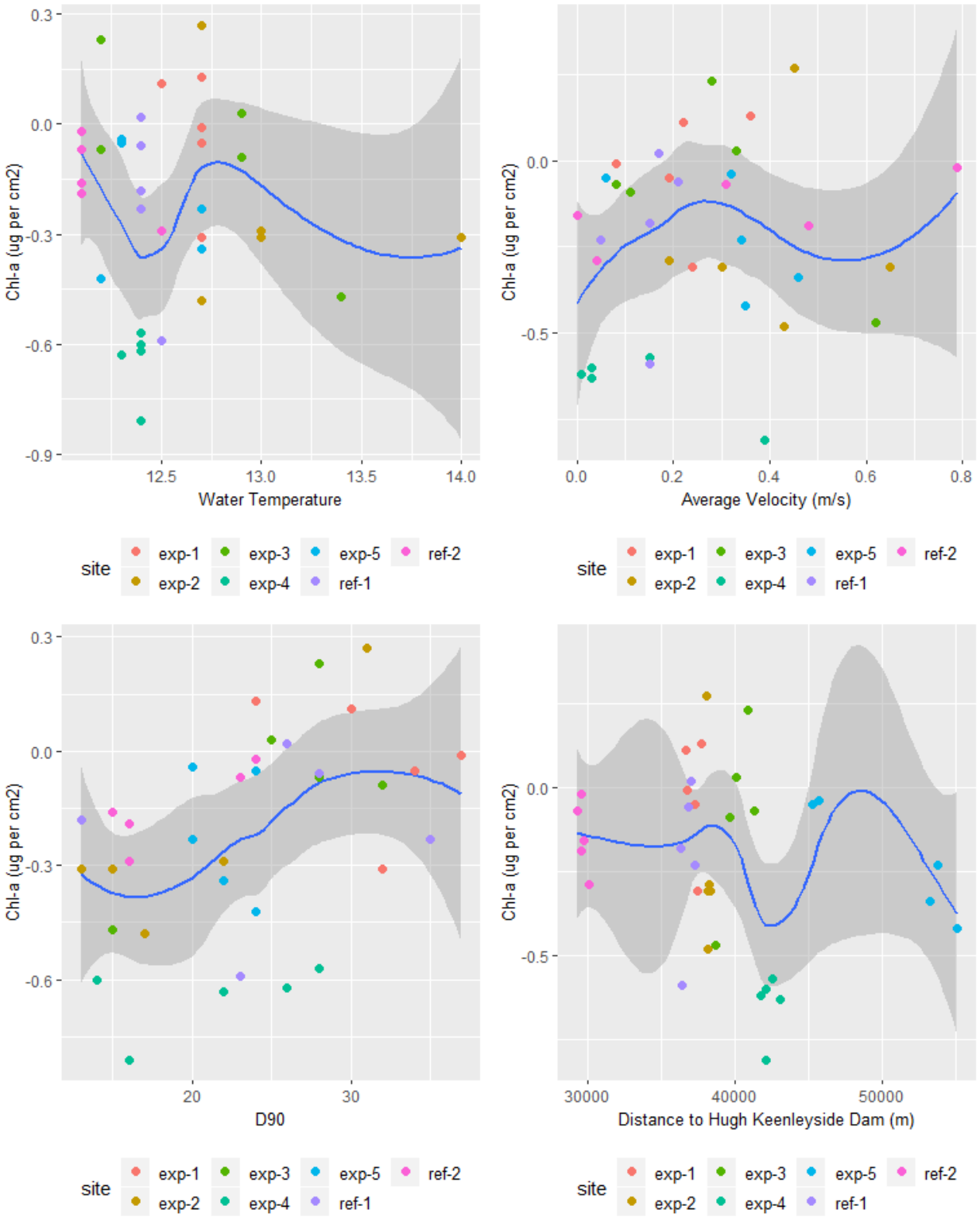


Figure A5. **Explanatory variables and log.chla grouped by site for riverine samplers.**

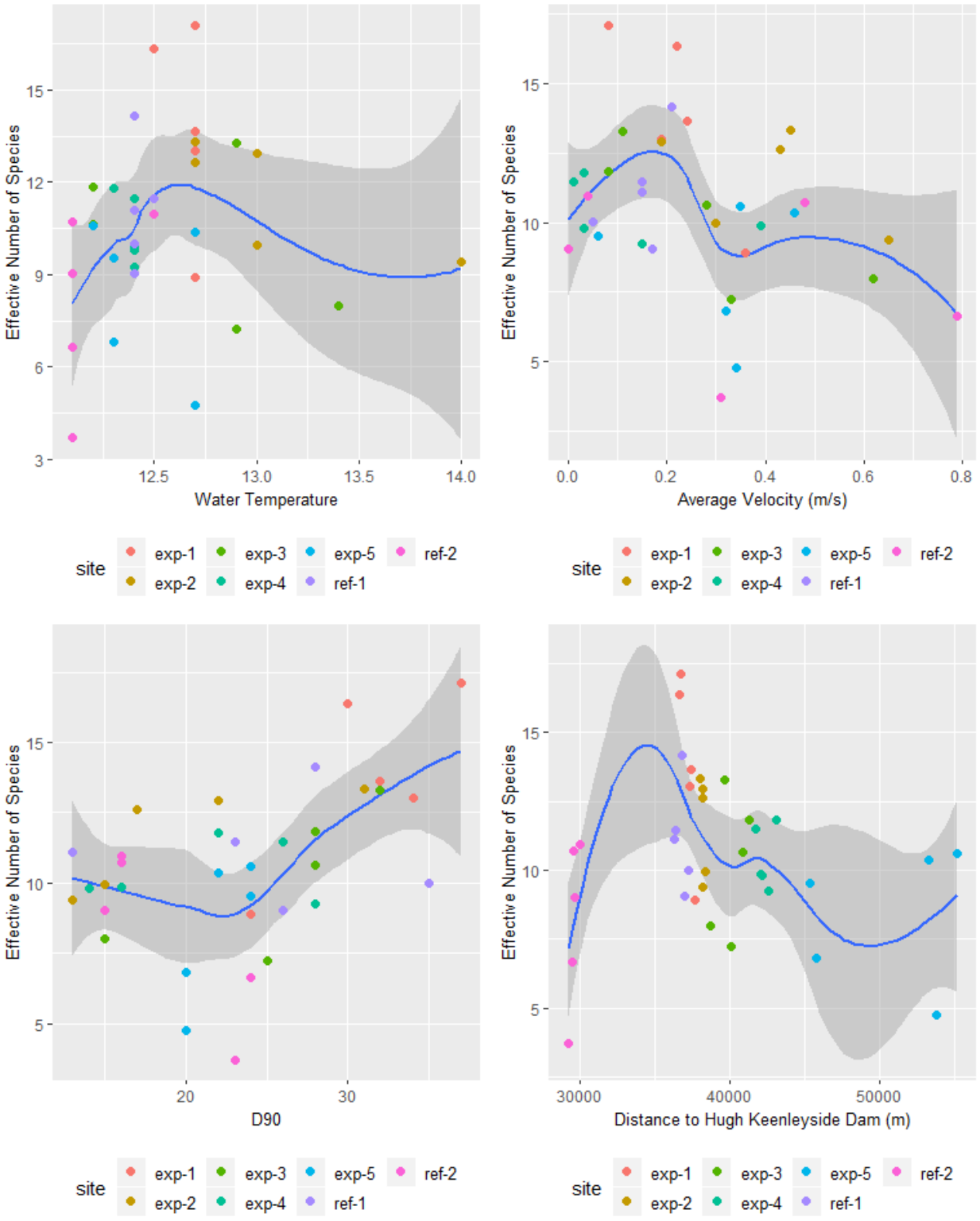


Figure A6. **Explanatory variables and H grouped by site for riverine samplers.**

Appendix M

Depositional Periphyton Statistical Outputs

Periphyton Depositional Sites Supplemental Results

```
# Log 10 Transform variables- total abundance and biovoulme
ml1$value=with(ml1,ifelse(variable %in%
c("tot.abun","tot.biov"),log10(value),value))

#checking Model assumptions
ddply(ml1,.(variable,lab),function(x)tidy(shapiro.test(x$value))$p.value)
```

variable	lab	V1
tot.abun	exp-2012	0.227
tot.abun	exp-2015	0.495
tot.abun	ref-2012	0.898
tot.abun	ref-2015	0.775
tot.biov	exp-2012	0.0259
tot.biov	exp-2015	0.281
tot.biov	ref-2012	0.663
tot.biov	ref-2015	0.69
H	exp-2012	0.402
H	exp-2015	0.891
H	ref-2012	0.173
H	ref-2015	0.135

```
ddply(ml1,.(variable),function(x)tidy(levene.test(x$value,x$lab))$p.value)
```

variable	V1
tot.abun	0.44
tot.biov	0.539
H	0.402

[1] "aov(value~year*ref_exp)"

ANOVA summary table for tot.abun depositional sites periphyton.

term	df	sumsq	meansq	statistic	p.value
x$year	1.000	1.146	1.146	31.794	0.000
x$ref_exp	1.000	0.046	0.046	1.285	0.273

term	df	sumsq	meansq	statistic	p.value
Residuals	17.000	0.613	0.036		

[1] "aov(value~year*ref_exp)"

ANOVA summary table for tot.biov depositional sites periphyton.

term	df	sumsq	meansq	statistic	p.value
x$year	1.000	1.265	1.265	25.904	0.000
x$ref_exp	1.000	0.016	0.016	0.320	0.579
Residuals	17.000	0.830	0.049		

[1] "aov(value~year*ref_exp)"

ANOVA summary table for H depositional sites periphyton.

term	df	sumsq	meansq	statistic	p.value
x$year	1.000	271.105	271.105	32.825	0.000
x$ref_exp	1.000	41.496	41.496	5.024	0.039
Residuals	17.000	140.405	8.259		

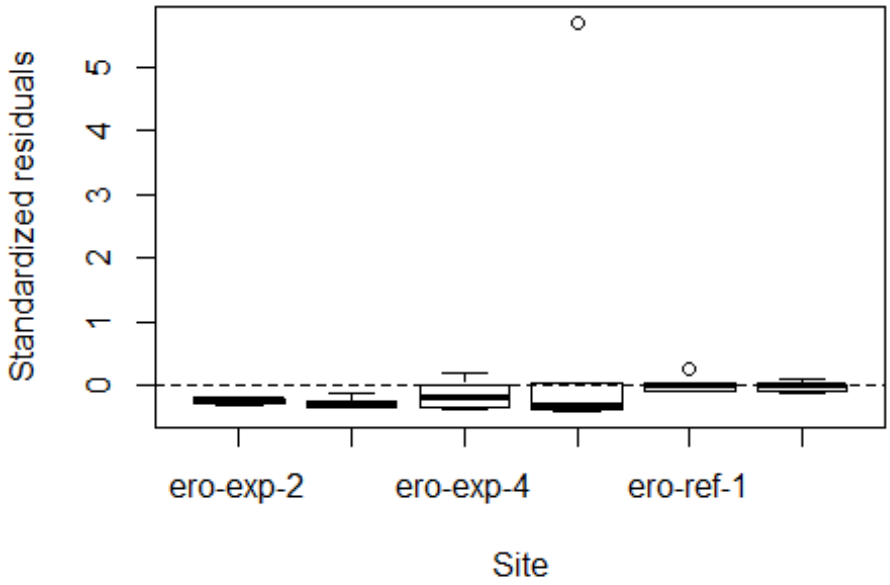
Appendix N

Periphyton ANOVA Mixed Effects Outputs

Anova Mixed Effects Peripyhton

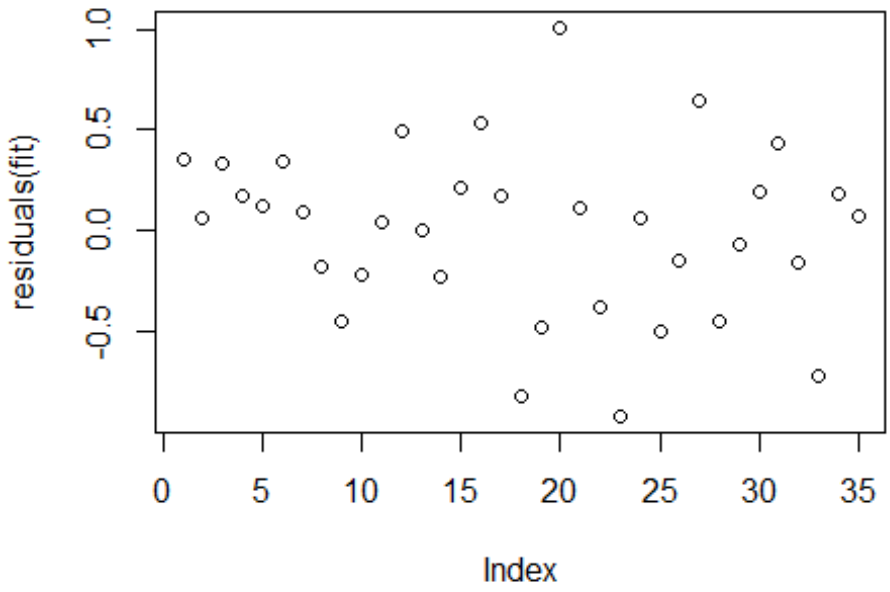
```
##   dep_ero ref_exp site transect taxa_group            label ben_group
## 1     ero     exp    2        1 Peripyhton 2015-ero-exp-2-1      <NA>
## 2     ero     exp    2        1         BI 2015-ero-exp-2-1 Caddisfly
## 3     ero     exp    2        2         BI 2015-ero-exp-2-2 Caddisfly
## 4     ero     exp    2        2 Peripyhton 2015-ero-exp-2-2      <NA>
## 5     ero     exp    2        3         BI 2015-ero-exp-2-3 Caddisfly
## 6     ero     exp    2        3 Peripyhton 2015-ero-exp-2-3      <NA>
##   CII_Dist       Bank   metal value   dl    label1
## 1     -478 Right Bank Arsenic 0.280 <NA> ero-exp-2
## 2     -478 Right Bank Arsenic 0.298 <NA> ero-exp-2
## 3     -383  Left Bank Arsenic 0.398 <NA> ero-exp-2
## 4     -383  Left Bank Arsenic 0.095 <NA> ero-exp-2
## 5     -346  Left Bank Arsenic 0.293 <NA> ero-exp-2
## 6     -346  Left Bank Arsenic 0.338 <NA> ero-exp-2

##    ref_exp    metal   V1
## 1      exp  Arsenic 0.00
## 2      exp  Cadmium 0.00
## 3      exp Chromium 0.00
## 4      exp   Copper 0.00
## 5      exp     Lead 0.00
## 6      exp  Mercury 0.00
## 7      exp Selenium 0.32
## 8      exp   Silver 0.04
## 9      exp Thallium 0.04
## 10     exp     Zinc 0.00
## 11     ref  Arsenic 0.00
## 12     ref  Cadmium 0.00
## 13     ref Chromium 0.00
## 14     ref   Copper 0.00
## 15     ref     Lead 0.00
## 16     ref  Mercury 0.20
## 17     ref Selenium 0.10
## 18     ref   Silver 0.90
## 19     ref Thallium 0.00
## 20     ref     Zinc 0.00

##       metal         V1
## 1   Arsenic 0.00000000
## 2   Cadmium 0.00000000
## 3  Chromium 0.00000000
## 4    Copper 0.00000000
## 5      Lead 0.00000000
## 6   Mercury 0.05714286
## 7  Selenium 0.25714286
## 8    Silver 0.28571429
```

```
## 9  Thallium 0.02857143
## 10     Zinc 0.00000000
```

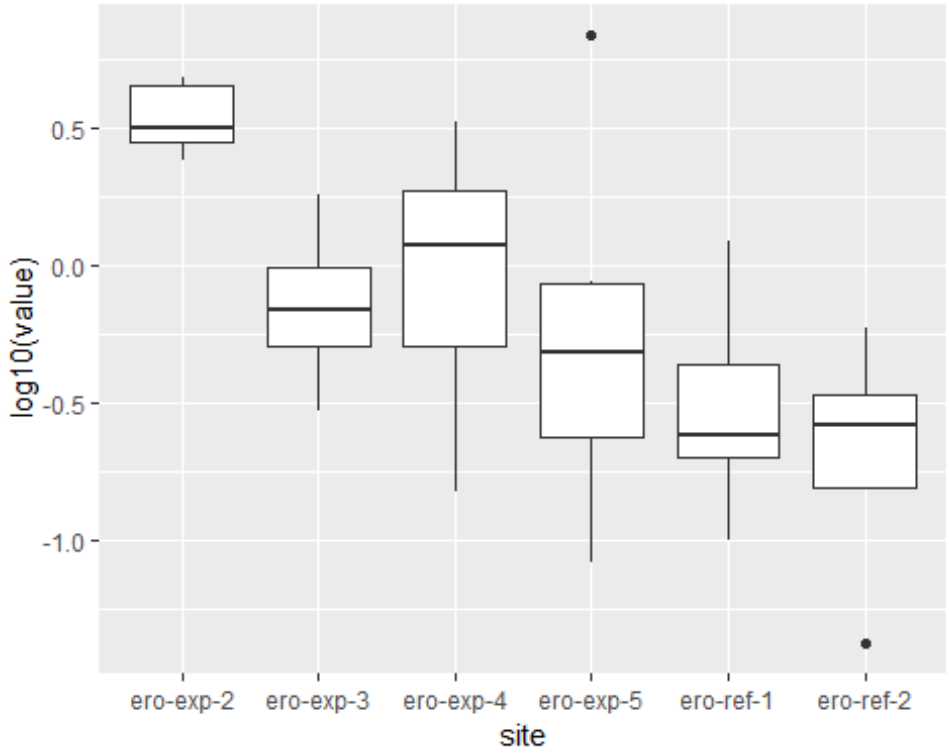



```
## Linear mixed model fit by REML. t-tests use Satterthwaite's method [
## lmerModLmerTest]
## Formula: log10(value) ~ (1 | site) + ref_exp
##    Data: x
##
## REML criterion at convergence: 49.2
##
## Scaled residuals:
##     Min      1Q  Median      3Q     Max
## -2.0783 -0.4990  0.1512  0.4596  2.2809
##
## Random effects:
##  Groups   Name        Variance Std.Dev.
##  site     (Intercept) 0.05796  0.2407
##  Residual             0.19458  0.4411
## Number of obs: 35, groups:  site, 6
##
## Fixed effects:
##             Estimate Std. Error       df t value Pr(>|t|)
## (Intercept)  0.01545    0.14973  3.52908   0.103   0.9234
## ref_expref  -0.62211    0.26619  3.93880  -2.337   0.0806 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
```

```
## Correlation of Fixed Effects:
##             (Intr)
## ref_expref -0.563
```



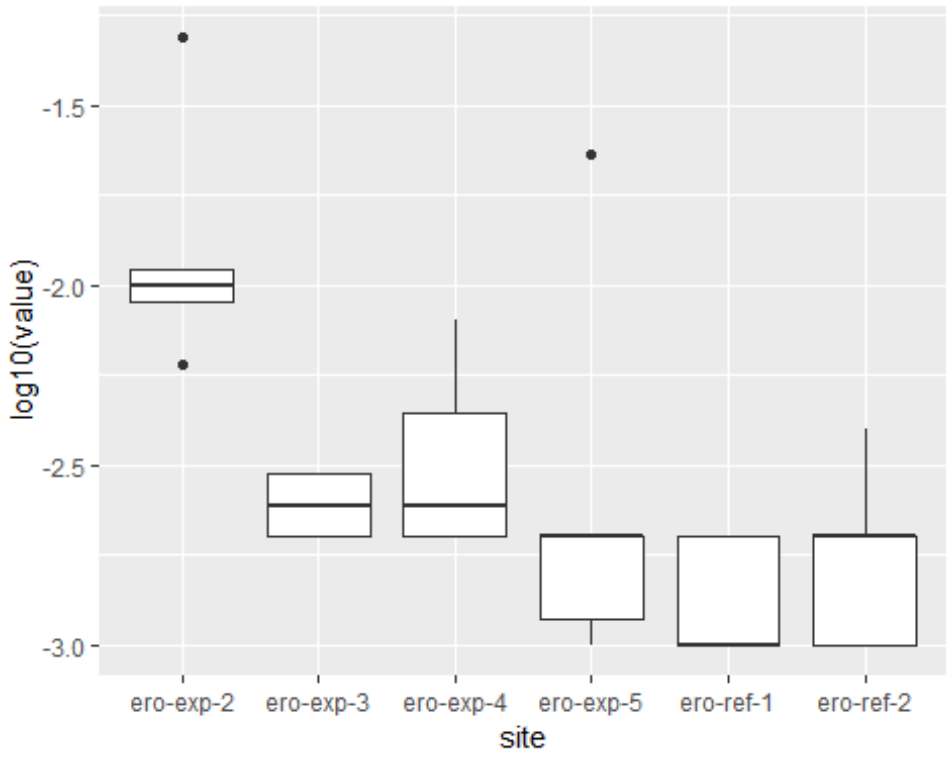

```
##
## Error: site
##           Df Sum Sq Mean Sq F value Pr(>F)
## ref_exp    1  2.636  2.6365   5.081 0.0872 .
## Residuals  4  2.075  0.5189
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Error: Within
##           Df Sum Sq Mean Sq F value Pr(>F)
## Residuals 29  5.614  0.1936
```

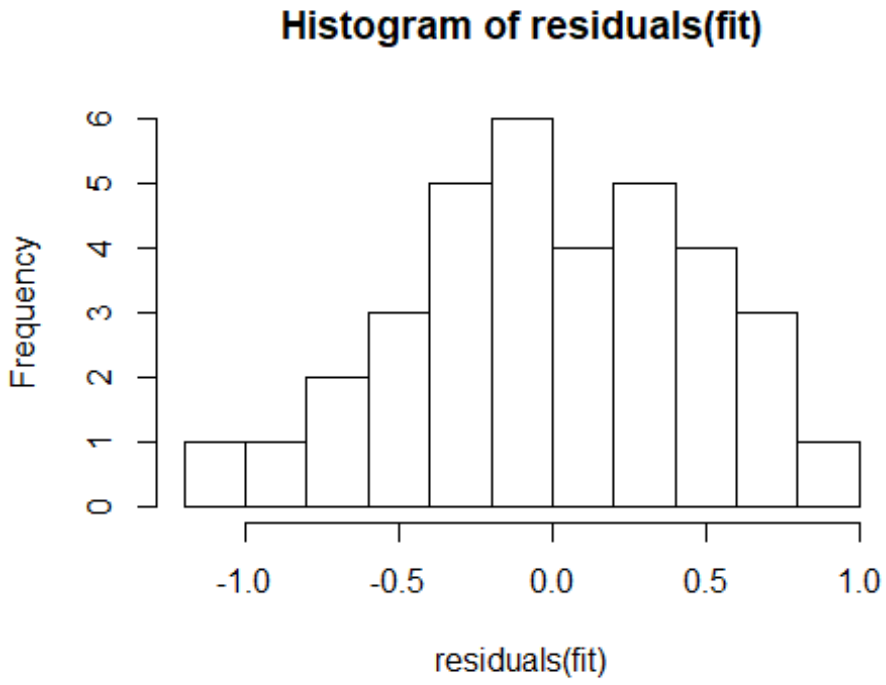



```
##
##  Modified robust Brown-Forsythe Levene-type test based on the
##  absolute deviations from the median
##
## data:  log10(x$value)
## Test Statistic = 1.3863, p-value = 0.2584

## $`ero-exp-2`
##
##  Shapiro-Wilk normality test
##
## data:  X[[i]]
## W = 0.90638, p-value = 0.4461
##
##
## $`ero-exp-3`
##
##  Shapiro-Wilk normality test
##
## data:  X[[i]]
## W = 0.98171, p-value = 0.9597
##
##
## $`ero-exp-4`
##
##  Shapiro-Wilk normality test
##
```

```
## data:  X[[i]]
## W = 0.94823, p-value = 0.6934
##
##
## $`ero-exp-5`
##
##  Shapiro-Wilk normality test
##
## data:  X[[i]]
## W = 0.95166, p-value = 0.7537
##
##
## $`ero-ref-1`
##
##  Shapiro-Wilk normality test
##
## data:  X[[i]]
## W = 0.97147, p-value = 0.8846
##
##
## $`ero-ref-2`
##
##  Shapiro-Wilk normality test
##
## data:  X[[i]]
## W = 0.9437, p-value = 0.6922

##   Tukey multiple comparisons of means
##     95% family-wise confidence level
##
## Fit: aov(formula = log10(value) ~ site, data = x)
##
## $site
##                             diff        lwr         upr     p adj
## ero-exp-3-ero-exp-2 -0.6864665 -1.4986299  0.12569703 0.1355694
## ero-exp-4-ero-exp-2 -0.5582825 -1.3229092  0.20634411 0.2570701
## ero-exp-5-ero-exp-2 -0.8012779 -1.6134414  0.01088557 0.0547952
## ero-ref-1-ero-exp-2 -1.0554924 -1.9037695 -0.20721527 0.0082914
## ero-ref-2-ero-exp-2 -1.2310176 -2.0792947 -0.38274046 0.0015931
## ero-exp-4-ero-exp-3  0.1281839 -0.5961706  0.85253839 0.9939896
## ero-exp-5-ero-exp-3 -0.1148115 -0.8891790  0.65955604 0.9973789
## ero-ref-1-ero-exp-3 -0.3690259 -1.1811894  0.44313757 0.7352604
## ero-ref-2-ero-exp-3 -0.5445511 -1.3567146  0.26761239 0.3434621
## ero-exp-5-ero-exp-4 -0.2429954 -0.9673499  0.48135909 0.9064899
## ero-ref-1-ero-exp-4 -0.4972098 -1.2618365  0.26741681 0.3762061
## ero-ref-2-ero-exp-4 -0.6727350 -1.4373617  0.09189162 0.1098214
## ero-ref-1-ero-exp-5 -0.2542145 -1.0663779  0.55794904 0.9284829
## ero-ref-2-ero-exp-5 -0.4297396 -1.2419031  0.38242385 0.5969334
## ero-ref-2-ero-ref-1 -0.1755252 -1.0238023  0.67275191 0.9877108
```

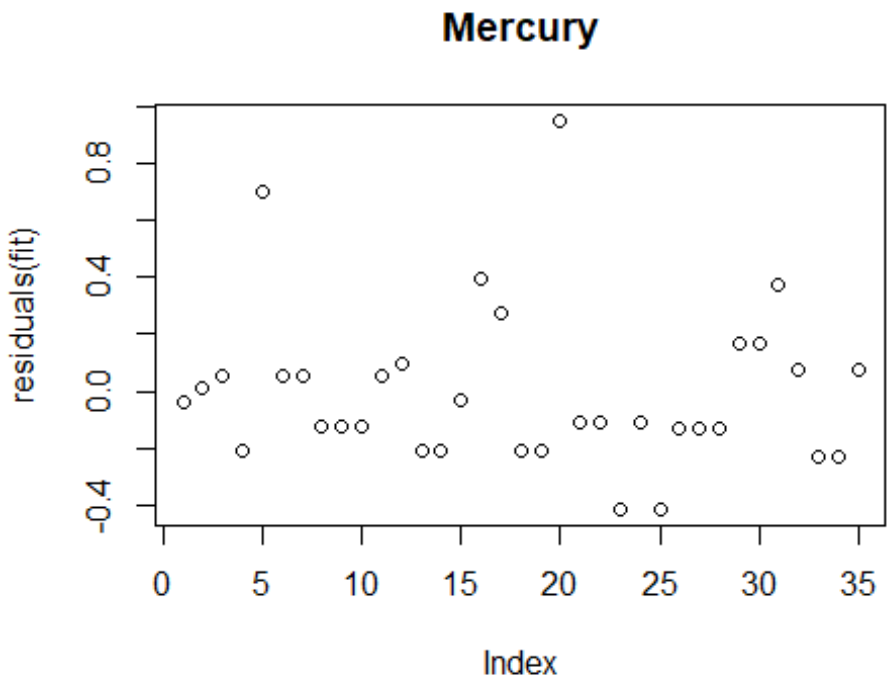
```
##     dep_ero ref_exp      site transect taxa_group            label
## 351     ero     exp ero-exp-2        1 Peripyhton 2015-ero-exp-2-1
## 354     ero     exp ero-exp-2        2 Peripyhton 2015-ero-exp-2-2
## 356     ero     exp ero-exp-2        3 Peripyhton 2015-ero-exp-2-3
## 358     ero     exp ero-exp-2        4 Peripyhton 2015-ero-exp-2-4
## 359     ero     exp ero-exp-2        5 Peripyhton 2015-ero-exp-2-5
## 361     ero     exp ero-exp-3        1 Peripyhton 2015-ero-exp-3-1
##     ben_group CII_Dist       Bank   metal value   dl    label1
## 351      <NA>     -478 Right Bank Mercury 0.009 <NA> ero-exp-2
## 354      <NA>     -383  Left Bank Mercury 0.010 <NA> ero-exp-2
## 356      <NA>     -346  Left Bank Mercury 0.011 <NA> ero-exp-2
## 358      <NA>     -206  Left Bank Mercury 0.006 <NA> ero-exp-2
## 359      <NA>     -316 Right Bank Mercury 0.049 <NA> ero-exp-2
## 361      <NA>      148 Right Bank Mercury 0.003 <NA> ero-exp-3
```





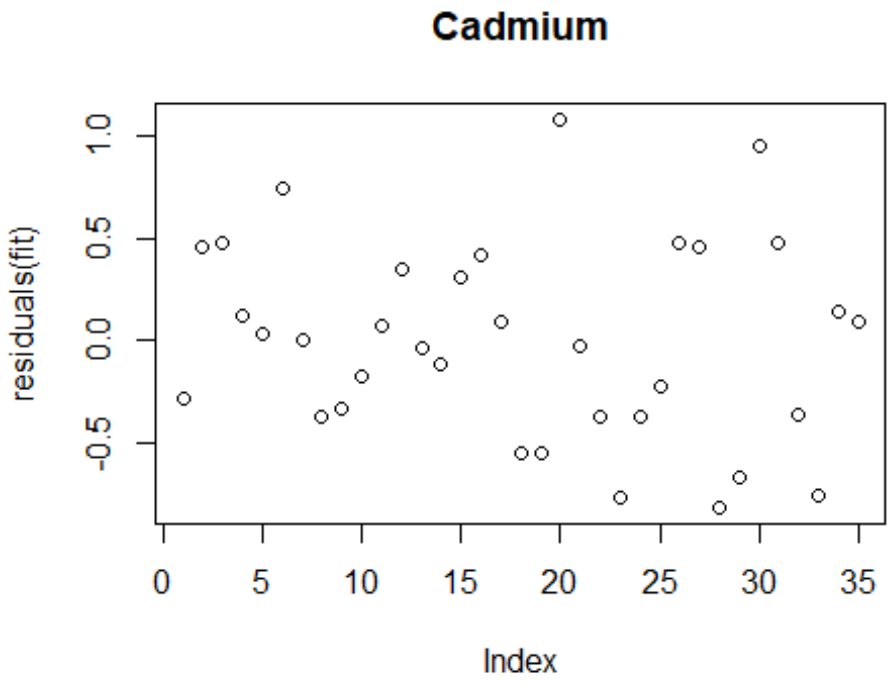

```
## [1] "Mercury"
## Linear mixed model fit by REML. t-tests use Satterthwaite's method [
## lmerModLmerTest]
## Formula: log10(value) ~ (1 | site) + ref_exp
```

```
##    Data: x
##
## REML criterion at convergence: 26.2
##
## Scaled residuals:
##     Min      1Q  Median      3Q     Max
## -1.3856 -0.5684 -0.3767  0.2426  3.1780
##
## Random effects:
##  Groups   Name        Variance Std.Dev.
##  site     (Intercept) 0.07011  0.2648
##  Residual             0.08904  0.2984
## Number of obs: 35, groups:  site, 6
##
## Fixed effects:
##             Estimate Std. Error      df t value Pr(>|t|)
## (Intercept)  -2.4166     0.1455  3.7762 -16.607 0.000114 ***
## ref_expref   -0.4028     0.2552  3.9752  -1.578 0.190079
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Correlation of Fixed Effects:
##            (Intr)
## ref_expref -0.570
```



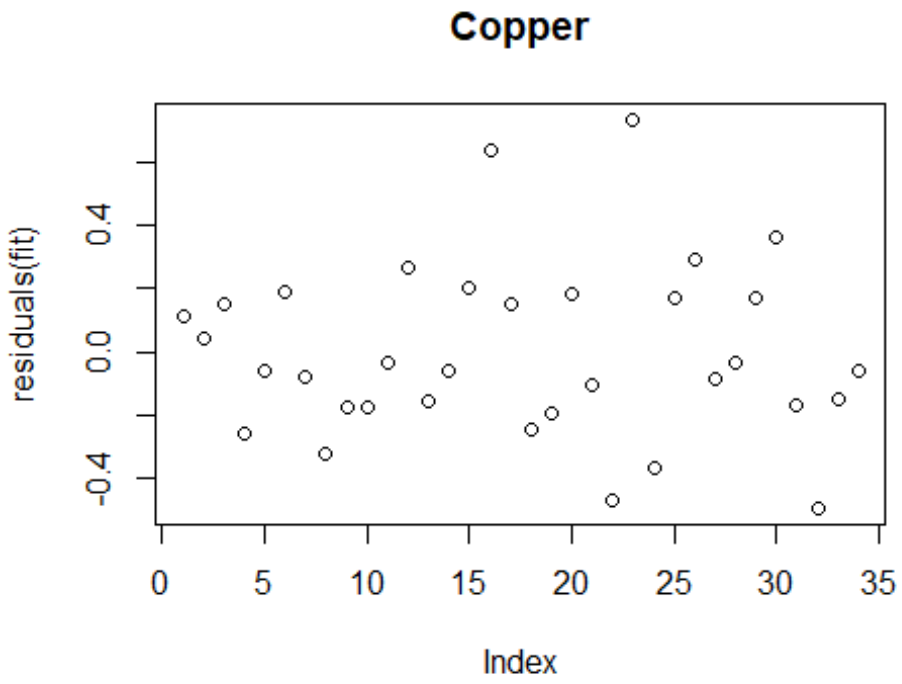

```
## NULL
## $site
```

```
##           (Intercept) ref_expref
## ero-exp-2   -2.010369 -0.4028079
## ero-exp-3   -2.576976 -0.4028079
## ero-exp-4   -2.492397 -0.4028079
## ero-exp-5   -2.586555 -0.4028079
## ero-ref-1   -2.464586 -0.4028079
## ero-ref-2   -2.368562 -0.4028079
##
## attr(,"class")
## [1] "coef.mer"
## [1] "Cadmium"
## Linear mixed model fit by REML. t-tests use Satterthwaite's method [
## lmerModLmerTest]
## Formula: log10(value) ~ (1 | site) + ref_exp
##    Data: x
##
## REML criterion at convergence: 60.9
##
## Scaled residuals:
##      Min       1Q   Median       3Q      Max
## -1.58545 -0.70750  0.01389  0.75477  2.10442
##
## Random effects:
##  Groups   Name        Variance Std.Dev.
##  site     (Intercept) 0.1461   0.3822
##  Residual             0.2629   0.5127
## Number of obs: 35, groups:  site, 6
##
## Fixed effects:
##             Estimate Std. Error      df t value Pr(>|t|)
## (Intercept)  -1.5600     0.2174  3.7123  -7.175  0.00264 **
## ref_expref   -0.1550     0.3829  3.9761  -0.405  0.70636
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Correlation of Fixed Effects:
##            (Intr)
## ref_expref -0.568
```



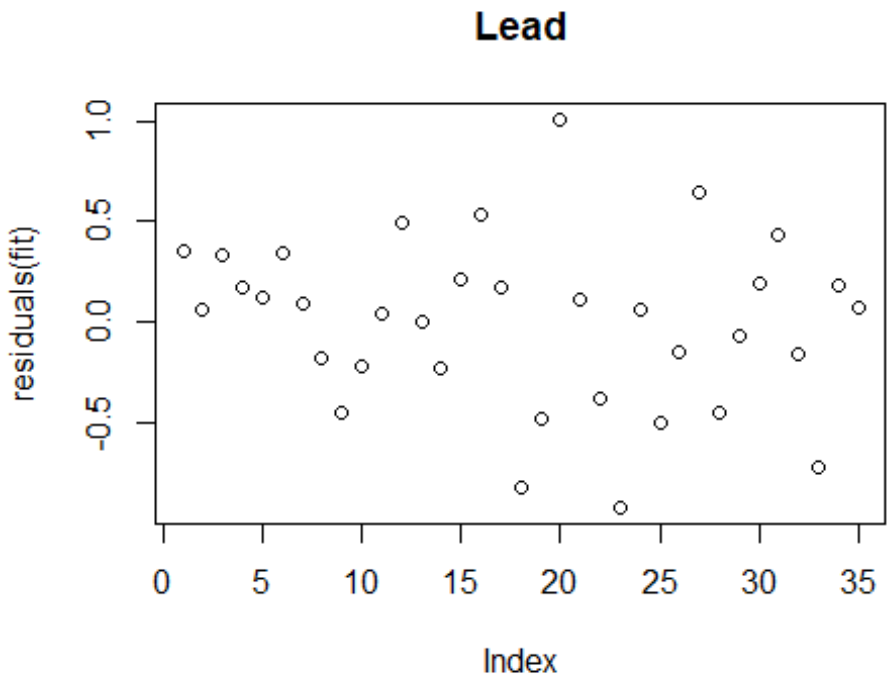

```
## NULL
## $site
##           (Intercept) ref_expref
## ero-exp-2   -1.111855  -0.155038
## ero-exp-3   -1.592149  -0.155038
## ero-exp-4   -1.603130  -0.155038
## ero-exp-5   -1.932880  -0.155038
## ero-ref-1   -1.333078  -0.155038
## ero-ref-2   -1.786929  -0.155038
##
## attr(,"class")
## [1] "coef.mer"
## [1] "Copper"
## Linear mixed model fit by REML. t-tests use Satterthwaite's method [
## lmerModLmerTest]
## Formula: log10(value) ~ (1 | site) + ref_exp
##    Data: x
##
## REML criterion at convergence: 17.4
##
## Scaled residuals:
##     Min      1Q  Median      3Q     Max
## -1.7286 -0.6089 -0.2054  0.5989  2.5734
##
## Random effects:
##  Groups   Name        Variance Std.Dev.
##  site     (Intercept) 0.006791 0.08241
```

```
##  Residual             0.080967 0.28455
## Number of obs: 34, groups:  site, 6
##
## Fixed effects:
##             Estimate Std. Error       df t value Pr(>|t|)
## (Intercept) -0.32920    0.07153  3.94407  -4.602   0.0104 *
## ref_expref  -0.13597    0.12887  4.71254  -1.055   0.3425
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Correlation of Fixed Effects:
##            (Intr)
## ref_expref -0.555
```

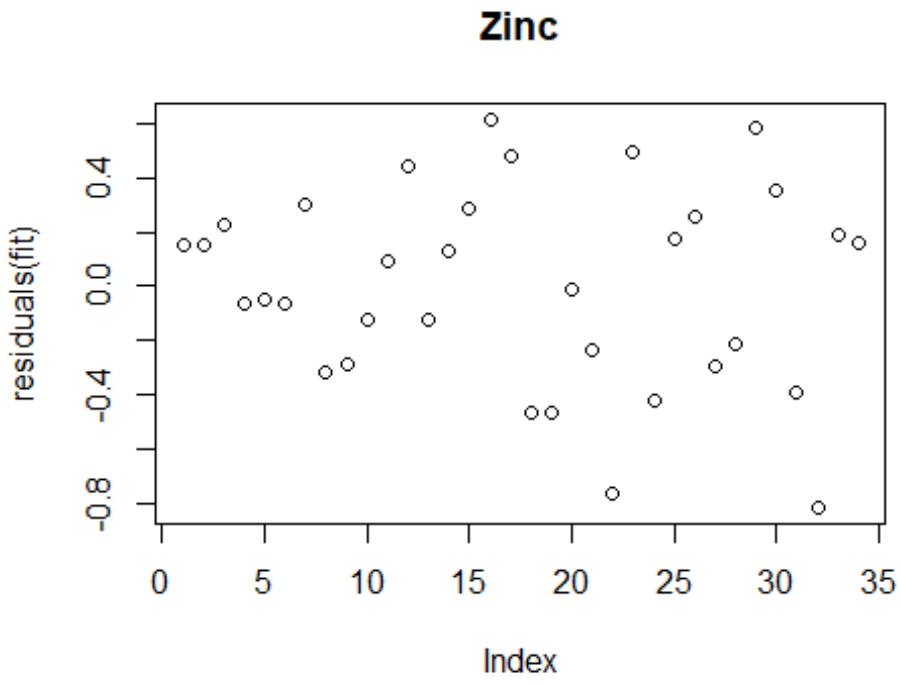



```
## NULL
## $site
##           (Intercept) ref_expref
## ero-exp-2  -0.3295151 -0.1359727
## ero-exp-3  -0.3783761 -0.1359727
## ero-exp-4  -0.2780455 -0.1359727
## ero-exp-5  -0.3308519 -0.1359727
## ero-ref-1  -0.2862441 -0.1359727
## ero-ref-2  -0.3721502 -0.1359727
##
## attr(,"class")
## [1] "coef.mer"
## [1] "Lead"
```

```
## Linear mixed model fit by REML. t-tests use Satterthwaite's method [
## lmerModLmerTest]
## Formula: log10(value) ~ (1 | site) + ref_exp
##    Data: x
##
## REML criterion at convergence: 49.2
##
## Scaled residuals:
##     Min      1Q  Median      3Q     Max
## -2.0783 -0.4990  0.1512  0.4596  2.2809
##
## Random effects:
##  Groups   Name        Variance Std.Dev.
##  site     (Intercept) 0.05796  0.2407
##  Residual             0.19458  0.4411
## Number of obs: 35, groups:  site, 6
##
## Fixed effects:
##             Estimate Std. Error       df t value Pr(>|t|)
## (Intercept)  0.01545    0.14973  3.52908   0.103   0.9234
## ref_expref  -0.62211    0.26619  3.93880  -2.337   0.0806 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Correlation of Fixed Effects:
##            (Intr)
## ref_expref -0.563
```

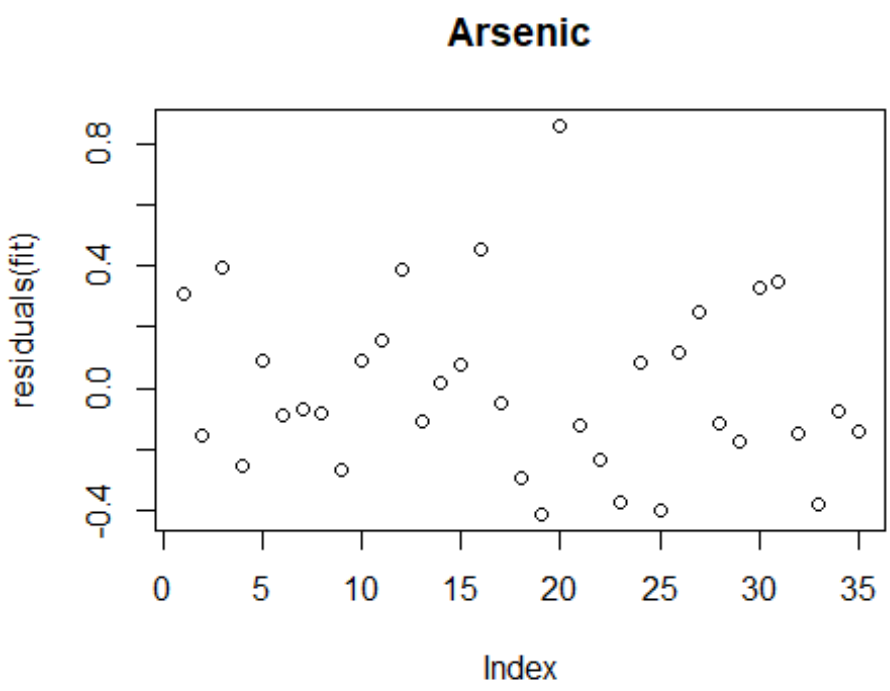



```
## NULL
## $site
##           (Intercept) ref_expref
## ero-exp-2  0.32723806 -0.6221101
## ero-exp-3 -0.09055432 -0.6221101
## ero-exp-4 -0.01070858 -0.6221101
## ero-exp-5 -0.16417204 -0.6221101
## ero-ref-1  0.06795684 -0.6221101
## ero-ref-2 -0.03705528 -0.6221101
##
## attr(,"class")
## [1] "coef.mer"
## [1] "Zinc"
##             Df Sum Sq Mean Sq F value Pr(>F)
## ref_exp      1  0.207  0.2067   1.516  0.227
## Residuals   32  4.363  0.1363
##
##  Modified robust Brown-Forsythe Levene-type test based on the
##  absolute deviations from the median
##
## data:  log(x$value)
## Test Statistic = 0.11139, p-value = 0.7407
```



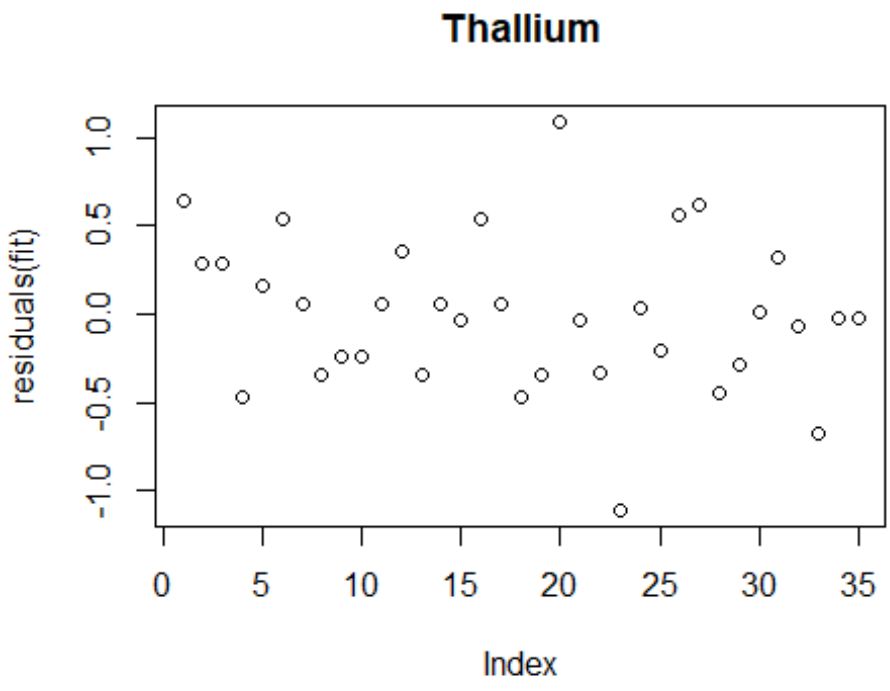

```
## NULL
## (Intercept)  ref_expref
##   0.4619930  -0.1711278
## [1] "Arsenic"
## Linear mixed model fit by REML. t-tests use Satterthwaite's method [
## lmerModLmerTest]
## Formula: log10(value) ~ (1 | site) + ref_exp
##    Data: x
##
## REML criterion at convergence: 25.7
##
## Scaled residuals:
##     Min      1Q  Median      3Q     Max
## -1.3639 -0.5526 -0.2557  0.4518  2.8376
##
## Random effects:
##  Groups   Name        Variance Std.Dev.
##  site     (Intercept) 0.04214  0.2053
##  Residual             0.09232  0.3038
## Number of obs: 35, groups:  site, 6
##
## Fixed effects:
##             Estimate Std. Error      df t value Pr(>|t|)
## (Intercept)  -1.0382     0.1196  3.6160  -8.680  0.00151 **
## ref_expref    0.1827     0.2112  3.9185   0.865  0.43683
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
##
## Correlation of Fixed Effects:
##             (Intr)
## ref_expref -0.566
```



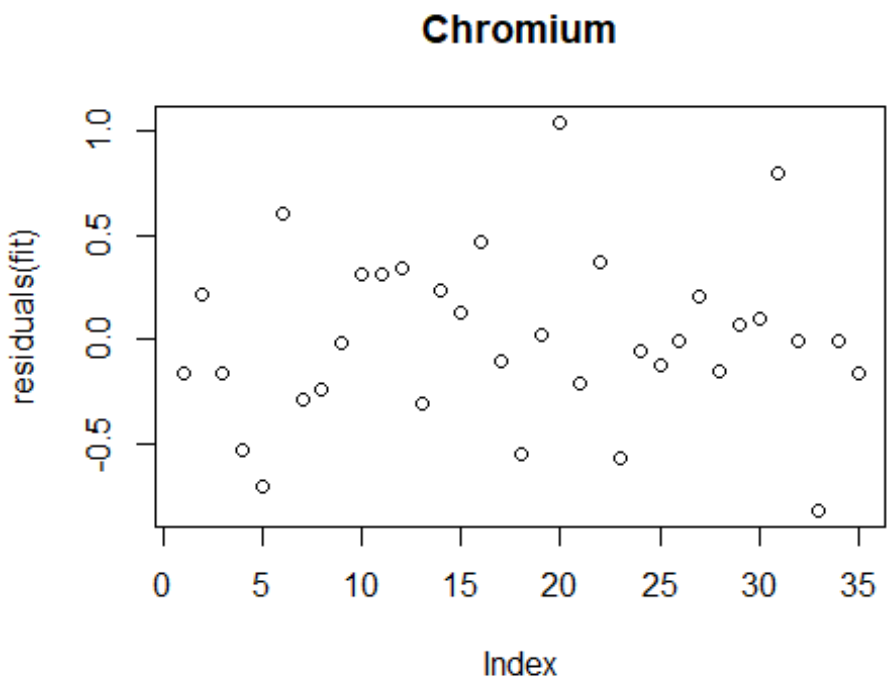

```
## NULL
## $site
##           (Intercept) ref_expref
## ero-exp-2  -0.8646068  0.1826712
## ero-exp-3  -1.1606119  0.1826712
## ero-exp-4  -1.0058066  0.1826712
## ero-exp-5  -1.1218399  0.1826712
## ero-ref-1  -0.8522548  0.1826712
## ero-ref-2  -1.2241778  0.1826712
##
## attr(,"class")
## [1] "coef.mer"
## [1] "Thallium"
## Linear mixed model fit by REML. t-tests use Satterthwaite's method [
## lmerModLmerTest]
## Formula: log10(value) ~ (1 | site) + ref_exp
##    Data: x
##
## REML criterion at convergence: 51.9
##
## Scaled residuals:
##      Min       1Q   Median       3Q      Max
```

```
## -2.43200 -0.67912 -0.04395  0.63066  2.38919
##
## Random effects:
##  Groups   Name        Variance Std.Dev.
##  site     (Intercept) 0.0714   0.2672
##  Residual             0.2090   0.4572
## Number of obs: 35, groups:  site, 6
##
## Fixed effects:
##             Estimate Std. Error      df t value Pr(>|t|)
## (Intercept)  -2.9978     0.1624  3.5484 -18.459 0.000118 ***
## ref_expref    0.1285     0.2881  3.9207   0.446 0.678935
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Correlation of Fixed Effects:
##            (Intr)
## ref_expref -0.564
```



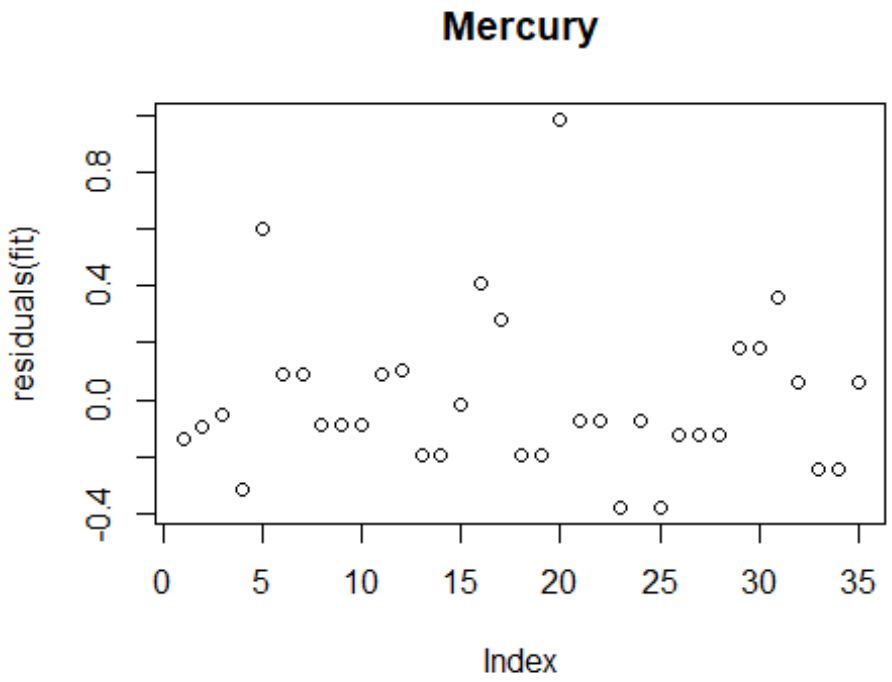

```
## NULL
## $site
##           (Intercept) ref_expref
## ero-exp-2   -2.686261  0.1285495
## ero-exp-3   -3.057833  0.1285495
## ero-exp-4   -3.057739  0.1285495
## ero-exp-5   -3.189184  0.1285495
## ero-ref-1   -2.841293  0.1285495
```

```
## ero-ref-2   -3.154216  0.1285495
##
## attr(,"class")
## [1] "coef.mer"
## [1] "Chromium"
## Linear mixed model fit by REML. t-tests use Satterthwaite's method [
## lmerModLmerTest]
## Formula: log10(value) ~ (1 | site) + ref_exp
##    Data: x
##
## REML criterion at convergence: 42.6
##
## Scaled residuals:
##      Min       1Q   Median       3Q      Max
## -1.98155 -0.46255 -0.02795  0.54247  2.51057
##
## Random effects:
##  Groups   Name        Variance Std.Dev.
##  site     (Intercept) 0.01514  0.1231
##  Residual             0.17143  0.4140
## Number of obs: 35, groups:  site, 6
##
## Fixed effects:
##              Estimate Std. Error        df t value Pr(>|t|)
## (Intercept) -0.869257   0.103515  3.080470  -8.397   0.0032 **
## ref_expref   0.008839   0.188229  3.817940   0.047   0.9649
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Correlation of Fixed Effects:
##            (Intr)
## ref_expref -0.550
```



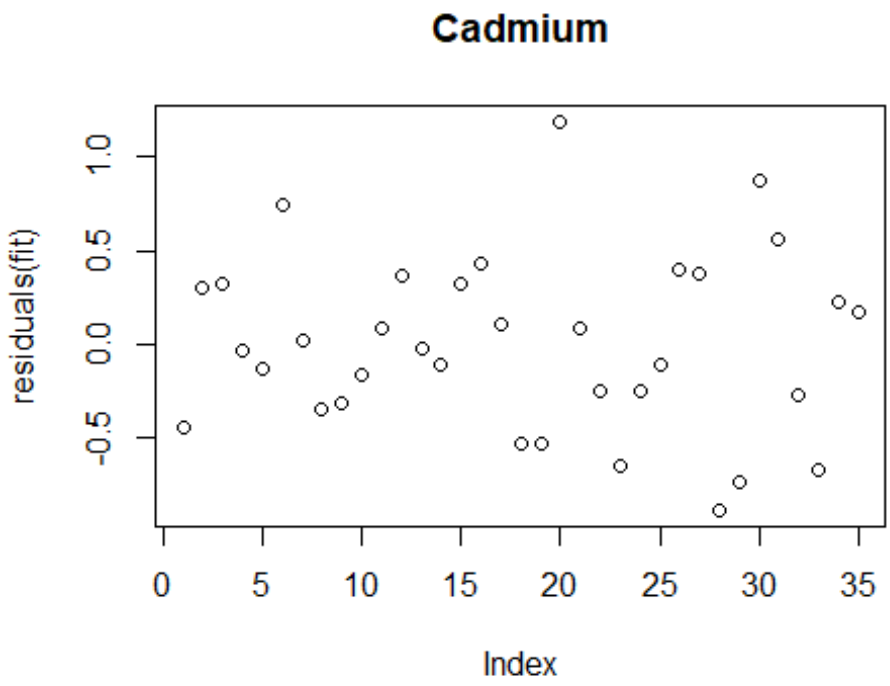

```
## NULL
## $site
##           (Intercept)  ref_expref
## ero-exp-2  -0.9890469 0.008838653
## ero-exp-3  -0.8085364 0.008838653
## ero-exp-4  -0.8494943 0.008838653
## ero-exp-5  -0.8299511 0.008838653
## ero-ref-1  -0.8511397 0.008838653
## ero-ref-2  -0.8873747 0.008838653
##
## attr(,"class")
## [1] "coef.mer"
```

```
## [1] "Mercury"
##             Df Sum Sq Mean Sq F value   Pr(>F)
## site         5  2.898  0.5796   6.526 0.000353 ***
## Residuals   29  2.576  0.0888
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

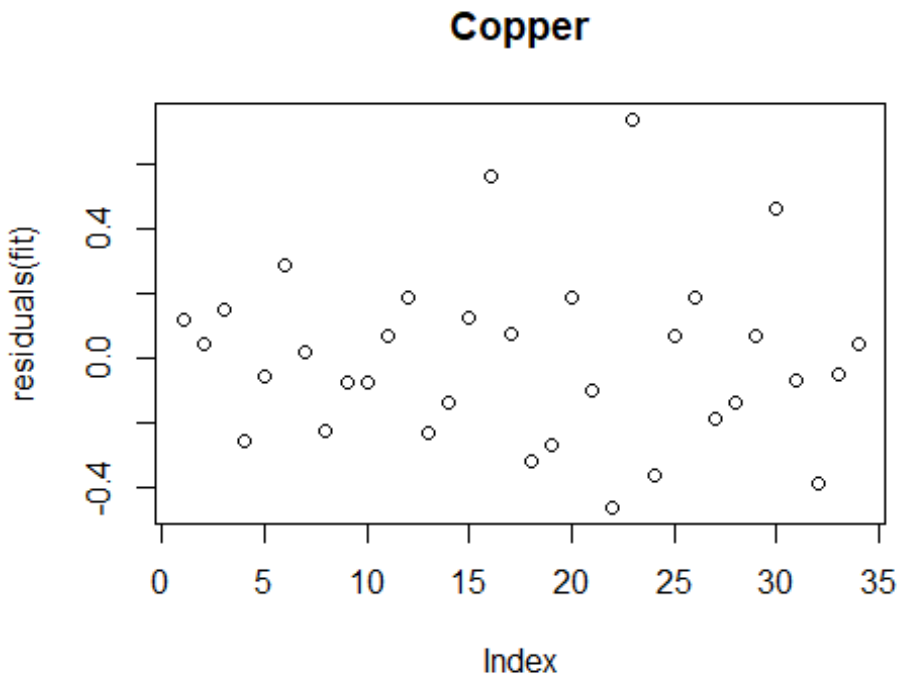



```
## NULL
## [1] "Cadmium"
##             Df Sum Sq Mean Sq F value Pr(>F)
## site         5  4.368  0.8737   3.334 0.0168 *
## Residuals   29  7.600  0.2621
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##   Tukey multiple comparisons of means
##     95% family-wise confidence level
##
## Fit: aov(formula = log10(value) ~ site, data = x)
##
## $site
##                               diff        lwr         upr     p adj
## ero-exp-3-ero-exp-2 -0.65126086 -1.5962503  0.29372854 0.3147223
## ero-exp-4-ero-exp-2 -0.66230077 -1.5519789  0.22737734 0.2387565
## ero-exp-5-ero-exp-2 -1.09420364 -2.0391930 -0.14921424 0.0160310
## ero-ref-1-ero-exp-2 -0.45589631 -1.4429056  0.53111293 0.7219682
## ero-ref-2-ero-exp-2 -1.07312305 -2.0601323 -0.08611381 0.0269993
## ero-exp-4-ero-exp-3 -0.01103991 -0.8538595  0.83177968 1.0000000
## ero-exp-5-ero-exp-3 -0.44294279 -1.3439548  0.45806925 0.6677751
## ero-ref-1-ero-exp-3  0.19536454 -0.7496249  1.14035394 0.9877595
## ero-ref-2-ero-exp-3 -0.42186219 -1.3668516  0.52312721 0.7490827
## ero-exp-5-ero-exp-4 -0.43190287 -1.2747225  0.41091672 0.6286146
## ero-ref-1-ero-exp-4  0.20640446 -0.6832737  1.09608256 0.9795561
## ero-ref-2-ero-exp-4 -0.41082228 -1.3005004  0.47885582 0.7222024
## ero-ref-1-ero-exp-5  0.63830733 -0.3066821  1.58329673 0.3356699
```

```
## ero-ref-2-ero-exp-5  0.02108059 -0.9239088  0.96606999 0.9999998
## ero-ref-2-ero-ref-1 -0.61722674 -1.6042360  0.36978250 0.4186381
```

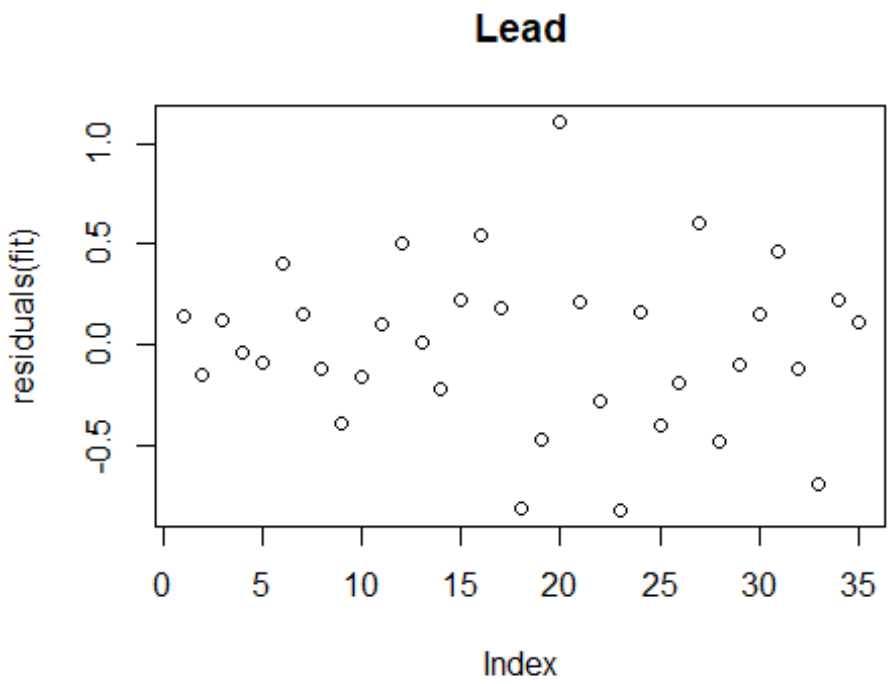



```
## NULL
## [1] "Copper"
##             Df Sum Sq Mean Sq F value Pr(>F)
## site         5 0.6093 0.12187   1.498  0.222
## Residuals   28 2.2781 0.08136
```

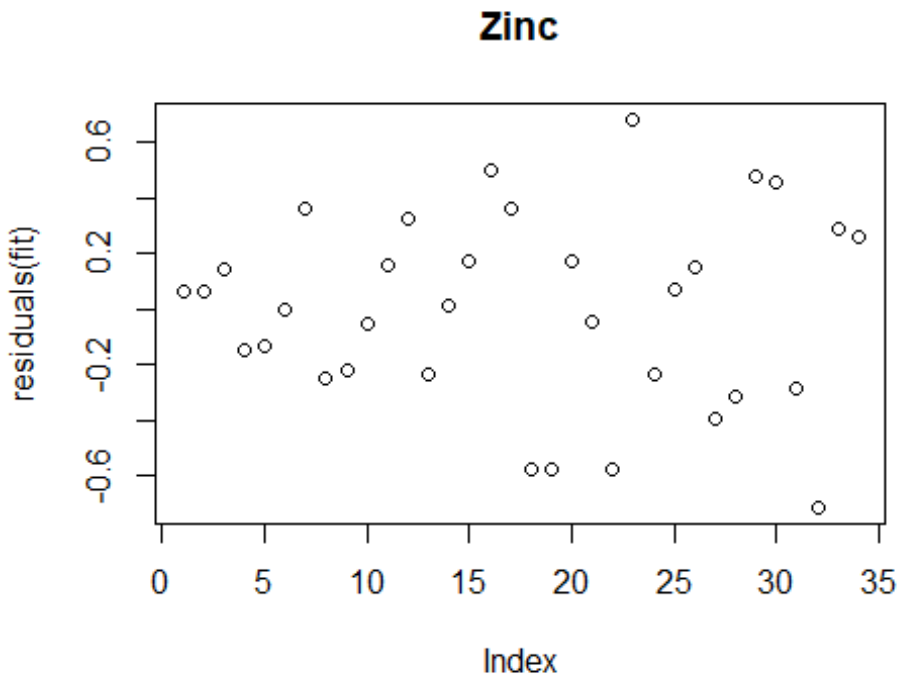



```
## NULL
## [1] "Lead"
##             Df Sum Sq Mean Sq F value  Pr(>F)
## site         5  4.712  0.9424   4.868 0.00236 **
## Residuals   29  5.614  0.1936
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##   Tukey multiple comparisons of means
##     95% family-wise confidence level
##
## Fit: aov(formula = log10(value) ~ site, data = x)
##
## $site
##                              diff        lwr         upr     p adj
## ero-exp-3-ero-exp-2 -0.6864665 -1.4986299  0.12569703 0.1355694
## ero-exp-4-ero-exp-2 -0.5582825 -1.3229092  0.20634411 0.2570701
## ero-exp-5-ero-exp-2 -0.8012779 -1.6134414  0.01088557 0.0547952
## ero-ref-1-ero-exp-2 -1.0554924 -1.9037695 -0.20721527 0.0082914
## ero-ref-2-ero-exp-2 -1.2310176 -2.0792947 -0.38274046 0.0015931
## ero-exp-4-ero-exp-3  0.1281839 -0.5961706  0.85253839 0.9939896
## ero-exp-5-ero-exp-3 -0.1148115 -0.8891790  0.65955604 0.9973789
## ero-ref-1-ero-exp-3 -0.3690259 -1.1811894  0.44313757 0.7352604
## ero-ref-2-ero-exp-3 -0.5445511 -1.3567146  0.26761239 0.3434621
## ero-exp-5-ero-exp-4 -0.2429954 -0.9673499  0.48135909 0.9064899
## ero-ref-1-ero-exp-4 -0.4972098 -1.2618365  0.26741681 0.3762061
## ero-ref-2-ero-exp-4 -0.6727350 -1.4373617  0.09189162 0.1098214
## ero-ref-1-ero-exp-5 -0.2542145 -1.0663779  0.55794904 0.9284829
```

```
## ero-ref-2-ero-exp-5 -0.4297396 -1.2419031  0.38242385 0.5969334
## ero-ref-2-ero-ref-1 -0.1755252 -1.0238023  0.67275191 0.9877108
```

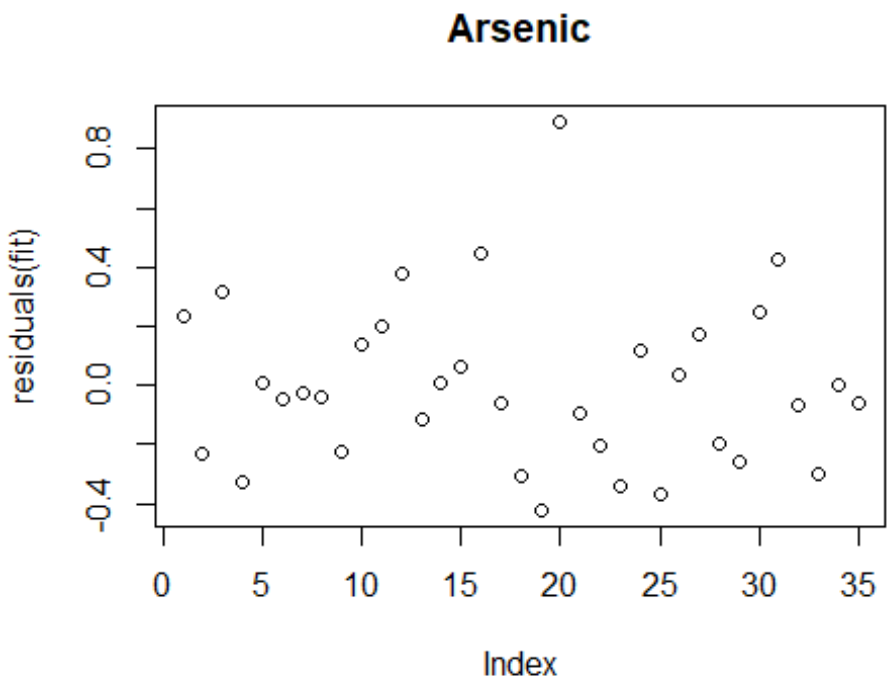



```
## NULL
## [1] "Zinc"
##             Df Sum Sq Mean Sq F value Pr(>F)
## site         5  0.646  0.1292   0.922  0.481
## Residuals   28  3.923  0.1401
```

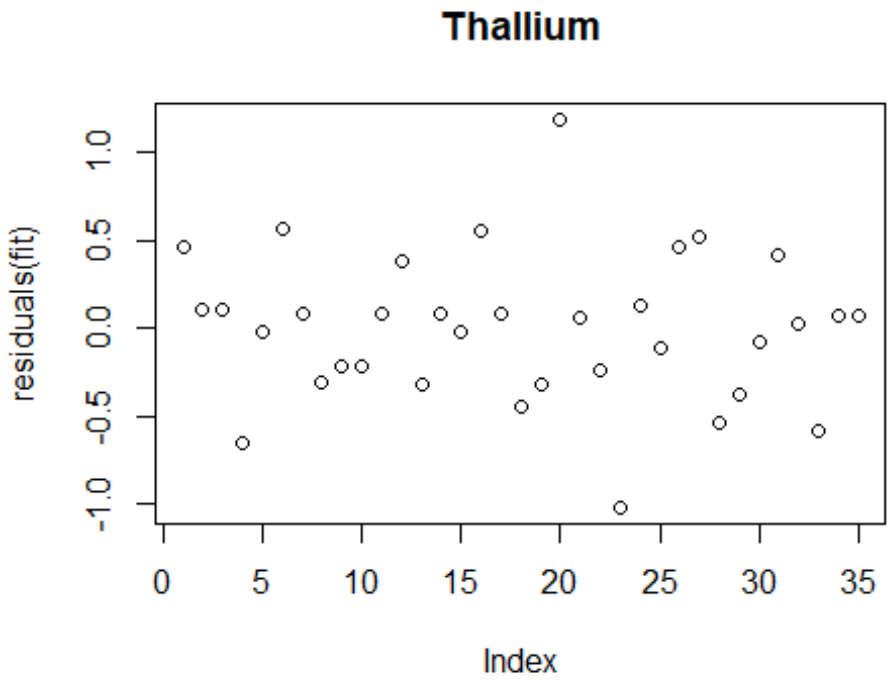



```
## NULL
## [1] "Arsenic"
##             Df Sum Sq Mean Sq F value Pr(>F)
## site         5  1.536  0.3071   3.342 0.0167 *
## Residuals   29  2.665  0.0919
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##   Tukey multiple comparisons of means
##     95% family-wise confidence level
##
## Fit: aov(formula = log10(value) ~ site, data = x)
##
## $site
##                               diff          lwr        upr     p adj
## ero-exp-3-ero-exp-2 -0.41677056 -0.976367793 0.14282668 0.2383305
## ero-exp-4-ero-exp-2 -0.20839648 -0.735239863 0.31844689 0.8304465
## ero-exp-5-ero-exp-2 -0.36384080 -0.923438036 0.19575644 0.3763412
## ero-ref-1-ero-exp-2  0.20043568 -0.384044568 0.78491593 0.8983864
## ero-ref-2-ero-exp-2 -0.33445730 -0.918937553 0.25002295 0.5152133
## ero-exp-4-ero-exp-3  0.20837407 -0.290720957 0.70746910 0.7969846
## ero-exp-5-ero-exp-3  0.05292976 -0.480625272 0.58648479 0.9996222
## ero-ref-1-ero-exp-3  0.61720624  0.057609004 1.17680348 0.0240841
## ero-ref-2-ero-exp-3  0.08231325 -0.477283981 0.64191049 0.9974757
## ero-exp-5-ero-exp-4 -0.15544432 -0.654539344 0.34365071 0.9298749
## ero-ref-1-ero-exp-4  0.40883217 -0.118011211 0.93567555 0.2016113
## ero-ref-2-ero-exp-4 -0.12606082 -0.652904196 0.40078256 0.9766028
## ero-ref-1-ero-exp-5  0.56427648  0.004679246 1.12387372 0.0472025
```

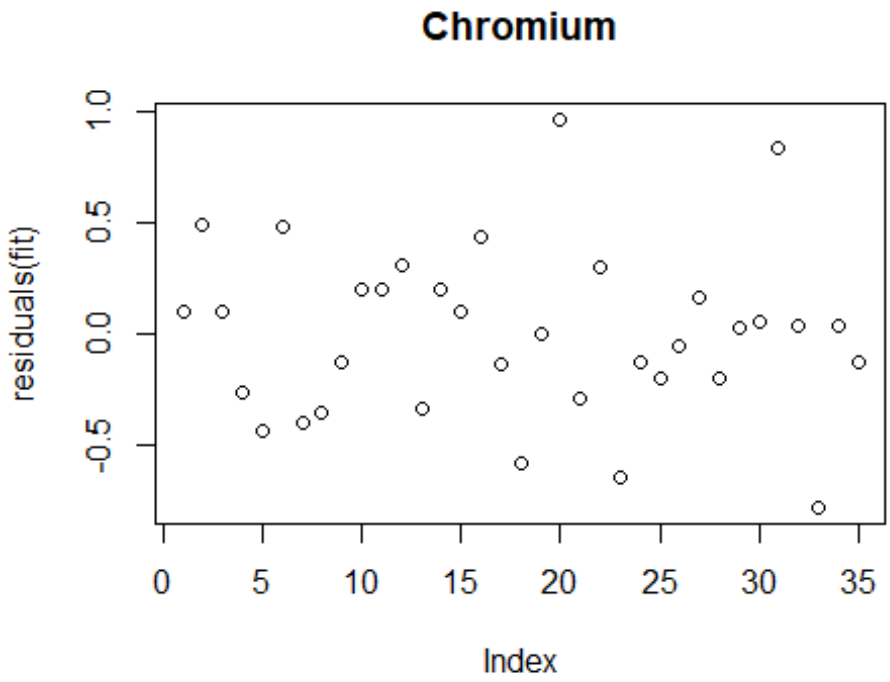
```
## ero-ref-2-ero-exp-5  0.02938350 -0.530213739 0.58898073 0.9999836
## ero-ref-2-ero-ref-1 -0.53489299 -1.119373236 0.04958727 0.0878759
```




```
## NULL
## [1] "Thallium"
##             Df Sum Sq Mean Sq F value Pr(>F)
## site         5  2.568  0.5136    2.47 0.0556 .
## Residuals   29  6.030  0.2079
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```




```
## NULL
## [1] "Chromium"
##             Df Sum Sq Mean Sq F value Pr(>F)
## site         5  1.078  0.2156   1.271  0.303
## Residuals   29  4.921  0.1697
```



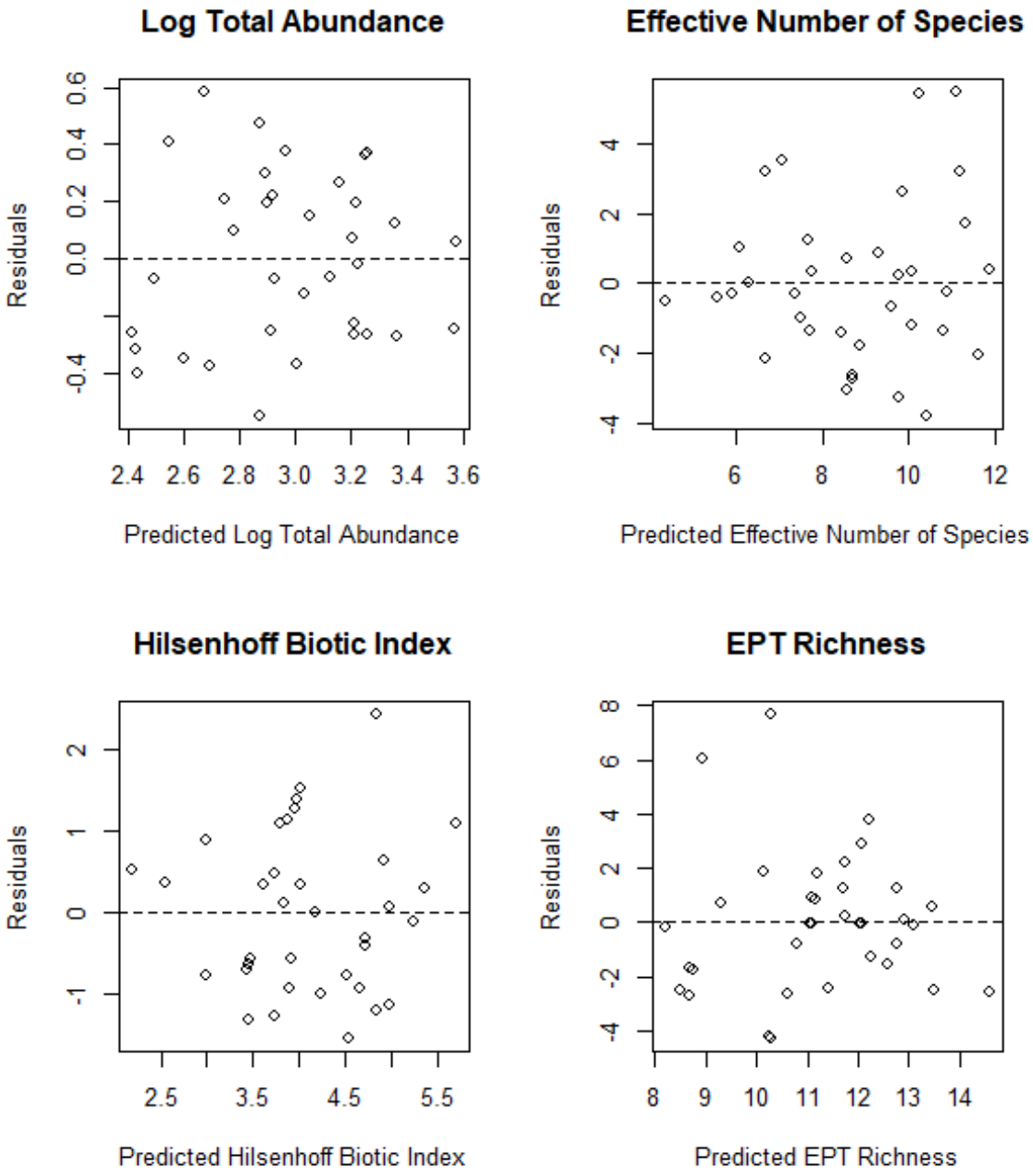

```
## NULL
```

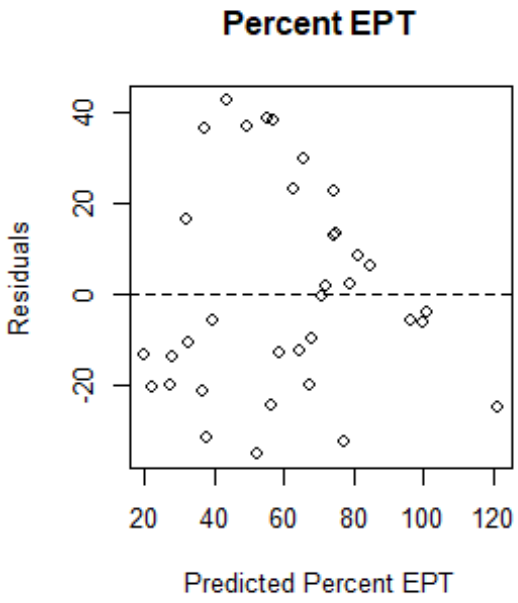
Appendix O

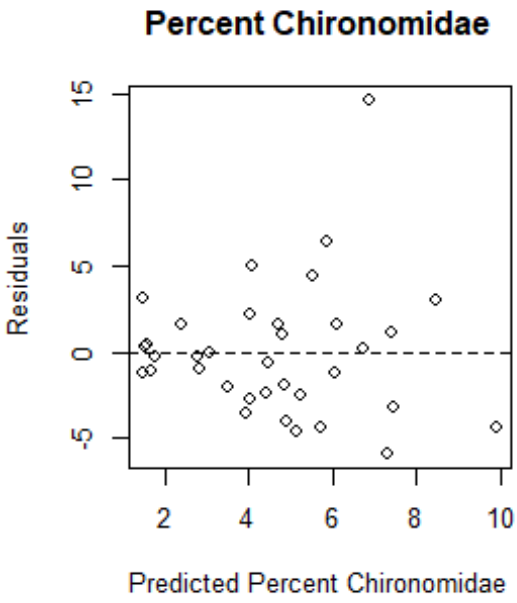
Erosional Invertebrates Statistical Outputs

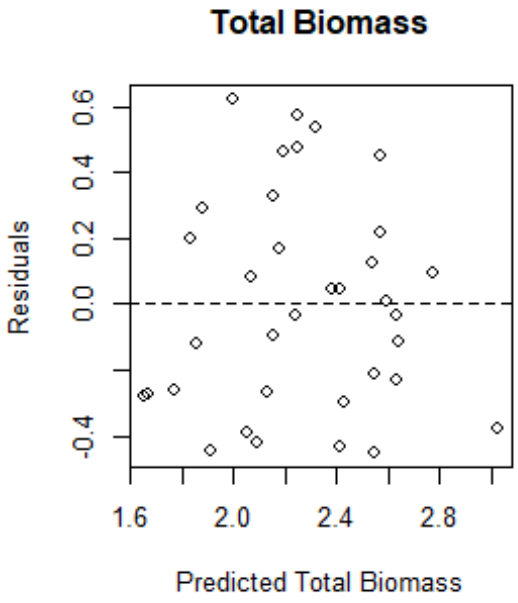
Appendix A Invertebrates Erosional Dredge Results

```
#TRANSFORMATIONS
#master.data$log.chla=with(master.data,round(log10(chla),2))
master.data$log.tot.abun=with(master.data,log10(tot.abun))
master.data$log.tot.biom=with(master.data,log10(tot.biom))

quadratic                                =                                F
randomVariable                              =                             T


randomVariableTerms = c("site")
```


Log Total Abundance
Residuals
-0.4
0.0
0.2
0.4
0.6
2.4
2.6
2.8
3.0
3.2
3.4
3.6
Predicted Log Total Abundance
Effective Number of Species
Residuals
-4
-2
0
2
4
6
8
10
12
Predicted Effective Number of Species
Hilsenhoff Biotic Index
Residuals
-1
0
1
2
2.5
3.5
4.5
5.5
Predicted Hilsenhoff Biotic Index
EPT Richness
Residuals
-4
-2
0
2
4
6
8
8
9
10
11
12
13
14
Predicted EPT Richness







1.1.1.1.1.1.1 Model average summaries of periphhyton models for all samples. The explanatory variables have standardized coefficients with 95% CLs.

response	variable	Estimate	Std.Error	lower.CI	upper.CI	rvi
Effective Number of Species	Average Velocity (m/s)	-3.210	0.940	-5.130	-1.300	1.000
Effective Number of Species	Reference	1.320	1.290	-1.310	3.950	0.290
Effective Number of Species	Water Temperature	0.850	1.100	-1.380	3.090	0.210

response	variable	Estimate	Std.Error	lower.CI	upper.CI	rvi
Effective Number of Species	Distance to Hugh Keenleyside Dam (m)	-0.410	1.240	-2.950	2.120	0.160
Effective Number of Species	D90	-0.150	0.990	-2.190	1.880	0.150
Effective Number of Species	(Intercept)	8.650	0.610	7.410	9.890	
EPT Richness	Average Velocity (m/s)	2.580	0.980	0.580	4.580	0.930
EPT Richness	Reference	-1.940	1.240	-4.450	0.570	0.530
EPT Richness	Distance to Hugh Keenleyside Dam (m)	-0.680	1.330	-3.370	2.010	0.250
EPT Richness	Water Temperature	-0.420	1.210	-2.870	2.030	0.220
EPT Richness	D90	0.570	1.010	-1.500	2.630	0.210
EPT Richness	(Intercept)	11.500	0.600	10.280	12.720	
Hilsenhoff Biotic Index	Average Velocity (m/s)	-1.240	0.390	-2.030	-0.450	1.000
Hilsenhoff Biotic Index	Reference	0.790	0.450	-0.130	1.700	0.580
Hilsenhoff Biotic Index	Water Temperature	-0.550	0.420	-1.410	0.310	0.390
Hilsenhoff Biotic Index	D90	-0.390	0.380	-1.170	0.390	0.290
Hilsenhoff Biotic Index	Distance to Hugh Keenleyside Dam (m)	0.100	0.500	-0.910	1.120	0.220
Hilsenhoff Biotic Index	(Intercept)	3.970	0.230	3.500	4.440	
Log Total Abundance	Distance to Hugh Keenleyside Dam (m)	-0.550	0.220	-1.010	-0.100	0.930
Log Total Abundance	Average Velocity (m/s)	0.230	0.130	-0.040	0.500	0.580
Log Total Abundance	D90	0.190	0.140	-0.100	0.480	0.370
Log Total Abundance	Reference	-0.370	0.280	-0.940	0.200	0.320
Log Total Abundance	Water Temperature	0.010	0.170	-0.330	0.350	0.160
Log Total Abundance	(Intercept)	3.010	0.120	2.760	3.260	
Percent Chironomidae	D90	4.010	1.400	1.160	6.860	0.970
Percent Chironomidae	Reference	1.450	1.680	-1.980	4.880	0.270
Percent Chironomidae	Average Velocity (m/s)	-0.610	1.480	-3.620	2.410	0.210
Percent Chironomidae	Distance to Hugh Keenleyside Dam (m)	0.060	1.600	-3.190	3.300	0.200
Percent Chironomidae	Water Temperature	-0.070	1.490	-3.100	2.960	0.190
Percent Chironomidae	(Intercept)	4.520	0.750	3.000	6.040	
Percent EPT	Average Velocity (m/s)	44.980	8.890	26.890	63.060	1.000
Percent EPT	Reference	-18.190	11.510	-41.500	5.120	0.540
Percent EPT	D90	11.220	8.930	-6.970	29.410	0.350

response	variable	Estimate	Std.Error	lower.CI	upper.CI	rvi
Percent EPT	Distance to Hugh Keenleyside Dam (m)	-9.370	11.980	-33.550	14.810	0.280
Percent EPT	Water Temperature	-1.030	10.660	-22.630	20.570	0.170
Percent EPT	(Intercept)	63.420	5.480	52.370	74.470	
Total Biomass	Distance to Hugh Keenleyside Dam (m)	-0.530	0.170	-0.870	-0.200	1.000
Total Biomass	Average Velocity (m/s)	0.370	0.130	0.100	0.640	0.950
Total Biomass	D90	0.340	0.130	0.070	0.600	0.910
Total Biomass	Reference	-0.310	0.180	-0.680	0.060	0.550
Total Biomass	Water Temperature	0.100	0.150	-0.200	0.410	0.220
Total Biomass	(Intercept)	2.320	0.080	2.150	2.480	

1.1.1.1.1.1.2 Summary of the number of plausible models identified using model averaging (those with a AIC <3) and the range of pseudo-R2 values for selected models for all samples.

rows	minr2	maxr2	response
5	0.290	0.320	Effective Number of Species
8	0.180	0.260	EPT Richness
8	0.280	0.380	Hilsenhoff Biotic Index
9	0.270	0.410	Log Total Abundance
5	0.210	0.220	Percent Chironomidae
9	0.450	0.530	Percent EPT
3	0.460	0.510	Total Biomass

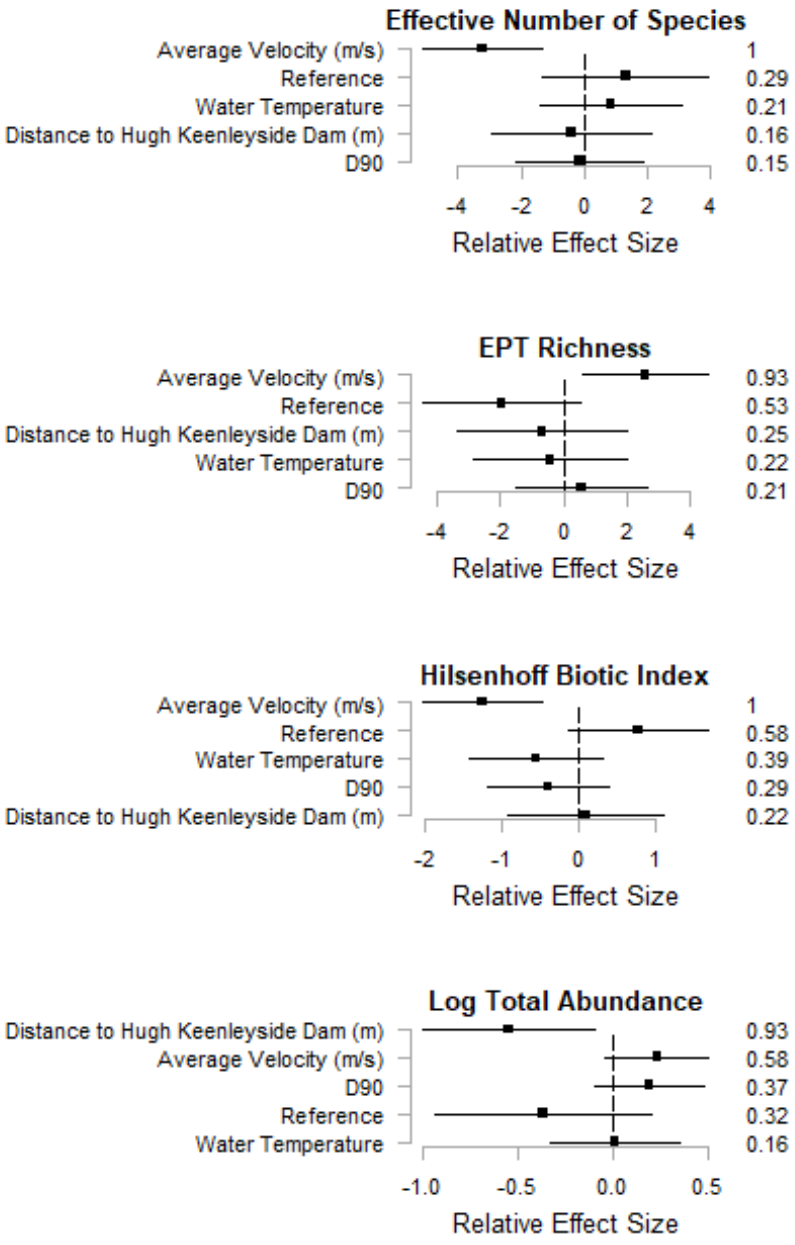


Figure A1. **The coefficients and their 95% CLs of standardized explanatory variables of benthic production for all samplers except. Benthic responses included effective number of species,ept richness, hilsenhoff biotic index and abundance. Explanatory variables included average velocity, reference, water temperature, distance to Hugh Keenleyside dam and D90. Coefficients were standardized to allow comparisons of the direction and size of effects, noting that variables with CLs that do not cross zero have an effect on the response variable. Key explanatory variables are those that have a relative variable importance (RVI) of greater than 0.6-0.7 and the RVI is shown on the right-hand side of each figure.**

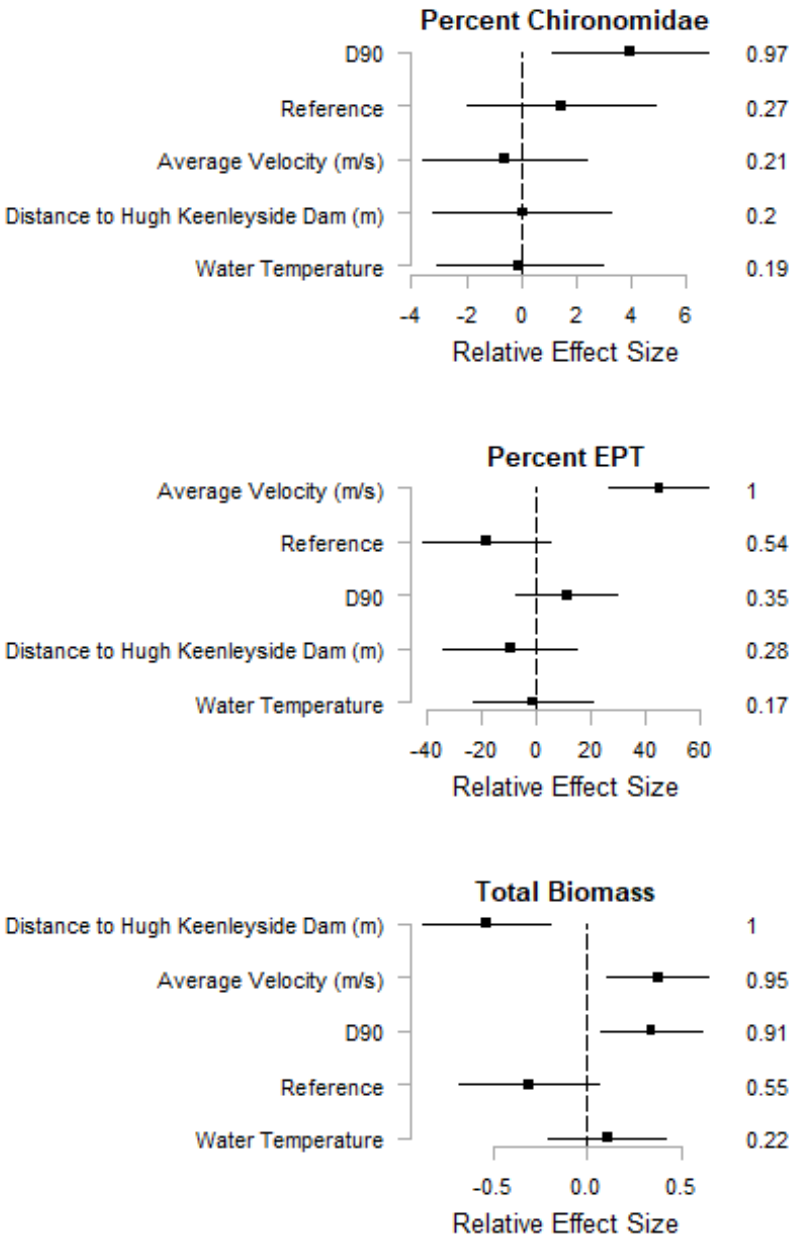


Figure A2. **The coefficients and their 95% CLs of standardized explanatory variables of benthic production for all samplers. Benthic responses included percent ept, percent chironomide and Biomass. Explanatory variables included average velocity, reference, water temperature, distance to Hugh Keenleyside dam and D90. Coefficients were standardized to allow comparisons of the direction and size of effects, noting that variables with CLs that do not cross zero have an effect on the response variable. Key explanatory variables are those that have a relative variable importance (RVI) of greater than 0.6-0.7 and the RVI is shown on the right-hand side of each figure.**

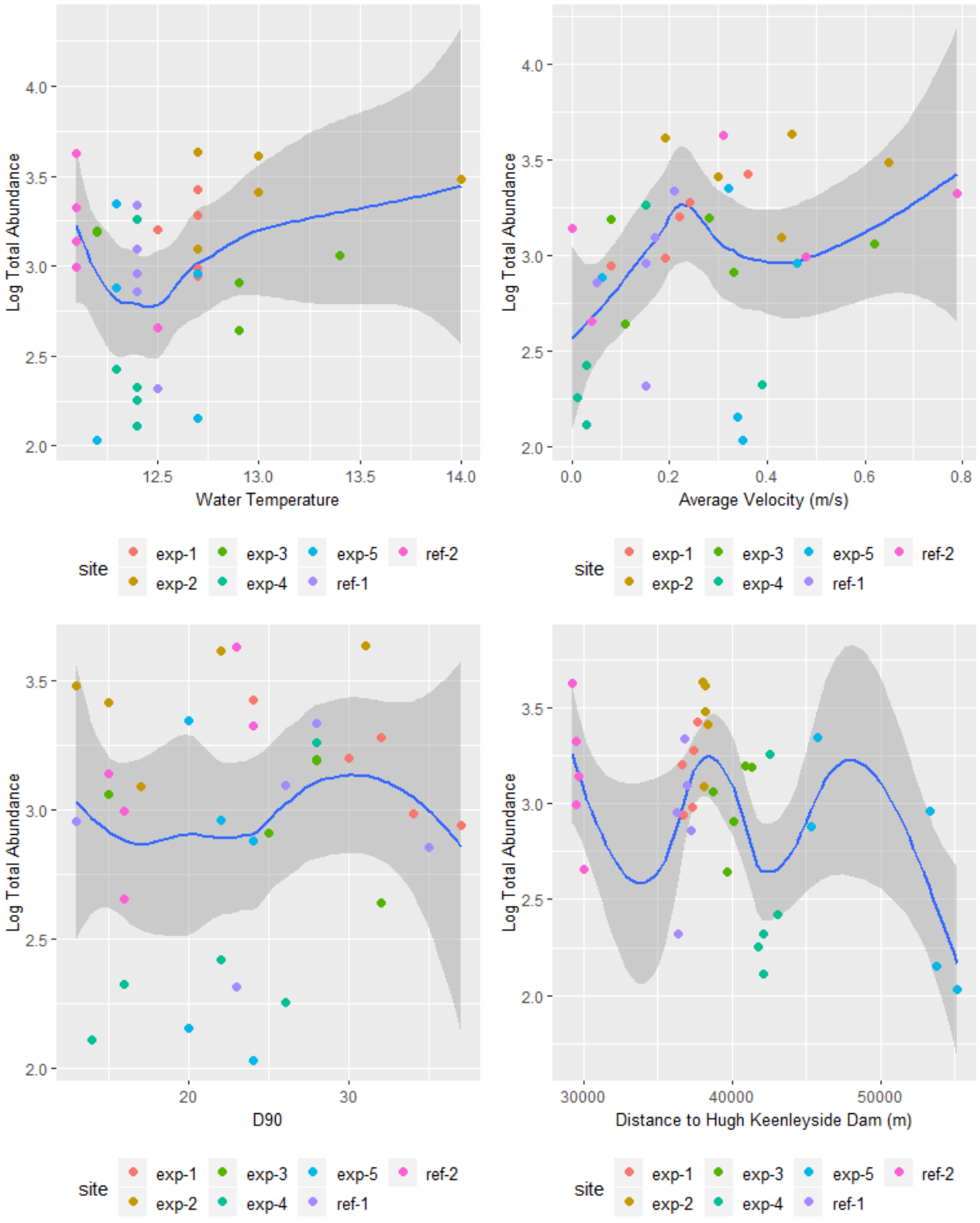


Figure A3. **Explanatory variables and log.tot.abun grouped by site for riverine samplers.**

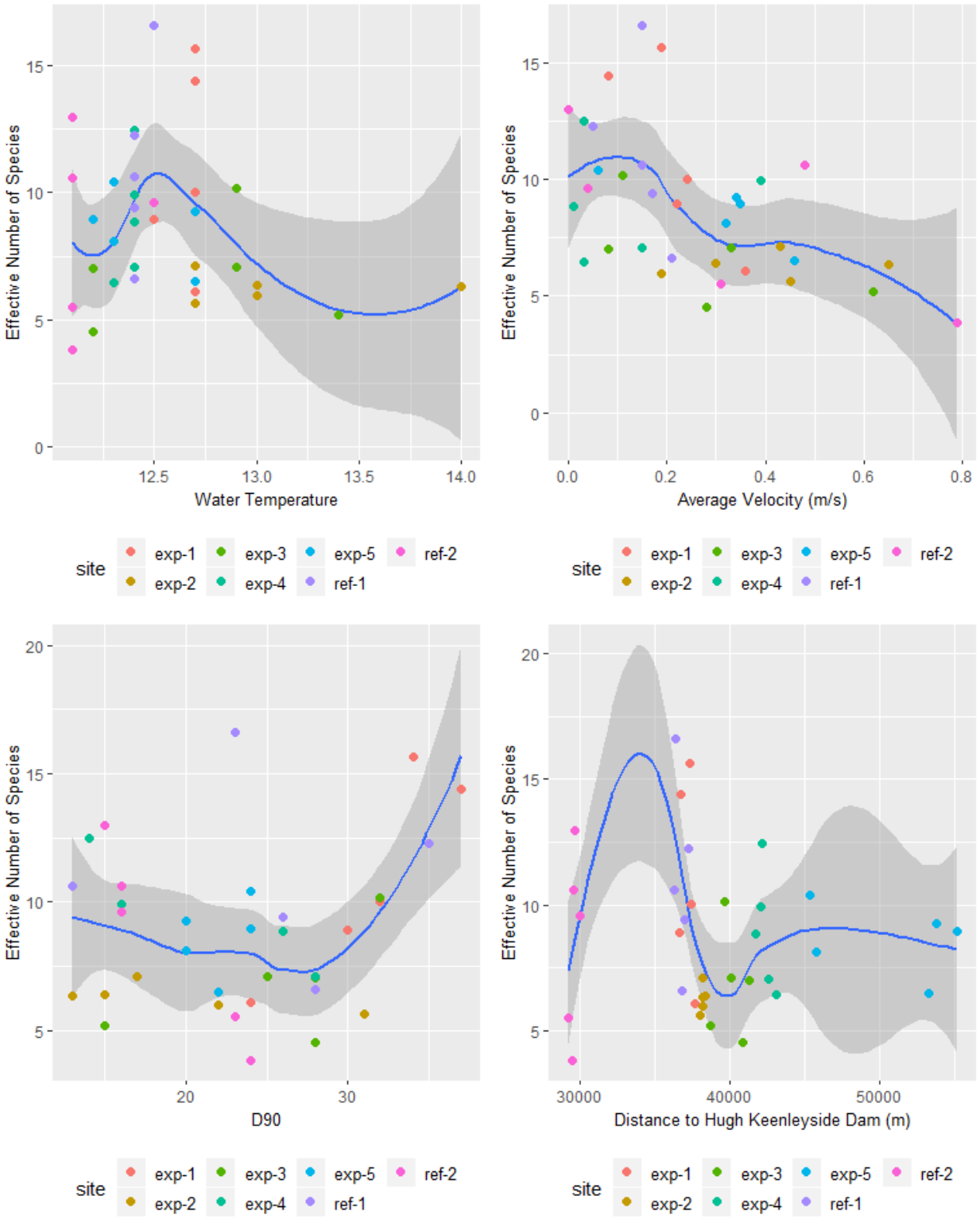


Figure A4. **Explanatory variables and H grouped by site for riverine samplers.**

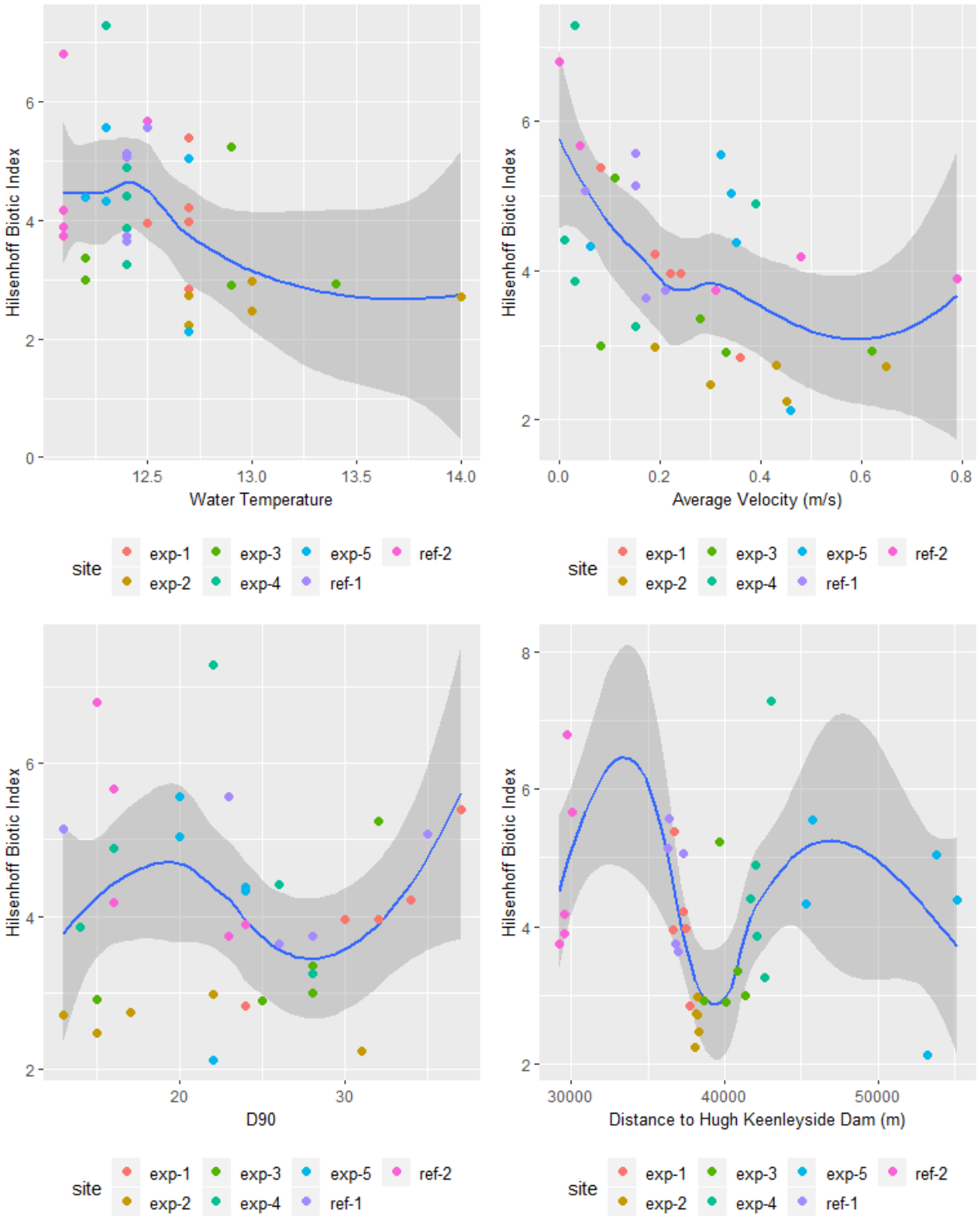


Figure A5. Explanatory variables and Hilsenhoff_Biotic_Index grouped by site for riverine samplers.

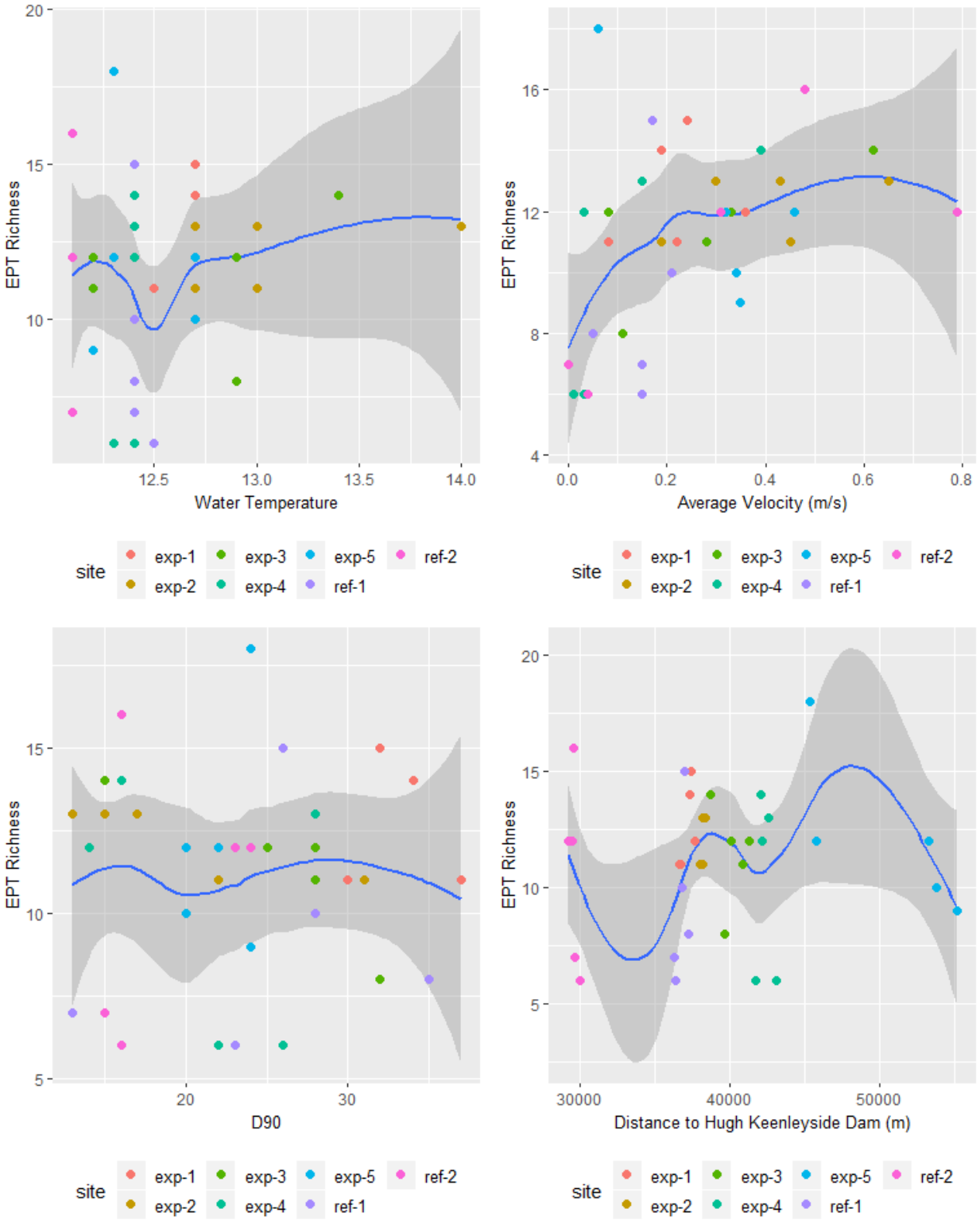


Figure A6. **Explanatory variables and ept.rich grouped by site for riverine samplers.**

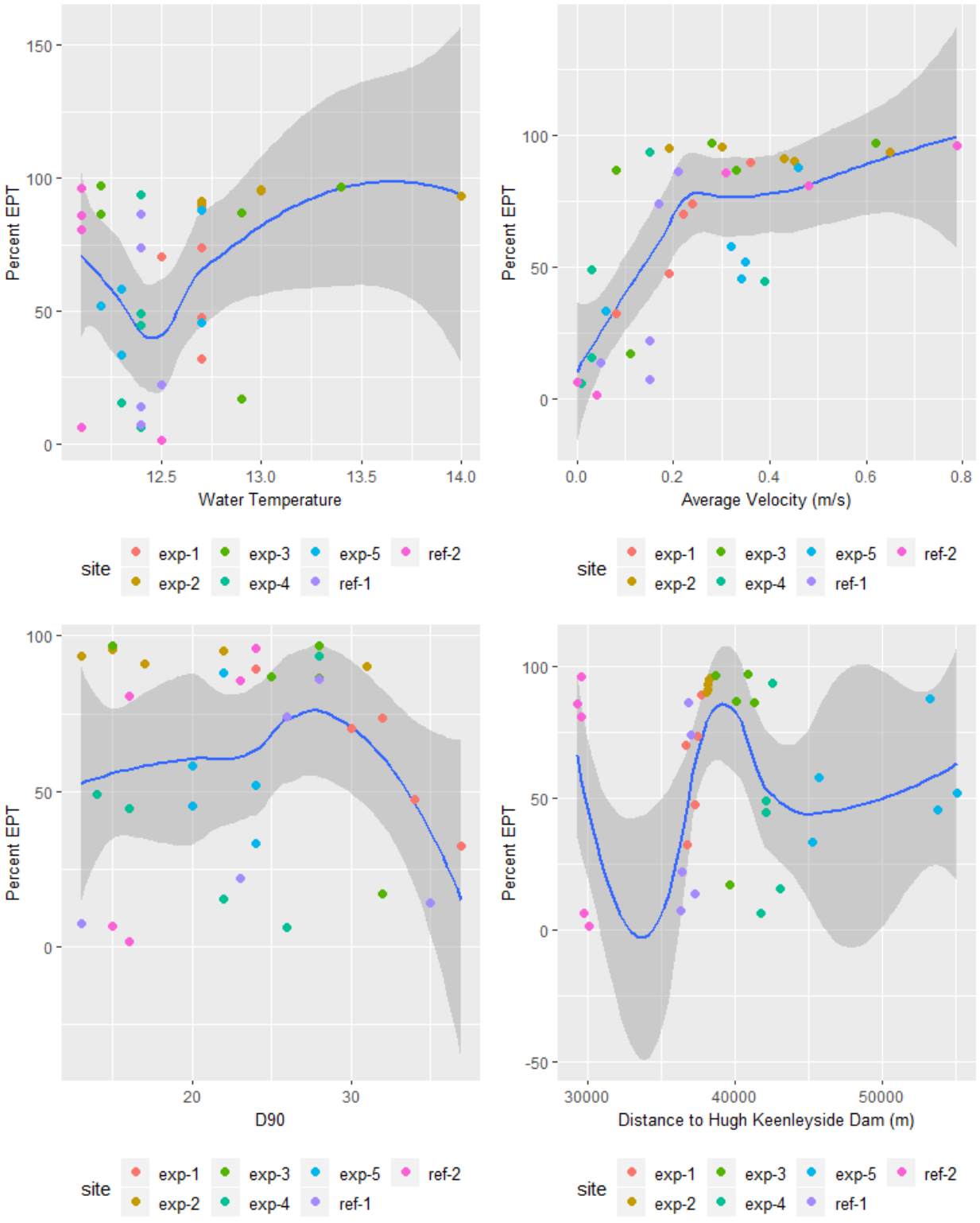


Figure A7. **Explanatory variables and perc.EPT grouped by site for riverine samplers.**

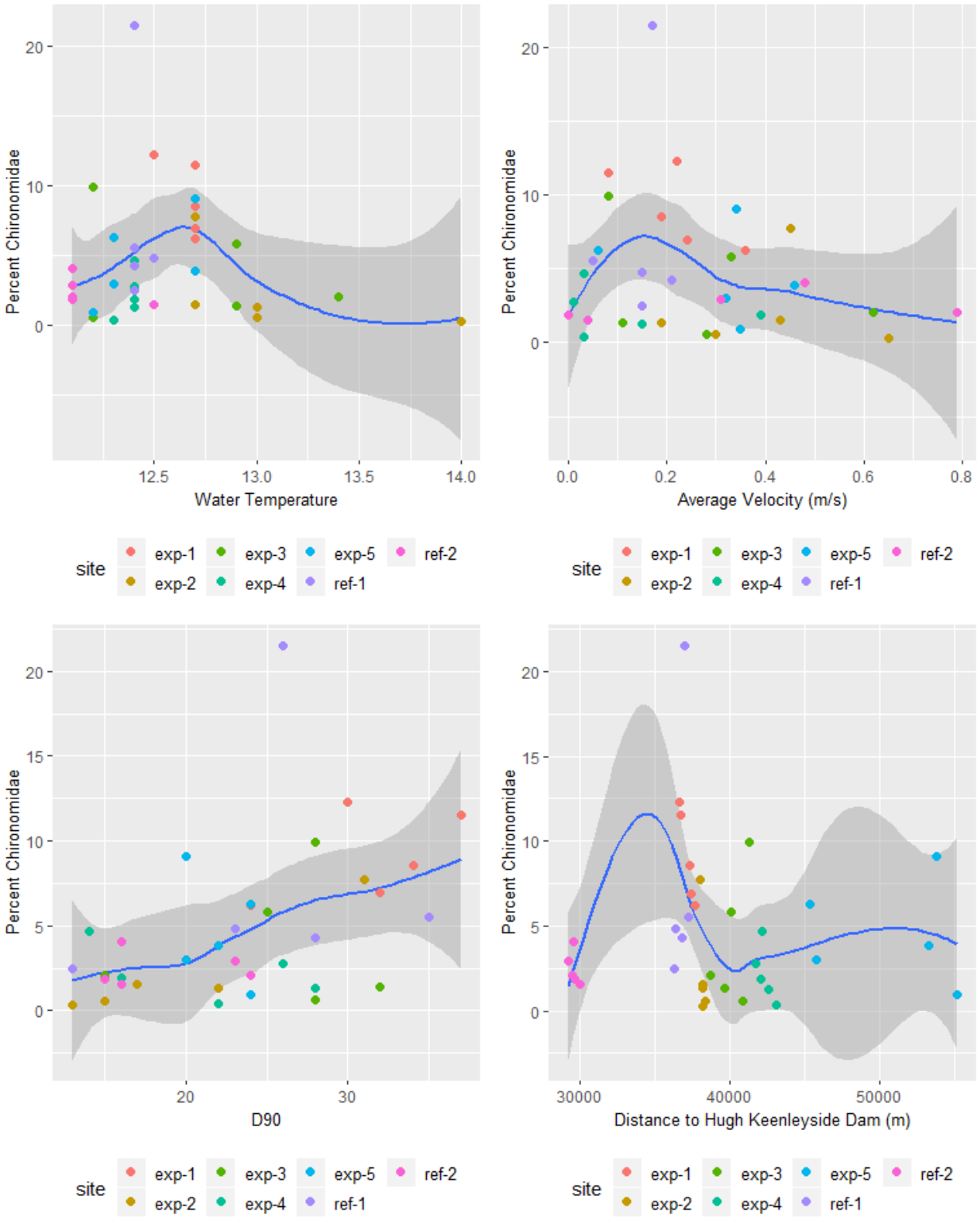


Figure A8. **Explanatory variables and perc.Chironomidae grouped by site for riverine samplers.**

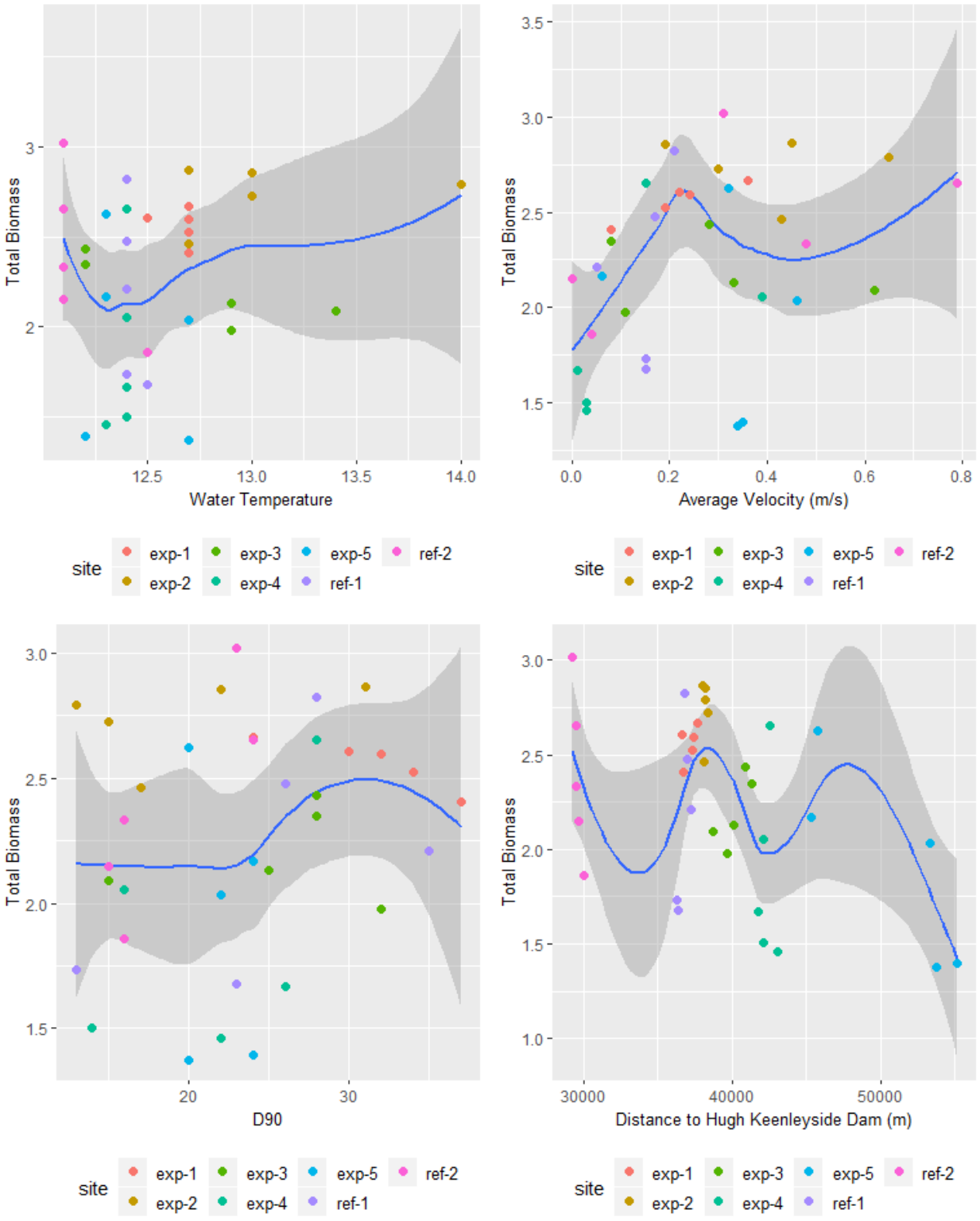


Figure A9. **Explanatory variables and log.tot.biom grouped by site for riverine samplers.**

Appendix P

Depositional Invertebrates Statistical Outputs

Benthic Invertebrate Depositional Sites Supplemental Results

```
# Log 10 Transform variables- total abundance percent EPT and chiron
ml1$value=with(ml1,ifelse(variable %in%
c("tot.abun","perc.Chironomidae","perc.EPT"),log10(value),value))

#checking Model assumptions
ddply(ml1,.(variable,lab),function(x)tidy(shapiro.test(x$value))$p.value)
```

variable	lab	V1
H	exp-2012	0.105
H	exp-2015	0.92
H	ref-2012	0.206
H	ref-2015	0.0879
perc.EPT	exp-2012	0.511
perc.EPT	exp-2015	0.14
perc.EPT	ref-2012	0.28
perc.EPT	ref-2015	0.877
perc.Chironomidae	exp-2012	0.0875
perc.Chironomidae	exp-2015	0.0471
perc.Chironomidae	ref-2012	0.655
perc.Chironomidae	ref-2015	0.746
tot.abun	exp-2012	0.453
tot.abun	exp-2015	0.825
tot.abun	ref-2012	0.0442
tot.abun	ref-2015	0.568

```
ddply(ml1,.(variable),function(x)tidy(levene.test(x$value,x$lab))$p.value)
```

variable	V1

H	0.877
perc.EPT	0.262
perc.Chironomidae	0.7
tot.abun	0.678

[1] “aov(value~year+ref_exp)”

ANOVA summary table for tot.abun depositional sites benthic invertebrate.

term	df	sumsq	meansq	statistic	p.value
x$year	1.000	0.024	0.024	0.090	0.768
x$ref_exp	1.000	0.179	0.179	0.677	0.422
Residuals	17.000	4.495	0.264		

[1] “aov(value~year+ref_exp)”

ANOVA summary table for perc.Chironomidae depositional sites benthic invertebrate.

term	df	sumsq	meansq	statistic	p.value
x$year	1.000	0.526	0.526	1.536	0.232
x$ref_exp	1.000	0.185	0.185	0.539	0.473
Residuals	17.000	5.820	0.342		

[1] “aov(value~year+ref_exp)”

ANOVA summary table for perc.EPT depositional sites benthic invertebrate.

term	df	sumsq	meansq	statistic	p.value
x$year	1.000	0.794	0.794	1.979	0.178
x$ref_exp	1.000	0.001	0.001	0.002	0.966
Residuals	17.000	6.821	0.401		

[1] “aov(value~year+ref_exp)”

ANOVA summary table for H depositional sites benthic invertebrate.

term	df	sumsq	meansq	statistic	p.value
x$year	1.000	31.182	31.182	2.388	0.141
x$ref_exp	1.000	6.307	6.307	0.483	0.496

term	df	sumsq	meansq	statistic	p.value
Residuals	17.000	221.963	13.057		

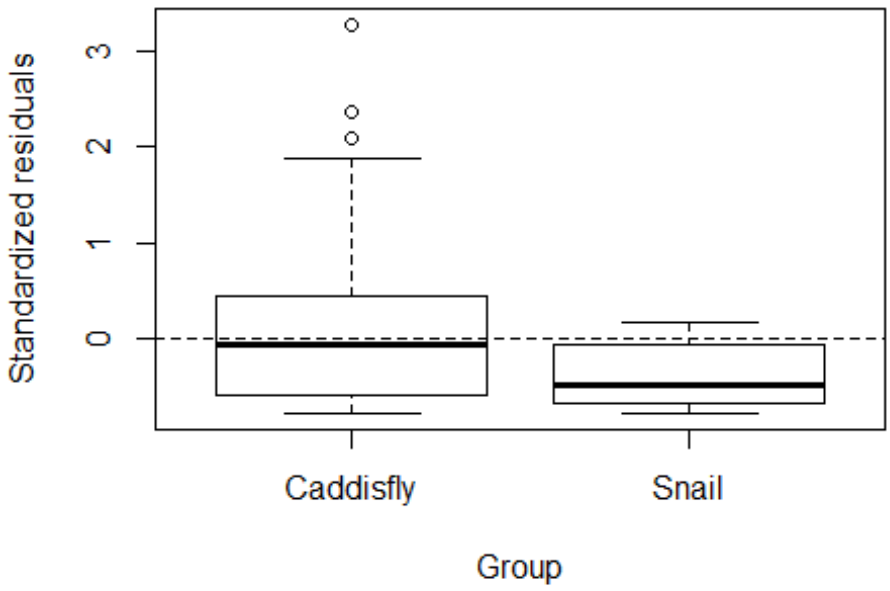
Appendix Q

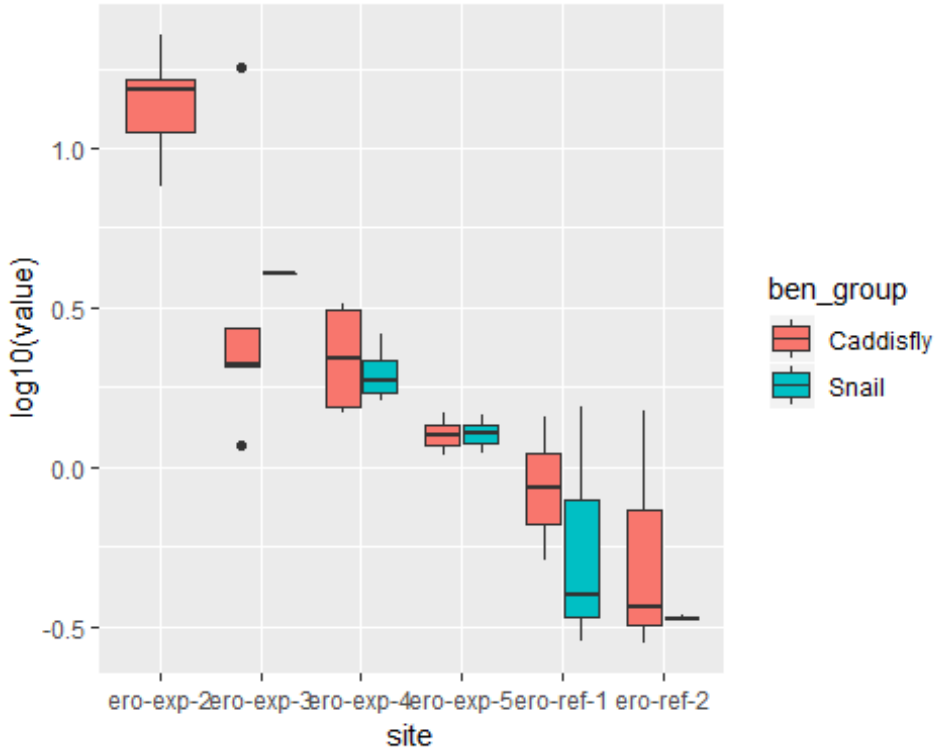
Invertebrate ANOVA Mixed Effects Outputs

Anova Mixed Effects Benthic

```
##   dep_ero ref_exp site transect taxa_group            label ben_group
## 1     ero     exp    2        1 Peripyhton 2015-ero-exp-2-1      <NA>
## 2     ero     exp    2        1         BI 2015-ero-exp-2-1 Caddisfly
## 3     ero     exp    2        2         BI 2015-ero-exp-2-2 Caddisfly
## 4     ero     exp    2        2 Peripyhton 2015-ero-exp-2-2      <NA>
## 5     ero     exp    2        3         BI 2015-ero-exp-2-3 Caddisfly
## 6     ero     exp    2        3 Peripyhton 2015-ero-exp-2-3      <NA>
##   CII_Dist       Bank   metal value   dl    label1
## 1     -478 Right Bank Arsenic 0.280 <NA> ero-exp-2
## 2     -478 Right Bank Arsenic 0.298 <NA> ero-exp-2
## 3     -383  Left Bank Arsenic 0.398 <NA> ero-exp-2
## 4     -383  Left Bank Arsenic 0.095 <NA> ero-exp-2
## 5     -346  Left Bank Arsenic 0.293 <NA> ero-exp-2
## 6     -346  Left Bank Arsenic 0.338 <NA> ero-exp-2

##    dep_ero ref_exp site transect taxa_group            label ben_group
## 2      ero     exp    2        1         BI 2015-ero-exp-2-1 Caddisfly
## 3      ero     exp    2        2         BI 2015-ero-exp-2-2 Caddisfly
## 5      ero     exp    2        3         BI 2015-ero-exp-2-3 Caddisfly
## 7      ero     exp    2        4         BI 2015-ero-exp-2-4 Caddisfly
## 10     ero     exp    2        5         BI 2015-ero-exp-2-5 Caddisfly
## 12     ero     exp    3        1         BI 2015-ero-exp-3-1 Caddisfly
##    CII_Dist       Bank   metal value   dl    label1        class1
## 2      -478 Right Bank Arsenic 0.298 <NA> ero-exp-2 exp_Caddisfly
## 3      -383  Left Bank Arsenic 0.398 <NA> ero-exp-2 exp_Caddisfly
## 5      -346  Left Bank Arsenic 0.293 <NA> ero-exp-2 exp_Caddisfly
## 7      -206  Left Bank Arsenic 0.356 <NA> ero-exp-2 exp_Caddisfly
## 10     -316 Right Bank Arsenic 0.257 <NA> ero-exp-2 exp_Caddisfly
## 12      148 Right Bank Arsenic 0.214 <NA> ero-exp-3 exp_Caddisfly

##    ref_exp    metal        V1
## 1      exp  Arsenic 0.0000000
## 2      exp  Cadmium 0.0000000
## 3      exp Chromium 0.2916667
## 4      exp   Copper 0.0000000
## 5      exp     Lead 0.0000000
## 6      exp  Mercury 0.6250000
## 7      exp Selenium 0.5833333
## 8      exp   Silver 0.5833333
## 9      exp Thallium 0.4166667
## 10     exp     Zinc 0.0000000
## 11     ref  Arsenic 0.0000000
## 12     ref  Cadmium 0.0000000
## 13     ref Chromium 0.1000000
## 14     ref   Copper 0.0000000
## 15     ref     Lead 0.0000000
```

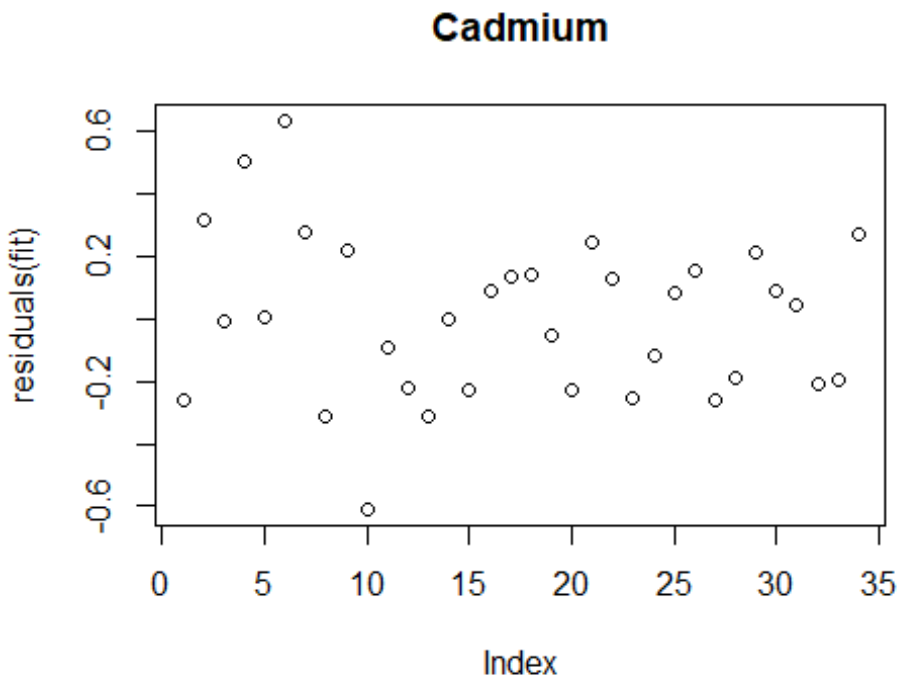
```
## 16     ref  Mercury 0.4000000
## 17     ref Selenium 0.1000000
## 18     ref   Silver 0.5000000
## 19     ref Thallium 0.1000000
## 20     ref     Zinc 0.0000000

##       metal        V1
## 1   Arsenic 0.0000000
## 2   Cadmium 0.0000000
## 3  Chromium 0.2352941
## 4    Copper 0.0000000
## 5      Lead 0.0000000
## 6   Mercury 0.5588235
## 7  Selenium 0.4411765
## 8    Silver 0.5588235
## 9  Thallium 0.3235294
## 10     Zinc 0.0000000
```





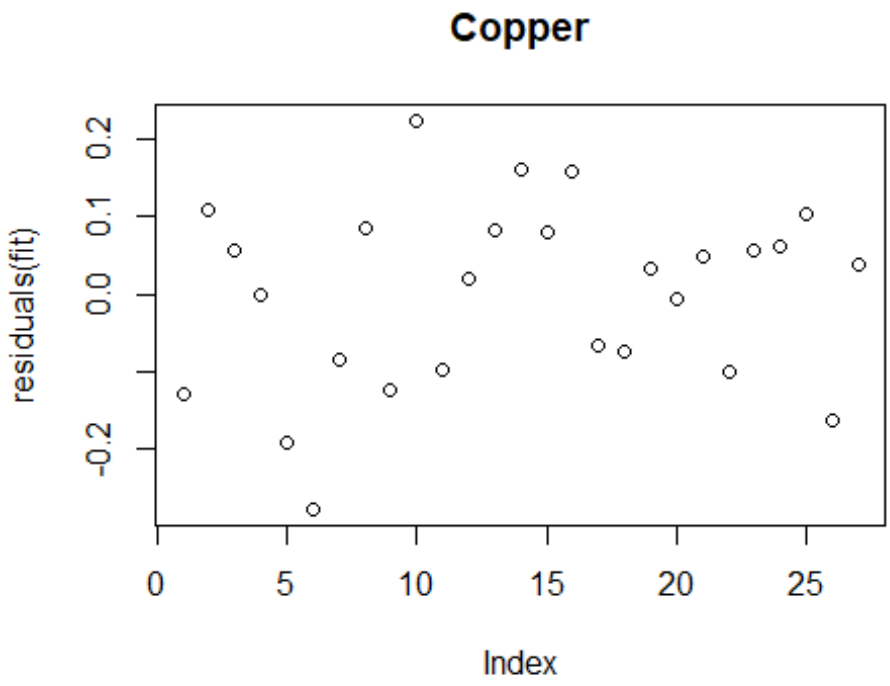

```
## [1] "Cadmium"
## Linear mixed model fit by REML. t-tests use Satterthwaite's method [
## lmerModLmerTest]
## Formula: log10(value) ~ (1 | site) + ref_exp + ben_group
##    Data: x
##
## REML criterion at convergence: 20.8
##
## Scaled residuals:
##      Min       1Q   Median       3Q      Max
## -2.17668 -0.78737  0.01442  0.54228  2.26364
##
## Random effects:
##  Groups   Name        Variance Std.Dev.
##  site     (Intercept) 0.02762  0.1662
##  Residual             0.07830  0.2798
## Number of obs: 34, groups:  site, 6
##
## Fixed effects:
##                Estimate Std. Error      df t value Pr(>|t|)
## (Intercept)     -0.4005     0.1069  4.3573  -3.748   0.0171 *
## ref_expref      -0.4375     0.1796  3.9002  -2.436   0.0731 .
## ben_groupSnail   0.2660     0.1064 29.9893   2.499   0.0182 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Correlation of Fixed Effects:
```

```
##             (Intr) rf_xpr
## ref_expref  -0.500
## ben_gropSnl -0.320 -0.106
```



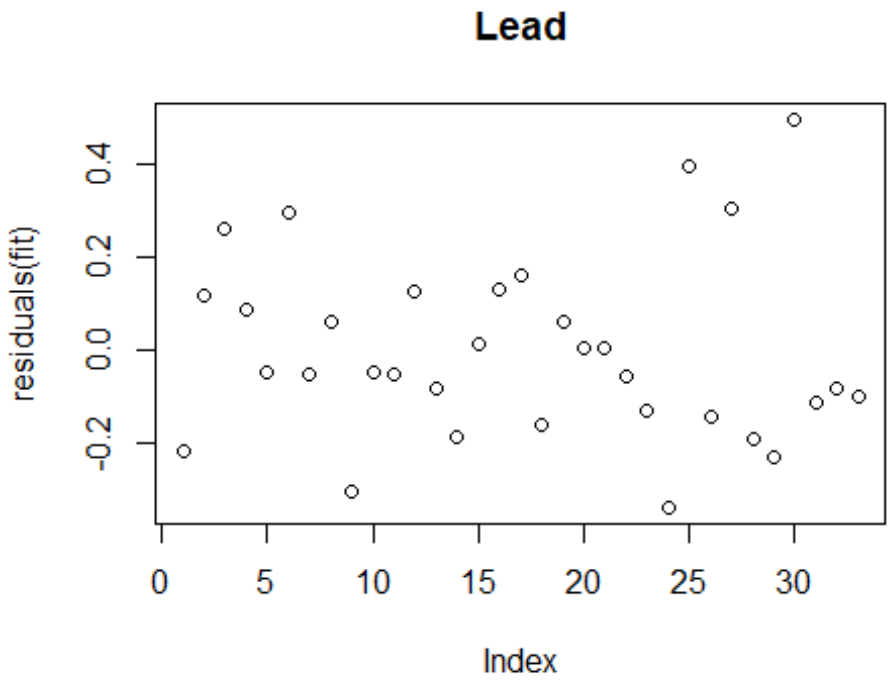

```
## NULL
## $site
##           (Intercept) ref_expref ben_groupSnail
## ero-exp-2  -0.2025990 -0.4375401      0.2659664
## ero-exp-3  -0.3615548 -0.4375401      0.2659664
## ero-exp-4  -0.5599000 -0.4375401      0.2659664
## ero-exp-5  -0.4780601 -0.4375401      0.2659664
## ero-ref-1  -0.4002320 -0.4375401      0.2659664
## ero-ref-2  -0.4008250 -0.4375401      0.2659664
##
## attr(,"class")
## [1] "coef.mer"
## [1] "Copper"
## Linear mixed model fit by REML. t-tests use Satterthwaite's method [
## lmerModLmerTest]
## Formula: log10(value) ~ (1 | site) + ref_exp + ben_group
##    Data: x
##
## REML criterion at convergence: -23.6
##
## Scaled residuals:
##     Min      1Q  Median      3Q     Max
## -2.2097 -0.7326  0.2700  0.6461  1.7823
```

```
##
## Random effects:
##  Groups   Name        Variance  Std.Dev.
##  site     (Intercept) 0.0008601 0.02933
##  Residual             0.0158662 0.12596
## Number of obs: 27, groups:  site, 5
##
## Fixed effects:
##                Estimate Std. Error       df t value Pr(>|t|)
## (Intercept)     0.62003    0.03935  3.08754  15.757 0.000473 ***
## ref_expref     -0.26156    0.05759  2.36640  -4.542 0.032689 *
## ben_groupSnail  0.53236    0.05075 23.99088  10.490 1.93e-10 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Correlation of Fixed Effects:
##             (Intr) rf_xpr
## ref_expref  -0.486
## ben_gropSnl -0.447 -0.135
```



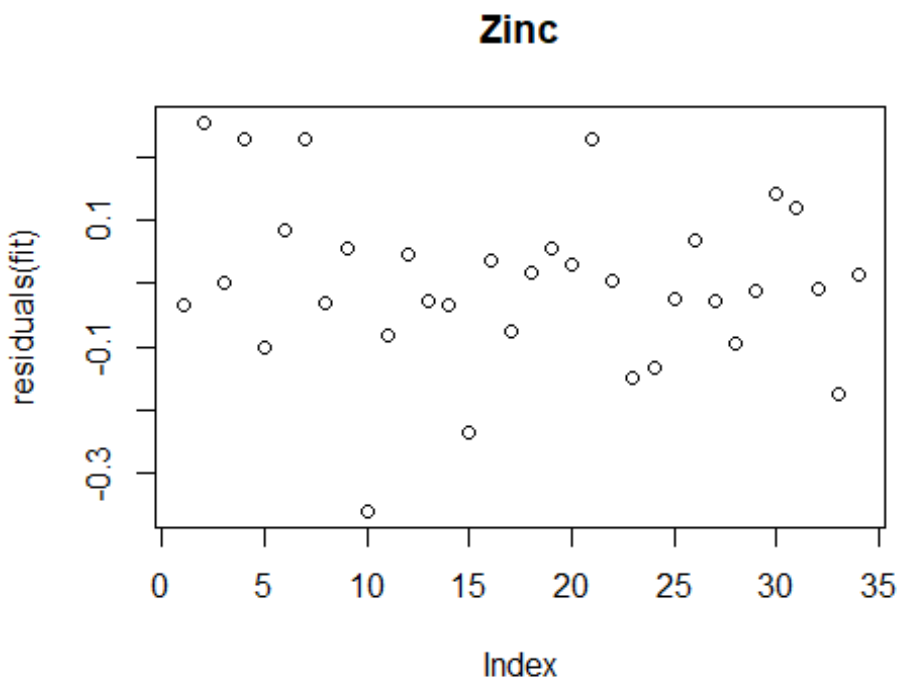

```
## NULL
## $site
##           (Intercept) ref_expref ben_groupSnail
## ero-exp-2   0.6114608 -0.2615599      0.5323605
## ero-exp-4   0.6104915 -0.2615599      0.5323605
## ero-exp-5   0.6381423 -0.2615599      0.5323605
## ero-ref-1   0.6147944 -0.2615599      0.5323605
```

```
## ero-ref-2   0.6252687 -0.2615599      0.5323605
##
## attr(,"class")
## [1] "coef.mer"
## [1] "Lead"
##     dep_ero ref_exp      site transect taxa_group            label
## 292     ero     exp ero-exp-3        1         BI 2015-ero-exp-3-1
##     ben_group CII_Dist       Bank metal value   dl    label1        class1
## 292 Caddisfly      148 Right Bank  Lead  17.9 <NA> ero-exp-3 exp_Caddisfly
## Linear mixed model fit by REML. t-tests use Satterthwaite's method [
## lmerModLmerTest]
## Formula: log10(value) ~ (1 | site) + ref_exp + ben_group
##    Data: x
##
## REML criterion at convergence: 12
##
## Scaled residuals:
##     Min      1Q  Median      3Q     Max
## -1.5615 -0.5932 -0.2214  0.5484  2.2952
##
## Random effects:
##  Groups   Name        Variance Std.Dev.
##  site     (Intercept) 0.13950  0.3735
##  Residual             0.04679  0.2163
## Number of obs: 33, groups:  site, 6
##
## Fixed effects:
##                Estimate Std. Error       df t value Pr(>|t|)
## (Intercept)     0.49522    0.19432  4.06373   2.549   0.0624 .
## ref_expref     -0.73095    0.33412  3.94798  -2.188   0.0948 .
## ben_groupSnail -0.06076    0.08499 26.55799  -0.715   0.4809
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Correlation of Fixed Effects:
##             (Intr) rf_xpr
## ref_expref  -0.563
## ben_gropSnl -0.143 -0.044
```



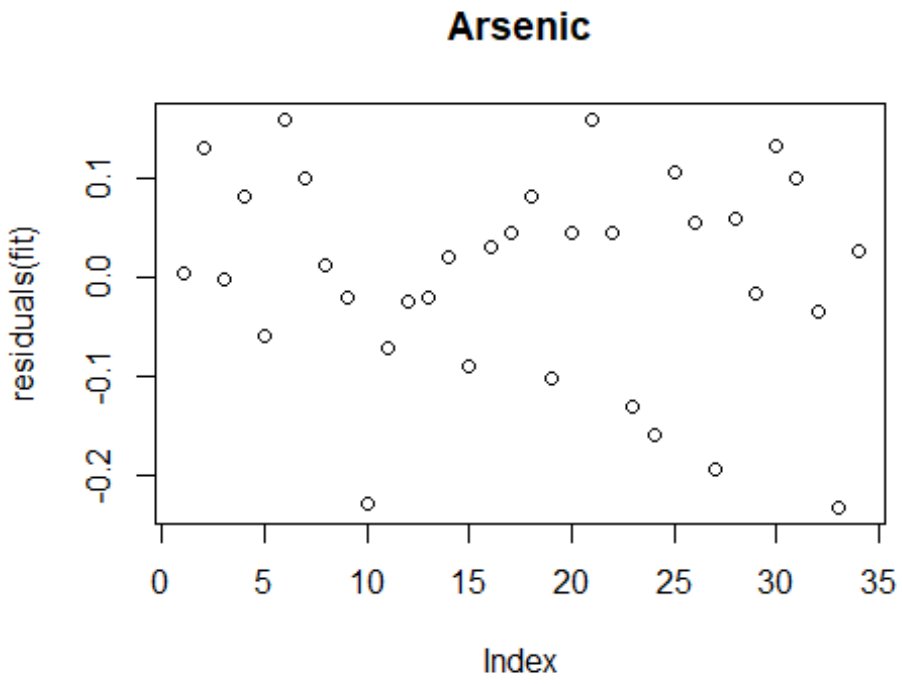

```
## NULL
## $site
##           (Intercept) ref_expref ben_groupSnail
## ero-exp-2   1.0962245 -0.7309458     -0.0607551
## ero-exp-3   0.3701087 -0.7309458     -0.0607551
## ero-exp-4   0.3528087 -0.7309458     -0.0607551
## ero-exp-5   0.1617537 -0.7309458     -0.0607551
## ero-ref-1   0.5828066 -0.7309458     -0.0607551
## ero-ref-2   0.4076412 -0.7309458     -0.0607551
##
## attr(,"class")
## [1] "coef.mer"
## [1] "Zinc"
## Linear mixed model fit by REML. t-tests use Satterthwaite's method [
## lmerModLmerTest]
## Formula: log10(value) ~ (1 | site) + ref_exp + ben_group
##    Data: x
##
## REML criterion at convergence: -23
##
## Scaled residuals:
##      Min       1Q   Median       3Q      Max
## -2.55971 -0.45890 -0.02101  0.38978  1.80241
##
## Random effects:
##  Groups   Name        Variance Std.Dev.
##  site     (Intercept) 0.004231 0.06505
```

```
##  Residual             0.019807 0.14074
## Number of obs: 34, groups:  site, 6
##
## Fixed effects:
##                Estimate Std. Error       df t value Pr(>|t|)
## (Intercept)     1.46587    0.04683  4.49430  31.301 1.96e-06 ***
## ref_expref     -0.16642    0.07801  3.91156  -2.133    0.101
## ben_groupSnail -0.43526    0.05291 30.59227  -8.227 3.01e-09 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Correlation of Fixed Effects:
##             (Intr) rf_xpr
## ref_expref  -0.477
## ben_gropSnl -0.365 -0.120
```

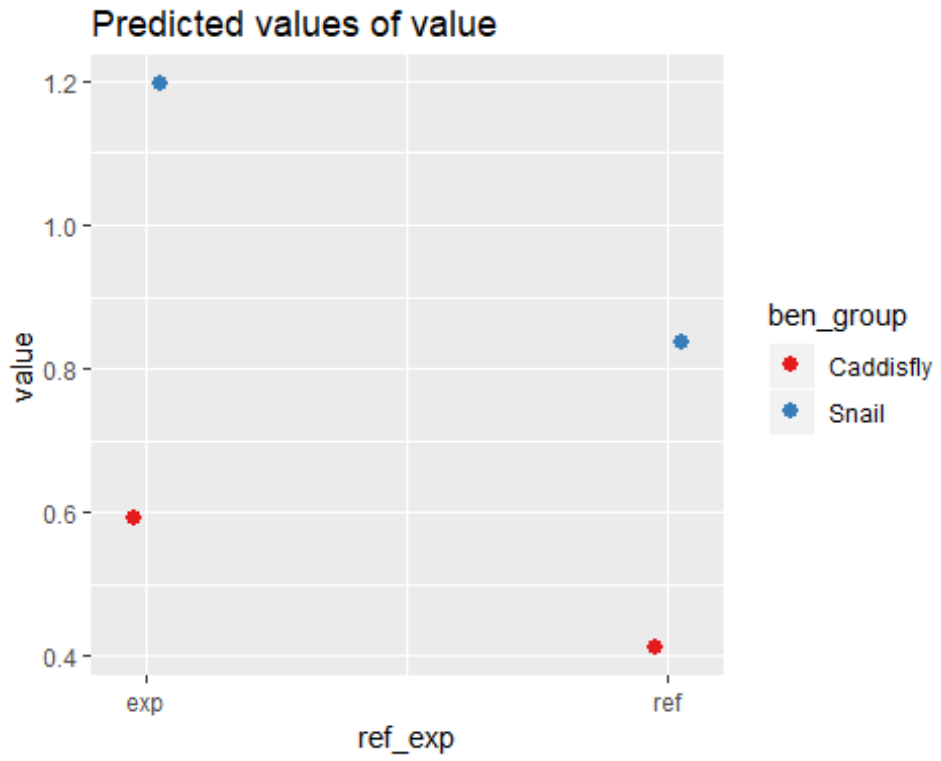



```
## NULL
## $site
##           (Intercept) ref_expref ben_groupSnail
## ero-exp-2    1.540125 -0.1664191     -0.4352634
## ero-exp-3    1.443030 -0.1664191     -0.4352634
## ero-exp-4    1.419042 -0.1664191     -0.4352634
## ero-exp-5    1.461270 -0.1664191     -0.4352634
## ero-ref-1    1.446193 -0.1664191     -0.4352634
## ero-ref-2    1.485541 -0.1664191     -0.4352634
##
## attr(,"class")
```

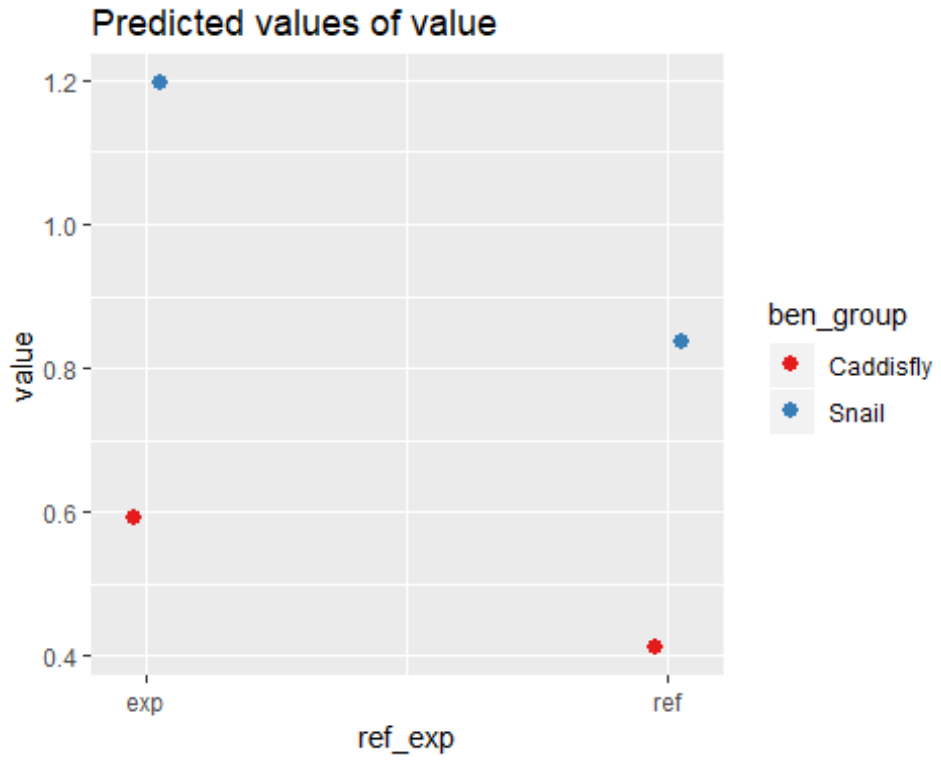
```
## [1] "coef.mer"
## [1] "Arsenic"
## Linear mixed model fit by REML. t-tests use Satterthwaite's method [
## lmerModLmerTest]
## Formula: log10(value) ~ (1 | site) + ref_exp + ben_group
##    Data: x
##
## REML criterion at convergence: -30.2
##
## Scaled residuals:
##     Min      1Q  Median      3Q     Max
## -2.0288 -0.4705  0.1458  0.6629  1.3870
##
## Random effects:
##  Groups   Name        Variance Std.Dev.
##  site     (Intercept) 0.01939  0.1392
##  Residual             0.01304  0.1142
## Number of obs: 34, groups:  site, 6
##
## Fixed effects:
##                Estimate Std. Error       df t value Pr(>|t|)
## (Intercept)    -0.75582    0.07489  4.11539 -10.093 0.000469 ***
## ref_expref     -0.11631    0.12834  3.94832  -0.906 0.416685
## ben_groupSnail  0.33286    0.04449 28.12958   7.481 3.68e-08 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Correlation of Fixed Effects:
##             (Intr) rf_xpr
## ref_expref  -0.551
## ben_gropSnl -0.189 -0.063
```




```
## NULL
## $site
##           (Intercept) ref_expref ben_groupSnail
## ero-exp-2  -0.5299212 -0.1163054      0.3328556
## ero-exp-3  -0.8279748 -0.1163054      0.3328556
## ero-exp-4  -0.8456223 -0.1163054      0.3328556
## ero-exp-5  -0.8197744 -0.1163054      0.3328556
## ero-ref-1  -0.7416170 -0.1163054      0.3328556
## ero-ref-2  -0.7700293 -0.1163054      0.3328556
##
## attr(,"class")
## [1] "coef.mer"

##
##  Modified robust Brown-Forsythe Levene-type test based on the
##  absolute deviations from the median
##
## data:  log10(x$value)
## Test Statistic = 0.2358, p-value = 0.6315

## `ref_exp` was not found in model terms. Maybe misspelled?
## `ben_group` was not found in model terms. Maybe misspelled?
```




```
## `ref_exp` was not found in model terms. Maybe misspelled?
## `ben_group` was not found in model terms. Maybe misspelled?
```

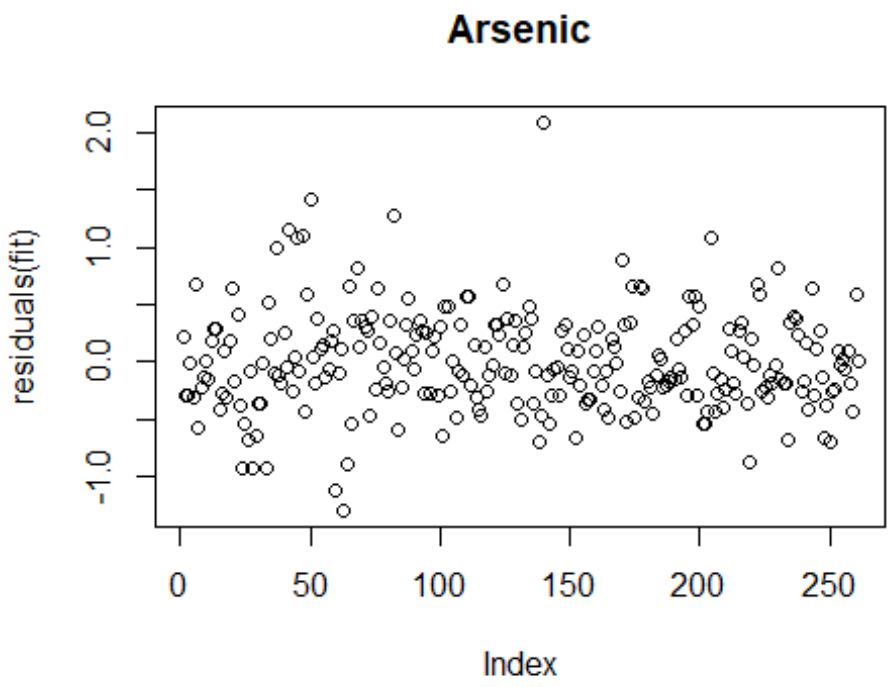


Appendix R

Fish Linear Mixed Effects Models

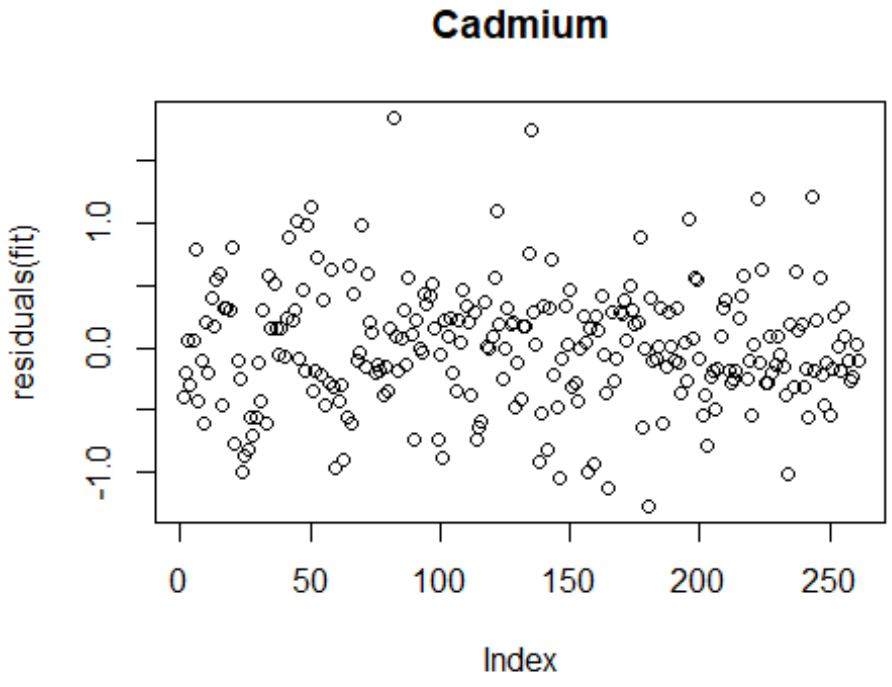
Linear Mixed Effects Small Body Fish

```
## [1] Arsenic
## 10 Levels: Arsenic Cadmium Chromium Copper Iron Lead Mercury ... Zinc
## Linear mixed model fit by REML. t-tests use Satterthwaite's method [
## lmerModLmerTest]
## Formula: log(value) ~ (1 | site) + treatment
##    Data: x
##
## REML criterion at convergence: 364.1
##
## Scaled residuals:
##     Min      1Q  Median      3Q     Max
## -2.8683 -0.6053 -0.1541  0.5890  4.6200
##
## Random effects:
##  Groups   Name        Variance Std.Dev.
##  site     (Intercept) 0.09389  0.3064
##  Residual             0.20541  0.4532
## Number of obs: 261, groups:  site, 17
##
## Fixed effects:
##             Estimate Std. Error      df t value Pr(>|t|)
## (Intercept)  -2.3679     0.2579 15.2642  -9.181 1.32e-07 ***
## treatment    -0.2858     0.2064 14.6950  -1.385    0.187
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Correlation of Fixed Effects:
##           (Intr)
## treatment -0.950
```



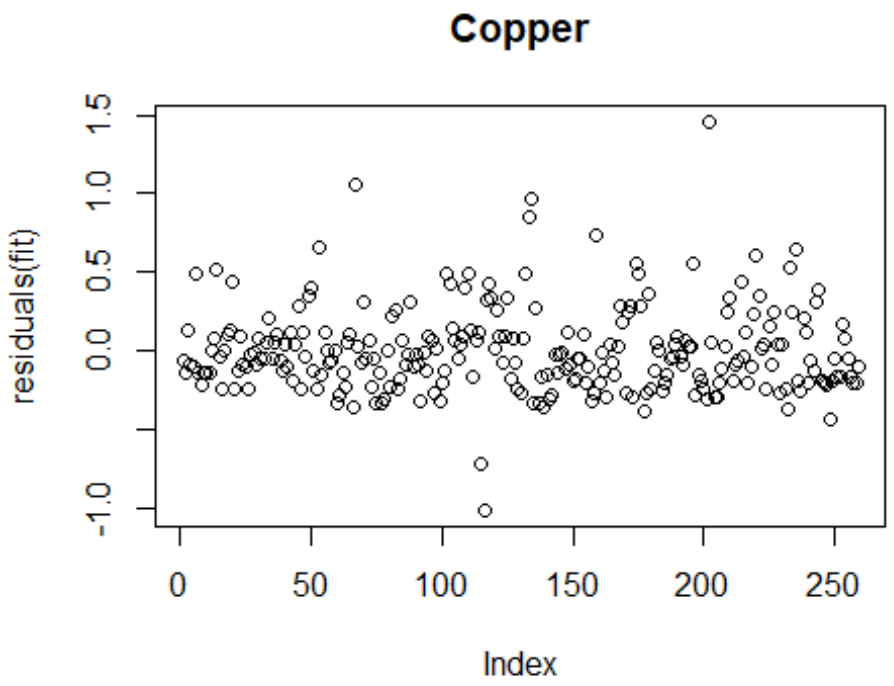

```
## NULL
## $site
##                (Intercept)  treatment
## Ero-Exp-1-1      -2.299334 -0.2858164
## Ero-Exp-1-2      -2.326202 -0.2858164
## Ero-Exp-2        -1.556158 -0.2858164
## Ero-Exp-3-1-L    -2.750026 -0.2858164
## Ero-Exp-3-1-R    -2.042531 -0.2858164
## Ero-Exp-3-2-L    -2.677317 -0.2858164
## Ero-Exp-3-2-R    -2.244427 -0.2858164
## Ero-Exp-3-3-L    -2.487250 -0.2858164
## Ero-Exp-3-3-R    -2.281436 -0.2858164
## Ero-Exp-3-4-L    -2.640081 -0.2858164
## Ero-Exp-3-4-R    -2.422526 -0.2858164
## Ero-Exp-4-5-L    -2.484535 -0.2858164
## Ero-Exp-4-5-R    -2.341827 -0.2858164
## Ero-Exp-5        -2.597631 -0.2858164
## Ero-Ref-2-4      -2.363213 -0.2858164
## Ero-Ref-3        -2.398227 -0.2858164
## Koot-Ref-1       -2.342405 -0.2858164
##
## attr(,"class")
## [1] "coef.mer"
## [1] Cadmium
## 10 Levels: Arsenic Cadmium Chromium Copper Iron Lead Mercury ... Zinc
## Linear mixed model fit by REML. t-tests use Satterthwaite's method [
## lmerModLmerTest]
```

```
## Formula: log(value) ~ (1 | site) + treatment
##    Data: x
##
## REML criterion at convergence: 421.6
##
## Scaled residuals:
##     Min      1Q  Median      3Q     Max
## -2.5740 -0.5629 -0.0128  0.5852  3.7325
##
## Random effects:
##  Groups   Name        Variance Std.Dev.
##  site     (Intercept) 0.2495   0.4995
##  Residual             0.2462   0.4961
## Number of obs: 261, groups:  site, 17
##
## Fixed effects:
##             Estimate Std. Error      df t value Pr(>|t|)
## (Intercept)  -1.9125     0.4058 14.5243  -4.713 0.000302 ***
## treatment    -0.6021     0.3264 14.2343  -1.845 0.085999 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Correlation of Fixed Effects:
##           (Intr)
## treatment -0.951
```



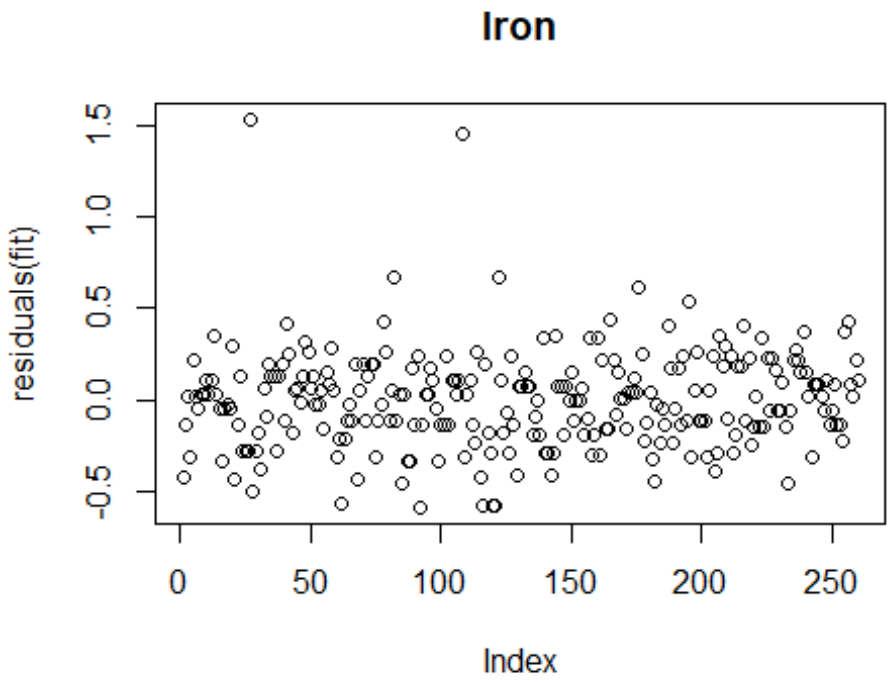
```
## NULL
## $site
##               (Intercept)  treatment
## Ero-Exp-1-1     -1.662838 -0.6020724
## Ero-Exp-1-2     -2.112517 -0.6020724
## Ero-Exp-2       -1.116976 -0.6020724
## Ero-Exp-3-1-L   -2.688417 -0.6020724
## Ero-Exp-3-1-R   -1.219063 -0.6020724
## Ero-Exp-3-2-L   -2.592915 -0.6020724
## Ero-Exp-3-2-R   -1.337942 -0.6020724
## Ero-Exp-3-3-L   -2.535187 -0.6020724
## Ero-Exp-3-3-R   -1.562888 -0.6020724
## Ero-Exp-3-4-L   -2.326252 -0.6020724
## Ero-Exp-3-4-R   -1.754419 -0.6020724
## Ero-Exp-4-5-L   -2.155218 -0.6020724
## Ero-Exp-4-5-R   -1.864227 -0.6020724
## Ero-Exp-5       -1.846068 -0.6020724
## Ero-Ref-2-4     -2.055967 -0.6020724
## Ero-Ref-3       -1.689874 -0.6020724
## Koot-Ref-1      -1.991643 -0.6020724
##
## attr(,"class")
## [1] "coef.mer"
## [1] Copper
## 10 Levels: Arsenic Cadmium Chromium Copper Iron Lead Mercury ... Zinc
## Linear mixed model fit by REML. t-tests use Satterthwaite's method [
## lmerModLmerTest]
## Formula: log(value) ~ (1 | site) + treatment
##    Data: x
##
## REML criterion at convergence: 96.6
##
## Scaled residuals:
##     Min      1Q  Median      3Q     Max
## -3.6057 -0.6639 -0.1644  0.3722  5.1839
##
## Random effects:
##  Groups   Name        Variance Std.Dev.
##  site     (Intercept) 0.005616 0.07494
##  Residual             0.078951 0.28098
## Number of obs: 259, groups:  site, 17
##
## Fixed effects:
##             Estimate Std. Error       df t value Pr(>|t|)
## (Intercept) -0.56204    0.08096 11.51575  -6.942 1.93e-05 ***
## treatment   -0.03356    0.06324 10.36988  -0.531    0.607
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Correlation of Fixed Effects:
```

```
##           (Intr)
## treatment -0.947
```



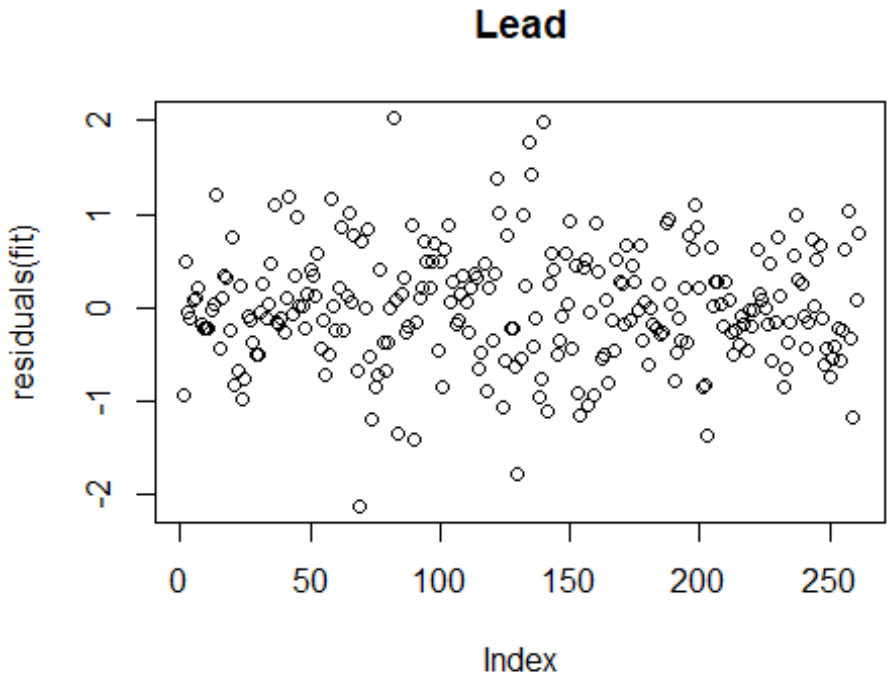

```
## NULL
## $site
##                (Intercept)   treatment
## Ero-Exp-1-1     -0.5631887 -0.03355638
## Ero-Exp-1-2     -0.6314352 -0.03355638
## Ero-Exp-2       -0.5384884 -0.03355638
## Ero-Exp-3-1-L   -0.6517661 -0.03355638
## Ero-Exp-3-1-R   -0.4959968 -0.03355638
## Ero-Exp-3-2-L   -0.5844614 -0.03355638
## Ero-Exp-3-2-R   -0.5627567 -0.03355638
## Ero-Exp-3-3-L   -0.5902185 -0.03355638
## Ero-Exp-3-3-R   -0.4975848 -0.03355638
## Ero-Exp-3-4-L   -0.6089825 -0.03355638
## Ero-Exp-3-4-R   -0.5964267 -0.03355638
## Ero-Exp-4-5-L   -0.5194198 -0.03355638
## Ero-Exp-4-5-R   -0.4713806 -0.03355638
## Ero-Exp-5       -0.5564382 -0.03355638
## Ero-Ref-2-4     -0.5600350 -0.03355638
## Ero-Ref-3       -0.6088744 -0.03355638
## Koot-Ref-1      -0.5172072 -0.03355638
##
## attr(,"class")
## [1] "coef.mer"
## [1] Iron
```

```
## 10 Levels: Arsenic Cadmium Chromium Copper Iron Lead Mercury ... Zinc
## Linear mixed model fit by REML. t-tests use Satterthwaite's method [
## lmerModLmerTest]
## Formula: log(value) ~ (1 | site) + treatment
##    Data: x
##
## REML criterion at convergence: 82.6
##
## Scaled residuals:
##     Min      1Q  Median      3Q     Max
## -2.1497 -0.5480  0.0730  0.5575  5.6191
##
## Random effects:
##  Groups   Name        Variance Std.Dev.
##  site     (Intercept) 0.005882 0.07669
##  Residual             0.074452 0.27286
## Number of obs: 260, groups:  site, 17
##
## Fixed effects:
##             Estimate Std. Error       df t value Pr(>|t|)
## (Intercept)  2.50493    0.08089 13.00255  30.967 1.44e-13 ***
## treatment    0.01846    0.06331 11.76956   0.292    0.776
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Correlation of Fixed Effects:
##           (Intr)
## treatment -0.948
```

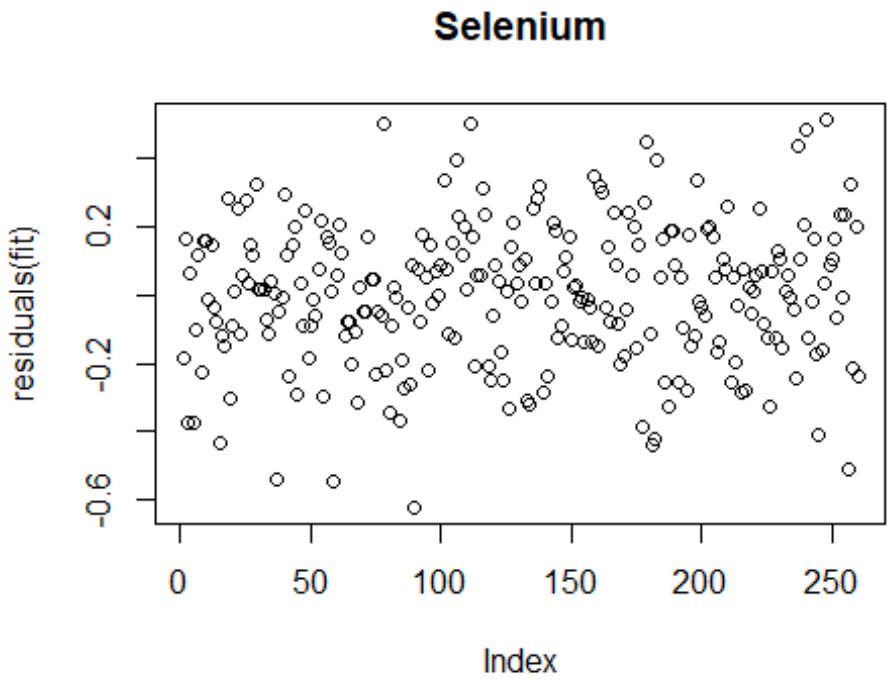



```
## NULL
## $site
##                (Intercept)  treatment
## Ero-Exp-1-1      2.534028 0.01845726
## Ero-Exp-1-2      2.494156 0.01845726
## Ero-Exp-2        2.514024 0.01845726
## Ero-Exp-3-1-L    2.469148 0.01845726
## Ero-Exp-3-1-R    2.473138 0.01845726
## Ero-Exp-3-2-L    2.477910 0.01845726
## Ero-Exp-3-2-R    2.353182 0.01845726
## Ero-Exp-3-3-L    2.541281 0.01845726
## Ero-Exp-3-3-R    2.506065 0.01845726
## Ero-Exp-3-4-L    2.516850 0.01845726
## Ero-Exp-3-4-R    2.489122 0.01845726
## Ero-Exp-4-5-L    2.527286 0.01845726
## Ero-Exp-4-5-R    2.572889 0.01845726
## Ero-Exp-5        2.599982 0.01845726
## Ero-Ref-2-4      2.540738 0.01845726
## Ero-Ref-3        2.498500 0.01845726
## Koot-Ref-1       2.475561 0.01845726
##
## attr(,"class")
## [1] "coef.mer"
## [1] Lead
## 10 Levels: Arsenic Cadmium Chromium Copper Iron Lead Mercury ... Zinc
## Linear mixed model fit by REML. t-tests use Satterthwaite's method [
## lmerModLmerTest]
```

```
## Formula: log(value) ~ (1 | site) + treatment
##    Data: x
##
## REML criterion at convergence: 551.4
##
## Scaled residuals:
##     Min      1Q  Median      3Q     Max
## -3.3511 -0.6006 -0.0281  0.5748  3.2008
##
## Random effects:
##  Groups   Name        Variance Std.Dev.
##  site     (Intercept) 0.4578   0.6766
##  Residual             0.4038   0.6355
## Number of obs: 261, groups:  site, 17
##
## Fixed effects:
##             Estimate Std. Error      df t value Pr(>|t|)
## (Intercept)   1.4507     0.5478 15.3021   2.648  0.01804 *
## treatment    -1.7501     0.4409 15.0252  -3.970  0.00123 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Correlation of Fixed Effects:
##           (Intr)
## treatment -0.951
```

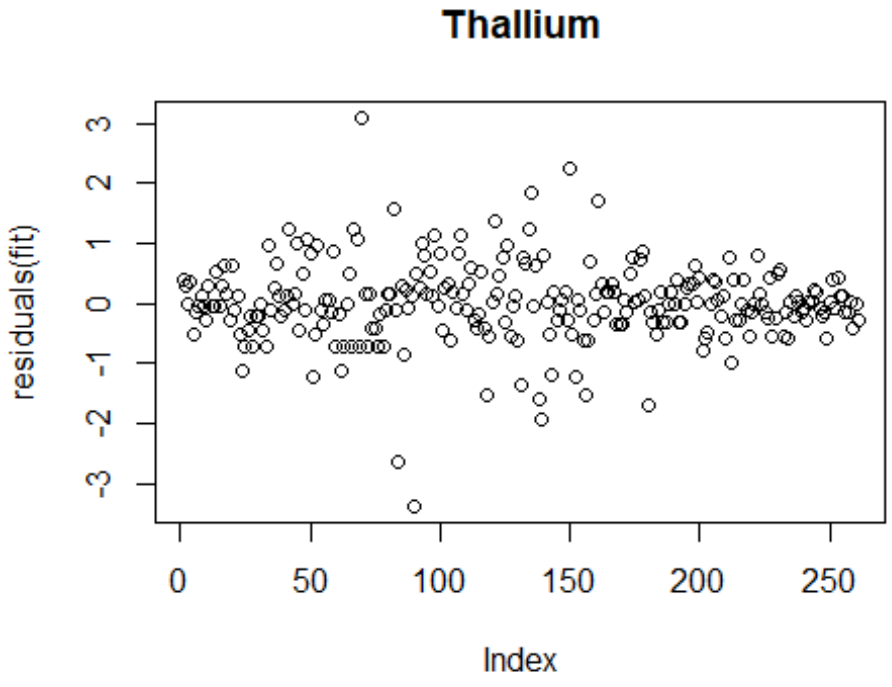


```
## NULL
## $site
##               (Intercept) treatment
## Ero-Exp-1-1     1.2131435 -1.750091
## Ero-Exp-1-2     1.8238678 -1.750091
## Ero-Exp-2       3.3997660 -1.750091
## Ero-Exp-3-1-L   0.6904550 -1.750091
## Ero-Exp-3-1-R   2.2115017 -1.750091
## Ero-Exp-3-2-L   1.0464876 -1.750091
## Ero-Exp-3-2-R   1.7773948 -1.750091
## Ero-Exp-3-3-L   1.1143892 -1.750091
## Ero-Exp-3-3-R   1.3247387 -1.750091
## Ero-Exp-3-4-L   1.1931356 -1.750091
## Ero-Exp-3-4-R   1.6014882 -1.750091
## Ero-Exp-4-5-L   0.8908756 -1.750091
## Ero-Exp-4-5-R   1.1031824 -1.750091
## Ero-Exp-5       0.9187612 -1.750091
## Ero-Ref-2-4     1.5066758 -1.750091
## Ero-Ref-3       1.2897477 -1.750091
## Koot-Ref-1      1.5555452 -1.750091
##
## attr(,"class")
## [1] "coef.mer"
## [1] Selenium
## 10 Levels: Arsenic Cadmium Chromium Copper Iron Lead Mercury ... Zinc
## Linear mixed model fit by REML. t-tests use Satterthwaite's method [
## lmerModLmerTest]
## Formula: log(value) ~ (1 | site) + treatment
##    Data: x
##
## REML criterion at convergence: -22.6
##
## Scaled residuals:
##      Min       1Q   Median       3Q      Max
## -2.93929 -0.58522  0.06626  0.70521  2.43782
##
## Random effects:
##  Groups   Name        Variance Std.Dev.
##  site     (Intercept) 0.03580  0.1892
##  Residual             0.04482  0.2117
## Number of obs: 260, groups:  site, 17
##
## Fixed effects:
##             Estimate Std. Error       df t value Pr(>|t|)
## (Intercept) -0.10649    0.15497 14.91231  -0.687    0.503
## treatment   -0.01314    0.12449 14.54607  -0.106    0.917
##
## Correlation of Fixed Effects:
##           (Intr)
## treatment -0.950
```



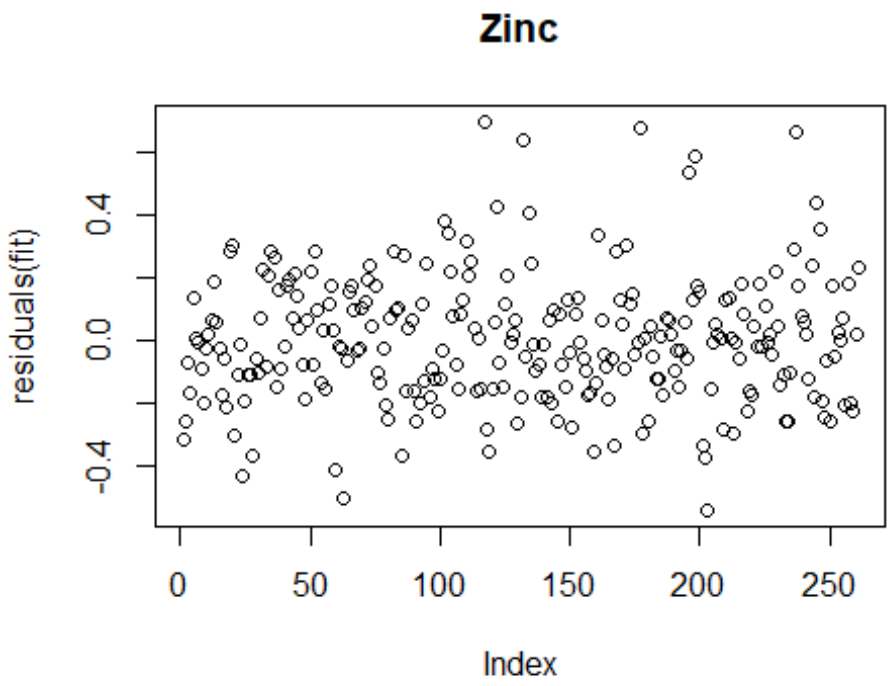

```
## NULL
## $site
##                (Intercept)   treatment
## Ero-Exp-1-1   -0.07334013 -0.01313691
## Ero-Exp-1-2   -0.29718667 -0.01313691
## Ero-Exp-2      0.20464103 -0.01313691
## Ero-Exp-3-1-L  0.03029250 -0.01313691
## Ero-Exp-3-1-R  0.07298916 -0.01313691
## Ero-Exp-3-2-L  0.04645261 -0.01313691
## Ero-Exp-3-2-R -0.47378795 -0.01313691
## Ero-Exp-3-3-L  0.02620771 -0.01313691
## Ero-Exp-3-3-R -0.21909391 -0.01313691
## Ero-Exp-3-4-L -0.26047436 -0.01313691
## Ero-Exp-3-4-R -0.07600730 -0.01313691
## Ero-Exp-4-5-L -0.21963967 -0.01313691
## Ero-Exp-4-5-R -0.17737242 -0.01313691
## Ero-Exp-5     -0.07460081 -0.01313691
## Ero-Ref-2-4   -0.22974358 -0.01313691
## Ero-Ref-3     -0.19717551 -0.01313691
## Koot-Ref-1     0.10743619 -0.01313691
##
## attr(,"class")
## [1] "coef.mer"
## [1] Thallium
## 10 Levels: Arsenic Cadmium Chromium Copper Iron Lead Mercury ... Zinc
## Linear mixed model fit by REML. t-tests use Satterthwaite's method [
## lmerModLmerTest]
```

```
## Formula: log(value) ~ (1 | site) + treatment
##    Data: x
##
## REML criterion at convergence: 605.5
##
## Scaled residuals:
##     Min      1Q  Median      3Q     Max
## -4.8942 -0.4335 -0.0367  0.4512  4.4698
##
## Random effects:
##  Groups   Name        Variance Std.Dev.
##  site     (Intercept) 1.1226   1.0595
##  Residual             0.4782   0.6915
## Number of obs: 261, groups:  site, 17
##
## Fixed effects:
##             Estimate Std. Error      df t value Pr(>|t|)
## (Intercept)  -3.0623     0.8455 14.9959  -3.622  0.00251 **
## treatment    -1.1364     0.6820 14.8542  -1.666  0.11660
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Correlation of Fixed Effects:
##           (Intr)
## treatment -0.951
```



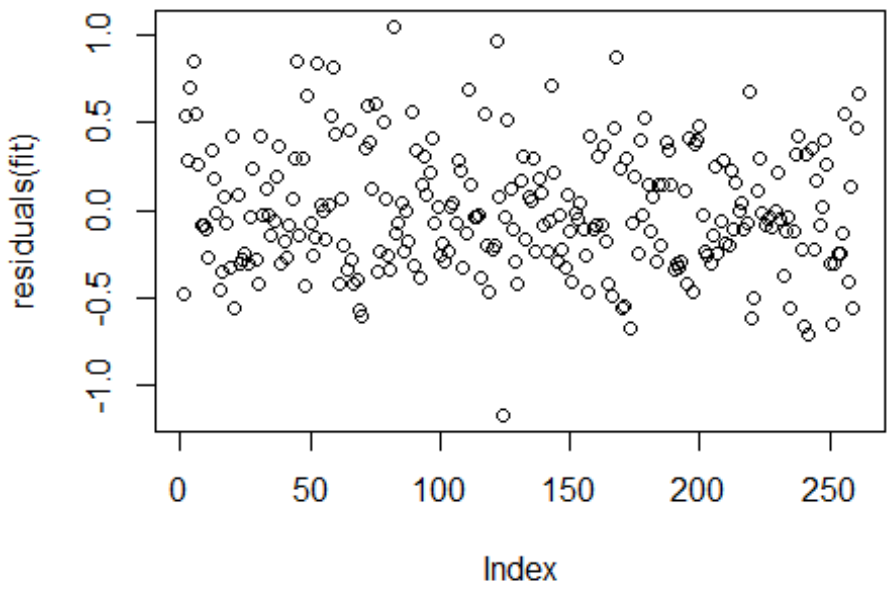
```
## NULL
## $site
##               (Intercept) treatment
## Ero-Exp-1-1   -4.02407870 -1.136443
## Ero-Exp-1-2   -3.96432315 -1.136443
## Ero-Exp-2     -0.08436924 -1.136443
## Ero-Exp-3-1-L -3.86951542 -1.136443
## Ero-Exp-3-1-R -2.21580768 -1.136443
## Ero-Exp-3-2-L -3.53406278 -1.136443
## Ero-Exp-3-2-R -2.45321439 -1.136443
## Ero-Exp-3-3-L -4.02177309 -1.136443
## Ero-Exp-3-3-R -2.26865163 -1.136443
## Ero-Exp-3-4-L -4.35965286 -1.136443
## Ero-Exp-3-4-R -2.79814528 -1.136443
## Ero-Exp-4-5-L -3.43748588 -1.136443
## Ero-Exp-4-5-R -2.98664887 -1.136443
## Ero-Exp-5     -2.85452609 -1.136443
## Ero-Ref-2-4   -2.81166414 -1.136443
## Ero-Ref-3     -2.96354633 -1.136443
## Koot-Ref-1    -3.41170133 -1.136443
##
## attr(,"class")
## [1] "coef.mer"
## [1] Zinc
## 10 Levels: Arsenic Cadmium Chromium Copper Iron Lead Mercury ... Zinc
## Linear mixed model fit by REML. t-tests use Satterthwaite's method [
## lmerModLmerTest]
## Formula: log(value) ~ (1 | site) + treatment
##    Data: x
##
## REML criterion at convergence: -40.7
##
## Scaled residuals:
##     Min      1Q  Median      3Q     Max
## -2.5923 -0.6972 -0.0438  0.5621  3.3385
##
## Random effects:
##  Groups   Name        Variance Std.Dev.
##  site     (Intercept) 0.01585  0.1259
##  Residual             0.04352  0.2086
## Number of obs: 261, groups:  site, 17
##
## Fixed effects:
##             Estimate Std. Error       df t value Pr(>|t|)
## (Intercept)  3.34128    0.10761 13.75284  31.050 3.92e-14 ***
## treatment   -0.01753    0.08593 13.14789  -0.204    0.842
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Correlation of Fixed Effects:
```

```
##           (Intr)
## treatment -0.950
```




```
## NULL
## $site
##                (Intercept)   treatment
## Ero-Exp-1-1      3.404180 -0.01752519
## Ero-Exp-1-2      3.370644 -0.01752519
## Ero-Exp-2        3.499340 -0.01752519
## Ero-Exp-3-1-L    3.158698 -0.01752519
## Ero-Exp-3-1-R    3.428588 -0.01752519
## Ero-Exp-3-2-L    3.128086 -0.01752519
## Ero-Exp-3-2-R    3.400313 -0.01752519
## Ero-Exp-3-3-L    3.331169 -0.01752519
## Ero-Exp-3-3-R    3.420724 -0.01752519
## Ero-Exp-3-4-L    3.247475 -0.01752519
## Ero-Exp-3-4-R    3.437489 -0.01752519
## Ero-Exp-4-5-L    3.221251 -0.01752519
## Ero-Exp-4-5-R    3.268483 -0.01752519
## Ero-Exp-5        3.461442 -0.01752519
## Ero-Ref-2-4      3.334115 -0.01752519
## Ero-Ref-3        3.434911 -0.01752519
## Koot-Ref-1       3.254806 -0.01752519
##
## attr(,"class")
## [1] "coef.mer"
```

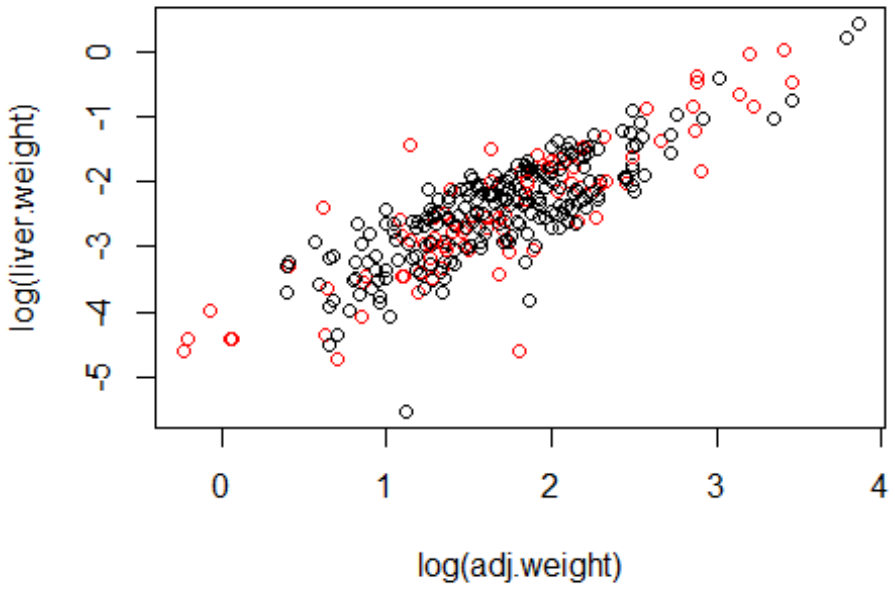
```
## Data: x
## Models:
## fit2: log(value) ~ Total.Length + treatment + (0 + Total.Length | site)
## fit: log(value) ~ Total.Length + (1 + Total.Length | site)
##      Df    AIC    BIC  logLik deviance  Chisq Chi Df Pr(>Chisq)
## fit2  5 319.84 337.66 -154.92   309.84
## fit   6 251.47 272.85 -119.73   239.47 70.371      1  < 2.2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

## Data: x
## Models:
## fit3: log(value) ~ Total.Length + treatment + (1 | site)
## fit: log(value) ~ Total.Length + (1 + Total.Length | site)
##      Df    AIC    BIC  logLik deviance  Chisq Chi Df Pr(>Chisq)
## fit3  5 252.21 270.03 -121.10   242.21
## fit   6 251.47 272.85 -119.73   239.47 2.7391      1    0.09792 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

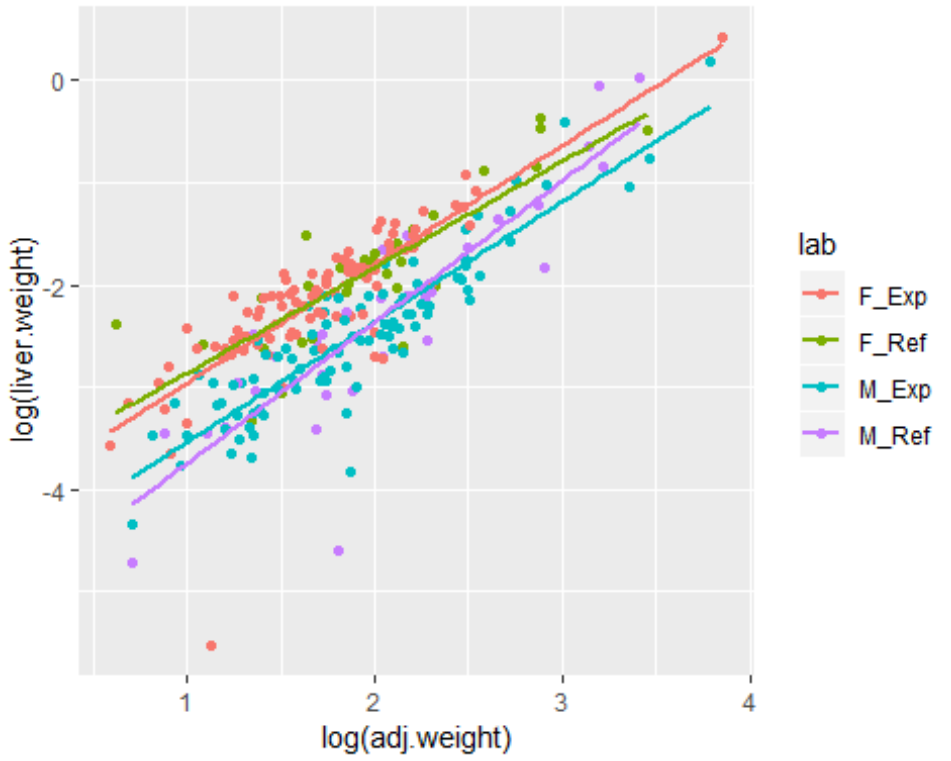


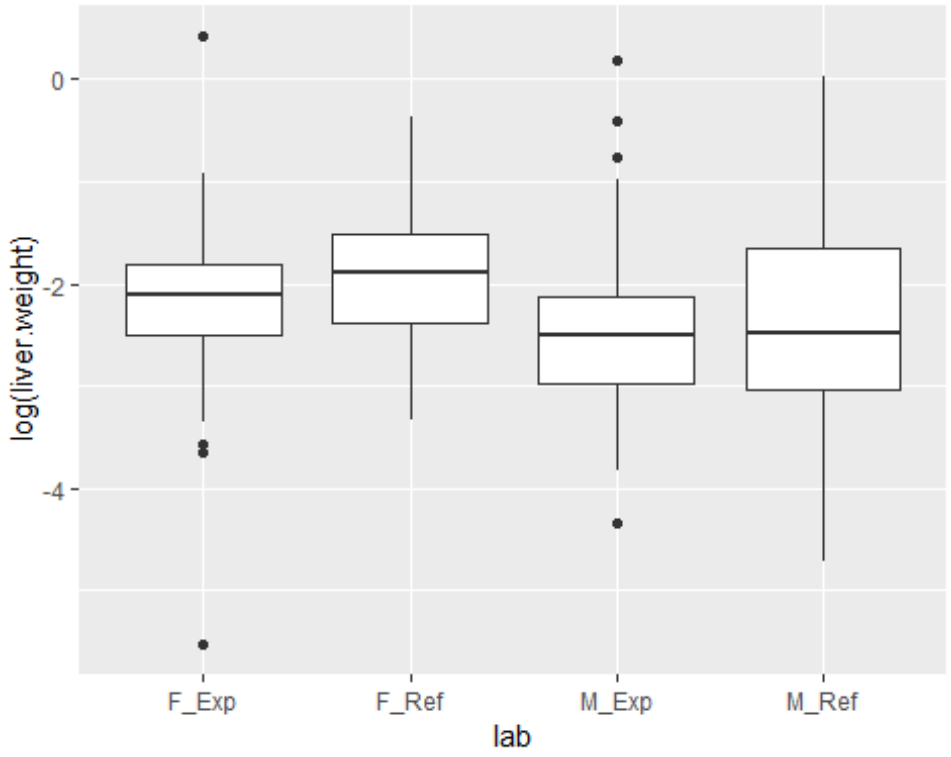

```
##
## Call:
## lm(formula = log(value) ~ Total.Length, data = x)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -1.47812 -0.33320 -0.07523  0.33560  1.29749
```

```
##
## Coefficients:
##              Estimate Std. Error  t value Pr(>|t|)
## (Intercept)  -3.68896    0.02792 -132.126  < 2e-16 ***
## Total.Length  0.19987    0.02797    7.145 9.13e-12 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.4511 on 259 degrees of freedom
## Multiple R-squared:  0.1646, Adjusted R-squared:  0.1614
## F-statistic: 51.05 on 1 and 259 DF,  p-value: 9.131e-12
```

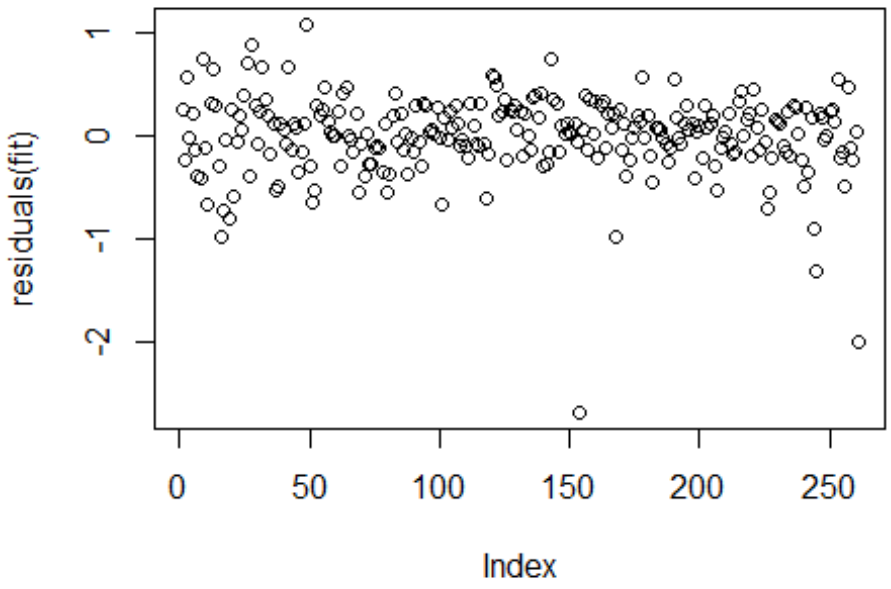
condition mixed effects models output



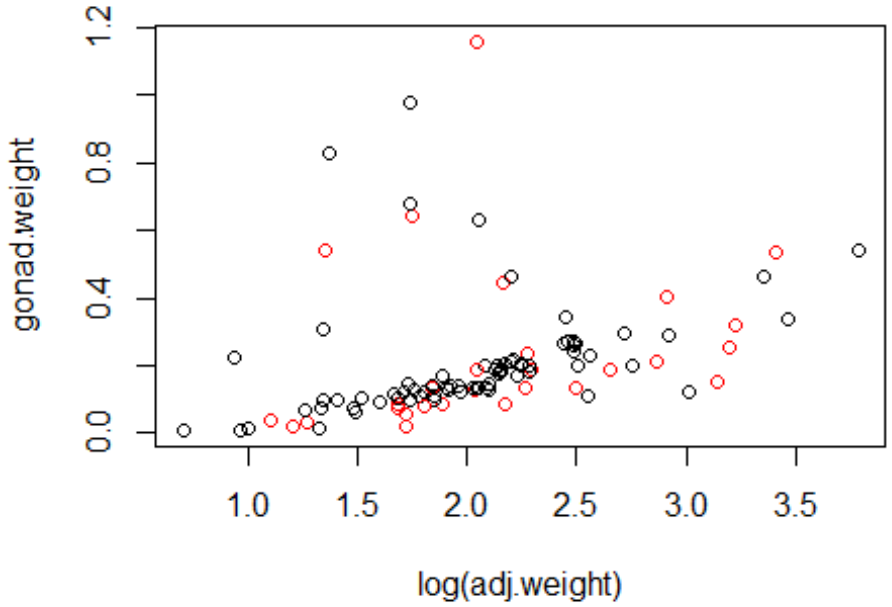


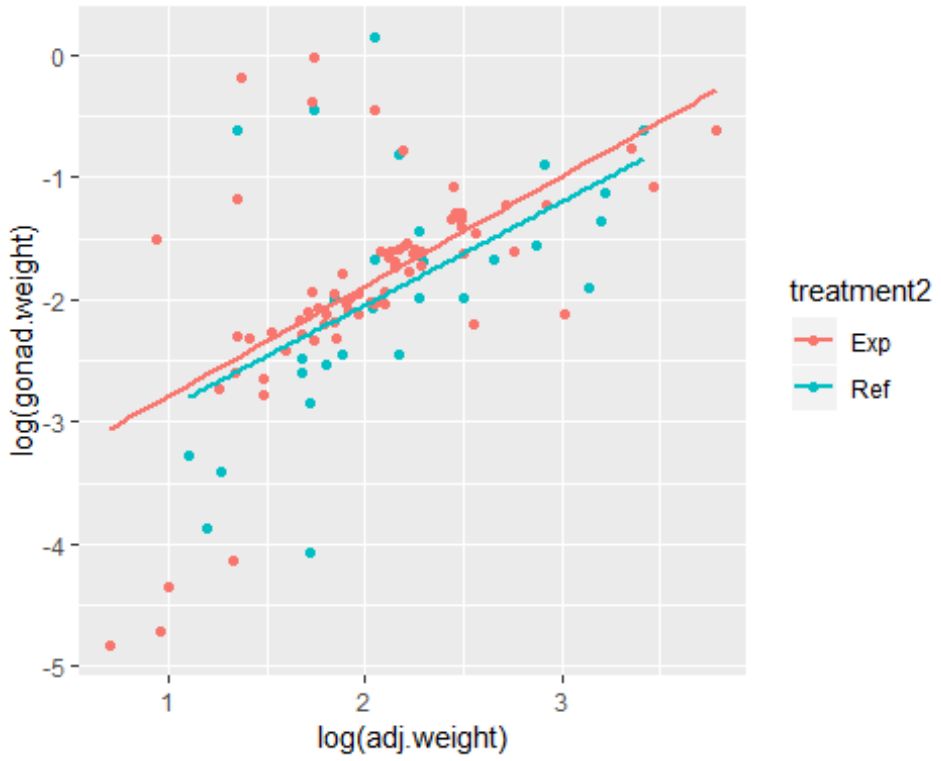


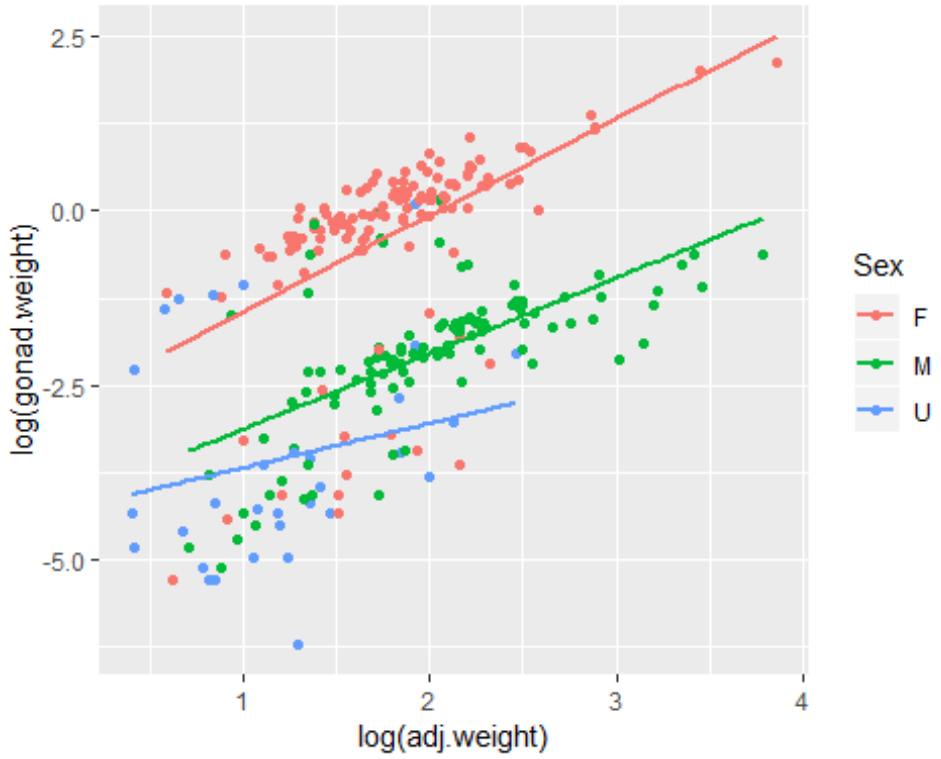

```
fit=lmer(log(liver.weight) ~ log(adj.weight)+treatment2+(1|Sex),liv.sub)
```

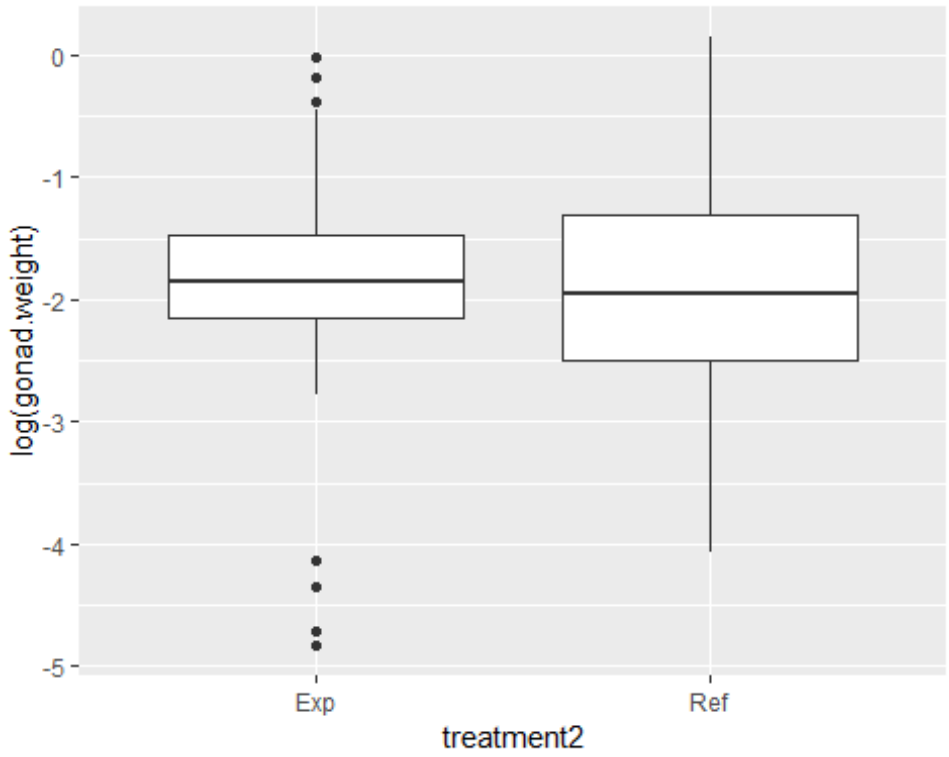

residuals(fit)
1
0
-1
-2
0
50
100
150
200
250
Index

Visualize


gonad.weight
1.2
0.8
0.4
0.0
1.0
1.5
2.0
2.5
3.0
3.5
log(adj.weight)

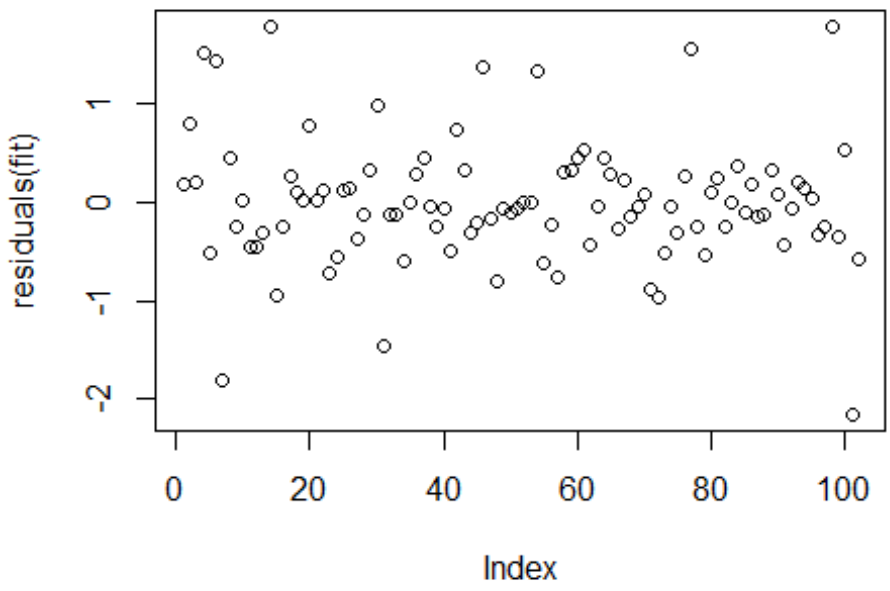

0
-1
-2
-3
-4
-5
log(gonad.weight)
1
2
3
log(adj.weight)
treatment2
Exp
Ref


2.5
0.0
-2.5
-5.0
log(gonad.weight)
1
2
3
4
log(adj.weight)
Sex
F
M
U



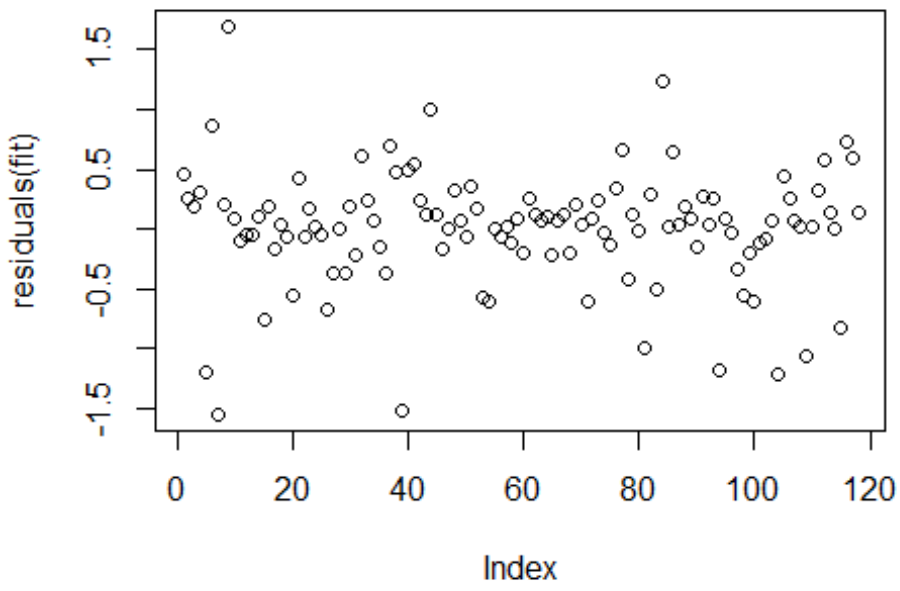
Function: different variation male

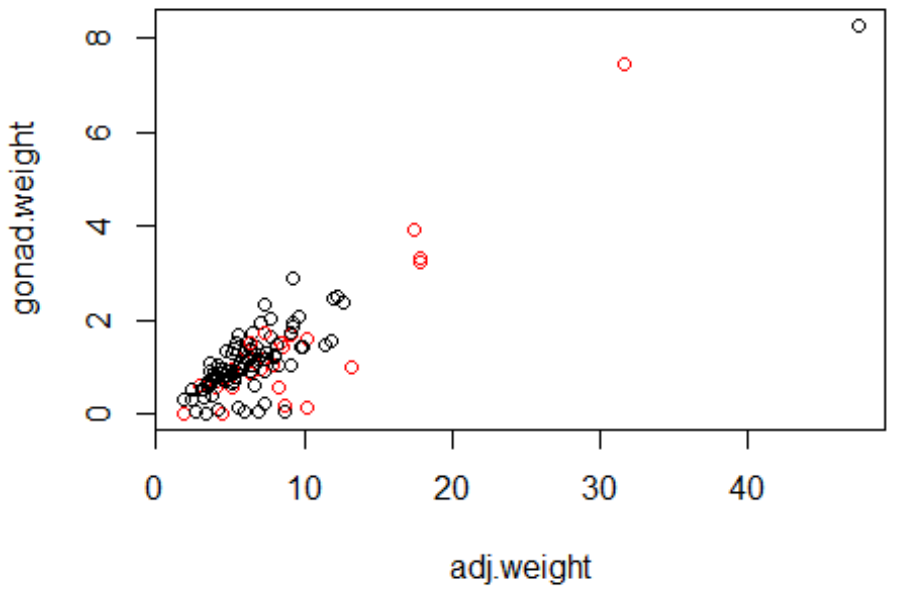
```
#try different variation
fit=lmer(log(gonad.weight)~ adj.weight*treatment2+(1|site),gon.sub.male)
#interaction not sig- remove
fit=lmer(log(gonad.weight)~ adj.weight+treatment2+(1|site),gon.sub.male)
```

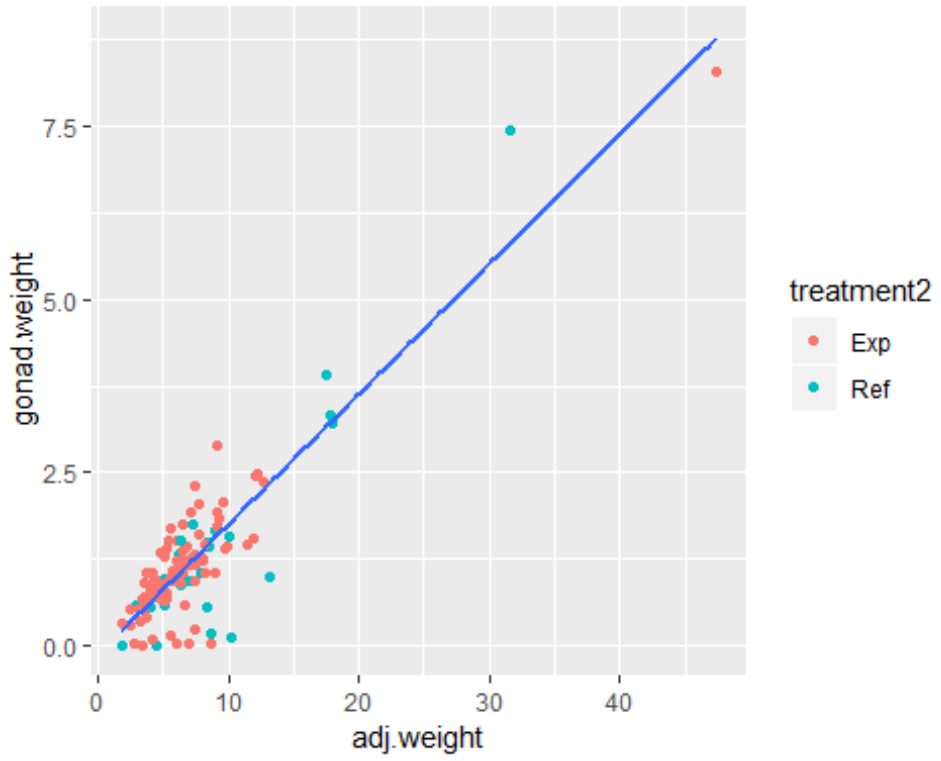


Function: different variation female

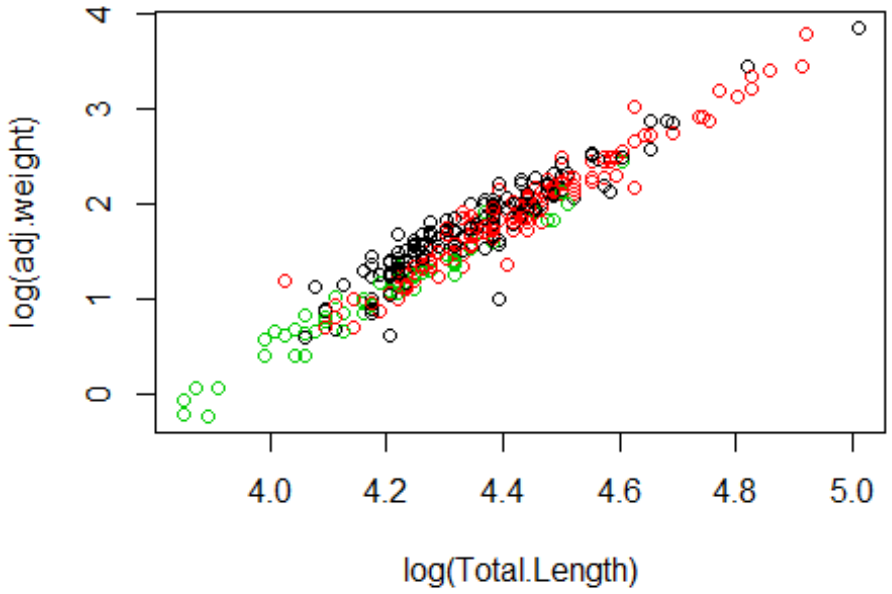
```
#do for females
fit=lmer(gonad.weight~ adj.weight*treatment2+(1|site),gon.sub.fem) #site is
not important for females
fit=lm(gonad.weight~ adj.weight*treatment2,gon.sub.fem) #drop interaction
fit=lm(gonad.weight~ adj.weight+treatment2,gon.sub.fem) #compare models
```

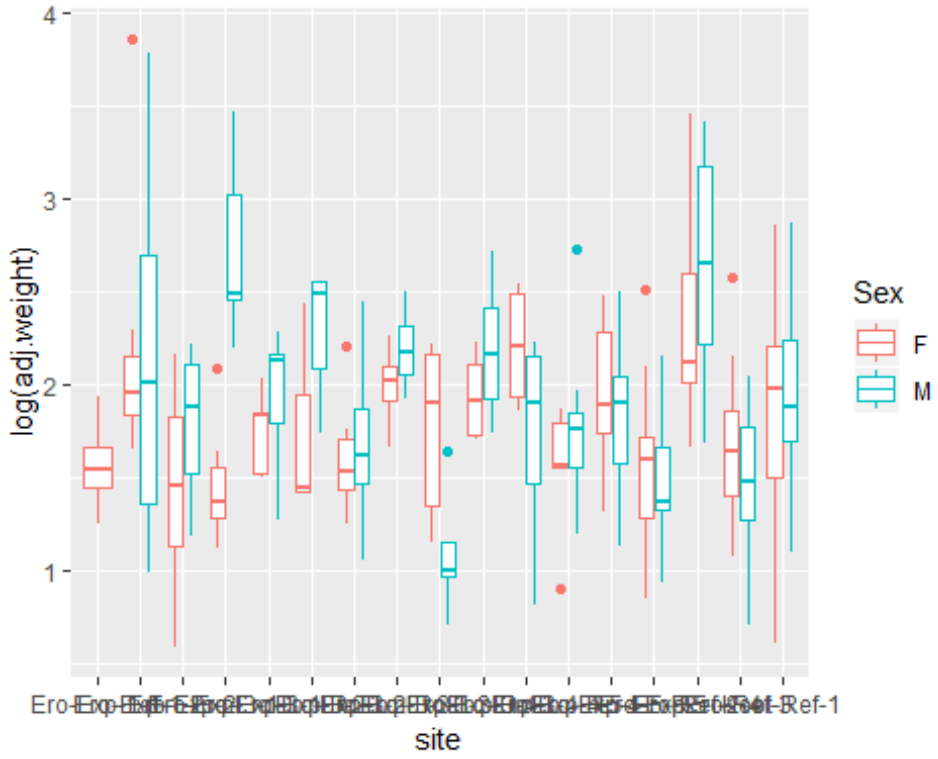

residuals(fit)
1.5
0.5
-0.5
-1.5
0
20
40
60
80
100
120
Index

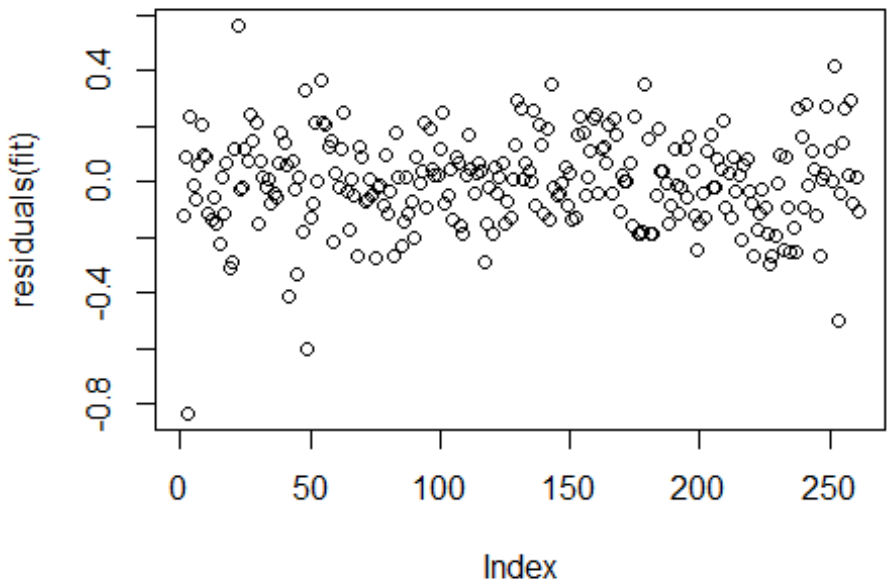

gonad.weight
8
6
4
2
0
0
10
20
30
40
adj.weight

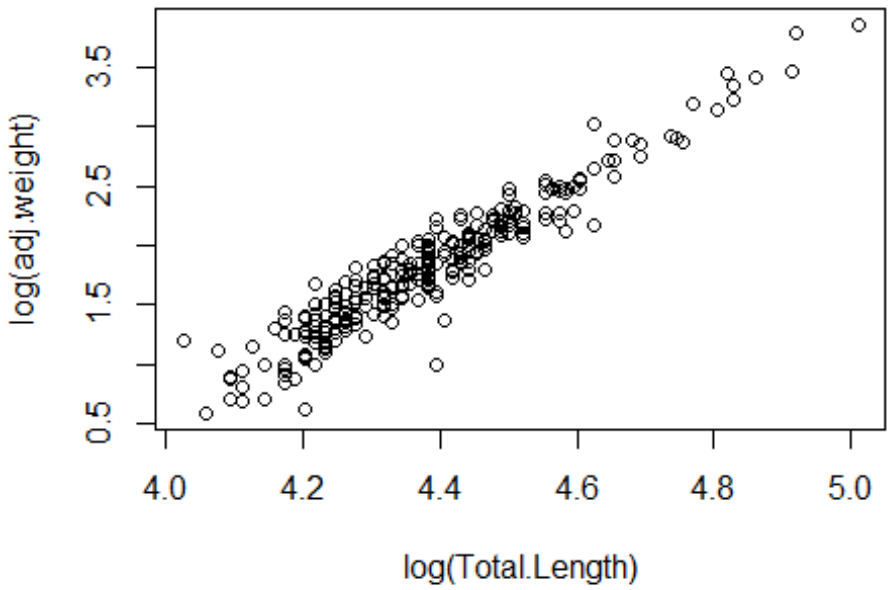


With interactions between treatment and sex and treatment and Total.Length:








```
## # A tibble: 5 x 5
##   term                 estimate std.error statistic   p.value
##   <chr>                   <dbl>     <dbl>     <dbl>     <dbl>
## 1 (Intercept)          -12.4        0.282   -44.0    1.97e-121
```

```
## 2 log(Total.Length)     3.24       0.0647   50.1    2.43e-134
## 3 treatment2Exp.Left    0.0864     0.0297    2.91   3.92e-  3
## 4 treatment2Exp.Right   0.0321     0.0287    1.12   2.64e-  1
## 5 treatment2Ref         0.00245    0.0291    0.0842 9.33e-  1
```