



Date: 03-OCT-17

PO No.: 0000132962

WO No.: L1997574

LSD:

Project Ref:

Sample ID: BRIS 213 BUB

Sampled By:

Date Collected: 26-SEP-17

Lab Sample ID: L1997574-1

Matrix: Water

**VANCOUVER SCHOOL BOARD**  
**Maintenance and Construction**  
 1549 Clark Drive  
 Vancouver BC V5L 3L4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<b>Total Metals</b> Lead (Pb)-Total	0.00185		mg/L	0.01		01-OCT-17
<p><b>CDWQG = Health Canada Guideline Limits updated DECEMBER 2015</b></p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L &lt; or N.D. = less than detection limit.            * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality            - A blank entry designates no known limit.            - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u><i>H McKenzie</i></u>            Heather McKenzie            Account Manager</p>						



Date: 03-OCT-17

PO No.: 0000132962

WO No.: L1997574

LSD:

Project Ref:

Sample ID: BRIS 325 SSDF

Sampled By:

Date Collected: 26-SEP-17

Lab Sample ID: L1997574-2

Matrix: Water

VANCOUVER SCHOOL BOARD  
Maintenance and Construction  
1549 Clark Drive  
Vancouver BC V5L 3L4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<b>Total Metals</b> Lead (Pb)-Total	0.00153		mg/L	0.01		01-OCT-17
<p><b>CDWQG = Health Canada Guideline Limits updated DECEMBER 2015</b></p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L &lt; or N.D. = less than detection limit.            * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality            - A blank entry designates no known limit.            - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u><i>H McKenzie</i></u>            Heather McKenzie            Account Manager</p>						



Date: 03-OCT-17

PO No.: 0000132962

WO No.: L1997574

LSD:

Project Ref:

Sample ID: BRIS 220 SSDF

Sampled By:

Date Collected: 26-SEP-17

Lab Sample ID: L1997574-3

Matrix: Water

VANCOUVER SCHOOL BOARD  
Maintenance and Construction  
1549 Clark Drive  
Vancouver BC V5L 3L4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<b>Total Metals</b> Lead (Pb)-Total	0.00430		mg/L	0.01		01-OCT-17
<p><b>CDWQG = Health Canada Guideline Limits updated DECEMBER 2015</b></p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L &lt; or N.D. = less than detection limit.            * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality            - A blank entry designates no known limit.            - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u><i>H McKenzie</i></u>            Heather McKenzie            Account Manager</p>						



**Date:** 03-OCT-17  
**PO No.:** 0000132962  
**WO No.:** L1997574  
**LSD:**  
**Project Ref:**  
**Sample ID:** BRIS 334 DF  
**Sampled By:**  
**Date Collected:** 26-SEP-17  
**Lab Sample ID:** L1997574-4  
**Matrix:** Water

**VANCOUVER SCHOOL BOARD**  
**Maintenance and Construction**  
**1549 Clark Drive**  
**Vancouver BC V5L 3L4**

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<b>Total Metals</b> Lead (Pb)-Total	0.000739		mg/L	0.01		01-OCT-17
<b>CDWQG = Health Canada Guideline Limits updated DECEMBER 2015</b> * CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.						
Approved by <u>Heather McKenzie</u> Heather McKenzie Account Manager						



Date: 03-OCT-17

PO No.: 0000132962

WO No.: L1997574

LSD:

Project Ref:

Sample ID: BRIS 331 SSDF

Sampled By:

Date Collected: 26-SEP-17

Lab Sample ID: L1997574-5

Matrix: Water

VANCOUVER SCHOOL BOARD  
Maintenance and Construction  
1549 Clark Drive  
Vancouver BC V5L 3L4

PAGE 5 of 13

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<b>Total Metals</b> Lead (Pb)-Total	0.00175		mg/L	0.01		01-OCT-17
<p><b>CDWQG = Health Canada Guideline Limits updated DECEMBER 2015</b></p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L &lt; or N.D. = less than detection limit.            * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality            - A blank entry designates no known limit.            - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u><i>H McKenzie</i></u>            Heather McKenzie            Account Manager</p>						

ADDRESS: 8081 Lougheed Hwy, Suite 100, Burnaby, BC V5A 1W9 Canada | Phone: +1 604 253 4188 | Fax: +1 604 253 6700

ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company



Date: 03-OCT-17

PO No.: 0000132962

WO No.: L1997574

LSD:

Project Ref:

Sample ID: BRIS 138 SSDF

Sampled By:

Date Collected: 26-SEP-17

Lab Sample ID: L1997574-6

Matrix: Water

**VANCOUVER SCHOOL BOARD**  
**Maintenance and Construction**  
 1549 Clark Drive  
 Vancouver BC V5L 3L4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<b>Total Metals</b> Lead (Pb)-Total	0.00384		mg/L	0.01		01-OCT-17
<p><b>CDWQG = Health Canada Guideline Limits updated DECEMBER 2015</b></p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L &lt; or N.D. = less than detection limit.            * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality            - A blank entry designates no known limit.            - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u><i>H McKenzie</i></u>            Heather McKenzie            Account Manager</p>						



Date: 03-OCT-17

PO No.: 0000132962

WO No.: L1997574

LSD:

Project Ref:

Sample ID: BRIS 140 SSDF

Sampled By:

Date Collected: 26-SEP-17

Lab Sample ID: L1997574-7

Matrix: Water

VANCOUVER SCHOOL BOARD  
Maintenance and Construction  
1549 Clark Drive  
Vancouver BC V5L 3L4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<b>Total Metals</b> Lead (Pb)-Total	0.00377		mg/L	0.01		01-OCT-17
<p><b>CDWQG = Health Canada Guideline Limits updated DECEMBER 2015</b></p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L &lt; or N.D. = less than detection limit.            * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality            - A blank entry designates no known limit.            - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u><i>H McKenzie</i></u>            Heather McKenzie            Account Manager</p>						



**VANCOUVER SCHOOL BOARD**  
**Maintenance and Construction**  
 1549 Clark Drive  
 Vancouver BC V5L 3L4

**Date:** 03-OCT-17

**PO No.:** 0000132962

**WO No.:** L1997574

**LSD:**

**Project Ref:**

**Sample ID:** BRIS 141 SSDF

**Sampled By:**

**Date Collected:** 26-SEP-17

**Lab Sample ID:** L1997574-8

**Matrix:** Water

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<b>Total Metals</b> Lead (Pb)-Total	0.000637		mg/L	0.01		01-OCT-17
<p><b>CDWQG = Health Canada Guideline Limits updated DECEMBER 2015</b></p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L &lt; or N.D. = less than detection limit.            * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality            - A blank entry designates no known limit.            - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u><i>H McKenzie</i></u>            Heather McKenzie            Account Manager</p>						





Date: 03-OCT-17

PO No.: 0000132962

WO No.: L1997574

LSD:

Project Ref:

Sample ID: BRIS D110 DF

Sampled By:

Date Collected: 26-SEP-17

Lab Sample ID: L1997574-9

Matrix: Water

VANCOUVER SCHOOL BOARD  
Maintenance and Construction  
1549 Clark Drive  
Vancouver BC V5L 3L4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<b>Total Metals</b> Lead (Pb)-Total	0.00431		mg/L	0.01		01-OCT-17
<p><b>CDWQG = Health Canada Guideline Limits updated DECEMBER 2015</b></p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L &lt; or N.D. = less than detection limit.            * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality            - A blank entry designates no known limit.            - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u><i>H McKenzie</i></u>            Heather McKenzie            Account Manager</p>						



Date: 03-OCT-17

PO No.: 0000132962

WO No.: L1997574

LSD:

Project Ref:

Sample ID: BRIS D107 DF

Sampled By:

Date Collected: 26-SEP-17

Lab Sample ID: L1997574-10

Matrix: Water

VANCOUVER SCHOOL BOARD  
Maintenance and Construction  
1549 Clark Drive  
Vancouver BC V5L 3L4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<b>Total Metals</b> Lead (Pb)-Total	0.00130		mg/L	0.01		01-OCT-17
<p><b>CDWQG = Health Canada Guideline Limits updated DECEMBER 2015</b></p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L &lt; or N.D. = less than detection limit.            * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality            - A blank entry designates no known limit.            - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u><i>H McKenzie</i></u>            Heather McKenzie            Account Manager</p>						



**Date:** 03-OCT-17  
**PO No.:** 0000132962  
**WO No.:** L1997574  
**LSD:**  
**Project Ref:**  
**Sample ID:** BRIS 204 BUB  
**Sampled By:**  
**Date Collected:** 26-SEP-17  
**Lab Sample ID:** L1997574-11  
**Matrix:** Water

**VANCOUVER SCHOOL BOARD**  
**Maintenance and Construction**  
**1549 Clark Drive**  
**Vancouver BC V5L 3L4**

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<b>Total Metals</b> Lead (Pb)-Total	0.00219		mg/L	0.01		01-OCT-17
<b>CDWQG = Health Canada Guideline Limits updated DECEMBER 2015</b> * CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.						
Approved by <u>Heather McKenzie</u> Heather McKenzie Account Manager						



Date: 03-OCT-17

PO No.: 0000132962

WO No.: L1997574

LSD:

Project Ref:

Sample ID: BRIS 205 BUB

Sampled By:

Date Collected: 26-SEP-17

Lab Sample ID: L1997574-12

Matrix: Water

VANCOUVER SCHOOL BOARD  
Maintenance and Construction  
1549 Clark Drive  
Vancouver BC V5L 3L4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<b>Total Metals</b> Lead (Pb)-Total	0.00523		mg/L	0.01		01-OCT-17
<p><b>CDWQG = Health Canada Guideline Limits updated DECEMBER 2015</b></p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L &lt; or N.D. = less than detection limit.            * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality            - A blank entry designates no known limit.            - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u><i>H McKenzie</i></u>            Heather McKenzie            Account Manager</p>						

## Guidelines & Objectives

### Health Canada MAC Health Related Criteria Limits

Nitrate/Nitrite-N*	Criteria limit is 10 mg/L (1.0 mg/L if present as all Nitrite-N). High concentrations may contribute to blue baby syndrome in infants.
Lead*	A cumulative body poison, uncommon in naturally occurring hard waters.
Fluoride*	Present in fluoridated water supplies at 0.8 mg/L to reduce dental caries. Elevated levels causes fluorosis (mottling of teeth).
Total Coliforms*	Criteria is 0 CFU/100mL. Adverse health effects.
E. Coli*	Criteria is 0 CFU/100 mL. Certain E. Coli bacteria can be life threatening.

\*Health Canada Canadian Drinking Water Quality Guidelines (MAC limit)

### Aesthetic Objective Concentration Levels

Alkalinity	Acid neutralizing capacity. Usually a measure of carbonate and bicarbonates and calculated and reported as calcium carbonate.
Balance	Quality control parameter ratioing cations to anions
Bicarbonate	See Alkalinity. Report as the anion HCO <sub>3</sub> -1
Carbonate	See Alkalinity. Reported at the anion CO <sub>3</sub> -2
Calcium	See Hardness. Common major cation of water chemistry.
Chloride	Common major anion of water chemistry.
Conductance	Physical test measuring water salinity (dissolved ions or solids)
Hardness	Classical measure or capacity of water to precipitate soap (chiefly calcium and magnesium ions). Causes scaling tendency in water if carbonates/bicarbonates are present (if >200 mg/L). For drinking water purposes waters with results <200 mg/L are considered acceptable, results >200 mg/L are considered poor but can be tolerated. Results >500 mg/L are unacceptable.
Hydroxide	See alkalinity
Magnesium	See hardness. Common major cation of water chemistry. Elevated levels (>125 mg/L) may exert a cathartic or diuretic action.
pH	Measure of water acidity/alkalinity. Normal range is 7.0-8.5.
Potassium	Common major cation of water chemistry.
Sodium	Common major cation of water chemistry. Measure of salinity (saltiness).
Sulphate	Common major anion of water chemistry. Elevated levels may exert a cathartic or diuretic action.
Total Dissolved Solids	A measure of water salinity.
Iron	Causes staining to laundry and porcelain and astringent taste. Oxidizes to red-brown precipitate on exposure to air.
Manganese	Elevated levels may cause staining of laundry and porcelain.
Heterotrophic Plate Count	Criteria is 500 cfu/mL Measure of heterotrophic bacteria present.

### GLOSSARY OF REPORT TERMS

*Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.*

*mg/kg - milligrams per kilogram based on dry weight of sample*

*mg/kg wwt - milligrams per kilogram based on wet weight of sample*

*mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight*

*mg/L - unit of concentration based on volume, parts per million.*

*< - Less than.*

*D.L. - The reporting limit.*

*N/A - Result not available. Refer to qualifier code and definition for explanation.*

*Test results reported relate only to the samples as received by the laboratory.*

*UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.*

*Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.*



L1997574-COFC

COC Number: 15 - 604423

Page / of /

<b>Report To</b> Contact and company name below will appear on the final report		<b>Report Format / Distribution</b>			<b>Select Service Level below - please confirm all E&amp;P TATs with your AM - surcharges will apply</b>							
Company: VANCOUVER SCHOOLS		Select Report Format: <input checked="" type="checkbox"/> PDF <input type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)			Regular [R] <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply							
Contact: STEPHEN THOMAS		Quality Control (QC) Report with Report <input type="checkbox"/> YES <input type="checkbox"/> NO			PRIORITY (Business Days)	4 day [P4] <input type="checkbox"/>			EMERGENCY	1 Business day [E1] <input type="checkbox"/>		
Phone: 604 713-8637		<input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked				3 day [P3] <input type="checkbox"/>				Same Day, Weekend or Statutory holiday [E0] <input type="checkbox"/>		
Company address below will appear on the final report		Select Distribution: <input type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX				2 day [P2] <input type="checkbox"/>						
Street: 1549 CLARK RD		Email 1 or Fax: stthomas@cust.bc.ca			Date and Time Required for all E&P TATs:							
City/Province: VANCOUVER B.C.		Email 2:			For tests that can not be performed according to the service level selected, you will be contacted.							
Postal Code: V5L 3Z4		Email 3:			<b>Analysis Request</b>							
Invoice To: Same as Report To <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		<b>Invoice Distribution</b>			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below							
Copy of Invoice with Report <input type="checkbox"/> YES <input type="checkbox"/> NO		Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			<div style="display: flex; justify-content: space-between;"> <span>← L-AD</span> <span>Number of Containers</span> </div>							
Company:		Email 1 or Fax:										
Contact:		Email 2:										
<b>Project Information</b>		<b>Oil and Gas Required Fields (client use)</b>										
ALS Account # / Quote #:		AFE/Coast Center:	PO#:									
Job #:		Major/Minor Code:	Routing Code:									
PO / AFE:		Requisitioner:										
LSD:		Location:										
ALS Lab Work Order # (lab use only):		ALS Contact: D. VATT	Sampler: S. THOMAS									
ALS Sample # (lab use only)	Sample identification and/or Coordinates (This description will appear on the report)			Date (dd-mmm-yy)							Time (hh:mm)	Sample Type
	BRIS 213 BUB			26-09-17	11:25	WAT6L						
	BRIS 325 SSDF			26-09-17	11:30	WAT6L						
	BRIS 220 SSDF			26-09-17	11:32	WAT6L						
	BRIS 334 DF			26-09-17	11:45	WAT6L						
	BRIS 331 SSDF			26-09-17	11:40	WAT6L						
	BRIS 138 SSDF			26-09-17	11:50	WAT6L						
	BRIS 140 SSDF			26-09-17	11:52	WAT6L						
	BRIS 141 SSDF			26-09-17	11:55	WAT6L						
	BRIS D110 DF			26-09-17	12:00	WAT6L						
	BRIS D107 DF			26-09-17	12:05	WAT6L						
	BRIS 204 BUB			26-09-17	12:10	WAT6L						
	BRIS 205 BUB			26-09-17	12:15	WAT6L						
<b>Drinking Water (DW) Samples<sup>1</sup> (client use)</b>		<b>Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)</b>			<b>SAMPLE CONDITION AS RECEIVED (lab use only)</b>							
Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input type="checkbox"/> NO					Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>							
Are samples for human drinking water use? <input type="checkbox"/> YES <input type="checkbox"/> NO					Ice Packs <input checked="" type="checkbox"/> Ice Cubes <input type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>							
					Cooling Initiated <input type="checkbox"/>							
					INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C				
								15				
<b>SHIPMENT RELEASE (client use)</b>			<b>INITIAL SHIPMENT RECEPTION (lab use only)</b>			<b>FINAL SHIPMENT RECEPTION (lab use only)</b>						
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:				
						JC	9/26/17	13:23				