

Water Testing Results for 2019 Reporting Period

With deep gratitude and respect, we are honoured to be learning and unlearning on the ancestral and unceded lands of the xʷməθkʷə́yəm (Musqueam), Skwxwú7mesh Úxwumixw (Squamish Nation) & səlilwətał (Tseil-Waututh Nation).

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 09-OCT-19

PO No.: 1517879

WO No.: L2357712

LSD:

Project Ref: ADMIRAL SEYMOUR

Sample ID: CORR 200 RM 208 DF

Sampled By: Robin Lemay

Date Collected: 01-OCT-19

Lab Sample ID: L2357712-1

Matrix: Water

PAGE 1 of 5

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000189		mg/L	0.005		04-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 09-OCT-19

PO No.: 1517879

WO No.: L2357712

LSD:

Project Ref: ADMIRAL SEYMOUR

Sample ID: CORR 100 RM 101 DF

Sampled By: Robin Lemay

Date Collected: 01-OCT-19

Lab Sample ID: L2357712-2

Matrix: Water

PAGE 2 of 5

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000204		mg/L	0.005		04-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 09-OCT-19

PO No.: 1517879

WO No.: L2357712

LSD:

Project Ref: ADMIRAL SEYMOUR

Sample ID: CORR 100 RM 105 DF

Sampled By: Robin Lemay

Date Collected: 01-OCT-19

Lab Sample ID: L2357712-3

Matrix: Water

PAGE 3 of 5

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000231		mg/L	0.005		04-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 09-OCT-19

PO No.: 1517879

WO No.: L2357712

LSD:

Project Ref: ADMIRAL SEYMOUR

Sample ID: CORR 011 SSDF

Sampled By: Robin Lemay

Date Collected: 01-OCT-19

Lab Sample ID: L2357712-4

Matrix: Water

PAGE 4 of 5

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000355		mg/L	0.005		04-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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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.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

*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 rationing cations to anions
Bicarbonate	See Alkalinity. Report as the anion HCO ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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 of 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.
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.

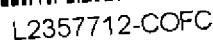
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

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



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COC Number: 17 - 762155

Page of

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

LINE 201A FROM

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 19-SEP-19

PO No.:

WO No.: L2345647

LSD:

Project Ref: BRITANNIA ELEM

Sample ID: CORR 141 FS

Sampled By: Robin Lemay

Date Collected: 11-SEP-19

Lab Sample ID: L2345647-1

Matrix: Water

PAGE 1 of 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000259		mg/L	0.005		13-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 19-SEP-19

PO No.:

WO No.: L2345647

LSD:

Project Ref: BRITANNIA ELEM

Sample ID: RM 117 BUB

Sampled By: Robin Lemay

Date Collected: 11-SEP-19

Lab Sample ID: L2345647-2

Matrix: Water

PAGE 2 of 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000460		mg/L	0.005		13-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 19-SEP-19

PO No.:

WO No.: L2345647

LSD:

Project Ref: BRITANNIA ELEM

Sample ID: RM 118 BUB

Sampled By: Robin Lemay

Date Collected: 11-SEP-19

Lab Sample ID: L2345647-3

Matrix: Water

PAGE 3 of 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000457		mg/L	0.005		13-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 19-SEP-19

PO No.:

WO No.: L2345647

LSD:

Project Ref: BRITANNIA ELEM

Sample ID: RM 114 BUB

Sampled By: Robin Lemay

Date Collected: 11-SEP-19

Lab Sample ID: L2345647-4

Matrix: Water

PAGE 4 of 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000277		mg/L	0.005		13-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 19-SEP-19

PO No.:

WO No.: L2345647

LSD:

Project Ref: BRITANNIA ELEM

Sample ID: RM 113 BUB

Sampled By: Robin Lemay

Date Collected: 11-SEP-19

Lab Sample ID: L2345647-5

Matrix: Water

PAGE 5 of 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000408		mg/L	0.005		13-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 19-SEP-19

PO No.:

WO No.: L2345647

LSD:

Project Ref: BRITANNIA ELEM

Sample ID: RM 112 BUB

Sampled By: Robin Lemay

Date Collected: 11-SEP-19

Lab Sample ID: L2345647-6

Matrix: Water

PAGE 6 of 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000868		mg/L	0.005		13-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 19-SEP-19

PO No.:

WO No.: L2345647

LSD:

Project Ref: BRITANNIA ELEM

Sample ID: RM 126 BUB

Sampled By: Robin Lemay

Date Collected: 11-SEP-19

Lab Sample ID: L2345647-7

Matrix: Water

PAGE 7 of 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000335		mg/L	0.005		13-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 19-SEP-19

PO No.:

WO No.: L2345647

LSD:

Project Ref: BRITANNIA ELEM

Sample ID: RM 111 BUB

Sampled By: Robin Lemay

Date Collected: 11-SEP-19

Lab Sample ID: L2345647-8

Matrix: Water

PAGE 8 of 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000378		mg/L	0.005		13-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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ATTN: Stephen Thomas

Date: 19-SEP-19

PO No.:

WO No.: L2345647

LSD:

Project Ref: BRITANNIA ELEM

Sample ID: RM 108 BUB

Sampled By: Robin Lemay

Date Collected: 11-SEP-19

Lab Sample ID: L2345647-9

Matrix: Water

PAGE 9 of 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000383		mg/L	0.005		13-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 19-SEP-19

PO No.:

WO No.: L2345647

LSD:

Project Ref: BRITANNIA ELEM

Sample ID: CORR 100 SSDF

Sampled By: Robin Lemay

Date Collected: 11-SEP-19

Lab Sample ID: L2345647-10

Matrix: Water

PAGE 10 of 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000351		mg/L	0.005		13-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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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.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

*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 ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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 of 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.
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.



L2345647-COFC

COC Number: 17 - 763421

Page of

Report To Contact and company name below will appear on the final report		Report Format / Distribution		Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)																																					
Company: <u>Vancouver School Board</u>		Select Report Format: ☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)		Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply																																					
Contact: <u>Stephen Thomas</u>		Quality Control (QC) Report with Report ☐ YES ☐ NO		4 day [P4-20%] ☐ 1 Business day [E - 100%] ☐																																					
Phone: <u>604-713-5637</u>		☐ Compare Results to Criteria on Report - provide details below if box checked		3 day [P3-25%] ☐ Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐																																					
Company address below will appear on the final report		Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX		2 day [P2-50%] ☐																																					
Street: <u>1549 Clark Drive</u>		Email 1 or Fax: <u>ssstomas@vsb.bc.ca</u>		Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm																																					
City/Province: <u>Vancouver B.C.</u>		Email 2: <u>rlamay@vsb.bc.ca</u>		For tests that can not be performed according to the service level selected, you will be contacted.																																					
Postal Code:		Email 3:		Analysis Request																																					
Invoice To: Same as Report To ☒ YES ☐ NO		Invoice Distribution		NUMBER OF CONTAINERS <table border="1" style="width: 100%; height: 200px;"> <tr><td colspan="12">Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below</td></tr> <tr><td colspan="12" style="text-align: center;">Lead</td></tr> <tr><td colspan="12" style="height: 180px;"></td></tr> </table> SAMPLES ON HOLD		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below												Lead																							
Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below																																									
Lead																																									
Copy of Invoice with Report ☐ YES ☐ NO		Select Invoice Distribution: ☒ EMAIL ☐ MAIL ☐ FAX																																							
Company:		Email 1 or Fax: <u>ssstomas@vsb.bc.ca</u>																																							
Contact:		Email 2: <u>rlamay@vsb.bc.ca</u>																																							
Project Information		Oil and Gas Required Fields (client use)																																							
ALS Account # / Quote #:		AFE/Cost Center:																																							
Job #: <u>Britannia Elem</u>		Major/Minor Code:																																							
PO / AFE:		Routing Code:																																							
LSD:		Requisitioner:																																							
ALS Lab Work Order # (lab use only):		Location:																																							
ALS Contact:		Sampler: <u>Robin Lemay</u>																																							

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
	Corr 141 FS	11-09-19	7:44am	water
	Rm 117 Bub	11-09-19	8:19am	water
	Rm 118 Bub	11-09-19	8:23am	water
	Rm 114 Bub	11-09-19	8:28am	water
	Rm 113 Bub	11-09-19	8:32am	water
	Rm 112 Bub	11-09-19	8:35am	water
	Rm 126 SSDF	11-09-19	8:41am	water
	Rm 111 Bub	11-09-19	8:45am	water
	Rm 108 Bub	11-09-19	8:49am	water
	Corr 100 SSDF	11-09-19	8:53am	water

Drinking Water (DW) Samples² (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below. (electronic COC only)		SAMPLE CONDITION AS RECEIVED (lab use only)	
Are samples taken from a Regulated DW System? ☐ YES ☐ NO		No Preservatives added		Frozen ☐ SIF Observations Yes ☐ No ☐	
Are samples for human consumption/ use? ☐ YES ☐ NO				Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐	
				Cooling Initiated ☐	
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)	
Released by:	Date:	Received by:	Date:	Received by:	Date:
				PAUL	SEP 11

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-SEP-19

PO No.: 1517879

WO No.: L2343813

LSD:

Project Ref: BRITTANIA SECONDARY

Sample ID: RM 213 BUB

Sampled By: Robin Lemay

Date Collected: 09-SEP-19

Lab Sample ID: L2343813-1

Matrix: Water

PAGE 1 of 9

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00177		mg/L	0.005		12-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-SEP-19

PO No.: 1517879

WO No.: L2343813

LSD:

Project Ref: BRITTANIA SECONDARY

Sample ID: RM 216 SSDF

Sampled By: Robin Lemay

Date Collected: 09-SEP-19

Lab Sample ID: L2343813-2

Matrix: Water

PAGE 2 of 9

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000633		mg/L	0.005		12-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-SEP-19

PO No.: 1517879

WO No.: L2343813

LSD:

Project Ref: BRITTANIA SECONDARY

Sample ID: RM 203 FS

Sampled By: Robin Lemay

Date Collected: 09-SEP-19

Lab Sample ID: L2343813-3

Matrix: Water

PAGE 3 of 9

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000411		mg/L	0.005		12-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-SEP-19

PO No.: 1517879

WO No.: L2343813

LSD:

Project Ref: BRITTANIA SECONDARY

Sample ID: RM 220 SSDF

Sampled By: Robin Lemay

Date Collected: 09-SEP-19

Lab Sample ID: L2343813-4

Matrix: Water

PAGE 4 of 9

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000479		mg/L	0.005		12-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-SEP-19

PO No.: 1517879

WO No.: L2343813

LSD:

Project Ref: BRITTANIA SECONDARY

Sample ID: RM B 204 BUB

Sampled By: Robin Lemay

Date Collected: 09-SEP-19

Lab Sample ID: L2343813-5

Matrix: Water

PAGE 5 of 9

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000666		mg/L	0.005		12-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-SEP-19

PO No.: 1517879

WO No.: L2343813

LSD:

Project Ref: BRITTANIA SECONDARY

Sample ID: RM 325 SSDF

Sampled By: Robin Lemay

Date Collected: 09-SEP-19

Lab Sample ID: L2343813-6

Matrix: Water

PAGE 6 of 9

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000670		mg/L	0.005		12-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-SEP-19

PO No.: 1517879

WO No.: L2343813

LSD:

Project Ref: BRITTANIA SECONDARY

Sample ID: RM 334 DF

Sampled By: Robin Lemay

Date Collected: 09-SEP-19

Lab Sample ID: L2343813-7

Matrix: Water

PAGE 7 of 9

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000554		mg/L	0.005		12-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-SEP-19

PO No.: 1517879

WO No.: L2343813

LSD:

Project Ref: BRITTANIA SECONDARY

Sample ID: RM 331 SSDF

Sampled By: Robin Lemay

Date Collected: 09-SEP-19

Lab Sample ID: L2343813-8

Matrix: Water

PAGE 8 of 9

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000369		mg/L	0.005		12-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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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.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

*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 rationing cations to anions
Bicarbonate	See Alkalinity. Report as the anion HCO ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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 of 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.
Heterotrophic	
Plate Count	Criteria is 500 cfu/mL Measure of heterotrophic bacteria present.

GLOSSARY OF REPORT TERMS

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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

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< - 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.

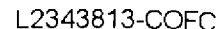
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

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



Canada Toll Free: 1 800 668 9878

www.alsglobal.com



COC Number: 17 - 763425

Page 4 of 4

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

SLING 30M FRONT

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

Results Summary VA20A5318

Project	Brittania Secondary
Report To	Stephen Thomas, Vancouver School Board
Date Received	24-Apr-2020 09:55
Issue Date	30-Apr-2020 11:03
Amendment	0

Client Sample ID			Rm. 137 SSDF	Rm. 141 SSDF	Rm. 140 SSDF	Rm. 107 DF	Rm. D-110
Date Sampled			24-Apr-2020	24-Apr-2020	24-Apr-2020	24-Apr-2020	24-Apr-2020
Time Sampled			08:35	08:40	08:40	08:55	08:50
ALS Sample ID			VA20A5318-001	VA20A5318-002	VA20A5318-003	VA20A5318-004	VA20A5318-005
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water
Total Metals (Matrix: Water)							
lead, total	0.000050	mg/L	0.000249	0.000673	0.00428	0.00366	0.0737



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-JUN-19

PO No.: 1517879

WO No.: L2281687

LSD:

Project Ref: CAPTAIN JAMES COOK ELEMENTARY

Sample ID: RM 107

Sampled By: Chris Carrell

Date Collected: 29-MAY-19

Lab Sample ID: L2281687-1

Matrix: Water

PAGE 1 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00308		mg/L	0.005		01-JUN-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-JUN-19

PO No.: 1517879

WO No.: L2281687

LSD:

Project Ref: CAPTAIN JAMES COOK ELEMENTARY

Sample ID: RM 101

Sampled By: Chris Carrell

Date Collected: 29-MAY-19

Lab Sample ID: L2281687-2

Matrix: Water

PAGE 2 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000066		mg/L	0.005		01-JUN-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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Date: 03-JUN-19

PO No.: 1517879

WO No.: L2281687

LSD:

Project Ref: CAPTAIN JAMES COOK ELEMENTARY

Sample ID: RM 103

Sampled By: Chris Carrell

Date Collected: 29-MAY-19

Lab Sample ID: L2281687-3

Matrix: Water

VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

PAGE 3 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000144		mg/L	0.005		01-JUN-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-JUN-19

PO No.: 1517879

WO No.: L2281687

LSD:

Project Ref: CAPTAIN JAMES COOK ELEMENTARY

Sample ID: RM 113R

Sampled By: Chris Carrell

Date Collected: 29-MAY-19

Lab Sample ID: L2281687-4

Matrix: Water

PAGE 4 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000070		mg/L	0.005		01-JUN-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-JUN-19

PO No.: 1517879

WO No.: L2281687

LSD:

Project Ref: CAPTAIN JAMES COOK ELEMENTARY

Sample ID: RM 116

Sampled By: Chris Carrell

Date Collected: 29-MAY-19

Lab Sample ID: L2281687-5

Matrix: Water

PAGE 5 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.104		mg/L	0.005		01-JUN-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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 						
Joanne Lee Account Manager						

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Date: 03-JUN-19

PO No.: 1517879

WO No.: L2281687

LSD:

Project Ref: CAPTAIN JAMES COOK ELEMENTARY

Sample ID: RM 128

Sampled By: Chris Carrell

Date Collected: 29-MAY-19

Lab Sample ID: L2281687-6

Matrix: Water

VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

PAGE 6 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.0192		mg/L	0.005		01-JUN-19
CDWQG = Health Canada Guideline Limits updated MAY 2018						
* 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  Joanne Lee Account Manager						

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

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 ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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.





VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 20-JUN-19

PO No.:

WO No.: L2292994

LSD:

Project Ref: CARNARVON ELEMENTARY

Sample ID: RM 101

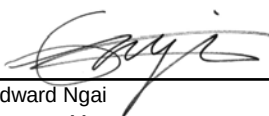
Sampled By: Chris Carrell

Date Collected: 17-JUN-19

Lab Sample ID: L2292994-1

Matrix: Water

PAGE 1 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000454		mg/L	0.005		19-JUN-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 20-JUN-19

PO No.:

WO No.: L2292994

LSD:

Project Ref: CARNARVON ELEMENTARY

Sample ID: RM 151 B

Sampled By: Chris Carrell

Date Collected: 17-JUN-19

Lab Sample ID: L2292994-2

Matrix: Water

PAGE 2 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000606		mg/L	0.005		19-JUN-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 20-JUN-19

PO No.:

WO No.: L2292994

LSD:

Project Ref: CARNARVON ELEMENTARY

Sample ID: RM 160

Sampled By: Chris Carrell

Date Collected: 17-JUN-19

Lab Sample ID: L2292994-3

Matrix: Water

PAGE 3 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	<0.000050		mg/L	0.005		19-JUN-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 20-JUN-19

PO No.:

WO No.: L2292994

LSD:

Project Ref: CARNARVON ELEMENTARY

Sample ID: RM 163

Sampled By: Chris Carrell

Date Collected: 17-JUN-19

Lab Sample ID: L2292994-4

Matrix: Water

PAGE 4 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000935		mg/L	0.005		19-JUN-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 20-JUN-19

PO No.:

WO No.: L2292994

LSD:

Project Ref: CARNARVON ELEMENTARY

Sample ID: RM 110

Sampled By: Chris Carrell

Date Collected: 17-JUN-19

Lab Sample ID: L2292994-5

Matrix: Water

PAGE 5 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000830		mg/L	0.005		19-JUN-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 20-JUN-19

PO No.:

WO No.: L2292994

LSD:

Project Ref: CARNARVON ELEMENTARY

Sample ID: RM 132

Sampled By: Chris Carrell

Date Collected: 17-JUN-19

Lab Sample ID: L2292994-6

Matrix: Water

PAGE 6 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	<0.000050		mg/L	0.005		19-JUN-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 20-JUN-19

PO No.:

WO No.: L2292994

LSD:

Project Ref: CARNARVON ELEMENTARY

Sample ID: RM 139

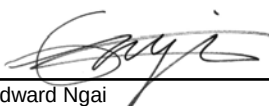
Sampled By: Chris Carrell

Date Collected: 17-JUN-19

Lab Sample ID: L2292994-7

Matrix: Water

PAGE 7 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.0109		mg/L	0.005		19-JUN-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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 						
Edward Ngai Account Manager						

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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 ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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.



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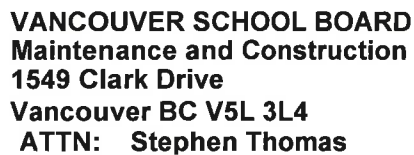
REFER TO BACK PAGE FOR AIS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

LINE 2018 ERC

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

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Matrix: Water

PAGE 1 of 13

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 23-SEP-19

PO No.: 1517879

WO No.: L2347347

LSD:

Project Ref: CHAMPLAIN ELEMENTARY

Sample ID: RM. 123 SSDF

Sampled By: Robin Lemay

Date Collected: 13-SEP-19

Lab Sample ID: L2347347-2

Matrix: Water

PAGE 2 of 13

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.00110		mg/L	0.005		19-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019						
* 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


Edward Ngai
Account Manager

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: 23-SEP-19

PO No.: 1517879

WO No.: L2347347

LSD:

Project Ref: CHAMPLAIN ELEMENTARY

Sample ID: RM. 161 BUB

Sampled By: Robin Lemay

Date Collected: 13-SEP-19

Lab Sample ID: L2347347-3

Matrix: Water

VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

PAGE 3 of 13

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000652		mg/L	0.005		18-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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 						
Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 23-SEP-19

PO No.: 1517879

WO No.: L2347347

LSD:

Project Ref: CHAMPLAIN ELEMENTARY

Sample ID: RM. 162 BUB

Sampled By: Robin Lemay

Date Collected: 13-SEP-19

Lab Sample ID: L2347347-4

Matrix: Water

PAGE 4 of 13

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.000663		mg/L	0.005		19-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019						
* 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


Edward Ngai
Account Manager

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 23-SEP-19

PO No.: 1517879

WO No.: L2347347

LSD:

Project Ref: CHAMPLAIN ELEMENTARY

Sample ID: RM. 163 BUB

Sampled By: Robin Lemay

Date Collected: 13-SEP-19

Lab Sample ID: L2347347-5

Matrix: Water

PAGE 5 of 13

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000499		mg/L	0.005		19-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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 						
Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 23-SEP-19
PO No.: 1517879
WO No.: L2347347
LSD:
Project Ref: CHAMPLAIN ELEMENTARY
Sample ID: RM. 164 BUB
Sampled By: Robin Lemay
Date Collected: 13-SEP-19
Lab Sample ID: L2347347-6
Matrix: Water

PAGE 6 of 13

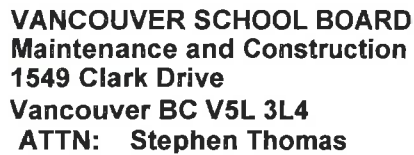
Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.000842		mg/L	0.005		18-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019						
* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate 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


Edward Ngai
Account Manager

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

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Matrix: Water

PAGE 8 of 13

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Date: 23-SEP-19

PO No.: 1517879

WO No.: L2347347

LSD:

Project Ref: CHAMPLAIN ELEMENTARY

Sample ID: RM. 262 BUB

Sampled By: Robin Lemay

Date Collected: 13-SEP-19

Lab Sample ID: L2347347-9

Matrix: Water

PAGE 9 of 13

VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.000870		mg/L	0.005		19-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019						
* 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 _____ Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 23-SEP-19
PO No.: 1517879
WO No.: L2347347

LSD:
Project Ref: CHAMPLAIN ELEMENTARY
Sample ID: RM. 261 BUB
Sampled By: Robin Lemay
Date Collected: 13-SEP-19
Lab Sample ID: L2347347-10
Matrix: Water

PAGE 10 of 13

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.00162		mg/L	0.005		19-SEP-19

CDWQG = Health Canada Guideline Limits updated JUNE 2019

- * 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


Edward Ngai
Account Manager



NOT IN SERVICE

Date: 23-SEP-19
PO No.: 1517879
WO No.: L2347347

LSD:

Project Ref: CHAMPLAIN ELEMENTARY

Sample ID: CORR226 SSDF

Sampled By: Robin Lemay

Date Collected: 13-SEP-19

Lab Sample ID: L2347347-11

Matrix: Water

VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

PAGE 11 of 13

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.00913		mg/L	0.005		19-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019						
* 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


Edward Ngai
Account Manager

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 19-SEP-19

PO No.:

WO No.: L2346509

LSD:

Project Ref: CHARLES DICKENS ANNEX

Sample ID: RM 114 DF

Sampled By: Robin Lemay

Date Collected: 12-SEP-19

Lab Sample ID: L2346509-1

Matrix: Water

PAGE 1 of 3

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000354		mg/L	0.005		17-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 19-SEP-19

PO No.:

WO No.: L2346509

LSD:

Project Ref: CHARLES DICKENS ANNEX

Sample ID: CORR 124 DF

Sampled By: Robin Lemay

Date Collected: 12-SEP-19

Lab Sample ID: L2346509-2

Matrix: Water

PAGE 2 of 3

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000738		mg/L	0.005		17-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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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.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

*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 rationing cations to anions
Bicarbonate	See Alkalinity. Report as the anion HCO ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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 of 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.
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.

[illegible]

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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JUNE 2018 FROM

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW CDC form**.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-OCT-19

PO No.: 1517879

WO No.: L2363042

LSD:

Project Ref: DAVID LIVINGSTONE ELEMENTARY

Sample ID: RM. 022 DF

Sampled By: Robin Lemay

Date Collected: 09-OCT-19

Lab Sample ID: L2363042-1

Matrix: Water

PAGE 1 of 10

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000584		mg/L	0.005		12-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-OCT-19

PO No.: 1517879

WO No.: L2363042

LSD:

Project Ref: DAVID LIVINGSTONE ELEMENTARY

Sample ID: RM. 016 DF

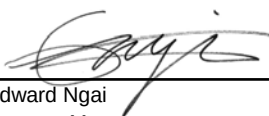
Sampled By: Robin Lemay

Date Collected: 09-OCT-19

Lab Sample ID: L2363042-2

Matrix: Water

PAGE 2 of 10

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000439		mg/L	0.005		12-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-OCT-19

PO No.: 1517879

WO No.: L2363042

LSD:

Project Ref: DAVID LIVINGSTONE ELEMENTARY

Sample ID: KINDER 101 DF

Sampled By: Robin Lemay

Date Collected: 09-OCT-19

Lab Sample ID: L2363042-3

Matrix: Water

PAGE 3 of 10

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000733		mg/L	0.005		12-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-OCT-19

PO No.: 1517879

WO No.: L2363042

LSD:

Project Ref: DAVID LIVINGSTONE ELEMENTARY

Sample ID: RM. 209A DF

Sampled By: Robin Lemay

Date Collected: 09-OCT-19

Lab Sample ID: L2363042-4

Matrix: Water

PAGE 4 of 10

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000134		mg/L	0.005		12-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-OCT-19

PO No.: 1517879

WO No.: L2363042

LSD:

Project Ref: DAVID LIVINGSTONE ELEMENTARY

Sample ID: RM. 103 DF

Sampled By: Robin Lemay

Date Collected: 09-OCT-19

Lab Sample ID: L2363042-5

Matrix: Water

PAGE 5 of 10

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000330		mg/L	0.005		12-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-OCT-19

PO No.: 1517879

WO No.: L2363042

LSD:

Project Ref: DAVID LIVINGSTONE ELEMENTARY

Sample ID: RM. 112B DF

Sampled By: Robin Lemay

Date Collected: 09-OCT-19

Lab Sample ID: L2363042-6

Matrix: Water

PAGE 6 of 10

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000111		mg/L	0.005		12-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-OCT-19

PO No.: 1517879

WO No.: L2363042

LSD:

Project Ref: DAVID LIVINGSTONE ELEMENTARY

Sample ID: RM. 001 DF

Sampled By: Robin Lemay

Date Collected: 09-OCT-19

Lab Sample ID: L2363042-7

Matrix: Water

PAGE 7 of 10

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000061		mg/L	0.005		12-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-OCT-19

PO No.: 1517879

WO No.: L2363042

LSD:

Project Ref: DAVID LIVINGSTONE ELEMENTARY

Sample ID: CORR 100 RM. 026 SSDF

Sampled By: Robin Lemay

Date Collected: 09-OCT-19

Lab Sample ID: L2363042-8

Matrix: Water

PAGE 8 of 10

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000249		mg/L	0.005		12-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-OCT-19

PO No.: 1517879

WO No.: L2363042

LSD:

Project Ref: DAVID LIVINGSTONE ELEMENTARY

Sample ID: CORR 011 RM. 012 DF

Sampled By: Robin Lemay

Date Collected: 09-OCT-19

Lab Sample ID: L2363042-9

Matrix: Water

PAGE 9 of 10

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000163		mg/L	0.005		12-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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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.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

*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 rationing cations to anions
Bicarbonate	See Alkalinity. Report as the anion HCO ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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 of 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.
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.

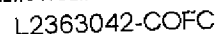
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

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



Canada Toll Free: 1 800 668 9878

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COC Number: 17 - 762163

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LINE 2018 FROM

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-OCT-19

PO No.: 1517879

WO No.: L2354290

LSD:

Project Ref: DAVID LLOYD GEORGE ELEMENTARY

Sample ID: COR 301 RM 304 DF

Sampled By: Robin Lenay

Date Collected: 25-SEP-19

Lab Sample ID: L2354290-1

Matrix: Water

PAGE 1 of 10

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000245		mg/L	0.005		27-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-OCT-19

PO No.: 1517879

WO No.: L2354290

LSD:

Project Ref: DAVID LLOYD GEORGE ELEMENTARY

Sample ID: COR 301 RM 313 DF

Sampled By: Robin Lenay

Date Collected: 25-SEP-19

Lab Sample ID: L2354290-2

Matrix: Water

PAGE 2 of 10

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000203		mg/L	0.005		27-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-OCT-19

PO No.: 1517879

WO No.: L2354290

LSD:

Project Ref: DAVID LLOYD GEORGE ELEMENTARY

Sample ID: COR 200 RM 207 DF

Sampled By: Robin Lenay

Date Collected: 25-SEP-19

Lab Sample ID: L2354290-3

Matrix: Water

PAGE 3 of 10

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000208		mg/L	0.005		27-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-OCT-19

PO No.: 1517879

WO No.: L2354290

LSD:

Project Ref: DAVID LLOYD GEORGE ELEMENTARY

Sample ID: COR 200 RM 202 DF

Sampled By: Robin Lenay

Date Collected: 25-SEP-19

Lab Sample ID: L2354290-4

Matrix: Water

PAGE 4 of 10

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000315		mg/L	0.005		27-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-OCT-19

PO No.: 1517879

WO No.: L2354290

LSD:

Project Ref: DAVID LLOYD GEORGE ELEMENTARY

Sample ID: COR 210 RM 210A DF

Sampled By: Robin Lenay

Date Collected: 25-SEP-19

Lab Sample ID: L2354290-5

Matrix: Water

PAGE 5 of 10

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000714		mg/L	0.005		27-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-OCT-19

PO No.: 1517879

WO No.: L2354290

LSD:

Project Ref: DAVID LLOYD GEORGE ELEMENTARY

Sample ID: RM 104 DF

Sampled By: Robin Lenay

Date Collected: 25-SEP-19

Lab Sample ID: L2354290-6

Matrix: Water

PAGE 6 of 10

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000303		mg/L	0.005		27-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-OCT-19

PO No.: 1517879

WO No.: L2354290

LSD:

Project Ref: DAVID LLOYD GEORGE ELEMENTARY

Sample ID: RM 113 DF

Sampled By: Robin Lenay

Date Collected: 25-SEP-19

Lab Sample ID: L2354290-7

Matrix: Water

PAGE 7 of 10

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00131		mg/L	0.005		27-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-OCT-19

PO No.: 1517879

WO No.: L2354290

LSD:

Project Ref: DAVID LLOYD GEORGE ELEMENTARY

Sample ID: COR 121 RM 121A DF

Sampled By: Robin Lenay

Date Collected: 25-SEP-19

Lab Sample ID: L2354290-8

Matrix: Water

PAGE 8 of 10

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00111		mg/L	0.005		27-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-OCT-19

PO No.: 1517879

WO No.: L2354290

LSD:

Project Ref: DAVID LLOYD GEORGE ELEMENTARY

Sample ID: COR 125 RM 128 DF

Sampled By: Robin Lenay

Date Collected: 25-SEP-19

Lab Sample ID: L2354290-9

Matrix: Water

PAGE 9 of 10

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000104		mg/L	0.005		27-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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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.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

*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 ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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 of 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.
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.



Canada Toll Free: 1 800 668 9878



Page of

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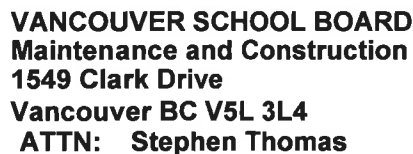
REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY

YELLOW - CLIENT COPY

JUNE 2018 FROM

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.



Matrix: Water

PAGE 3 of 7

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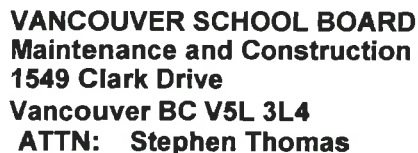
VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 04-NOV-19
PO No.: 1517879
WO No.: L2372963
LSD:
Project Ref: OPPENHEIMER ELEMENTARY
Sample ID: RM. 145 DF
Sampled By: Robin Lemay
Date Collected: 28-OCT-19
Lab Sample ID: L2372963-5
Matrix: Water

PAGE 5 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00149		mg/L	0.005		31-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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 						
Edward Ngai Account Manager						

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Matrix: Water

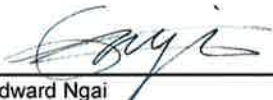
PAGE 6 of 7

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Date: 04-NOV-19
PO No.: 1517879
WO No.: L2372963
LSD:
Project Ref: OPPENHEIMER ELEMENTARY
Sample ID: RM. 129 DF
Sampled By: Robin Lemay
Date Collected: 28-OCT-19
Lab Sample ID: L2372963-1
Matrix: Water

PAGE 1 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.00647		mg/L	0.005		30-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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Date: 09-MAY-19

PO No.: 1517879

WO No.: L2267538

LSD:

Project Ref:

Sample ID: RM 129

Sampled By: Chris Carrell

Date Collected: 03-MAY-19

Lab Sample ID: L2267538-2

Matrix: Water

VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

PAGE 2 of 9

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.00562		mg/L	0.005		06-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018						
* 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 						
Joanne Lee Account Manager						

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NOT IN SERVICE

Date: 09-MAY-19

PO No.: 1517879

WO No.: L2267538

LSD:

Project Ref:

Sample ID: RM 112A

Sampled By: Chris Carrell

Date Collected: 03-MAY-19

Lab Sample ID: L2267538-4

Matrix: Water

VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

PAGE 4 of 9

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.0246		mg/L	0.005		06-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018						
* 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 						
Joanne Lee Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 13-MAY-19

PO No.: 1517879

WO No.: L2266872

LSD:

Project Ref: DAVID THOMPSON

Sample ID: RM 112C

Sampled By: Chris Carrel

Date Collected: 02-MAY-19

Lab Sample ID: L2266872-1

Matrix: Water

PAGE 1 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000474		mg/L	0.005		03-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager 13-MAY-2019 Updated with "David Thompson".						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 13-MAY-19

PO No.: 1517879

WO No.: L2266872

LSD:

Project Ref: DAVID THOMPSON

Sample ID: RM 109

Sampled By: Chris Carrel

Date Collected: 02-MAY-19

Lab Sample ID: L2266872-2

Matrix: Water

PAGE 2 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00143		mg/L	0.005		03-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						
13-MAY-2019 Updated with "David Thompson".						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 13-MAY-19

PO No.: 1517879

WO No.: L2266872

LSD:

Project Ref: DAVID THOMPSON

Sample ID: RM 101

Sampled By: Chris Carrel

Date Collected: 02-MAY-19

Lab Sample ID: L2266872-3

Matrix: Water

PAGE 3 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00206		mg/L	0.005		03-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager 13-MAY-2019 Updated with "David Thompson".						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 13-MAY-19

PO No.: 1517879

WO No.: L2266872

LSD:

Project Ref: DAVID THOMPSON

Sample ID: RM 269

Sampled By: Chris Carrel

Date Collected: 02-MAY-19

Lab Sample ID: L2266872-4

Matrix: Water

PAGE 4 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000432		mg/L	0.005		03-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager 13-MAY-2019 Updated with "David Thompson".						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 13-MAY-19

PO No.: 1517879

WO No.: L2266872

LSD:

Project Ref: DAVID THOMPSON

Sample ID: RM 273

Sampled By: Chris Carrel

Date Collected: 02-MAY-19

Lab Sample ID: L2266872-5

Matrix: Water

PAGE 5 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000164		mg/L	0.005		03-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager 13-MAY-2019 Updated with "David Thompson".						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 13-MAY-19

PO No.: 1517879

WO No.: L2266872

LSD:

Project Ref: DAVID THOMPSON

Sample ID: RM 320

Sampled By: Chris Carrel

Date Collected: 02-MAY-19

Lab Sample ID: L2266872-6

Matrix: Water

PAGE 6 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000368		mg/L	0.005		03-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						
13-MAY-2019 Updated with "David Thompson".						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 13-MAY-19

PO No.: 1517879

WO No.: L2266872

LSD:

Project Ref: DAVID THOMPSON

Sample ID: RM 316B

Sampled By: Chris Carrel

Date Collected: 02-MAY-19

Lab Sample ID: L2266872-7

Matrix: Water

PAGE 7 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000721		mg/L	0.005		03-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager 13-MAY-2019 Updated with "David Thompson".						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 13-MAY-19

PO No.: 1517879

WO No.: L2266872

LSD:

Project Ref: DAVID THOMPSON

Sample ID: RM 210D

Sampled By: Chris Carrel

Date Collected: 02-MAY-19

Lab Sample ID: L2266872-8

Matrix: Water

PAGE 8 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00163		mg/L	0.005		03-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						
13-MAY-2019 Updated with "David Thompson".						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 13-MAY-19

PO No.: 1517879

WO No.: L2266872

LSD:

Project Ref: DAVID THOMPSON

Sample ID: RM 214

Sampled By: Chris Carrel

Date Collected: 02-MAY-19

Lab Sample ID: L2266872-9

Matrix: Water

PAGE 9 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00142		mg/L	0.005		03-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager 13-MAY-2019 Updated with "David Thompson".						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 13-MAY-19

PO No.: 1517879

WO No.: L2266872

LSD:

Project Ref: DAVID THOMPSON

Sample ID: RM 267

Sampled By: Chris Carrel

Date Collected: 02-MAY-19

Lab Sample ID: L2266872-10

Matrix: Water

PAGE 10 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000666		mg/L	0.005		03-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager 13-MAY-2019 Updated with "David Thompson".						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 13-MAY-19
PO No.: 1517879
WO No.: L2266872

NOT IN SERVICE

LSD:
Project Ref: DAVID THOMPSON

Sample ID: RM 267R

Sampled By: Chris Carrel

Date Collected: 02-MAY-19

Lab Sample ID: L2266872-11

Matrix: Water

PAGE 11 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.00506		mg/L	0.005		03-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						
13-MAY-2019 Updated with "David Thompson".						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 13-MAY-19

PO No.: 1517879

WO No.: L2266872

LSD:

Project Ref: DAVID THOMPSON

Sample ID: RM 277

Sampled By: Chris Carrel

Date Collected: 02-MAY-19

Lab Sample ID: L2266872-12

Matrix: Water

PAGE 12 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000589		mg/L	0.005		03-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager 13-MAY-2019 Updated with "David Thompson".						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 13-MAY-19

PO No.: 1517879

WO No.: L2266872

LSD:

Project Ref: DAVID THOMPSON

Sample ID: RM 227 A R

Sampled By: Chris Carrel

Date Collected: 02-MAY-19

Lab Sample ID: L2266872-13

Matrix: Water

PAGE 13 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000482		mg/L	0.005		03-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager 13-MAY-2019 Updated with "David Thompson".						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 13-MAY-19

PO No.: 1517879

WO No.: L2266872

LSD:

Project Ref: DAVID THOMPSON

Sample ID: RM 226

Sampled By: Chris Carrel

Date Collected: 02-MAY-19

Lab Sample ID: L2266872-14

Matrix: Water

PAGE 14 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000686		mg/L	0.005		03-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						
13-MAY-2019 Updated with "David Thompson".						

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 13-MAY-19

PO No.: 1517879

WO No.: L2266872

LSD:

Project Ref: DAVID THOMPSON

Sample ID: RM 229

Sampled By: Chris Carrel

Date Collected: 02-MAY-19

Lab Sample ID: L2266872-15

Matrix: Water

PAGE 15 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00118		mg/L	0.005		04-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						
13-MAY-2019 Updated with "David Thompson".						

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 13-MAY-19

PO No.: 1517879

WO No.: L2266872

LSD:

Project Ref: DAVID THOMPSON

Sample ID: RM 281

Sampled By: Chris Carrel

Date Collected: 02-MAY-19

Lab Sample ID: L2266872-16

Matrix: Water

PAGE 16 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000207		mg/L	0.005		04-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager 13-MAY-2019 Updated with "David Thompson".						

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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 ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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.



Canada Toll Free: 1 800 668 9878

L2266872-COFC

Page of

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY

YELLOW - CLIENT COPY

JUNE 2018 FRONT

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.



Chain of Custody (COC) / Analytical
Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com



L2266872-COFC

COC Number: 17 - 828450

Page of

Report To		Report From		
Contact and company name below will appear on the final report		Below - Contact your AM to confirm all E&P TATs (surcharges may apply)		
Company:	Vancouver School Board	Select Report Format:	☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)	
Contact:	Strahen Thomas	Quality Control (QC) Report with Report	☐ YES ☐ NO	
Phone:	604 713 5637	☐ Compare Results to Criteria on Report - provide details below if box checked		
Company address below will appear on the final report		Select Distribution:	☒ EMAIL ☐ MAIL ☐ FAX	
Street:	1549 Clark Dr	Email 1 or Fax:	SS Thomas@VSB.BC.ca	
City/Province:	Vancouver BC	Email 2:		
Postal Code:		Email 3:		
Invoice To:	Same as Report To ☒ YES ☐ NO	Invoice Distribution:	☒ EMAIL ☐ MAIL ☐ FAX	
	Copy of Invoice with Report ☐ YES ☐ NO	Select Invoice Distribution:	☒ EMAIL ☐ MAIL ☐ FAX	
Company:		Email 1 or Fax:	SS Thomas@VSB.BC.ca	
Contact:		Email 2:		
Project Information		Oil and Gas Required Fields (client use)		
ALS Account # / Quote #:		AFE/Cost Center:	PO#	
Job #:		Major/Minor Code:	Routing Code:	
PO / AFE:		Requisitioner:		
LSD:		Location:		
ALS Lab Work Order # (lab use only):		ALS Contact:	Sampler: Chris Carroll	
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type
	RM 112C	02 May 19	10:12	Water
	RM 109	02 May 19	10:17	Water
	RM 101	02 May 19	10:21	Water
	RM 269	02 May 19	11:25	Water
	RM 273	02 May 19	11:19	Water
	RM 320	02 May 19	11:43	Water
	RM 316B	02 May 19	11:46	Water
	RM 210 D	02 May 19	12:45	Water
	RM 214	02 May 19	12:41	Water
	RM 267	02 May 19	10:48	Water
	RM 267 R	02 May 19	11:13	Water
	RM 277	02 May 19	10:53	Water
Drinking Water (DW) Samples (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		
Are samples taken from a Regulated DW System? ☐ YES ☐ NO		No Reservative added		
Are samples for human consumption/ use? ☐ YES ☐ NO				
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Received by:	Date:	
SHIPMENT RELEASE (client use)		FINAL SHIPMENT RECEPTION (lab use only)		
Received by:	Date:	Received by:	Date:	

Analysis Request	
Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below	
NUMBER OF CONTAINERS	SAMPLES ON HOLD
L-lead	

SAMPLE CONDITION AS RECEIVED (lab use only)	
Frozen ☐	SIF Observations Yes ☐ No ☐
Ice Packs ☒ Ice Cubes ☐	Custody seal intact Yes ☐ No ☐
Cooling Initiated ☒	
INITIAL COOLER TEMPERATURES °C	FINAL COOLER TEMPERATURES °C
	13

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY

YELLOW - CLIENT COPY

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

JUNE 2018 FORM



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-OCT-19

PO No.: 1517879

WO No.: L2355208

LSD:

Project Ref: A.R. LORD ELEMENTARY

Sample ID: COR 200 RM 208 SSDF

Sampled By: Robin Lemay

Date Collected: 26-SEP-19

Lab Sample ID: L2355208-1

Matrix: Water

PAGE 1 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000271		mg/L	0.005		30-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-OCT-19

PO No.: 1517879

WO No.: L2355208

LSD:

Project Ref: A.R. LORD ELEMENTARY

Sample ID: RM 202 FGDF

Sampled By: Robin Lemay

Date Collected: 26-SEP-19

Lab Sample ID: L2355208-2

Matrix: Water

PAGE 2 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000556		mg/L	0.005		30-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-OCT-19

PO No.: 1517879

WO No.: L2355208

LSD:

Project Ref: A.R. LORD ELEMENTARY

Sample ID: COR 104 RM 106 SSDF

Sampled By: Robin Lemay

Date Collected: 26-SEP-19

Lab Sample ID: L2355208-3

Matrix: Water

PAGE 3 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000209		mg/L	0.005		30-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-OCT-19

PO No.: 1517879

WO No.: L2355208

LSD:

Project Ref: A.R. LORD ELEMENTARY

Sample ID: RM 109 FGDF

Sampled By: Robin Lemay

Date Collected: 26-SEP-19

Lab Sample ID: L2355208-4

Matrix: Water

PAGE 4 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000327		mg/L	0.005		30-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-OCT-19

PO No.: 1517879

WO No.: L2355208

LSD:

Project Ref: A.R. LORD ELEMENTARY

Sample ID: COR 121 RM 117 SSDF

Sampled By: Robin Lemay

Date Collected: 26-SEP-19

Lab Sample ID: L2355208-5

Matrix: Water

PAGE 5 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000697		mg/L	0.005		30-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



NOT IN SERVICE

Date: 03-OCT-19

PO No.: 1517879

WO No.: L2355208

LSD:

Project Ref: A.R. LORD ELEMENTARY

Sample ID: COR 121 RM 118 DF

Sampled By: Robin Lemay

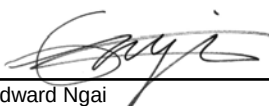
Date Collected: 26-SEP-19

Lab Sample ID: L2355208-6

Matrix: Water

VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

PAGE 6 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.00659		mg/L	0.005		30-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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 						
Edward Ngai Account Manager						

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

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.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

*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 rationing cations to anions
Bicarbonate	See Alkalinity. Report as the anion HCO ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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 of 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.
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.



Report To Contact and company name below will appear on the final report			Report Format / Distribution			Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)					
Company: <u>Vancouver School Board</u>			Select Report Format: ☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)			Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply					
Contact: <u>Stephen Thomas</u>			Quality Control (QC) Report with Report ☐ YES ☐ NO			PRIORITY (Business Days) 4 day [P4-20%] ☐ 3 day [P3-25%] ☐ 2 day [P2-50%] ☐		EMERGENCY 1 Business day [E - 100%] Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐			
Phone: <u>604-713-5637</u>			☐ Compare Results to Criteria on Report - provide details below if box checked Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX								
Company address below will appear on the final report			Email 1 or Fax: <u>ssthenas@vsb.bc.ca</u>			Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm					
Street: <u>1549 Clarke Dr.</u>			Email 2: <u>elemay@vsb.bc.ca</u>			For tests that can not be performed according to the service level selected, you will be contacted.					
City/Province: <u>Vancouver B.C.</u>			Email 3:			Analysis Request					
Postal Code:						Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below					
Invoice To			Invoice Distribution			NUMBER OF CONTAINERS SAMPLES ON HOLD SUSPECTED HAZARD (see Special Instructions)					
Same as Report To ☒ YES ☐ NO			Select Invoice Distribution: ☒ EMAIL ☐ MAIL ☐ FAX								
Copy of Invoice with Report ☐ YES ☐ NO			Email 1 or Fax: <u>ssthenas@vsb.bc.ca</u>								
Company:			Email 2: <u>elemay@vsb.bc.ca</u>								
Contact:											
Project Information			Oil and Gas Required Fields (client use)								
ALS Account # / Quote #:			AFE/Cost Center: PO#								
Job #: <u>A.R. Lord Elementary</u>			Major/Minor Code: Routing Code:								
PO / AFE:			Requisitioner:								
LSD:			Location:								
ALS Lab Work Order # (lab use only):			ALS Contact:			Sampler: <u>Robin Lemay</u>					
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						
	<u>Cor. 200 Rm. 208 SSDF</u>		<u>26-09-19</u>	<u>10:38am</u>	<u>water</u>						
	<u>Rm. 202 FGDF</u>		<u>26-09-19</u>	<u>10:43am</u>	<u>water</u>						
	<u>Cor. 104 Rm. 106 SSDF</u>		<u>26-09-19</u>	<u>10:48am</u>	<u>water</u>						
	<u>Rm. 109 FGDF</u>		<u>26-09-19</u>	<u>10:53am</u>	<u>water</u>						
	<u>Cor. 121 Rm. 117 SSDF</u>		<u>26-09-19</u>	<u>11:03am</u>	<u>water</u>						
	<u>Cor. 121 Rm. 118 DF</u>		<u>26-09-19</u>	<u>11:18am</u>	<u>water</u>						
Drinking Water (DW) Samples¹ (client use)			Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)			SAMPLE CONDITION AS RECEIVED (lab use only)					
Are samples taken from a Regulated DW System? ☐ YES ☐ NO			<u>No preservatives added</u>			Frozen ☐ SIF Observations Yes ☐ No ☐					
Are samples for human consumption/ use? ☐ YES ☐ NO						Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐					
						Cooling Initiated ☒					
						INITIAL COOLER TEMPERATURES °C					
						FINAL COOLER TEMPERATURES °C					
SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)					
Released by:			Received by:			Received by: <u>HM</u>					
Date:			Date:			Date: <u>9/26</u>					
Time:			Time:			Time: <u>2:54</u>					



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 18-OCT-19

PO No.: 1517879

WO No.: L2363901

LSD:

Project Ref: DR. GEORGE M. WEIR ELEMENTARY

Sample ID: CORR 204 RM. 204B DF

Sampled By: Robin Lemay

Date Collected: 10-OCT-19

Lab Sample ID: L2363901-1

Matrix: Water

PAGE 1 of 4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00105		mg/L	0.005		13-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 18-OCT-19

PO No.: 1517879

WO No.: L2363901

LSD:

Project Ref: DR. GEORGE M. WEIR ELEMENTARY

Sample ID: CORR 104 RM. 106 DF

Sampled By: Robin Lemay

Date Collected: 10-OCT-19

Lab Sample ID: L2363901-2

Matrix: Water

PAGE 2 of 4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000440		mg/L	0.005		13-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 18-OCT-19

PO No.: 1517879

WO No.: L2363901

LSD:

Project Ref: DR. GEORGE M. WEIR ELEMENTARY

Sample ID: CORR 104 RM. 120 DF

Sampled By: Robin Lemay

Date Collected: 10-OCT-19

Lab Sample ID: L2363901-3

Matrix: Water

PAGE 3 of 4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00159		mg/L	0.005		13-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

*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 ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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 of 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.
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.

Chain of Custody (COC) / Analytical Request Form



L2363901-COFC

COC Number: 17 - 762168

Page of

Environmental

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Canada Toll Free: 1 800 668 9878

Contact and company name below will appear on the final report:			Report Format / Distribution			Select Service Level below - Contact your AM to confirm all E&P TATs (surcharges may apply)											
Vancouver School Board Stephen Thomas 604-713-5637 Company address below will appear on the final report: 1549 Clark Dr Vancouver B.C.			Select Report Format: ☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)			Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply											
			Quality Control (QC) Report with Report ☐ YES ☐ NO ☐ Compare Results to Criteria on Report - provide details below if box checked			4 day [P4-20%] ☐ 3 day [P3-25%] ☐ 2 day [P2-50%] ☐											
Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX			Email 1 or Fax: ss.thomas@vsb.bc.ca Email 2: r.lamay@vsb.bc.ca Email 3:			1 Business day [E - 100%] Same Day, Weekend or Statutory holiday [E2 - 200%] (Laboratory opening fees may apply)											
Same as Report To ☒ YES ☐ NO Copy of Invoice with Report ☐ YES ☐ NO			Invoice Distribution			Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm											
			Select Invoice Distribution: ☒ EMAIL ☐ MAIL ☐ FAX Email 1 or Fax: ss.thomas@vsb.bc.ca Email 2: r.lamay@vsb.bc.ca			For tests that can not be performed according to the service level selected, you will be contacted.											
Project Information			Oil and Gas Required Fields (client use)			Analysis Request											
Int # / Quote #: George M. Weir Elementary			AFE/Cost Center: PO# Major/Minor Code: Routing Code: Requisitioner: Location:			Indicate Filled (F), Preserved (P) or Filled and Preserved (F/P) below											
Work Order # (lab use only):			ALS Contact:			Sampler: Robin Lemay			NUMBER OF CONTAINERS Lead								
Sample Identification and/or Coordinates (This description will appear on the report)			Date (dd-mmm-yy)			Time (hh:mm)						SAMPLES ON HOLD SUSPECTED HAZARD (see Special Instructions)					
Corr 204 Rm 204b DF			10-10-19			11:56am									water		
Corr 104 Rm 106 DF			10-10-19			11:35am									water		
Corr 104 Rm 120 DF			10-10-19			11:40am									water		
Drinking Water (DW) Samples ¹ (client use) taken from a Regulated DW System? ☐ YES ☐ NO for human consumption/ use? ☐ YES ☐ NO			Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)			SAMPLE CONDITION AS RECEIVED (lab use only)											
			No preservatives added			Frozen ☐ SIF Observations Yes ☐ No ☐ Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐ Cooling Initiated ☒											
						INITIAL COOLER TEMPERATURES °C: FINAL COOLER TEMPERATURES °C:											
SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)											
Date: Time:			Received by: Date: Time:			Received by: 12A Date: 10/10 Time: 2:40p											

BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY

YELLOW - CLIENT COPY

JUNE 2015 PRINT

samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 24-JUL-19
PO No.: 1517879
WO No.: L2311929

LSD:

Project Ref: DR. H.N. MACCORKINDALE ELEMENTARY

Sample ID: RM 153 DF

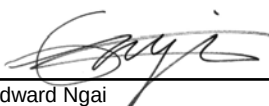
Sampled By: Robin Lemay

Date Collected: 17-JUL-19

Lab Sample ID: L2311929-1

Matrix: Water

PAGE 1 of 3

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00136		mg/L	0.005		18-JUL-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 24-JUL-19

PO No.: 1517879

WO No.: L2311929

LSD:

Project Ref: DR. H.N. MACCORKINDALE ELEMENTARY

Sample ID: RM 131 SSDF

Sampled By: Robin Lemay

Date Collected: 17-JUL-19

Lab Sample ID: L2311929-2

Matrix: Water

PAGE 2 of 3

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000429		mg/L	0.005		18-JUL-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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 ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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.



Chain of Custody (COC) / Analytical
Request Form

Canada Toll Free: 1 800 668 9878



L2311929-COFC

COC Number: 17 - 756168

Page of

www.alsglobal.com

Report To		Report Format / Distribution		Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)						
Company:	Vancouver School Board	Select Report Format:	☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)	Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply						
Contact:	Stephen Thomas	Quality Control (QC) Report with Report	☐ YES ☐ NO	1 Business day [E - 100%]						
Phone:	604 713 5637	☐ Compare Results to Criteria on Report - provide details below if box checked		Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)]						
Company address below will appear on the final report		Select Distribution:	☒ EMAIL ☐ MAIL ☐ FAX	Date and Time Required for all E&P TATs: dd-mm-yy hh:mm						
Street:	1549 Clark Dr.	Email 1 or Fax	ssthomas@vsb.bc.ca	For tests that can not be performed according to the service level selected, you will be contacted.						
City/Province:	Vancouver B.C.	Email 2	rlemay@vsb.bc.ca	Analysis Request						
Postal Code:		Email 3		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (FP) below						
Invoice To	Same as Report To ☐ YES ☐ NO	Invoice Distribution		NUMBER OF CONTAINERS Lead		SAMPLES ON HOLD		SUSPECTED HAZARD (see Special Instructions)		
	Copy of Invoice with Report ☐ YES ☐ NO	Select Invoice Distribution:	☒ EMAIL ☐ MAIL ☐ FAX							
Company:		Email 1 or Fax	ssthomas@vsb.bc.ca							
Contact:		Email 2	rlemay@vsb.bc.ca							
Project Information		Oil and Gas Required Fields (client use)								
ALS Account # / Quote #:		AFE/Cost Center:	PO#							
Job #:	Dr. H.N. MacCorkindale Elementary	Major/Minor Code:	Routing Code:							
PO / AFE:		Requisitioner:								
LSD:		Location:								
ALS Lab Work Order # (lab use only):		ALS Contact:	Sampler: Robin Lemay							
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type						
	Rm. 153 DF	17-07-19	1:11pm	water						
	Rm. 131 SSDF	17-07-19	1:17pm	water						
Drinking Water (DW) Samples ¹ (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		SAMPLE CONDITION AS RECEIVED (lab use only)						
Are samples taken from a Regulated DW System? ☐ YES ☐ NO		No preservatives added		Frozen ☐ SIF Observations Yes ☐ No ☐						
Are samples for human consumption/ use? ☐ YES ☐ NO				Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐						
				Cooling Initiated ☒						
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)						
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:		
						HA	7/17	2:15pm		

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JUNE 2016 PRINT

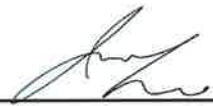
1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 15-MAY-19
PO No.: 1517879
WO No.: L2269901
LSD:
Project Ref: DR. R.E. MCKECHNIE
Sample ID: RM 109
Sampled By: Chris Carrell
Date Collected: 08-MAY-19
Lab Sample ID: L2269901-5
Matrix: Water

PAGE 5 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.00139		mg/L	0.005		11-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018						
* 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 						
Joanne Lee Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 15-MAY-19

PO No.: 1517879

WO No.: L2269901

LSD:

Project Ref: DR. R.E. MCKECHNIE

Sample ID: RM 126

Sampled By: Chris Carrell

Date Collected: 08-MAY-19

Lab Sample ID: L2269901-3

Matrix: Water

PAGE 3 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.0710		mg/L	0.005		11-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 15-MAY-19

PO No.: 1517879

WO No.: L2269901

LSD:

Project Ref: DR. R.E. MCKECHNIE

Sample ID: RM 116

Sampled By: Chris Carrell

Date Collected: 08-MAY-19

Lab Sample ID: L2269901-1

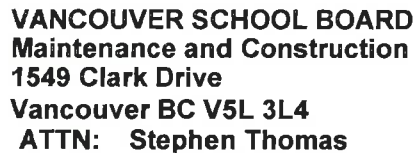
Matrix: Water

PAGE 1 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00103		mg/L	0.005		11-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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Matrix: Water

PAGE 6 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.000635		mg/L	0.005		11-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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Date: 15-MAY-19

PO No.: 1517879

WO No.: L2269901

LSD:

Project Ref: DR. R.E. MCKECHNIE

Sample ID: RM 120

Sampled By: Chris Carrell

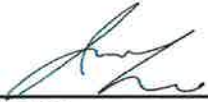
Date Collected: 08-MAY-19

Lab Sample ID: L2269901-2

Matrix: Water

PAGE 2 of 7

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.0179		mg/L	0.005		11-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 14-JUN-19

PO No.: 1517879

WO No.: L2287859

LSD:

Project Ref: SIR ALEXANDER MACKENZIE ELEMENTARY

Sample ID: RM 116

Sampled By: Chris Carrell

Date Collected: 07-JUN-19

Lab Sample ID: L2287859-1

Matrix: Water

PAGE 1 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00182		mg/L	0.005		13-JUN-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 14-JUN-19

PO No.: 1517879

WO No.: L2287859

LSD:

Project Ref: SIR ALEXANDER MACKENZIE ELEMENTARY

Sample ID: RM 004

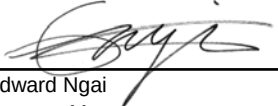
Sampled By: Chris Carrell

Date Collected: 07-JUN-19

Lab Sample ID: L2287859-2

Matrix: Water

PAGE 2 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000622		mg/L	0.005		13-JUN-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 14-JUN-19

PO No.: 1517879

WO No.: L2287859

LSD:

Project Ref: SIR ALEXANDER MACKENZIE ELEMENTARY

Sample ID: RM 006 L

Sampled By: Chris Carrell

Date Collected: 07-JUN-19

Lab Sample ID: L2287859-3

Matrix: Water

PAGE 3 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000267		mg/L	0.005		13-JUN-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 14-JUN-19

PO No.: 1517879

WO No.: L2287859

LSD:

Project Ref: SIR ALEXANDER MACKENZIE ELEMENTARY

Sample ID: RM 006 R

Sampled By: Chris Carrell

Date Collected: 07-JUN-19

Lab Sample ID: L2287859-4

Matrix: Water

PAGE 4 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000715		mg/L	0.005		13-JUN-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 14-JUN-19

PO No.: 1517879

WO No.: L2287859

LSD:

Project Ref: SIR ALEXANDER MACKENZIE ELEMENTARY

Sample ID: RM 005

Sampled By: Chris Carrell

Date Collected: 07-JUN-19

Lab Sample ID: L2287859-5

Matrix: Water

PAGE 5 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.00530		mg/L	0.005		13-JUN-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 14-JUN-19

PO No.: 1517879

WO No.: L2287859

LSD:

Project Ref: SIR ALEXANDER MACKENZIE ELEMENTARY

Sample ID: RM 112

Sampled By: Chris Carrell

Date Collected: 07-JUN-19

Lab Sample ID: L2287859-6

Matrix: Water

PAGE 6 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00108		mg/L	0.005		13-JUN-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 14-JUN-19

PO No.: 1517879

WO No.: L2287859

LSD:

Project Ref: SIR ALEXANDER MACKENZIE ELEMENTARY

Sample ID: RM 222

Sampled By: Chris Carrell

Date Collected: 07-JUN-19

Lab Sample ID: L2287859-7

Matrix: Water

PAGE 7 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000864		mg/L	0.005		13-JUN-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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 ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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 vwt - 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.

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Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com



L2287859-COFC

DC Number: 17 - 765037

Page of

Report To Contact and company name below will appear on the final report		Report Format / Distribution		fact your AM to confirm all E&P TATs (surcharges may apply)	
Company:	Vancouver School Board	Select Report Format:	☒ PDF ☐ EXCEL ☐ EDU (DIGITAL)	Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply	
Contact:	Stephen Thomas	Quality Control (QC) Report with Report	☐ YES ☐ NO	4 day [P4-20%] ☐ 1 Business day [E - 100%] ☐	
Phone:	604-713-5637	☐ Compare Results to Criteria on Report - provide details below if box checked		3 day [P3-25%] ☐ Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐	
Company address below will appear on the final report		Select Distribution:	☒ EMAIL ☐ MAIL ☐ FAX	2 day [P2-50%] ☐	
Street:	1549 Clark Dr.	Email 1 or Fax	SSThomas@VSB.bc.ca	Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm	
City/Province:	Vancouver/BC	Email 2		For tests that can not be performed according to the service level selected, you will be contacted.	
Postal Code:		Email 3		Analysis Request	
Invoice To	Same as Report To ☒ YES ☐ NO	Invoice Distribution		NUMBER OF CONTAINERS LEAD SAMPLES ON HOLD SUSPECTED HAZARD (see Special Instructions)	
Copy of Invoice with Report	☐ YES ☐ NO	Select Invoice Distribution:	☐ EMAIL ☐ MAIL ☐ FAX		
Company:		Email 1 or Fax	SSThomas@VSB.bc.ca		
Contact:		Email 2			
Project Information		Oil and Gas Required Fields (client use)			
ALS Account # / Quote #:		AFE/Cost Center:	PO#		
Job #:	Sir Alexander Mackenzie Elementary	Major/Minor Code:	Routing Code:		
PO / AFE:		Requisitioner:			
LSD:		Location:			
ALS Lab Work Order # (lab use only):		ALS Contact:	Sampler: Chris Carrell		
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	
	RM 116	07-June-19	01:34	water	
	RM 004	07-Jun-19	01:47	water	
	RM 006 L	07-Jun-19	01:39	water	
	RM 006 R	07-Jun-19	01:38	water	
	RM 005	07-Jun-19	01:43	water	
	RM 112	07-Jun-19	01:30	water	
	RM 222	07-Jun-19	01:23	water	
Drinking Water (DW) Samples ¹ (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		SAMPLE CONDITION AS RECEIVED (lab use only)	
Are samples taken from a Regulated DW System? ☐ YES ☐ NO		No preservatives added		Frozen ☐ SIF Observations Yes ☐ No ☐	
Are samples for human consumption/ use? ☐ YES ☐ NO				Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐	
				Cooling Initiated ☒	
				INITIAL COOLER TEMPERATURES °C	
				FINAL COOLER TEMPERATURES °C	
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)	
Released by:	Date:	Time:	Received by:	Date:	Time:
				617	2142P

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JUNE 2018 FORM

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 16-SEP-19

PO No.: 1517879

WO No.: L2343129

LSD:

Project Ref: EDITH CAVELL

Sample ID: RM. 207 DF

Sampled By: Robin Lenay

Date Collected: 06-SEP-19

Lab Sample ID: L2343129-1

Matrix: Water

PAGE 1 of 6

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000993		mg/L	0.005		11-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 16-SEP-19

PO No.: 1517879

WO No.: L2343129

LSD:

Project Ref: EDITH CAVELL

Sample ID: RM. 106 DF

Sampled By: Robin Lenay

Date Collected: 06-SEP-19

Lab Sample ID: L2343129-2

Matrix: Water

PAGE 2 of 6

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00336		mg/L	0.005		11-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 16-SEP-19

PO No.: 1517879

WO No.: L2343129

LSD:

Project Ref: EDITH CAVELL

Sample ID: RM. 023 DF

Sampled By: Robin Lenay

Date Collected: 06-SEP-19

Lab Sample ID: L2343129-3

Matrix: Water

PAGE 3 of 6

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00165		mg/L	0.005		11-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 16-SEP-19

PO No.: 1517879

WO No.: L2343129

LSD:

Project Ref: EDITH CAVELL

Sample ID: RM. 031 SSDF

Sampled By: Robin Lenay

Date Collected: 06-SEP-19

Lab Sample ID: L2343129-4

Matrix: Water

PAGE 4 of 6

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000136		mg/L	0.005		11-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 16-SEP-19

PO No.: 1517879

WO No.: L2343129

LSD:

Project Ref: EDITH CAVELL

Sample ID: RM. 002 SSDF

Sampled By: Robin Lenay

Date Collected: 06-SEP-19

Lab Sample ID: L2343129-5

Matrix: Water

PAGE 5 of 6

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000660		mg/L	0.005		11-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

*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 rationing cations to anions
Bicarbonate	See Alkalinity. Report as the anion HCO ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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 of 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.
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.

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 18-SEP-19

PO No.: 1517879

WO No.: L2344651

LSD:

Project Ref: EMILY CARR ELEMENTARY

Sample ID: RM B125 DF

Sampled By: ROBIN LEMAY

Date Collected: 10-SEP-19

Lab Sample ID: L2344651-1

Matrix: WATER

PAGE 1 of 5

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000711		mg/L	0.005		18-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 18-SEP-19

PO No.: 1517879

WO No.: L2344651

LSD:

Project Ref: EMILY CARR ELEMENTARY

Sample ID: RM B110A DF

Sampled By: ROBIN LEMAY

Date Collected: 10-SEP-19

Lab Sample ID: L2344651-2

Matrix: WATER

PAGE 2 of 5

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00248		mg/L	0.005		18-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 18-SEP-19

PO No.: 1517879

WO No.: L2344651

LSD:

Project Ref: EMILY CARR ELEMENTARY

Sample ID: RM 109 DF

Sampled By: ROBIN LEMAY

Date Collected: 10-SEP-19

Lab Sample ID: L2344651-3

Matrix: WATER

PAGE 3 of 5

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00332		mg/L	0.005		18-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 18-SEP-19

PO No.: 1517879

WO No.: L2344651

LSD:

Project Ref: EMILY CARR ELEMENTARY

Sample ID: RM 001 SSDF

Sampled By: ROBIN LEMAY

Date Collected: 10-SEP-19

Lab Sample ID: L2344651-4

Matrix: WATER

PAGE 4 of 5

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000104		mg/L	0.005		18-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Carbonate	See Alkalinity. Reported at the anion CO ₃ -2
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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).
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Total Dissolved Solids	A measure of water salinity.
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Heterotrophic	
Plate Count	Criteria is 500 cfu/mL Measure of heterotrophic bacteria present.

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D.L. - The reporting limit.

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



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com



L2344651-COFC

COC Number: 17 - 763424

Page of

Report To		Report Format / Distribution		Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)		
Company:	Vancouver School Board	Select Report Format:	☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)	Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply		
Contact:	Stephen Thomas	Quality Control (QC) Report with Report	☐ YES ☐ NO	4 day [P4-20%] ☐ 1 Business day [E - 100%] ☐		
Phone:	604-713-5637	☐ Compare Results to Criteria on Report - provide details below if box checked		3 day [P3-25%] ☐ Same Day, Weekend or Statutory holiday [E2 -200%] (Laboratory opening fees may apply) ☐		
Company address below will appear on the final report		Select Distribution:	☒ EMAIL ☐ MAIL ☐ FAX	2 day [P2-50%] ☐		
Street:	1549 Clark Dr.	Email 1 or Fax	ssthenas@vsb.bc.ca	Date and Time Required for all E&P TATs: dd-mm-yy hh:mm		
City/Province:	Vancouver B.C.	Email 2	rlamay@vsb.bc.ca	For tests that can not be performed according to the service level selected, you will be contacted.		
Postal Code:		Email 3		Analysis Request		
Invoice To	Same as Report To ☒ YES ☐ NO	Invoice Distribution		NUMBER OF CONTAINERS Lead SAMPLES ON HOLD SUSPECTED HAZARD (see Special Instructions)		
Copy of Invoice with Report	☐ YES ☐ NO	Select Invoice Distribution:	☒ EMAIL ☐ MAIL ☐ FAX			
Company:	Emily Carr Elementary	Email 1 or Fax	ssthenas@vsb.bc.ca			
Contact:		Email 2	rlamay@vsb.bc.ca			
Project Information		Oil and Gas Required Fields (client use)				
ALS Account # / Quote #:		AFE/Cost Center:	PO#			
Job #:	Emily Carr Elementary	Major/Minor Code:	Routing Code:			
PO / AFE:		Requisitioner:				
LSD:		Location:				
ALS Lab Work Order # (lab use only):		ALS Contact:	Sampler: Robin Lemay			
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type		
	Rn B125 DF	10-09-19	11:23am	water		
	Rn B110A DF	10-09-19	11:30am	water		
	Rn. 109 DF	10-09-19	11:35am	water		
	Rn. 001 SSDF	10-09-19	11:41am	water		
Drinking Water (DW) Samples ¹ (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		SAMPLE CONDITION AS RECEIVED (lab use only)		
Are samples taken from a Regulated DW System?	☐ YES ☐ NO	No preservatives added		Frozen ☐ SIF Observations Yes ☐ No ☐		
Are samples for human consumption/ use?	☐ YES ☐ NO			Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐		
				Cooling Initiated ☒		
				INITIAL COOLER TEMPERATURES °C		
				FINAL COOLER TEMPERATURES °C		
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	
				11A	9/10	

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JUNE 2016 FORM

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 12-JUL-19

PO No.:

WO No.: L2307748

LSD:

Project Ref: ERIC HAMBER SECONDARY

Sample ID: RM 358 DF

Sampled By: Robin Lemay

Date Collected: 10-JUL-19

Lab Sample ID: L2307748-1

Matrix: Water

PAGE 1 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00125		mg/L	0.005		12-JUL-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 12-JUL-19

PO No.:

WO No.: L2307748

LSD:

Project Ref: ERIC HAMBER SECONDARY

Sample ID: RM 323

Sampled By: Robin Lemay

Date Collected: 10-JUL-19

Lab Sample ID: L2307748-2

Matrix: Water

PAGE 2 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000713		mg/L	0.005		11-JUL-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 12-JUL-19

PO No.:

WO No.: L2307748

LSD:

Project Ref: ERIC HAMBER SECONDARY

Sample ID: RM 312

Sampled By: Robin Lemay

Date Collected: 10-JUL-19

Lab Sample ID: L2307748-3

Matrix: Water

PAGE 3 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000275		mg/L	0.005		11-JUL-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 12-JUL-19

PO No.:

WO No.: L2307748

LSD:

Project Ref: ERIC HAMBER SECONDARY

Sample ID: RM 301

Sampled By: Robin Lemay

Date Collected: 10-JUL-19

Lab Sample ID: L2307748-4

Matrix: Water

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Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000611		mg/L	0.005		11-JUL-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Vancouver BC V5L 3L4
ATTN: Stephen Thomas

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LSD:

Project Ref: ERIC HAMBER SECONDARY

Sample ID: RM 201

Sampled By: Robin Lemay

Date Collected: 10-JUL-19

Lab Sample ID: L2307748-5

Matrix: Water

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Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00102		mg/L	0.005		11-JUL-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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WO No.: L2307748

LSD:

Project Ref: ERIC HAMBER SECONDARY

Sample ID: RM 211A

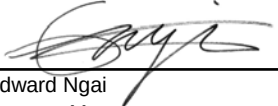
Sampled By: Robin Lemay

Date Collected: 10-JUL-19

Lab Sample ID: L2307748-6

Matrix: Water

PAGE 6 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000123		mg/L	0.005		11-JUL-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 12-JUL-19

PO No.:

WO No.: L2307748

LSD:

Project Ref: ERIC HAMBER SECONDARY

Sample ID: RM 221

Sampled By: Robin Lemay

Date Collected: 10-JUL-19

Lab Sample ID: L2307748-7

Matrix: Water

PAGE 7 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000947		mg/L	0.005		11-JUL-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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ATTN: Stephen Thomas

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PO No.:

WO No.: L2307748

LSD:

Project Ref: ERIC HAMBER SECONDARY

Sample ID: RM 285

Sampled By: Robin Lemay

Date Collected: 10-JUL-19

Lab Sample ID: L2307748-8

Matrix: Water

PAGE 8 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000550		mg/L	0.005		11-JUL-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Maintenance and Construction
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ATTN: Stephen Thomas

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PO No.:

WO No.: L2307748

LSD:

Project Ref: ERIC HAMBER SECONDARY

Sample ID: RM 293

Sampled By: Robin Lemay

Date Collected: 10-JUL-19

Lab Sample ID: L2307748-9

Matrix: Water

PAGE 9 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000156		mg/L	0.005		11-JUL-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Maintenance and Construction
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Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 12-JUL-19

PO No.:

WO No.: L2307748

LSD:

Project Ref: ERIC HAMBER SECONDARY

Sample ID: RM 295

Sampled By: Robin Lemay

Date Collected: 10-JUL-19

Lab Sample ID: L2307748-10

Matrix: Water

PAGE 10 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000166		mg/L	0.005		11-JUL-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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ATTN: Stephen Thomas

Date: 12-JUL-19

PO No.:

WO No.: L2307748

LSD:

Project Ref: ERIC HAMBER SECONDARY

Sample ID: RM 290

Sampled By: Robin Lemay

Date Collected: 10-JUL-19

Lab Sample ID: L2307748-11

Matrix: Water

PAGE 11 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000285		mg/L	0.005		12-JUL-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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ATTN: Stephen Thomas

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PO No.:

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LSD:

Project Ref: ERIC HAMBER SECONDARY

Sample ID: RM 110

Sampled By: Robin Lemay

Date Collected: 10-JUL-19

Lab Sample ID: L2307748-12

Matrix: Water

PAGE 12 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000732		mg/L	0.005		11-JUL-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Maintenance and Construction
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Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 12-JUL-19

PO No.:

WO No.: L2307748

LSD:

Project Ref: ERIC HAMBER SECONDARY

Sample ID: RM 121

Sampled By: Robin Lemay

Date Collected: 10-JUL-19

Lab Sample ID: L2307748-13

Matrix: Water

PAGE 13 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00126		mg/L	0.005		11-JUL-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Vancouver BC V5L 3L4
ATTN: Stephen Thomas

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PO No.:

WO No.: L2307748

LSD:

Project Ref: ERIC HAMBER SECONDARY

Sample ID: RM L105

Sampled By: Robin Lemay

Date Collected: 10-JUL-19

Lab Sample ID: L2307748-14

Matrix: Water

PAGE 14 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000138		mg/L	0.005		11-JUL-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

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PO No.:

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LSD:

Project Ref: ERIC HAMBER SECONDARY

Sample ID: RM 144

Sampled By: Robin Lemay

Date Collected: 10-JUL-19

Lab Sample ID: L2307748-15

Matrix: Water

PAGE 15 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000325		mg/L	0.005		12-JUL-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Maintenance and Construction
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Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 12-JUL-19

PO No.:

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LSD:

Project Ref: ERIC HAMBER SECONDARY

Sample ID: RM 138

Sampled By: Robin Lemay

Date Collected: 10-JUL-19

Lab Sample ID: L2307748-16

Matrix: Water

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Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000131		mg/L	0.005		12-JUL-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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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 ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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 vwt - 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.



L2307748-COFC

COC Number: 17 - 811614

Page of

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Company: <u>Vancouver School Board</u>		Select Report Format: ☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)		Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply																																																																																																																												
Contact: <u>Stephen Thomas</u>		Quality Control (QC) Report with Report ☐ YES ☐ NO		4 day [P4-20%] ☐ 1 Business day [E - 100%] ☐																																																																																																																												
Phone: <u>604-713-5637</u>		☐ Compare Results to Criteria on Report - provide details below if box checked		3 day [P3-25%] ☐ Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐																																																																																																																												
Company address below will appear on the final report		Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX		2 day [P2-50%] ☐																																																																																																																												
Street: <u>1549 Clark Dr.</u>		Email 1 or Fax: <u>ss.thomas@vsb.bc.ca</u>		Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm																																																																																																																												
City/Province: <u>Vancouver, B.C.</u>		Email 2: <u>rlemay@vsb.bc.ca</u>		For tests that can not be performed according to the service level selected, you will be contacted.																																																																																																																												
Postal Code:		Email 3:		Analysis Request																																																																																																																												
Invoice To: Same as Report To ☒ YES ☐ NO		Invoice Distribution		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td rowspan="10" style="writing-mode: vertical-rl; transform: rotate(180deg); text-align: center;">NUMBER OF CONTAINERS Lead</td> <td colspan="12">Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below</td> <td rowspan="10" style="writing-mode: vertical-rl; transform: rotate(180deg); text-align: center;">SAMPLES ON HOLD</td> <td rowspan="10" style="writing-mode: vertical-rl; transform: rotate(180deg); text-align: center;">SUSPECTED HAZARD (see Special Instructions)</td> </tr> <tr><td colspan="12"></td></tr> <tr><td colspan="12"></td></tr> <tr><td colspan="12"></td></tr> <tr><td colspan="12"></td></tr> <tr><td colspan="12"></td></tr> <tr><td colspan="12"></td></tr> <tr><td colspan="12"></td></tr> <tr><td colspan="12"></td></tr> <tr><td colspan="12"></td></tr> </table>		NUMBER OF CONTAINERS Lead	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below												SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)																																																																																																												
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Copy of Invoice with Report ☐ YES ☐ NO		Select Invoice Distribution: ☒ EMAIL ☐ MAIL ☐ FAX																																																																																																																														
Company:		Email 1 or Fax: <u>ss.thomas@vsb.bc.ca</u>																																																																																																																														
Contact:		Email 2: <u>rlemay@vsb.bc.ca</u>																																																																																																																														
Project Information		Oil and Gas Required Fields (client use)																																																																																																																														
ALS Account # / Quote #:		AFE/Cost Center: PO#:																																																																																																																														
Job #: <u>Eric Hamber Secondary</u>		Major/Minor Code: Routing Code:																																																																																																																														
PO / AFE:		Requisitioner:																																																																																																																														
LSD:		Location:																																																																																																																														
ALS Lab Work Order # (lab use only):		ALS Contact:		Sampler: <u>Robin Lemay</u>																																																																																																																												
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																																																																																																																												
	Rm 358 DF	10-07-19	12:09	water																																																																																																																												
	Rm 323	10-07-19	12:13	water																																																																																																																												
	Rm 312	10-07-19	12:18	water																																																																																																																												
	Rm 301	10-07-19	12:23	water																																																																																																																												
	Rm 201	10-07-19	12:28	water																																																																																																																												
	Rm 211A	10-07-19	12:35	water																																																																																																																												
	Rm 221	10-07-19	12:39	water																																																																																																																												
	Rm 285	10-07-19	12:46	water																																																																																																																												
	Rm 293	10-07-19	12:53	water																																																																																																																												
	Rm 295	10-07-19	12:59	water																																																																																																																												
	Rm 290	10-07-19	1:05	water																																																																																																																												
	Rm 110	10-07-19	1:12	water																																																																																																																												
Drinking Water (DW) Samples¹ (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		SAMPLE CONDITION AS RECEIVED (lab use only)																																																																																																																												
Are samples taken from a Regulated DW System? ☐ YES ☐ NO		<u>No preservatives added</u>		Frozen ☐ SIF Observations Yes ☐ No ☐																																																																																																																												
Are samples for human consumption/ use? ☐ YES ☐ NO				Ice Packs ☒ Ice Cubes ☒ Custody seal intact Yes ☐ No ☐																																																																																																																												
				Cooling Initiated ☒																																																																																																																												
				INITIAL COOLER TEMPERATURES °C																																																																																																																												
				FINAL COOLER TEMPERATURES °C																																																																																																																												
				16°C																																																																																																																												
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)																																																																																																																												
Released by:	Date:	Time:	Received by:	Date:	Time:																																																																																																																											
				July 10, 2019	3:10pm																																																																																																																											

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JUNE 2018 (REV)

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



Chain of Custody (COC) / Analytical
Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com



L2307748-COFC

COC Number: 17 - 811615

Page of

Report To		Report Format / Distribution		Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)	
Company:	Vancouver School Board	Select Report Format:	☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)	Regular [R] ☒ Standard TAT If received by 3 pm - business days - no surcharges apply	
Contact:	Stephen Thomas	Quality Control (QC) Report with Report	☐ YES ☐ NO	1 Business day [E - 100%]	
Phone:	604-713-5637	☐ Compare Results to Criteria on Report - provide details below if box checked		Same Day, Weekend or Statutory holiday [E2 - 200% (Laboratory opening fees may apply)]	
Company address below will appear on the final report		Select Distribution:	☒ EMAIL ☐ MAIL ☐ FAX	Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm	
Street:	1549 Clark Dr.	Email 1 or Fax:	sstomas@vsb.bc.ca	For tests that can not be performed according to the service level selected, you will be contacted.	
City/Province:	Vancouver B.C.	Email 2:	rlemay@vsb.bc.ca	Analysis Request	
Postal Code:		Email 3:		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below	
Invoice To	Same as Report To ☐ YES ☐ NO	Invoice Distribution		NUMBER OF CONTAINERS Lead	SAMPLES ON HOLD
	Copy of Invoice with Report ☐ YES ☐ NO	Select Invoice Distribution: ☒ EMAIL ☐ MAIL ☐ FAX			
Company:		Email 1 or Fax: sstomas@vsb.bc.ca			
Contact:		Email 2: rlemay@vsb.bc.ca			
Project Information		Oil and Gas Required Fields (client use)			
ALS Account # / Quote #:		AFE/Cost Center:	PO#		
Job #:	Eric Hamber Secondary	Major/Minor Code:	Routing Code:		
PO / AFE:		Requisitioner:			
LSD:		Location:			
ALS Lab Work Order # (lab use only):		ALS Contact:	Sampler: Robin Lemay		
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	
	Rm 121	10/07-19	1:16	water	
	Rm L105	10-07-19	1:25	water	
	Rm 144	10-07-19	1:30	water	
	Rm 138	10-07-19	1:37	water	
Drinking Water (DW) Samples ¹ (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		SAMPLE CONDITION AS RECEIVED (lab use only)	
Are samples taken from a Regulated DW System? ☐ YES ☐ NO		No preservatives added		Frozen ☐ SIF Observations Yes ☐ No ☐	
Are samples for human consumption/ use? ☐ YES ☐ NO				Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐	
				Cooling Initiated ☒	
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)	
Released by:	Date:	Time:	Received by:	Date:	Time:
				Received by: [Signature]	Date: July 10, 2019 Time: 3:16pm

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY

YELLOW - CLIENT COPY

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 30-JUL-19

PO No.: 1517879

WO No.: L2316469

LSD:

Project Ref: ERIC HAMBER

Sample ID: RM 144 BUB

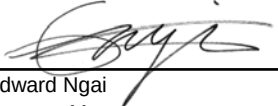
Sampled By: Robin Lemay

Date Collected: 24-JUL-19

Lab Sample ID: L2316469-1

Matrix: Water

PAGE 1 of 3

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000707		mg/L	0.005		27-JUL-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 30-JUL-19

PO No.: 1517879

WO No.: L2316469

LSD:

Project Ref: ERIC HAMBER

Sample ID: RM A201C SSDF

Sampled By: Robin Lemay

Date Collected: 24-JUL-19

Lab Sample ID: L2316469-2

Matrix: Water

PAGE 2 of 3

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000807		mg/L	0.005		27-JUL-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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 ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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.

[illegible]



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 19-SEP-19

PO No.: 1517879

WO No.: L2345646

LSD:

Project Ref: FALSE CREEK ELEMENTARY

Sample ID: RM. 112 SSDF

Sampled By: Robin Lemay

Date Collected: 11-SEP-19

Lab Sample ID: L2345646-1

Matrix: water

PAGE 1 of 3

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000503		mg/L	0.005		16-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 19-SEP-19

PO No.: 1517879

WO No.: L2345646

LSD:

Project Ref: FALSE CREEK ELEMENTARY

Sample ID: VEST 109 SSDF

Sampled By: Robin Lemay

Date Collected: 11-SEP-19

Lab Sample ID: L2345646-2

Matrix: water

PAGE 2 of 3

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00148		mg/L	0.005		16-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

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

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Plate Count	Criteria is 500 cfu/mL Measure of heterotrophic bacteria present.

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

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

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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.

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878



L2345646-COFC

COC Number: 17 - 756174

Page of

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Report To Contact and company name below will appear on the final report		Report Format / Distribution		Select Service Level below - Contact your AM to confirm all E&P TATs (surcharges may apply)									
Company: Vancouver School Board		Select Report Format: ☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)		Regular [R] ☒ Standard TAT If received by 3 pm - business days - no surcharges apply									
Contact: Stephen Thomas		Quality Control (QC) Report with Report ☐ YES ☐ NO		PROPERTY (Business Days)									
Phone: 604-713-5637		☐ Compare Results to Criteria on Report - provide details below if box checked		4 day [P4-20%] ☐									
Company address below will appear on the final report		Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX		3 day [P3-25%] ☐									
Street: 1549 Clark Dr.		Email 1 or Fax: ss.thomas@vsb.bc.ca		2 day [P2-50%] ☐									
City/Province: Vancouver B.C.		Email 2: r.lamay@vsb.bc.ca		EMERGENCY									
Postal Code:		Email 3:		1 Business day [E - 100%] ☐									
Invoice To: Same as Report To ☒ YES ☐ NO		Invoice Distribution		Same Day, Weekend or Statutory holiday [E2 -200%] ☐									
Copy of Invoice with Report ☐ YES ☐ NO		Select Invoice Distribution: ☒ EMAIL ☐ MAIL ☐ FAX		(Laboratory opening fees may apply) []									
Company:		Email 1 or Fax: ss.thomas@vsb.bc.ca		Date and Time Required for all E&P TATs:									
Contact:		Email 2: r.lamay@vsb.bc.ca		dd-mmm-yy hh:mm									
Project Information		Oil and Gas Required Fields (client use)		Analysis Request									
ALS Account # / Quote #:		AFE/Cost Center:		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below									
Job #: False Creek Elementary		Major/Minor Code:		NUMBER OF CONTAINERS									
PO / AFE:		Routing Code:		Lead									
LSD:		Requisitioner:		SAMPLES ON HOLD									
ALS Lab Work Order # (lab use only):		Location:		SUSPECTED HAZARD (see Special Instructions)									
ALS Contact:		Sampler: Robin Lamay											
Sample Identification and/or Coordinates		Date		Time									
(This description will appear on the report)		(dd-mmm-yy)		(hh:mm)									
Km. 112 SSDF		11-09-19		11:39am		water							
Vest 109 SSDF		11-09-19		11:45am		water							
Drinking Water (DW) Samples (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		SAMPLE CONDITION AS RECEIVED (lab use only)									
Are samples taken from a Regulated DW System?		No Preservatives added		Frozen ☐ SIF Observations Yes ☐ No ☐									
☐ YES ☐ NO				Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐									
Are samples for human consumption/ use?				Cooling Initiated ☐									
☐ YES ☐ NO				INITIAL COOLER TEMPERATURES °C									
				FINAL COOLER TEMPERATURES °C									
				10-8									
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)									
Released by:		Received by:		Received by: PAUL									
Date:		Date:		Date: SEP 11									
Time:		Time:		Time: 15:20									

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JUNE 2018 FRONT



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 04-OCT-19

PO No.: 1517879

WO No.: L2355975

LSD:

Project Ref: GARIBALDI ELEMENTARY

Sample ID: CORR 200 DF

Sampled By: Robin Lemay

Date Collected: 27-SEP-19

Lab Sample ID: L2355975-1

Matrix: Water

PAGE 1 of 4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00421		mg/L	0.005		01-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 04-OCT-19

PO No.: 1517879

WO No.: L2355975

LSD:

Project Ref: GARIBALDI ELEMENTARY

Sample ID: CORR 100 DF

Sampled By: Robin Lemay

Date Collected: 27-SEP-19

Lab Sample ID: L2355975-2

Matrix: Water

PAGE 2 of 4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00213		mg/L	0.005		01-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 04-OCT-19

PO No.: 1517879

WO No.: L2355975

LSD:

Project Ref: GARIBALDI ELEMENTARY

Sample ID: RM 119A DF

Sampled By: Robin Lemay

Date Collected: 27-SEP-19

Lab Sample ID: L2355975-3

Matrix: Water

PAGE 3 of 4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00184		mg/L	0.005		01-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company

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.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

*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 rationing cations to anions
Bicarbonate	See Alkalinity. Report as the anion HCO ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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 of 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.
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.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878



L2355975-COFC

COC Number: 17 - 762150

Page of

[illegible]

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

WHITE - LABORATORY COPY

YELLOW - CLIENT COPY

THE 2011 EDITION



NOT IN SERVICE

Date: 17-SEP-19

PO No.: 1517879

WO No.: L2343812

LSD:

Project Ref: GENERAL BROCK ELEMENTARY

Sample ID: RM 119 DF

Sampled By: Robin Lemay

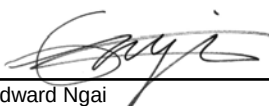
Date Collected: 09-SEP-19

Lab Sample ID: L2343812-1

Matrix: Water

VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

PAGE 1 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.00514		mg/L	0.005		12-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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 						
Edward Ngai Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-SEP-19

PO No.: 1517879

WO No.: L2343812

LSD:

Project Ref: GENERAL BROCK ELEMENTARY

Sample ID: RM 130 DF

Sampled By: Robin Lemay

Date Collected: 09-SEP-19

Lab Sample ID: L2343812-2

Matrix: Water

PAGE 2 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00369		mg/L	0.005		12-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-SEP-19

PO No.: 1517879

WO No.: L2343812

LSD:

Project Ref: GENERAL BROCK ELEMENTARY

Sample ID: RM C 205A DF

Sampled By: Robin Lemay

Date Collected: 09-SEP-19

Lab Sample ID: L2343812-3

Matrix: Water

PAGE 3 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000249		mg/L	0.005		12-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-SEP-19

PO No.: 1517879

WO No.: L2343812

LSD:

Project Ref: GENERAL BROCK ELEMENTARY

Sample ID: RM B 111 DF

Sampled By: Robin Lemay

Date Collected: 09-SEP-19

Lab Sample ID: L2343812-4

Matrix: Water

PAGE 4 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000440		mg/L	0.005		12-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-SEP-19

PO No.: 1517879

WO No.: L2343812

LSD:

Project Ref: GENERAL BROCK ELEMENTARY

Sample ID: RM 204 BUB

Sampled By: Robin Lemay

Date Collected: 09-SEP-19

Lab Sample ID: L2343812-5

Matrix: Water

PAGE 5 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000930		mg/L	0.005		12-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-SEP-19

PO No.: 1517879

WO No.: L2343812

LSD:

Project Ref: GENERAL BROCK ELEMENTARY

Sample ID: RM 002 DF

Sampled By: Robin Lemay

Date Collected: 09-SEP-19

Lab Sample ID: L2343812-6

Matrix: Water

PAGE 6 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00138		mg/L	0.005		12-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-SEP-19

PO No.: 1517879

WO No.: L2343812

LSD:

Project Ref: GENERAL BROCK ELEMENTARY

Sample ID: RM 007 DF

Sampled By: Robin Lemay

Date Collected: 09-SEP-19

Lab Sample ID: L2343812-7

Matrix: Water

PAGE 7 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00110		mg/L	0.005		12-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company

Guidelines & Objectives

Health Canada MAC Health Related Criteria Limits

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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.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

*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 rationing cations to anions
Bicarbonate	See Alkalinity. Report as the anion HCO ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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 of 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.
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.

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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.

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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.



Chain of Custody (COC) / Analytical
Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com



L2343812-COFC

COC Number: 17 - 756172

Page of

Report To		Report Format / Distribution		Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)	
Company:	Vancouver School Board	Select Report Format:	☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)	Regular [R] ☒ Standard TAT If received by 3 pm - business days - no surcharges apply	
Contact:	Stephen Thomas	Quality Control (QC) Report with Report	☐ YES ☐ NO	4 day [P4-20%] ☐ 1 Business day [E - 100%] ☐	
Phone:	604-713-5637	☐ Compare Results to Criteria on Report - provide details below if box checked		3 day [P3-25%] ☐ Same Day, Weekend or Statutory holiday [E2 - 200%] ☐	
Company address below will appear on the final report		Select Distribution:	☒ EMAIL ☐ MAIL ☐ FAX	2 day [P2-50%] ☐ (Laboratory opening fees may apply) ☐	
Street:	1549 Clark Dr.	Email 1 or Fax	ss.thomas@vsb.bc.ca	Date and Time Required for all E&P TATs: dd-mm-yy hh:mm	
City/Province:	Vancouver B.C.	Email 2	rlenay@vsb.bc.ca	For tests that can not be performed according to the service level selected, you will be contacted.	
Postal Code:		Email 3		Analysis Request	
Invoice To	Same as Report To ☒ YES ☐ NO	Invoice Distribution		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (FP) below NUMBER OF CONTAINERS Lead SAMPLES ON HOLD SUSPECTED HAZARD (see Special Instructions)	
Copy of Invoice with Report	☐ YES ☐ NO	Select Invoice Distribution:	☐ EMAIL ☐ MAIL ☐ FAX		
Company:		Email 1 or Fax	ss.thomas@vsb.bc.ca		
Contact:		Email 2	rlenay@vsb.bc.ca		
Project Information		Oil and Gas Required Fields (client use)			
ALS Account # / Quote #:		AFE/Cost Center:	PO#		
Job #:	General Brock Elementary	Major/Minor Code:	Routing Code:		
PO / AFE:		Requisitioner:			
LSD:		Location:			
ALS Lab Work Order # (lab use only):		ALS Contact:	Robin Lennay		
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type	
	Rm. 119 DF	09-09-19	2:09pm	water	
	Rm. 130 DF	09-09-19	2:13pm	water	
	Rm. c 205A DF	09-09-19	2:19pm	water	
	Rm. B 111 DF	09-09-19	2:23pm	water	
	Rm. 204 BUB	09-09-19	2:29pm	water	
	Rm. 002 DF	09-09-19	2:37pm	water	
	Rm. 007 DF	09-09-19	2:40pm	water	
Drinking Water (DW) Samples ¹ (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		SAMPLE CONDITION AS RECEIVED (lab use only)	
Are samples taken from a Regulated DW System? ☐ YES ☐ NO		No Preservatives added		Frozen ☐ SIF Observations Yes ☐ No ☐	
Are samples for human consumption/ use? ☐ YES ☐ NO				Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐	
				Cooling initiated ☒	
				INITIAL COOLER TEMPERATURES °C	
				FINAL COOLER TEMPERATURES °C	
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)	
Released by:	Date:	Time:	Received by:	Date:	Time:
				BA	9/9

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY

YELLOW - CLIENT COPY

JUNE 2018 FROST

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 23-SEP-19

PO No.: 1517879

WO No.: L2347343

LSD:

Project Ref: GEORGE T. CUNNINGHAM ELEMENTARY

Sample ID: RM. 123 DF

Sampled By: Robin Lemay

Date Collected: 13-SEP-19

Lab Sample ID: L2347343-1

Matrix: Water

PAGE 1 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000832		mg/L	0.005		17-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 23-SEP-19

PO No.: 1517879

WO No.: L2347343

LSD:

Project Ref: GEORGE T. CUNNINGHAM ELEMENTARY

Sample ID: RM. 122 SSDF

Sampled By: Robin Lemay

Date Collected: 13-SEP-19

Lab Sample ID: L2347343-2

Matrix: Water

PAGE 2 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000114		mg/L	0.005		17-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 23-SEP-19

PO No.: 1517879

WO No.: L2347343

LSD:

Project Ref: GEORGE T. CUNNINGHAM ELEMENTARY

Sample ID: RM. 131 DF

Sampled By: Robin Lemay

Date Collected: 13-SEP-19

Lab Sample ID: L2347343-3

Matrix: Water

PAGE 3 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00128		mg/L	0.005		17-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 23-SEP-19

PO No.: 1517879

WO No.: L2347343

LSD:

Project Ref: GEORGE T. CUNNINGHAM ELEMENTARY

Sample ID: RM. 110 DF

Sampled By: Robin Lemay

Date Collected: 13-SEP-19

Lab Sample ID: L2347343-4

Matrix: Water

PAGE 4 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000181		mg/L	0.005		17-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 23-SEP-19

PO No.: 1517879

WO No.: L2347343

LSD:

Project Ref: GEORGE T. CUNNINGHAM ELEMENTARY

Sample ID: RM. 114 SSDF

Sampled By: Robin Lemay

Date Collected: 13-SEP-19

Lab Sample ID: L2347343-5

Matrix: Water

PAGE 5 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000252		mg/L	0.005		17-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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ATTN: Stephen Thomas

Date: 23-SEP-19

PO No.: 1517879

WO No.: L2347343

LSD:

Project Ref: GEORGE T. CUNNINGHAM ELEMENTARY

Sample ID: RM. 143 DF

Sampled By: Robin Lemay

Date Collected: 13-SEP-19

Lab Sample ID: L2347343-6

Matrix: Water

PAGE 6 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00282		mg/L	0.005		17-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Date: 23-SEP-19

PO No.: 1517879

WO No.: L2347343

LSD:

Project Ref: GEORGE T. CUNNINGHAM ELEMENTARY

Sample ID: RM. A103 SSDF

Sampled By: Robin Lemay

Date Collected: 13-SEP-19

Lab Sample ID: L2347343-7

Matrix: Water

PAGE 7 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000209		mg/L	0.005		17-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 23-SEP-19

PO No.: 1517879

WO No.: L2347343

LSD:

Project Ref: GEORGE T. CUNNINGHAM ELEMENTARY

Sample ID: RM. A110 BUB

Sampled By: Robin Lemay

Date Collected: 13-SEP-19

Lab Sample ID: L2347343-8

Matrix: Water

PAGE 8 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000546		mg/L	0.005		17-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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ATTN: Stephen Thomas

Date: 23-SEP-19

PO No.: 1517879

WO No.: L2347343

LSD:

Project Ref: GEORGE T. CUNNINGHAM ELEMENTARY

Sample ID: RM. A109 BUB

Sampled By: Robin Lemay

Date Collected: 13-SEP-19

Lab Sample ID: L2347343-9

Matrix: Water

PAGE 9 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000930		mg/L	0.005		17-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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ATTN: Stephen Thomas

Date: 23-SEP-19

PO No.: 1517879

WO No.: L2347343

LSD:

Project Ref: GEORGE T. CUNNINGHAM ELEMENTARY

Sample ID: RM. A111 BUB

Sampled By: Robin Lemay

Date Collected: 13-SEP-19

Lab Sample ID: L2347343-10

Matrix: Water

PAGE 10 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000426		mg/L	0.005		17-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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ATTN: Stephen Thomas

Date: 23-SEP-19

PO No.: 1517879

WO No.: L2347343

LSD:

Project Ref: GEORGE T. CUNNINGHAM ELEMENTARY

Sample ID: RM. A205 BUB

Sampled By: Robin Lemay

Date Collected: 13-SEP-19

Lab Sample ID: L2347343-11

Matrix: Water

PAGE 11 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000339		mg/L	0.005		17-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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ATTN: Stephen Thomas

Date: 23-SEP-19

PO No.: 1517879

WO No.: L2347343

LSD:

Project Ref: GEORGE T. CUNNINGHAM ELEMENTARY

Sample ID: RM. A206 BUB

Sampled By: Robin Lemay

Date Collected: 13-SEP-19

Lab Sample ID: L2347343-12

Matrix: Water

PAGE 12 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000896		mg/L	0.005		17-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Date: 23-SEP-19

PO No.: 1517879

WO No.: L2347343

LSD:

Project Ref: GEORGE T. CUNNINGHAM ELEMENTARY

Sample ID: RM. A207 BUB

Sampled By: Robin Lemay

Date Collected: 13-SEP-19

Lab Sample ID: L2347343-13

Matrix: Water

PAGE 13 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000594		mg/L	0.005		17-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Date: 23-SEP-19

PO No.: 1517879

WO No.: L2347343

LSD:

Project Ref: GEORGE T. CUNNINGHAM ELEMENTARY

Sample ID: RM. A208 BUB

Sampled By: Robin Lemay

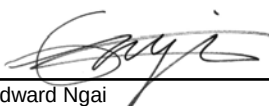
Date Collected: 13-SEP-19

Lab Sample ID: L2347343-14

Matrix: Water

VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

PAGE 14 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.00910		mg/L	0.005		19-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Maintenance and Construction
1549 Clark Drive
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ATTN: Stephen Thomas

Date: 23-SEP-19

PO No.: 1517879

WO No.: L2347343

LSD:

Project Ref: GEORGE T. CUNNINGHAM ELEMENTARY

Sample ID: RM. A209 BUB

Sampled By: Robin Lemay

Date Collected: 13-SEP-19

Lab Sample ID: L2347343-15

Matrix: Water

PAGE 15 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000413		mg/L	0.005		19-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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ATTN: Stephen Thomas

Date: 23-SEP-19

PO No.: 1517879

WO No.: L2347343

LSD:

Project Ref: GEORGE T. CUNNINGHAM ELEMENTARY

Sample ID: RM. A210 BUB

Sampled By: Robin Lemay

Date Collected: 13-SEP-19

Lab Sample ID: L2347343-16

Matrix: Water

PAGE 16 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000327		mg/L	0.005		19-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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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.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

*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 rationing cations to anions
Bicarbonate	See Alkalinity. Report as the anion HCO ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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 of 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.
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.



Chain of Custody (COC) / Analytical
Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com



L2347343-COFC

COC Number: 17 - 762136

Page of

Report To		Report Format / Distribution		Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)			
Company: <u>Vancouver School Board</u>		Select Report Format: ☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)		Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply			
Contact: <u>Stephen Thomas</u>		Quality Control (QC) Report with Report ☐ YES ☐ NO		4 day [P4-20%] ☐ 1 Business day [E - 100%] ☐			
Phone: <u>604-713-5637</u>		☐ Compare Results to Criteria on Report - provide details below if box checked		3 day [P3-25%] ☐ Same Day, Weekend or Statutory holiday [E2 -200%] ☐			
Company address below will appear on the final report		Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX		2 day [P2-50%] ☐ (Laboratory opening fees may apply)			
Street: <u>1549 Clark Dr</u>		Email 1 or Fax: <u>ss.thomas@vsb.bc.ca</u>		Date and Time Required for all E&P TATs: dd-mm-yy hh:mm			
City/Province: <u>Vancouver B.C.</u>		Email 2: <u>slenay@vsb.bc.ca</u>		For tests that can not be performed according to the service level selected, you will be contacted.			
Postal Code:		Email 3:		Analysis Request			
Invoice To: Same as Report To ☒ YES ☐ NO		Invoice Distribution		NUMBER OF CONTAINERS Lead SAMPLES ON HOLD SUSPECTED HAZARD (see Special Instructions)			
Copy of Invoice with Report ☐ YES ☐ NO		Select Invoice Distribution: ☒ EMAIL ☐ MAIL ☐ FAX					
Company:		Email 1 or Fax: <u>ss.thomas@vsb.bc.ca</u>					
Contact:		Email 2: <u>slenay@vsb.bc.ca</u>					
Project Information		Oil and Gas Required Fields (client use)					
ALS Account # / Quote #:		AFECost Center: PO#					
Job #: <u>George T. Cunningham Elementary</u>		Major/Minor Code: Routing Code:					
PO / AFE:		Requisitioner:					
LSD:		Location:					
ALS Lab Work Order # (lab use only):		ALS Contact:					
ALS Sample # (lab use only)		Date (dd-mm-yy)		Time (hh:mm)		Sample Type	
Sample Identification and/or Coordinates (This description will appear on the report)							
<u>Rm. 123 DF</u>		<u>13-09-19</u>		<u>10:18am</u>		<u>water</u>	
<u>Rm. 122 SSDF</u>		<u>13-09-19</u>		<u>10:23am</u>		<u>water</u>	
<u>Rm. 131 DF</u>		<u>13-09-19</u>		<u>10:27am</u>		<u>water</u>	
<u>Rm. 116 DF</u>		<u>13-09-19</u>		<u>10:32am</u>		<u>water</u>	
<u>Rm. 114 SSDF</u>		<u>13-09-19</u>		<u>10:37am</u>		<u>water</u>	
<u>Rm. 143 DF</u>		<u>13-09-19</u>		<u>10:43am</u>		<u>water</u>	
<u>Rm. A103 SSDF</u>		<u>13-09-19</u>		<u>10:49am</u>		<u>water</u>	
<u>Rm. A110 Bub</u>		<u>13-09-19</u>		<u>11:02am</u>		<u>water</u>	
<u>Rm. A109 Bub</u>		<u>13-09-19</u>		<u>11:10am</u>		<u>water</u>	
<u>Rm. A111 Bub</u>		<u>13-09-19</u>		<u>11:16am</u>		<u>water</u>	
<u>Rm. A205 Bub</u>		<u>13-09-19</u>		<u>11:22am</u>		<u>water</u>	
<u>Rm. A206 Bub</u>		<u>13-09-19</u>		<u>11:27am</u>		<u>water</u>	
Drinking Water (DW) Samples ¹ (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		SAMPLE CONDITION AS RECEIVED (lab use only)			
Are samples taken from a Regulated DW System? ☐ YES ☐ NO		<u>No preservatives added</u>		Frozen ☐ SIF Observations Yes ☐ No ☐			
Are samples for human consumption/ use? ☐ YES ☐ NO				Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐			
				Cooling Initiated ☒			
				INITIAL COOLER TEMPERATURES °C			
				FINAL COOLER TEMPERATURES °C			
				<u>10°C</u>			
				<u>8</u>			
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)			
Released by:		Received by:		Received by: <u>AN</u>			
Date:		Date:		Date: <u>9/13</u>			
Time:		Time:		Time: <u>4pm</u>			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JUNE 2016 FRONT

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

A2

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878



L2347343-COFC

COC Number: 17 - 762137

Page of

www.alsglobal.com

[illegible]

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

DATE 2018 FROM

Results Summary VA20A2767

Project	GLADSTONE SECONDARY SCHOOL
Report To	Stephen Thomas, Vancouver School Board
Date Received	04-Mar-2020 02:55
Issue Date	06-Mar-2020 13:42
Amendment	0

Client Sample ID			RM B205A	RM B210	RM E201	RM E207	RM A110	RM A110 SS	RM A102 FS	RM A102	RM A125	RM A125 SS	RM A122	RM A202
Date Sampled			04-Mar-2020	04-Mar-2020	04-Mar-2020	04-Mar-2020	04-Mar-2020	04-Mar-2020	04-Mar-2020	04-Mar-2020	04-Mar-2020	04-Mar-2020	04-Mar-2020	04-Mar-2020
Time Sampled			08:44	08:48	08:51	08:54	09:07	09:11	09:00	09:02	09:18	09:21	09:25	09:29
ALS Sample ID			VA20A2767-001	VA20A2767-002	VA20A2767-003	VA20A2767-004	VA20A2767-005	VA20A2767-006	VA20A2767-007	VA20A2767-008	VA20A2767-009	VA20A2767-010	VA20A2767-011	VA20A2767-012
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water
Total Metals (Matrix: Water)														
lead, total	0.000050	mg/L	0.000317	0.000617	0.000283	0.00134	0.00376	0.00418	0.000101	0.000283	0.00303	0.000795	0.00387	0.000271



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 30-MAY-19

PO No.: 1517879

WO No.: L2279056

LSD:

Project Ref: GRAHAM BRUCE ELEMENTARY

Sample ID: RM 101

Sampled By: Chris Carrell

Date Collected: 24-MAY-19

Lab Sample ID: L2279056-1

Matrix: Water

PAGE 1 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00166		mg/L	0.005		28-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 30-MAY-19

PO No.: 1517879

WO No.: L2279056

LSD:

Project Ref: GRAHAM BRUCE ELEMENTARY

Sample ID: RM 024

Sampled By: Chris Carrell

Date Collected: 24-MAY-19

Lab Sample ID: L2279056-2

Matrix: Water

PAGE 2 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000557		mg/L	0.005		28-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 30-MAY-19

PO No.: 1517879

WO No.: L2279056

LSD:

Project Ref: GRAHAM BRUCE ELEMENTARY

Sample ID: RM 010B

Sampled By: Chris Carrell

Date Collected: 24-MAY-19

Lab Sample ID: L2279056-3

Matrix: Water

PAGE 3 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000864		mg/L	0.005		28-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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Date: 30-MAY-19

PO No.: 1517879

WO No.: L2279056

LSD:

Project Ref: GRAHAM BRUCE ELEMENTARY

Sample ID: RM 106

Sampled By: Chris Carrell

Date Collected: 24-MAY-19

Lab Sample ID: L2279056-4

Matrix: Water

VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

PAGE 4 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00431		mg/L	0.005		28-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 30-MAY-19

PO No.: 1517879

WO No.: L2279056

LSD:

Project Ref: GRAHAM BRUCE ELEMENTARY

Sample ID: RM 010A

Sampled By: Chris Carrell

Date Collected: 24-MAY-19

Lab Sample ID: L2279056-5

Matrix: Water

PAGE 5 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00121		mg/L	0.005		28-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 30-MAY-19

PO No.: 1517879

WO No.: L2279056

LSD:

Project Ref: GRAHAM BRUCE ELEMENTARY

Sample ID: RM 030

Sampled By: Chris Carrell

Date Collected: 24-MAY-19

Lab Sample ID: L2279056-6

Matrix: Water

PAGE 6 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00219		mg/L	0.005		28-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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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 ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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.



Report To Contact and company name below will appear on the final report		Report Format / Distribution		Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply																																					
Company:	Vancouver School Board	Select Report Format:	☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)	Emergency [E] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply																																					
Contact:	Stephen Thomas	Quality Control (QC) Report with Report	☐ YES ☐ NO	4 day [P4-20%] ☐ 1 Business day [E - 100%] ☐																																					
Phone:	604-713-5637	☐ Compare Results to Criteria on Report - provide details below if box checked		3 day [P3-25%] ☐ Same Day, Weekend or Statutory holiday [E2 - 200%] ☐																																					
Company address below will appear on the final report:		Select Distribution:	☒ EMAIL ☐ MAIL ☐ FAX	2 day [P2-50%] ☐ (Laboratory opening fees may apply) ☐																																					
Street:	1549 Clark Dr.	Email 1 or Fax	55Thomas@Vsb.bc.ca	Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm																																					
City/Province:	Vancouver / BC	Email 2		For tests that can not be performed according to the service level selected, you will be contacted.																																					
Postal Code:		Email 3		Analysis Request																																					
Invoice To	Same as Report To ☒ YES ☐ NO	Invoice Distribution		NUMBER OF CONTAINERS <table border="1" style="width: 100%; height: 200px;"> <tr><td colspan="12">Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below</td></tr> <tr><td colspan="12" style="text-align: center;">LEAD</td></tr> <tr><td colspan="12" style="text-align: center;">SAMPLES ON HOLD</td></tr> </table> SUSPECTED HAZARD (see Special Instructions)		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below												LEAD												SAMPLES ON HOLD											
Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below																																									
LEAD																																									
SAMPLES ON HOLD																																									
	Copy of Invoice with Report ☐ YES ☐ NO	Select Invoice Distribution: ☒ EMAIL ☐ MAIL ☐ FAX																																							
Company:		Email 1 or Fax 55Thomas@Vsb.bc.ca																																							
Contact:		Email 2																																							
Project Information		Oil and Gas Required Fields (client use)																																							
ALS Account # / Quote #:		AFE/Cost Center:	PO#																																						
Job #:	Graham Bruce Elementary	Major/Minor Code:	Routing Code:																																						
PO / AFE:		Requisitioner:																																							
LSD:		Location:																																							
ALS Lab Work Order # (lab use only):		ALS Contact:	Sampler: Chris Carrell																																						
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																																					
	RM 101	24-May-19	08:00	Water																																					
	RM 024	24-May-19	08:17	Water																																					
	RM 010B	24-May-19	08:13	Water																																					
	RM 106	24-May-19	08:06	Water																																					
	RM 010A	24-May-19	08:10	Water																																					
	RM 030	24-May-19	08:21	Water																																					
Drinking Water (DW) Samples¹ (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		SAMPLE CONDITION AS RECEIVED (lab use only)																																					
Are samples taken from a Regulated DW System? ☐ YES ☐ NO		No preservatives added		Frozen ☐ SIF Observations Yes ☐ No ☐																																					
Are samples for human consumption/ use? ☐ YES ☐ NO				Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐																																					
				Cooling Initiated ☒																																					
				INITIAL COOLER TEMPERATURES °C																																					
				FINAL COOLER TEMPERATURES °C																																					
				14																																					
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)																																					
Released by:	Date:	Time:	Received by:	Date:	Time:																																				
				HA	5/24																																				
					2249																																				



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 26-SEP-19

PO No.: 1517879

WO No.: L2352438

LSD:

Project Ref: GRANDVIEW ELEMENTARY

Sample ID: RM 122 DF

Sampled By: Robin Lemay

Date Collected: 23-SEP-19

Lab Sample ID: L2352438-1

Matrix: Water

PAGE 1 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000266		mg/L	0.005		25-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 26-SEP-19

PO No.: 1517879

WO No.: L2352438

LSD:

Project Ref: GRANDVIEW ELEMENTARY

Sample ID: RM 123 DF

Sampled By: Robin Lemay

Date Collected: 23-SEP-19

Lab Sample ID: L2352438-2

Matrix: Water

PAGE 2 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000436		mg/L	0.005		25-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 26-SEP-19

PO No.: 1517879

WO No.: L2352438

LSD:

Project Ref: GRANDVIEW ELEMENTARY

Sample ID: RM 106 DF

Sampled By: Robin Lemay

Date Collected: 23-SEP-19

Lab Sample ID: L2352438-3

Matrix: Water

PAGE 3 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000234		mg/L	0.005		25-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 26-SEP-19

PO No.: 1517879

WO No.: L2352438

LSD:

Project Ref: GRANDVIEW ELEMENTARY

Sample ID: RM 101 DF

Sampled By: Robin Lemay

Date Collected: 23-SEP-19

Lab Sample ID: L2352438-4

Matrix: Water

PAGE 4 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00177		mg/L	0.005		25-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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Date: 26-SEP-19

PO No.: 1517879

WO No.: L2352438

LSD:

Project Ref: GRANDVIEW ELEMENTARY

Sample ID: RM 108 DF

Sampled By: Robin Lemay

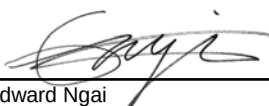
Date Collected: 23-SEP-19

Lab Sample ID: L2352438-5

Matrix: Water

VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

PAGE 5 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.0142		mg/L	0.005		25-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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 						
Edward Ngai Account Manager						

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



NOT IN SERVICE

Date: 26-SEP-19

PO No.: 1517879

WO No.: L2352438

LSD:

Project Ref: GRANDVIEW ELEMENTARY

Sample ID: RM 113 DF

Sampled By: Robin Lemay

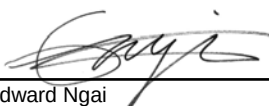
Date Collected: 23-SEP-19

Lab Sample ID: L2352438-6

Matrix: Water

VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

PAGE 6 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.0103		mg/L	0.005		25-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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 						
Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 26-SEP-19

PO No.: 1517879

WO No.: L2352438

LSD:

Project Ref: GRANDVIEW ELEMENTARY

Sample ID: CORR 200 DF

Sampled By: Robin Lemay

Date Collected: 23-SEP-19

Lab Sample ID: L2352438-7

Matrix: Water

PAGE 7 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000162		mg/L	0.005		25-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

*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 ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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 of 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.
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.



L2352438-COFC

COC Number: 17 - 762143

Page of

Report To Contact and company name below will appear on the final report			Report Format / Distribution			Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)																													
Company: <u>Vancouver School Board</u>			Select Report Format: ☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)			Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply																													
Contact: <u>Stephen Thomas</u>			Quality Control (QC) Report with Report ☐ YES ☐ NO			PRIORITY (Business Days) 4 day [P4-20%] ☐ 3 day [P3-25%] ☐ 2 day [P2-50%] ☐		EMERGENCY 1 Business day [E - 100%] Same Day, Weekend or Statutory holiday [E2 - 200% (Laboratory opening fees may apply)]																											
Phone: <u>604 713 5637</u>			☐ Compare Results to Criteria on Report - provide details below if box checked																																
Company address below will appear on the final report			Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX			Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm																													
Street: <u>1549 Clark Dr.</u>			Email 1 or Fax: <u>sstthomas@vsb.bc.ca</u>			For tests that can not be performed according to the service level selected, you will be contacted.																													
City/Province: <u>Vancouver B.C.</u>			Email 2: <u>sthenmay@vsb.bc.ca</u>			Analysis Request																													
Postal Code:			Email 3:			<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td colspan="12">Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below</td> </tr> <tr> <td colspan="12" style="height: 150px; vertical-align: middle; text-align: center;"> NUMBER OF CONTAINERS Lead SAMPLES ON HOLD SUSPECTED HAZARD (see Special Instructions) </td> </tr> </table>						Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below												NUMBER OF CONTAINERS Lead SAMPLES ON HOLD SUSPECTED HAZARD (see Special Instructions)											
Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below																																			
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Invoice To: Same as Report To ☒ YES ☐ NO			Invoice Distribution																																
Copy of Invoice with Report ☐ YES ☐ NO			Select Invoice Distribution: ☒ EMAIL ☐ MAIL ☐ FAX																																
Company:			Email 1 or Fax: <u>sstthomas@vsb.bc.ca</u>																																
Contact:			Email 2: <u>sthenmay@vsb.bc.ca</u>																																
Project Information			Oil and Gas Required Fields (client use)																																
ALS Account # / Quote #:			AFE/Cost Center: PO#																																
Job #: <u>Grandview Elementary</u>			Major/Minor Code: Routing Code:																																
PO / AFE:			Requisitioner:																																
LSD:			Location:																																
ALS Lab Work Order # (lab use only):			ALS Contact:			Sampler: <u>Robin Lemay</u>																													
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																														
	<u>Rm. 122 DF</u>		<u>23-09-19</u>	<u>1:29pm</u>	<u>water</u>																														
	<u>Rm. 123 DF</u>		<u>23-09-19</u>	<u>1:30pm</u>	<u>water</u>																														
	<u>Rm. 106 DF</u>		<u>23-09-19</u>	<u>1:36pm</u>	<u>water</u>																														
	<u>Rm. 101 DF</u>		<u>23-09-19</u>	<u>1:44pm</u>	<u>water</u>																														
	<u>Rm. 108 DF</u>		<u>23-09-19</u>	<u>1:50pm</u>	<u>water</u>																														
	<u>Rm. 113 DF</u>		<u>23-09-19</u>	<u>1:54pm</u>	<u>water</u>																														
	<u>Corr 200 DF</u>		<u>23-09-19</u>	<u>2:00pm</u>	<u>water</u>																														
Drinking Water (DW) Samples¹ (client use)			Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)			SAMPLE CONDITION AS RECEIVED (lab use only)																													
Are samples taken from a Regulated DW System? ☐ YES ☐ NO			<u>No preservatives added</u>			Frozen ☐ SIF Observations Yes ☐ No ☐																													
Are samples for human consumption/ use? ☐ YES ☐ NO						Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐																													
						Cooling Initiated ☒																													
						INITIAL COOLER TEMPERATURES °C																													
						FINAL COOLER TEMPERATURES °C																													
						15																													
SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)																													
Released by:		Date:	Time:	Received by:		Date:	Time:	Received by: <u>HA</u>		Date:	Time:																								
										<u>9/23</u>	<u>2:35pm</u>																								

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JUNE 2015 / FRONT

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 26-SEP-19

PO No.: 1517879

WO No.: L2352437

LSD:

Project Ref: HENRY HUDSON ELEMENTARY

Sample ID: VEST 016A DF

Sampled By:

Date Collected: 23-SEP-19

Lab Sample ID: L2352437-1

Matrix: Water

PAGE 1 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000240		mg/L	0.005		26-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 26-SEP-19

PO No.: 1517879

WO No.: L2352437

LSD:

Project Ref: HENRY HUDSON ELEMENTARY

Sample ID: RM 096A DF

Sampled By:

Date Collected: 23-SEP-19

Lab Sample ID: L2352437-2

Matrix: Water

PAGE 2 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000109		mg/L	0.005		26-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 26-SEP-19

PO No.: 1517879

WO No.: L2352437

LSD:

Project Ref: HENRY HUDSON ELEMENTARY

Sample ID: CORR 109 DF

Sampled By:

Date Collected: 23-SEP-19

Lab Sample ID: L2352437-3

Matrix: Water

PAGE 3 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000946		mg/L	0.005		26-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 26-SEP-19

PO No.: 1517879

WO No.: L2352437

LSD:

Project Ref: HENRY HUDSON ELEMENTARY

Sample ID: VEST 100 DF

Sampled By:

Date Collected: 23-SEP-19

Lab Sample ID: L2352437-4

Matrix: Water

PAGE 4 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000361		mg/L	0.005		26-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 26-SEP-19

PO No.: 1517879

WO No.: L2352437

LSD:

Project Ref: HENRY HUDSON ELEMENTARY

Sample ID: RM 212 DF

Sampled By:

Date Collected: 23-SEP-19

Lab Sample ID: L2352437-5

Matrix: Water

PAGE 5 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000205		mg/L	0.005		26-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 26-SEP-19

PO No.: 1517879

WO No.: L2352437

LSD:

Project Ref: HENRY HUDSON ELEMENTARY

Sample ID: STAIR 296 DF

Sampled By:

Date Collected: 23-SEP-19

Lab Sample ID: L2352437-6

Matrix: Water

PAGE 6 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000227		mg/L	0.005		26-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 26-SEP-19

PO No.: 1517879

WO No.: L2352437

LSD:

Project Ref: HENRY HUDSON ELEMENTARY

Sample ID: RM 107 DF

Sampled By:

Date Collected: 23-SEP-19

Lab Sample ID: L2352437-7

Matrix: Water

PAGE 7 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000234		mg/L	0.005		26-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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Guidelines & Objectives

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Aesthetic Objective Concentration Levels

Alkalinity	Acid neutralizing capacity. Usually a measure of carbonate and bicarbonates and calculated and reported as calcium carbonate.
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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.
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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.
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Heterotrophic	
Plate Count	Criteria is 500 cfu/mL Measure of heterotrophic bacteria present.

GLOSSARY OF REPORT TERMS

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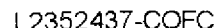
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

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Canada Toll Free: 1 800 668 9878

www.alsglobal.com



COC Number: 17 - 762142

Page of

REFER TO BACK PAGE FOR ALL LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY

YELLOW - CLIENT COPY

LINE 2018 E820

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 24-JUN-19

PO No.: 1517879

WO No.: L2295956

LSD:

Project Ref: IDEAL MINI

Sample ID: IDEAL FS

Sampled By: Chris Carrell

Date Collected: 20-JUN-19

Lab Sample ID: L2295956-1

Matrix: Water

PAGE 1 of 2

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000304		mg/L	0.005		22-JUN-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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Guidelines & Objectives

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Magnesium	See hardness. Common major cation of water chemistry. Elevated levels (>125 mg/L) may exert a cathartic or diuretic action.
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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.

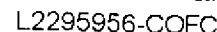
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

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



Canada Toll Free: 1 800 668 9878

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COC Number: 17 - 765840

Page of

REFER TO BACK PAGE FOR AIS LOCATIONS AND SAMPLING INFORMATION

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LINE 201A FROM

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 24-SEP-19

PO No.: 1517879

WO No.: L2349008

LSD:

Project Ref: JOHN HENDERSON SECONDARY

Sample ID: RM 115 DF

Sampled By: Robin Lemay

Date Collected: 17-SEP-19

Lab Sample ID: L2349008-1

Matrix: WATER

PAGE 1 of 10

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000395		mg/L	0.005		20-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 24-SEP-19

PO No.: 1517879

WO No.: L2349008

LSD:

Project Ref: JOHN HENDERSON SECONDARY

Sample ID: RM 142 DF

Sampled By: Robin Lemay

Date Collected: 17-SEP-19

Lab Sample ID: L2349008-2

Matrix: WATER

PAGE 2 of 10

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00129		mg/L	0.005		20-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 24-SEP-19

PO No.: 1517879

WO No.: L2349008

LSD:

Project Ref: JOHN HENDERSON SECONDARY

Sample ID: RM 151 DF

Sampled By: Robin Lemay

Date Collected: 17-SEP-19

Lab Sample ID: L2349008-3

Matrix: WATER

PAGE 3 of 10

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00316		mg/L	0.005		20-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 24-SEP-19

PO No.: 1517879

WO No.: L2349008

LSD:

Project Ref: JOHN HENDERSON SECONDARY

Sample ID: RM 122 FS

Sampled By: Robin Lemay

Date Collected: 17-SEP-19

Lab Sample ID: L2349008-4

Matrix: WATER

PAGE 4 of 10

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000297		mg/L	0.005		20-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 24-SEP-19

PO No.: 1517879

WO No.: L2349008

LSD:

Project Ref: JOHN HENDERSON SECONDARY

Sample ID: RM 136 DF

Sampled By: Robin Lemay

Date Collected: 17-SEP-19

Lab Sample ID: L2349008-5

Matrix: WATER

PAGE 5 of 10

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00172		mg/L	0.005		20-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 24-SEP-19

PO No.: 1517879

WO No.: L2349008

LSD:

Project Ref: JOHN HENDERSON SECONDARY

Sample ID: RM 133 SSDF

Sampled By: Robin Lemay

Date Collected: 17-SEP-19

Lab Sample ID: L2349008-6

Matrix: WATER

PAGE 6 of 10

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000262		mg/L	0.005		20-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 24-SEP-19

PO No.: 1517879

WO No.: L2349008

LSD:

Project Ref: JOHN HENDERSON SECONDARY

Sample ID: RM 129 DF

Sampled By: Robin Lemay

Date Collected: 17-SEP-19

Lab Sample ID: L2349008-7

Matrix: WATER

PAGE 7 of 10

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000337		mg/L	0.005		20-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 24-SEP-19

PO No.: 1517879

WO No.: L2349008

LSD:

Project Ref: JOHN HENDERSON SECONDARY

Sample ID: RM 167 SSDF

Sampled By: Robin Lemay

Date Collected: 17-SEP-19

Lab Sample ID: L2349008-8

Matrix: WATER

PAGE 8 of 10

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000276		mg/L	0.005		20-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 24-SEP-19

PO No.: 1517879

WO No.: L2349008

LSD:

Project Ref: JOHN HENDERSON SECONDARY

Sample ID: RM 202 SSDF

Sampled By: Robin Lemay

Date Collected: 17-SEP-19

Lab Sample ID: L2349008-9

Matrix: WATER

PAGE 9 of 10

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000168		mg/L	0.005		20-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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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.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

*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 rationing cations to anions
Bicarbonate	See Alkalinity. Report as the anion HCO ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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 of 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.
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.



L2349008-COFC

COC Number: 17 - 762141

Page of

Report To Contact and company name below will appear on the final report		Report Format / Distribution		Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)																																																	
Company: <u>Vancouver School Board</u>		Select Report Format: ☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)		Regular [R] ☐ Standard TAT if received by 3 pm - business days - no surcharges apply																																																	
Contact: <u>Stephen Thomas</u>		Quality Control (QC) Report with Report ☐ YES ☐ NO		4 day [P4-20%] ☐ 1 Business day [E - 100%] ☐																																																	
Phone: <u>604-713-5637</u>		☐ Compare Results to Criteria on Report - provide details below if box checked		3 day [P3-25%] ☐ Same Day, Weekend or Statutory holiday [E2 -200%] (Laboratory opening fees may apply) ☐																																																	
Company address below will appear on the final report		Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX		2 day [P2-50%] ☐																																																	
Street: <u>1549 Clark Dr.</u>		Email 1 or Fax: <u>ssstomas@vsb.bc.ca</u>		Date and Time Required for all E&P TATs: dd-mm-yy hh:mm																																																	
City/Province: <u>Vancouver B.C.</u>		Email 2: <u>clenay@vsb.bc.ca</u>		For tests that can not be performed according to the service level selected, you will be contacted.																																																	
Postal Code:		Email 3:		Analysis Request																																																	
Invoice To: Same as Report To ☒ YES ☐ NO		Invoice Distribution		NUMBER OF CONTAINERS <table border="1" style="width: 100%; height: 200px;"> <tr><td colspan="12">Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below</td></tr> <tr><td colspan="12" style="text-align: center;">Lead</td></tr> <tr><td colspan="12" style="text-align: center;">SAMPLES ON HOLD</td></tr> <tr><td colspan="12" style="text-align: center;">SUSPECTED HAZARD (see Special Instructions)</td></tr> </table>		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below												Lead												SAMPLES ON HOLD												SUSPECTED HAZARD (see Special Instructions)											
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SUSPECTED HAZARD (see Special Instructions)																																																					
Copy of Invoice with Report ☐ YES ☐ NO		Select Invoice Distribution: ☒ EMAIL ☐ MAIL ☐ FAX																																																			
Company:		Email 1 or Fax: <u>ssstomas@vsb.bc.ca</u>																																																			
Contact:		Email 2: <u>clenay@vsb.bc.ca</u>																																																			
Project Information		Oil and Gas Required Fields (client use)																																																			
ALS Account # / Quote #:		AFE/Cost Center: PO#																																																			
Job #: <u>John Henderson Elementary</u>		Major/Minor Code: Routing Code:																																																			
PO / AFE:		Requisitioner:																																																			
LSD:		Location:																																																			
ALS Lab Work Order # (lab use only):		ALS Contact:		Sampler: <u>Robin Lenay</u>																																																	
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type																																																	
	Rm. 115 DF	17-09-19	1:18pm	water																																																	
	Rm. 142 DF	17-09-19	1:23pm	water																																																	
	Rm. 151 DF	17-09-19	1:29pm	water																																																	
	Rm. 122 FS	17-09-19	1:35pm	water																																																	
	Rm. 136 DF	17-09-19	1:40pm	water																																																	
	Rm. 133 SSDF	17-09-19	1:44pm	water																																																	
	Rm. 129 DF	17-09-19	1:48pm	water																																																	
	Rm. 167 SSDF	17-09-19	1:52pm	water																																																	
	Rm. 202 SSDF	17-09-19	1:57pm	water																																																	
Drinking Water (DW) Samples (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		SAMPLE CONDITION AS RECEIVED (lab use only)																																																	
Are samples taken from a Regulated DW System? ☐ YES ☐ NO				Frozen ☐ SIF Observations Yes ☐ No ☐																																																	
Are samples for human consumption/ use? ☐ YES ☐ NO				Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐																																																	
				Cooling initiated ☐																																																	
				INITIAL COOLER TEMPERATURES °C																																																	
				7°C																																																	
				FINAL COOLER TEMPERATURES °C																																																	
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)																																																	
Released by:	Date:	Time:	Received by:	Date:	Time:																																																
				17 Sep 19	2:50 PM																																																

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JUNE 2018 PRINT



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 24-SEP-19

PO No.: 1517879

WO No.: L2348216

LSD:

Project Ref: JOHN OLIVER SECONDARY

Sample ID: RM 149 FS

Sampled By: Robin Lenay

Date Collected: 16-SEP-19

Lab Sample ID: L2348216-1

Matrix: Water

PAGE 1 of 16

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000175		mg/L	0.005		19-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 24-SEP-19

PO No.: 1517879

WO No.: L2348216

LSD:

Project Ref: JOHN OLIVER SECONDARY

Sample ID: RM 153 DF

Sampled By: Robin Lenay

Date Collected: 16-SEP-19

Lab Sample ID: L2348216-2

Matrix: Water

PAGE 2 of 16

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000384		mg/L	0.005		19-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 24-SEP-19

PO No.: 1517879

WO No.: L2348216

LSD:

Project Ref: JOHN OLIVER SECONDARY

Sample ID: RM 248 DF

Sampled By: Robin Lenay

Date Collected: 16-SEP-19

Lab Sample ID: L2348216-3

Matrix: Water

PAGE 3 of 16

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000440		mg/L	0.005		19-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 24-SEP-19

PO No.: 1517879

WO No.: L2348216

LSD:

Project Ref: JOHN OLIVER SECONDARY

Sample ID: RM 239 DF

Sampled By: Robin Lenay

Date Collected: 16-SEP-19

Lab Sample ID: L2348216-4

Matrix: Water

PAGE 4 of 16

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000281		mg/L	0.005		19-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 24-SEP-19

PO No.: 1517879

WO No.: L2348216

LSD:

Project Ref: JOHN OLIVER SECONDARY

Sample ID: RM 217A DF

Sampled By: Robin Lenay

Date Collected: 16-SEP-19

Lab Sample ID: L2348216-5

Matrix: Water

PAGE 5 of 16

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000450		mg/L	0.005		19-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 24-SEP-19

PO No.: 1517879

WO No.: L2348216

LSD:

Project Ref: JOHN OLIVER SECONDARY

Sample ID: RM 315 DF

Sampled By: Robin Lenay

Date Collected: 16-SEP-19

Lab Sample ID: L2348216-6

Matrix: Water

PAGE 6 of 16

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000321		mg/L	0.005		19-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 24-SEP-19

PO No.: 1517879

WO No.: L2348216

LSD:

Project Ref: JOHN OLIVER SECONDARY

Sample ID: RM 309 DF

Sampled By: Robin Lenay

Date Collected: 16-SEP-19

Lab Sample ID: L2348216-7

Matrix: Water

PAGE 7 of 16

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000408		mg/L	0.005		19-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 24-SEP-19

PO No.: 1517879

WO No.: L2348216

LSD:

Project Ref: JOHN OLIVER SECONDARY

Sample ID: RM 303 SSDF

Sampled By: Robin Lenay

Date Collected: 16-SEP-19

Lab Sample ID: L2348216-8

Matrix: Water

PAGE 8 of 16

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000385		mg/L	0.005		19-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 24-SEP-19

PO No.: 1517879

WO No.: L2348216

LSD:

Project Ref: JOHN OLIVER SECONDARY

Sample ID: RM 109 DF

Sampled By: Robin Lenay

Date Collected: 16-SEP-19

Lab Sample ID: L2348216-9

Matrix: Water

PAGE 9 of 16

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000331		mg/L	0.005		19-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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NOT IN SERVICE

Date: 24-SEP-19

PO No.: 1517879

WO No.: L2348216

LSD:

Project Ref: JOHN OLIVER SECONDARY

Sample ID: RM 115 DF

Sampled By: Robin Lenay

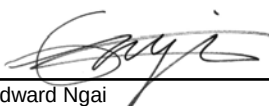
Date Collected: 16-SEP-19

Lab Sample ID: L2348216-10

Matrix: Water

VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

PAGE 10 of 16

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.00526		mg/L	0.005		19-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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 						
Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 24-SEP-19

PO No.: 1517879

WO No.: L2348216

LSD:

Project Ref: JOHN OLIVER SECONDARY

Sample ID: RM 132 DF

Sampled By: Robin Lenay

Date Collected: 16-SEP-19

Lab Sample ID: L2348216-11

Matrix: Water

PAGE 11 of 16

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00130		mg/L	0.005		19-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 24-SEP-19

PO No.: 1517879

WO No.: L2348216

LSD:

Project Ref: JOHN OLIVER SECONDARY

Sample ID: RM 123 SSDF

Sampled By: Robin Lenay

Date Collected: 16-SEP-19

Lab Sample ID: L2348216-12

Matrix: Water

PAGE 12 of 16

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000972		mg/L	0.005		19-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 24-SEP-19

PO No.: 1517879

WO No.: L2348216

LSD:

Project Ref: JOHN OLIVER SECONDARY

Sample ID: RM 115 BUB

Sampled By: Robin Lenay

Date Collected: 16-SEP-19

Lab Sample ID: L2348216-13

Matrix: Water

PAGE 13 of 16

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000377		mg/L	0.005		19-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 24-SEP-19

PO No.: 1517879

WO No.: L2348216

LSD:

Project Ref: JOHN OLIVER SECONDARY

Sample ID: RM 114 BUB

Sampled By: Robin Lenay

Date Collected: 16-SEP-19

Lab Sample ID: L2348216-14

Matrix: Water

PAGE 14 of 16

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00335		mg/L	0.005		19-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 24-SEP-19

PO No.: 1517879

WO No.: L2348216

LSD:

Project Ref: JOHN OLIVER SECONDARY

Sample ID: RM 157 DF

Sampled By: Robin Lenay

Date Collected: 16-SEP-19

Lab Sample ID: L2348216-15

Matrix: Water

PAGE 15 of 16

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000128		mg/L	0.005		19-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

*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 rationing cations to anions
Bicarbonate	See Alkalinity. Report as the anion HCO ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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 of 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.
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.



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com



L2348216-COFC

COC Number: 17 - 762139

Page 1 of 2

Report To		Report Format / Distribution		Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)	
Company:	Vancouver School Board	Select Report Format:	☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)	Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply	
Contact:	Stephen Thomas	Quality Control (QC) Report with Report	☐ YES ☐ NO	1 Business day [E - 100%]	
Phone:	604-713-5637	☐ Compare Results to Criteria on Report - provide details below if box checked		Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)]	
Company address below will appear on the final report		Select Distribution:	☒ EMAIL ☐ MAIL ☐ FAX	Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm	
Street:	1549 Clark Dr.	Email 1 or Fax:	stthomas@vsb.bc.ca	For tests that cannot be performed according to the service level selected, you will be contacted.	
City/Province:	Vancouver B.C.	Email 2:	rlenay@vsb.bc.ca	Analysis Request	
Postal Code:		Email 3:		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below	
Invoice To	Same as Report To ☒ YES ☐ NO	Invoice Distribution		NUMBER OF CONTAINERS Lead SAMPLES ON HOLD SUSPECTED HAZARD (see Special Instructions)	
Copy of Invoice with Report	☐ YES ☐ NO	Select Invoice Distribution:	☒ EMAIL ☐ MAIL ☐ FAX		
Company:		Email 1 or Fax:	stthomas@vsb.bc.ca		
Contact:		Email 2:	rlenay@vsb.bc.ca		
Project Information		Oil and Gas Required Fields (client use)			
ALS Account # / Quote #:		AFE/Cost Center:	PO#		
Job #:	John Oliver Secondary	Major/Minor Code:	Routing Code:		
PO / AFE:		Requisitioner:			
LSD:		Location:			
ALS Lab Work Order # (lab use only):		ALS Contact:	Sampler: Robin Leno		
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	
	Rm. 149 FS	16-09-19	9:24am	water	
	Rm. 153 DF	16-09-19	9:29am	water	
	Rm. 248 DF	16-09-19	9:34am	water	
	Rm. 237 DF	16-09-19	9:45am	water	
	Rm. 217A DF	16-09-19	9:40am	water	
	Rm. 315 DF	16-09-19	9:52am	water	
	Rm. 309 DF	16-09-19	9:57am	water	
	Rm. 303 SSDF	16-09-19	10:01am	water	
	Rm. 109 DF	16-09-19	10:07am	water	
	Rm. 115 DF	16-09-19	10:12am	water	
	Lobby 132 DF	16-09-19	10:17am	water	
	Rm. 123G SSDF	16-09-19	10:22am	water	
Drinking Water (DW) Samples (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		SAMPLE CONDITION AS RECEIVED (lab use only)	
Are samples taken from a Regulated DW System?		No preservatives added		Frozen ☐ SIF Observations Yes ☐ No ☐	
☐ YES ☐ NO				Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐	
Are samples for human consumption/ use?				Cooling Initiated ☒	
☐ YES ☐ NO				INITIAL COOLER TEMPERATURES °C	
				FINAL COOLER TEMPERATURES °C	
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)	
Released by:	Date:	Time:	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY

YELLOW - CLIENT COPY

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

JUNE 2016 FORM



Chain of Custody (COC) / Analytical
Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com



L2348216-COFC

COC Number: 17 - 762140

Page 2 of 2

Report To		Report Format / Distribution		Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)						
Contact and company name below will appear on the final report		Select Report Format: ☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)		Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply						
Company:	Vancouver School Board	Quality Control (QC) Report with Report ☐ YES ☐ NO		4 day [P4-20%] ☐ 1 Business day [E - 100%] ☐						
Contact:	Stephen Thomas	☐ Compare Results to Criteria on Report - provide details below if box checked		3 day [P3-25%] ☐ Same Day, Weekend or Statutory holiday [E2 -200%] (Laboratory opening fees may apply) ☐						
Phone:	604-713-5637	Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX		2 day [P2-50%] ☐						
Company address below will appear on the final report		Email 1 or Fax: ss.thomas@vsb.bc.ca		Date and Time Required for all E&P TATs: dd-mm-yy hh:mm						
Street:	1549 Clark Dr.	Email 2: slemay@vsb.bc.ca		For tests that can not be performed according to the service level selected, you will be contacted.						
City/Province:	Vancouver B.C.	Email 3:		Analysis Request						
Postal Code:				Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below						
Invoice To	Same as Report To ☒ YES ☐ NO	Invoice Distribution		NUMBER OF CONTAINERS Lead		SAMPLES ON HOLD		SUSPECTED HAZARD (see Special Instructions)		
Copy of Invoice with Report	☐ YES ☐ NO	Select Invoice Distribution: ☒ EMAIL ☐ MAIL ☐ FAX								
Company:		Email 1 or Fax: ss.thomas@vsb.bc.ca								
Contact:		Email 2: slemay@vsb.bc.ca								
Project Information		Oil and Gas Required Fields (client use)								
ALS Account # / Quote #:		AFE/Cost Center:								
Job #:		Major/Minor Code:								
PO / AFE:		Requisitioner:								
LSD:		Location:								
ALS Lab Work Order # (lab use only):		ALS Contact:		Sampler: Robin Lemaire						
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type						
	Rm. 115 Bub	16-09-19	10:31am	water						
	Rm. 114 Bub	16-09-19	10:37am	water						
	Rm. 157 DF	16-09-19	10:50am	water						
Drinking Water (DW) Samples (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		SAMPLE CONDITION AS RECEIVED (lab use only)						
Are samples taken from a Regulated DW System? ☐ YES ☐ NO		No preservatives added		Frozen ☐ SIF Observations Yes ☐ No ☐						
Are samples for human consumption/ use? ☐ YES ☐ NO				Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐						
				Cooling Initiated ☒						
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)						
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:		
						HA	9/16	4pm		

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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JUNE 2016 FRONT

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 24-JUN-19

PO No.: 1517879

WO No.: L2295955

LSD:

Project Ref: KERRISDALE ANNEX

Sample ID: RM 109

Sampled By: Chris Carrell

Date Collected: 20-JUN-19

Lab Sample ID: L2295955-1

Matrix: Water

PAGE 1 of 4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00153		mg/L	0.005		22-JUN-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 24-JUN-19

PO No.: 1517879

WO No.: L2295955

LSD:

Project Ref: KERRISDALE ANNEX

Sample ID: RM 101

Sampled By: Chris Carrell

Date Collected: 20-JUN-19

Lab Sample ID: L2295955-2

Matrix: Water

PAGE 2 of 4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00281		mg/L	0.005		22-JUN-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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1549 Clark Drive
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ATTN: Stephen Thomas

Date: 24-JUN-19

PO No.: 1517879

WO No.: L2295955

LSD:

Project Ref: KERRISDALE ANNEX

Sample ID: RM 104

Sampled By: Chris Carrell

Date Collected: 20-JUN-19

Lab Sample ID: L2295955-3

Matrix: Water

PAGE 3 of 4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00362		mg/L	0.005		22-JUN-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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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 ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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.

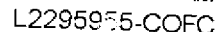
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

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



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JUNE 2018 FROM

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-MAY-19

PO No.: 1517879

WO No.: L2273973

LSD:

Project Ref: KILLARNEY SECONDARY SCHOOL

Sample ID: B111

Sampled By: Chris Carrell

Date Collected: 15-MAY-19

Lab Sample ID: L2273973-1

Matrix: Water

PAGE 1 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00351		mg/L	0.005		17-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-MAY-19

PO No.: 1517879

WO No.: L2273973

LSD:

Project Ref: KILLARNEY SECONDARY SCHOOL

Sample ID: B103

Sampled By: Chris Carrell

Date Collected: 15-MAY-19

Lab Sample ID: L2273973-2

Matrix: Water

PAGE 2 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000837		mg/L	0.005		17-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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.						
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ATTN: Stephen Thomas

Date: 17-MAY-19

PO No.: 1517879

WO No.: L2273973

LSD:

Project Ref: KILLARNEY SECONDARY SCHOOL

Sample ID: 101

Sampled By: Chris Carrell

Date Collected: 15-MAY-19

Lab Sample ID: L2273973-3

Matrix: Water

PAGE 3 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000072		mg/L	0.005		17-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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.						
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ATTN: Stephen Thomas

Date: 17-MAY-19

PO No.: 1517879

WO No.: L2273973

LSD:

Project Ref: KILLARNEY SECONDARY SCHOOL

Sample ID: C125

Sampled By: Chris Carrell

Date Collected: 15-MAY-19

Lab Sample ID: L2273973-4

Matrix: Water

PAGE 4 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00291		mg/L	0.005		17-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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.						
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ATTN: Stephen Thomas

Date: 17-MAY-19

PO No.: 1517879

WO No.: L2273973

LSD:

Project Ref: KILLARNEY SECONDARY SCHOOL

Sample ID: C111

Sampled By: Chris Carrell

Date Collected: 15-MAY-19

Lab Sample ID: L2273973-5

Matrix: Water

PAGE 5 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000455		mg/L	0.005		17-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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.						
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ATTN: Stephen Thomas

Date: 17-MAY-19

PO No.: 1517879

WO No.: L2273973

LSD:

Project Ref: KILLARNEY SECONDARY SCHOOL

Sample ID: C110

Sampled By: Chris Carrell

Date Collected: 15-MAY-19

Lab Sample ID: L2273973-6

Matrix: Water

PAGE 6 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000313		mg/L	0.005		17-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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.						
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ATTN: Stephen Thomas

Date: 17-MAY-19

PO No.: 1517879

WO No.: L2273973

LSD:

Project Ref: KILLARNEY SECONDARY SCHOOL

Sample ID: C107

Sampled By: Chris Carrell

Date Collected: 15-MAY-19

Lab Sample ID: L2273973-7

Matrix: Water

PAGE 7 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00360		mg/L	0.005		17-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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.						
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1549 Clark Drive
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ATTN: Stephen Thomas

Date: 17-MAY-19

PO No.: 1517879

WO No.: L2273973

LSD:

Project Ref: KILLARNEY SECONDARY SCHOOL

Sample ID: A130

Sampled By: Chris Carrell

Date Collected: 15-MAY-19

Lab Sample ID: L2273973-8

Matrix: Water

PAGE 8 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000054		mg/L	0.005		17-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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.						
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PO No.: 1517879

WO No.: L2273973

LSD:

Project Ref: KILLARNEY SECONDARY SCHOOL

Sample ID: A120

Sampled By: Chris Carrell

Date Collected: 15-MAY-19

Lab Sample ID: L2273973-9

Matrix: Water

PAGE 9 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00191		mg/L	0.005		17-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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.						
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Date: 17-MAY-19

PO No.: 1517879

WO No.: L2273973

LSD:

Project Ref: KILLARNEY SECONDARY SCHOOL

Sample ID: A112

Sampled By: Chris Carrell

Date Collected: 15-MAY-19

Lab Sample ID: L2273973-10

Matrix: Water

PAGE 10 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000783		mg/L	0.005		17-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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.						
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Date: 17-MAY-19

PO No.: 1517879

WO No.: L2273973

LSD:

Project Ref: KILLARNEY SECONDARY SCHOOL

Sample ID: D120

Sampled By: Chris Carrell

Date Collected: 15-MAY-19

Lab Sample ID: L2273973-11

Matrix: Water

PAGE 11 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00257		mg/L	0.005		17-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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.						
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ATTN: Stephen Thomas

Date: 17-MAY-19

PO No.: 1517879

WO No.: L2273973

LSD:

Project Ref: KILLARNEY SECONDARY SCHOOL

Sample ID: D123

Sampled By: Chris Carrell

Date Collected: 15-MAY-19

Lab Sample ID: L2273973-12

Matrix: Water

PAGE 12 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00427		mg/L	0.005		17-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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.						
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Maintenance and Construction
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ATTN: Stephen Thomas

Date: 17-MAY-19

PO No.: 1517879

WO No.: L2273973

LSD:

Project Ref: KILLARNEY SECONDARY SCHOOL

Sample ID: A227

Sampled By: Chris Carrell

Date Collected: 15-MAY-19

Lab Sample ID: L2273973-13

Matrix: Water

PAGE 13 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000107		mg/L	0.005		17-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-MAY-19

PO No.: 1517879

WO No.: L2273973

LSD:

Project Ref: KILLARNEY SECONDARY SCHOOL

Sample ID: A202

Sampled By: Chris Carrell

Date Collected: 15-MAY-19

Lab Sample ID: L2273973-14

Matrix: Water

PAGE 14 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00160		mg/L	0.005		17-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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.						
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ATTN: Stephen Thomas

Date: 17-MAY-19

PO No.: 1517879

WO No.: L2273973

LSD:

Project Ref: KILLARNEY SECONDARY SCHOOL

Sample ID: A208

Sampled By: Chris Carrell

Date Collected: 15-MAY-19

Lab Sample ID: L2273973-15

Matrix: Water

PAGE 15 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00239		mg/L	0.005		17-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-MAY-19

PO No.: 1517879

WO No.: L2273973

LSD:

Project Ref: KILLARNEY SECONDARY SCHOOL

Sample ID: B212

Sampled By: Chris Carrell

Date Collected: 15-MAY-19

Lab Sample ID: L2273973-16

Matrix: Water

PAGE 16 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000423		mg/L	0.005		17-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-MAY-19

PO No.: 1517879

WO No.: L2273973

LSD:

Project Ref: KILLARNEY SECONDARY SCHOOL

Sample ID: B202

Sampled By: Chris Carrell

Date Collected: 15-MAY-19

Lab Sample ID: L2273973-17

Matrix: Water

PAGE 17 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000351		mg/L	0.005		17-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-MAY-19

PO No.: 1517879

WO No.: L2273973

LSD:

Project Ref: KILLARNEY SECONDARY SCHOOL

Sample ID: A327

Sampled By: Chris Carrell

Date Collected: 15-MAY-19

Lab Sample ID: L2273973-18

Matrix: Water

PAGE 18 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000056		mg/L	0.005		17-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-MAY-19

PO No.: 1517879

WO No.: L2273973

LSD:

Project Ref: KILLARNEY SECONDARY SCHOOL

Sample ID: A302

Sampled By: Chris Carrell

Date Collected: 15-MAY-19

Lab Sample ID: L2273973-19

Matrix: Water

PAGE 19 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000888		mg/L	0.005		17-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-MAY-19

PO No.: 1517879

WO No.: L2273973

LSD:

Project Ref: KILLARNEY SECONDARY SCHOOL

Sample ID: A318

Sampled By: Chris Carrell

Date Collected: 15-MAY-19

Lab Sample ID: L2273973-20

Matrix: Water

PAGE 20 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000139		mg/L	0.005		17-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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Date: 17-MAY-19

PO No.: 1517879

WO No.: L2273973

LSD:

Project Ref: KILLARNEY SECONDARY SCHOOL

Sample ID: C108

Sampled By: Chris Carrell

Date Collected: 15-MAY-19

Lab Sample ID: L2273973-21

Matrix: Water

VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

PAGE 21 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.0247		mg/L	0.005		17-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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 						
Joanne Lee Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-MAY-19

PO No.: 1517879

WO No.: L2273973

LSD:

Project Ref: KILLARNEY SECONDARY SCHOOL

Sample ID: D121

Sampled By: Chris Carrell

Date Collected: 15-MAY-19

Lab Sample ID: L2273973-22

Matrix: Water

PAGE 22 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00213		mg/L	0.005		17-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-MAY-19

PO No.: 1517879

WO No.: L2273973

LSD:

Project Ref: KILLARNEY SECONDARY SCHOOL

Sample ID: A308

Sampled By: Chris Carrell

Date Collected: 15-MAY-19

Lab Sample ID: L2273973-23

Matrix: Water

PAGE 23 of 24

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000910		mg/L	0.005		17-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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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 ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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.



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com



L2273973-COFC

COC Number: 17 - 829220

Page of

Report To		Report Format		Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)	
Company:	Vancouver School board	Select Report Format:	☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)	Regular [R]	☒ Standard TAT If received by 3 pm - business days - no surcharges apply
Contact:	Stephen Thomas	Quality Control (QC) Report with Report	☐ YES ☐ NO	4 day [P4-20%]	☐ 1 Business day [E - 100%]
Phone:	604-713-5637	☐ Compare Results to Criteria on Report - provide details below if box checked		3 day [P3-25%]	☐ Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)]
Company address below will appear on the final report		Select Distribution:	☒ EMAIL ☐ MAIL ☐ FAX	2 day [P2-50%]	☐
Street:	1544 Clark Dr	Email 1 or Fax	55Thomas@VSB.BC.ca	Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm	
City/Province:	Vancouver / BC	Email 2		For tests that can not be performed according to the service level selected, you will be contacted.	
Postal Code:		Email 3		Analysis Request	
Invoice To	Same as Report To ☒ YES ☐ NO	Invoice Distribution		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below	
	Copy of Invoice with Report ☒ YES ☐ NO	Select Invoice Distribution:	☒ EMAIL ☐ MAIL ☐ FAX		
Company:		Email 1 or Fax	55Thomas@VSB.BC.ca		
Contact:		Email 2			
Project Information		Oil and Gas Required Fields (client use)			
ALS Account # / Quote #:		AFE/Cost Center:	PO#		
Job #:	Killarney Secondary School	Major/Minor Code:	Routing Code:		
PO / AFE:		Requisitioner:			
LSD:		Location:			
ALS Lab Work Order # (lab use only):		ALS Contact:	Sampler: Chris Carrell		
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	
	B111	15-May-19	08:25	water	
	B103	15-May-19	08:15	water	
	101	15/May/19	08:10	water	
	C125	15/May/19	08:35	water	
	C111	15/May/19	08:41	water	
	C110	15/May/19	08:45	water	
	C107	15/May/19	08:49	water	
	A130	15/May/19	09:16	water	
	A120	15/May/19	09:06	water	
	A112	15/May/19	09:22	water	
	D120	15/May/19	09:25	water	
	D123	15/May/19	09:29	water	
Drinking Water (DW) Samples (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		SAMPLE CONDITION AS RECEIVED (lab use only)	
Are samples taken from a Regulated DW System?				Frozen ☐ SIF Observations Yes ☐ No ☐	
☐ YES ☐ NO				Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐	
Are samples for human consumption/ use?				Cooling Initiated ☒	
☐ YES ☐ NO				INITIAL COOLER TEMPERATURES °C	
				FINAL COOLER TEMPERATURES °C	
				16	
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)	
Released by:	Date:	Time:	Received by:	Date:	Time:
				14X	5/15
					2150P

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JUNE 2016 FORM

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



Chain of Custody (COC) / Analytical
Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com



L2273973-COFC

COC Number: 17 - 829219

Page of

Report To Contact and company name below will appear on the final report.		Report For		Flow - Contact your AM to confirm all E&P TATs (surcharges may apply)	
Company: <u>Vancouver School Board</u>		Select Report Format: ☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)		Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply	
Contact: <u>Stephen Thomas</u>		Quality Control (QC) Report with Report ☐ YES ☐ NO		4 day [P4-20%] ☐ 1 Business day [E - 100%] ☐	
Phone: <u>604 713 5637</u>		☐ Compare Results to Criteria on Report - provide details below if box checked		3 day [P3-25%] ☐ Same Day, Weekend or Statutory holiday [E2 - 200% (Laboratory opening fees may apply)] ☐	
Company address below will appear on the final report		Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX		2 day [P2-50%] ☐	
Street: <u>1549 Clark Dr</u>		Email 1 or Fax: <u>Sstomas@VSB.BC.CA</u>		Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm	
City/Province: <u>Vancouver BC</u>		Email 2		For tests that can not be performed according to the service level selected, you will be contacted.	
Postal Code:		Email 3		Analysis Request	
Invoice To: Same as Report To ☒ YES ☐ NO		Invoice Distribution		NUMBER OF CONTAINERS Lead SAMPLES ON HOLD SUSPECTED HAZARD (see Special Instructions)	
Copy of Invoice with Report ☒ YES ☐ NO		Select Invoice Distribution: ☒ EMAIL ☐ MAIL ☐ FAX			
Company:		Email 1 or Fax: <u>Sstomas@VSB.BC.CA</u>			
Contact:		Email 2			
Project Information		Oil and Gas Required Fields (client use)			
ALS Account # / Quote #:		AFE/Cost Center: PO#			
Job #: <u>Killarney Secondary School</u>		Major/Minor Code: Routing Code:			
PO / AFE:		Requisitioner:			
LSD:		Location:			
ALS Lab Work Order # (lab use only):		ALS Contact:			
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	
	A227	15 May 19	10:23	Water	
	A202	15 May 19	10:28	Water	
	A208	15 May 19	10:31	Water	
	B212	15 May 19	10:16	Water	
	B202	15 May 19	10:19	Water	
	A327	15 May 19	10:47	Water	
	A302	15 May 19	10:41	Water	
	A318	15 May 19	10:44	Water	
	C108	15 May 19	08:53	Water	
	D121	15 May 19	09:33	Water	
	A308	15 May 19	10:35	Water	
Drinking Water (DW) Samples ¹ (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		SAMPLE CONDITION AS RECEIVED (lab use only)	
Are samples taken from a Regulated DW System? ☐ YES ☐ NO		<u>No preservatives added</u>		Frozen ☐ SIF Observations Yes ☐ No ☐	
Are samples for human consumption/ use? ☐ YES ☐ NO				Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐	
				Cooling Initiated ☒	
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)	
Released by:	Date:	Time:	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JUNE 2018 FORM

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-OCT-19

PO No.: 1517879

WO No.: L2355205

LSD:

Project Ref: KING GEORGE SECONDARY

Sample ID: RM 102 SSDF

Sampled By: Robin Lemay

Date Collected: 26-SEP-19

Lab Sample ID: L2355205-1

Matrix: Water

PAGE 1 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000279		mg/L	0.005		30-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-OCT-19

PO No.: 1517879

WO No.: L2355205

LSD:

Project Ref: KING GEORGE SECONDARY

Sample ID: RM 145 SSDF

Sampled By: Robin Lemay

Date Collected: 26-SEP-19

Lab Sample ID: L2355205-2

Matrix: Water

PAGE 2 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000132		mg/L	0.005		30-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-OCT-19

PO No.: 1517879

WO No.: L2355205

LSD:

Project Ref: KING GEORGE SECONDARY

Sample ID: COR 144 FS

Sampled By: Robin Lemay

Date Collected: 26-SEP-19

Lab Sample ID: L2355205-3

Matrix: Water

PAGE 3 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000506		mg/L	0.005		30-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-OCT-19

PO No.: 1517879

WO No.: L2355205

LSD:

Project Ref: KING GEORGE SECONDARY

Sample ID: COR 100 RM 111 SSDF

Sampled By: Robin Lemay

Date Collected: 26-SEP-19

Lab Sample ID: L2355205-4

Matrix: Water

PAGE 4 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000154		mg/L	0.005		30-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-OCT-19

PO No.: 1517879

WO No.: L2355205

LSD:

Project Ref: KING GEORGE SECONDARY

Sample ID: COR 233A RM 230 SSDF

Sampled By: Robin Lemay

Date Collected: 26-SEP-19

Lab Sample ID: L2355205-5

Matrix: Water

PAGE 5 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000722		mg/L	0.005		30-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-OCT-19

PO No.: 1517879

WO No.: L2355205

LSD:

Project Ref: KING GEORGE SECONDARY

Sample ID: COR 325 RM 323 FS

Sampled By: Robin Lemay

Date Collected: 26-SEP-19

Lab Sample ID: L2355205-6

Matrix: Water

PAGE 6 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	<0.000050		mg/L	0.005		30-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

*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 rationing cations to anions
Bicarbonate	See Alkalinity. Report as the anion HCO ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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 of 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.
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.



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com



L2355205-COFC

COC Number: 17 - 762146

Page of

Report To		Report Format / Distribution		Flow - Contact your AM to confirm all E&P TATs (surcharges may apply)	
Company:	Vancouver School Board	Select Report Format:	☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)	Regular [R]	☒ Standard TAT if received by 3 pm - business days - no surcharges apply
Contact:	Stephen Thomas	Quality Control (QC) Report with Report	☐ YES ☐ NO	PRIORITY (Business Days)	4 day [P4-20%] ☐
Phone:	604-713-5637	☐ Compare Results to Criteria on Report - provide details below if box checked		3 day [P3-25%] ☐	1 Business day [E - 100%] ☐
Company address below will appear on the final report		Select Distribution:	☒ EMAIL ☐ MAIL ☐ FAX	2 day [P2-50%] ☐	Same Day, Weekend or Statutory holiday [E2 -200%] (Laboratory opening fees may apply) ☐
Street:	1549 Clark Drive	Email 1 or Fax	sstthomas@vsb.bc.ca	Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm	
City/Province:	Vancouver B.C.	Email 2	rlamay@vsb.bc.ca	For tests that can not be performed according to the service level selected, you will be contacted.	
Postal Code:		Email 3		Analysis Request	
Invoice To	Same as Report To ☒ YES ☐ NO	Invoice Distribution		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below	
	Copy of Invoice with Report ☐ YES ☐ NO	Select Invoice Distribution:	☒ EMAIL ☐ MAIL ☐ FAX		
Company:		Email 1 or Fax	sstthomas@vsb.bc.ca	NUMBER OF CONTAINERS	SAMPLES ON HOLD
Contact:		Email 2	rlamay@vsb.bc.ca		
Project Information		Oil and Gas Required Fields (client use)			
ALS Account # / Quote #:		AFE/Cost Center:	PO#		
Job #:	King George Secondary	Major/Minor Code:	Routing Code:		
PO / AFE:		Requisitioner:			
LSD:		Location:			
ALS Lab Work Order # (lab use only):		ALS Contact:	Sampler: Robin Lemay		
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	
	Rm. 102 SSDF	26-09-19	7:28am	water	
	Rm. 145 SSDF	26-09-19	7:34am	water	
	Cor 144 FS	26-09-19	7:38am	water	
	Cor 100 Rm 111 SSDF	26-09-19	7:44am	water	
	Cor 233A Rm 230 SSDF	26-09-19	7:50am	water	
	Cor 325 Rm. 323 FS	26-09-19	7:56am	water	
Drinking Water (DW) Samples (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		SAMPLE CONDITION AS RECEIVED (lab use only)	
Are samples taken from a Regulated DW System?		No preservatives added		Frozen ☐ SIF Observations Yes ☐ No ☐	
☐ YES ☐ NO				Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐	
Are samples for human consumption/ use?				Cooling Initiated ☒	
☐ YES ☐ NO				INITIAL COOLER TEMPERATURES °C	
				FINAL COOLER TEMPERATURES °C	
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)	
Released by:	Date:	Time:	Received by:	Date:	Time:
				HA	9/26

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY

YELLOW - CLIENT COPY

JUNE 2015 FRONT

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 16-SEP-19

PO No.: 1517879

WO No.: L2343128

LSD:

Project Ref: LORD BEACONSFIELD

Sample ID: RM. 002 DF

Sampled By: Robin Lenay

Date Collected: 06-SEP-19

Lab Sample ID: L2343128-1

Matrix: Water

PAGE 1 of 10

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00143		mg/L	0.005		11-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 16-SEP-19

PO No.: 1517879

WO No.: L2343128

LSD:

Project Ref: LORD BEACONSFIELD

Sample ID: RM. 007 DF

Sampled By: Robin Lenay

Date Collected: 06-SEP-19

Lab Sample ID: L2343128-2

Matrix: Water

PAGE 2 of 10

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000643		mg/L	0.005		11-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 16-SEP-19

PO No.: 1517879

WO No.: L2343128

LSD:

Project Ref: LORD BEACONSFIELD

Sample ID: LORR 095 DF

Sampled By: Robin Lenay

Date Collected: 06-SEP-19

Lab Sample ID: L2343128-3

Matrix: Water

PAGE 3 of 10

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000308		mg/L	0.005		11-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 16-SEP-19

PO No.: 1517879

WO No.: L2343128

LSD:

Project Ref: LORD BEACONSFIELD

Sample ID: RM. 101 DF

Sampled By: Robin Lenay

Date Collected: 06-SEP-19

Lab Sample ID: L2343128-4

Matrix: Water

PAGE 4 of 10

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000294		mg/L	0.005		11-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 16-SEP-19

PO No.: 1517879

WO No.: L2343128

LSD:

Project Ref: LORD BEACONSFIELD

Sample ID: RM. 102 DF

Sampled By: Robin Lenay

Date Collected: 06-SEP-19

Lab Sample ID: L2343128-5

Matrix: Water

PAGE 5 of 10

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000849		mg/L	0.005		11-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 16-SEP-19

PO No.: 1517879

WO No.: L2343128

LSD:

Project Ref: LORD BEACONSFIELD

Sample ID: RM. 106 DF

Sampled By: Robin Lenay

Date Collected: 06-SEP-19

Lab Sample ID: L2343128-6

Matrix: Water

PAGE 6 of 10

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000410		mg/L	0.005		11-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 16-SEP-19

PO No.: 1517879

WO No.: L2343128

LSD:

Project Ref: LORD BEACONSFIELD

Sample ID: RM. 206 DF

Sampled By: Robin Lenay

Date Collected: 06-SEP-19

Lab Sample ID: L2343128-7

Matrix: Water

PAGE 7 of 10

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000494		mg/L	0.005		11-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 16-SEP-19

PO No.: 1517879

WO No.: L2343128

LSD:

Project Ref: LORD BEACONSFIELD

Sample ID: RM. 201 DF

Sampled By: Robin Lenay

Date Collected: 06-SEP-19

Lab Sample ID: L2343128-8

Matrix: Water

PAGE 8 of 10

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000395		mg/L	0.005		11-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 16-SEP-19

PO No.: 1517879

WO No.: L2343128

LSD:

Project Ref: LORD BEACONSFIELD

Sample ID: RM. 202 DF

Sampled By: Robin Lenay

Date Collected: 06-SEP-19

Lab Sample ID: L2343128-9

Matrix: Water

PAGE 9 of 10

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00201		mg/L	0.005		11-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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*Health Canada Canadian Drinking Water Quality Guidelines (MAC limit)

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Chloride	Common major anion of water chemistry.
Conductance	Physical test measuring water salinity (dissolved ions or solids)
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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.
Heterotrophic	
Plate Count	Criteria is 500 cfu/mL Measure of heterotrophic bacteria present.

GLOSSARY OF REPORT TERMS

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

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D.L. - The reporting limit.

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

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878



L2343128-COFC

COC Number: 17 - 756170

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[illegible]

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JUNE 2018 FRD

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 19-SEP-19

PO No.: 1517879

WO No.: L2346510

LSD:

Project Ref: LORD BYNG SECONDARY

Sample ID: RM B112 DF

Sampled By: Robin Lemay

Date Collected: 12-SEP-19

Lab Sample ID: L2346510-1

Matrix: Water

PAGE 1 of 6

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000120		mg/L	0.005		17-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 19-SEP-19

PO No.: 1517879

WO No.: L2346510

LSD:

Project Ref: LORD BYNG SECONDARY

Sample ID: RM 123 DF

Sampled By: Robin Lemay

Date Collected: 12-SEP-19

Lab Sample ID: L2346510-2

Matrix: Water

PAGE 2 of 6

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000275		mg/L	0.005		18-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 19-SEP-19

PO No.: 1517879

WO No.: L2346510

LSD:

Project Ref: LORD BYNG SECONDARY

Sample ID: RM 107 DF

Sampled By: Robin Lemay

Date Collected: 12-SEP-19

Lab Sample ID: L2346510-3

Matrix: Water

PAGE 3 of 6

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000120		mg/L	0.005		17-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 19-SEP-19
PO No.: 1517879
WO No.: L2346510

LSD:

Project Ref: LORD BYNG SECONDARY

Sample ID: RM B120 FS

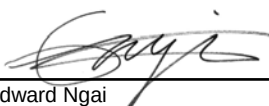
Sampled By: Robin Lemay

Date Collected: 12-SEP-19

Lab Sample ID: L2346510-4

Matrix: Water

PAGE 4 of 6

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00121		mg/L	0.005		17-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 19-SEP-19

PO No.: 1517879

WO No.: L2346510

LSD:

Project Ref: LORD BYNG SECONDARY

Sample ID: RM 102 DF

Sampled By: Robin Lemay

Date Collected: 12-SEP-19

Lab Sample ID: L2346510-5

Matrix: Water

PAGE 5 of 6

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000164		mg/L	0.005		17-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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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.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

*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 ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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 of 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.
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.

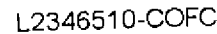
Test results reported relate only to the samples as received by the laboratory.

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.



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JUNE 2018 FRONT

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 04-OCT-19

PO No.: 1517879

WO No.: L2356764

LSD:

Project Ref: LORD ROBERTS ANNEX

Sample ID: CORR 100 RM 126 DF

Sampled By: Robin Lemay

Date Collected: 30-SEP-19

Lab Sample ID: L2356764-1

Matrix: Water

PAGE 1 of 2

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000400		mg/L	0.005		03-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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Guidelines & Objectives

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

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

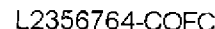
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

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COC Number: 17 - 762152

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LINE 30: EBOV

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 04-OCT-19

PO No.: 1517879

WO No.: L2356762

LSD:

Project Ref: LORD ROBERTS ELEMENTARY

Sample ID: RM 209 SSDF

Sampled By: Robin Lemay

Date Collected: 30-SEP-19

Lab Sample ID: L2356762-1

Matrix: Water

PAGE 1 of 9

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000478		mg/L	0.005		03-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 04-OCT-19

PO No.: 1517879

WO No.: L2356762

LSD:

Project Ref: LORD ROBERTS ELEMENTARY

Sample ID: RM 110 FS

Sampled By: Robin Lemay

Date Collected: 30-SEP-19

Lab Sample ID: L2356762-2

Matrix: Water

PAGE 2 of 9

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000056		mg/L	0.005		03-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 04-OCT-19

PO No.: 1517879

WO No.: L2356762

LSD:

Project Ref: LORD ROBERTS ELEMENTARY

Sample ID: RM 007 SSDF

Sampled By: Robin Lemay

Date Collected: 30-SEP-19

Lab Sample ID: L2356762-3

Matrix: Water

PAGE 3 of 9

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000071		mg/L	0.005		03-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 04-OCT-19

PO No.: 1517879

WO No.: L2356762

LSD:

Project Ref: LORD ROBERTS ELEMENTARY

Sample ID: RM 507 DF

Sampled By: Robin Lemay

Date Collected: 30-SEP-19

Lab Sample ID: L2356762-4

Matrix: Water

PAGE 4 of 9

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00221		mg/L	0.005		03-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 04-OCT-19

PO No.: 1517879

WO No.: L2356762

LSD:

Project Ref: LORD ROBERTS ELEMENTARY

Sample ID: RM 513 DF

Sampled By: Robin Lemay

Date Collected: 30-SEP-19

Lab Sample ID: L2356762-5

Matrix: Water

PAGE 5 of 9

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000473		mg/L	0.005		03-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 04-OCT-19

PO No.: 1517879

WO No.: L2356762

LSD:

Project Ref: LORD ROBERTS ELEMENTARY

Sample ID: COR 200 RM 207 DF

Sampled By: Robin Lemay

Date Collected: 30-SEP-19

Lab Sample ID: L2356762-6

Matrix: Water

PAGE 6 of 9

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000237		mg/L	0.005		03-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 04-OCT-19

PO No.: 1517879

WO No.: L2356762

LSD:

Project Ref: LORD ROBERTS ELEMENTARY

Sample ID: COR 100 RM 100A DF

Sampled By: Robin Lemay

Date Collected: 30-SEP-19

Lab Sample ID: L2356762-7

Matrix: Water

PAGE 7 of 9

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000267		mg/L	0.005		03-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 04-OCT-19

PO No.: 1517879

WO No.: L2356762

LSD:

Project Ref: LORD ROBERTS ELEMENTARY

Sample ID: COR 006 RM 010 DF

Sampled By: Robin Lemay

Date Collected: 30-SEP-19

Lab Sample ID: L2356762-8

Matrix: Water

PAGE 8 of 9

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000427		mg/L	0.005		03-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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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.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

*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 rationing cations to anions
Bicarbonate	See Alkalinity. Report as the anion HCO ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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 of 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.
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.

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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.



Chain of Custody (COC) / Analytical
Request Form

Canada Toll Free: 1 800 668 9878



L2356762-COFC

COC Number: 17 - 762151

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Report To		Report Format / Distribution		Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)	
Company:	Vancouver School Board	Select Report Format:	☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)	Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply	
Contact:	Stephen Thomas	Quality Control (QC) Report with Report	☐ YES ☐ NO	1 Business day [E - 100%]	
Phone:	604-713-5637	☐ Compare Results to Criteria on Report - provide details below if box checked		Same Day, Weekend or Statutory holiday [E2 - 200% (Laboratory opening fees may apply)]	
Company address below will appear on the final report		Select Distribution:	☒ EMAIL ☐ MAIL ☐ FAX	Date and Time Required for all E&P TATs: dd-mm-yy hh:mm	
Street:	1549 Clark Dr.	Email 1 or Fax:	ssthenas@vsb.bc.ca	For tests that can not be performed according to the service level selected, you will be contacted.	
City/Province:	Vancouver B.C.	Email 2:	clenay@vsb.bc.ca	Analysis Request	
Postal Code:		Email 3:		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below	
Invoice To	Same as Report To ☒ YES ☐ NO	Invoice Distribution		NUMBER OF CONTAINERS	SAMPLES ON HOLD
Copy of Invoice with Report	☐ YES ☐ NO	Select Invoice Distribution:	☒ EMAIL ☐ MAIL ☐ FAX		
Company:		Email 1 or Fax:	sthenas@vsb.bc.ca		
Contact:		Email 2:	clenay@vsb.bc.ca		
Project Information		Oil and Gas Required Fields (client use)			
ALS Account # / Quote #:		AFE/Cost Center:	PO#		
Job #:	Lord Roberts Elementary	Major/Minor Code:	Routing Code:		
PO / AFE:		Requisitioner:			
LSD:		Location:			
ALS Lab Work Order # (lab use only):		ALS Contact:	Sampler: Robin Lemay		
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (h:mm)	Sample Type	
	Rm. 209 SSDF	30-09-19	11:21am	water	
	Rm. 110 FS	30-09-19	11:26am	water	
	Rm. 007 SSDF	30-09-19	11:30am	water	
	Rm. 507 DF	30-09-19	11:36am	water	
	Rm. 513 DF	30-09-19	11:39am	water	
	Cor 200 Rm. 207 DF	30-09-19	11:45am	water	
	Cor 100 Rm. 100A DF	30-09-19	11:50am	water	
	Cor 006 Rm. 010 DF	30-09-19	11:54am	water	
Drinking Water (DW) Samples (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		SAMPLE CONDITION AS RECEIVED (lab use only)	
Are samples taken from a Regulated DW System? ☐ YES ☐ NO		No preservatives added		Frozen ☐ SIF Observations Yes ☐ No ☐	
Are samples for human consumption/ use? ☐ YES ☐ NO				Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐	
				Cooling Initiated ☐	
				INITIAL COOLER TEMPERATURES °C	
				FINAL COOLER TEMPERATURES °C	
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)	
Released by:	Date:	Time:	Received by:	Date:	Time:
				9/30	2:25p

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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JUNE 2016 PRINT



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-OCT-19

PO No.: 1517879

WO No.: L2363041

LSD:

Project Ref: LORD SELKIRK AMEX ELEMENTARY

Sample ID: RM. 115 DF

Sampled By: Robin Lemay

Date Collected: 09-OCT-19

Lab Sample ID: L2363041-1

Matrix: Water

PAGE 1 of 3

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000306		mg/L	0.005		16-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-OCT-19

PO No.: 1517879

WO No.: L2363041

LSD:

Project Ref: LORD SELKIRK AMEX ELEMENTARY

Sample ID: RM. 105 DF

Sampled By: Robin Lemay

Date Collected: 09-OCT-19

Lab Sample ID: L2363041-2

Matrix: Water

PAGE 2 of 3

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000765		mg/L	0.005		16-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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Guidelines & Objectives

Health Canada MAC Health Related Criteria Limits

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

Aesthetic Objective Concentration Levels

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Magnesium	See hardness. Common major cation of water chemistry. Elevated levels (>125 mg/L) may exert a cathartic or diuretic action.
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Plate Count	Criteria is 500 cfu/mL Measure of heterotrophic bacteria present.

GLOSSARY OF REPORT TERMS

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

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

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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.

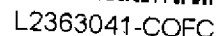
Test results reported relate only to the samples as received by the laboratory.

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COC Number: 17 - 762164

Page of

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LINE 201A FROM

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW CQC form**.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 18-OCT-19

PO No.: 1517879

WO No.: L2363905

LSD:

Project Ref: LORD SELKIRK ELEMENTARY

Sample ID: RM. 109A DF

Sampled By: Robin Lemay

Date Collected: 10-OCT-19

Lab Sample ID: L2363905-1

Matrix: Water

PAGE 1 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000365		mg/L	0.005		16-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 18-OCT-19

PO No.: 1517879

WO No.: L2363905

LSD:

Project Ref: LORD SELKIRK ELEMENTARY

Sample ID: RM. 014 DF

Sampled By: Robin Lemay

Date Collected: 10-OCT-19

Lab Sample ID: L2363905-2

Matrix: Water

PAGE 2 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00491		mg/L	0.005		16-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 18-OCT-19

PO No.: 1517879

WO No.: L2363905

LSD:

Project Ref: LORD SELKIRK ELEMENTARY

Sample ID: RM. 022 DF

Sampled By: Robin Lemay

Date Collected: 10-OCT-19

Lab Sample ID: L2363905-3

Matrix: Water

PAGE 3 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00115		mg/L	0.005		16-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 18-OCT-19

PO No.: 1517879

WO No.: L2363905

LSD:

Project Ref: LORD SELKIRK ELEMENTARY

Sample ID: PLAY AREA DF

Sampled By: Robin Lemay

Date Collected: 10-OCT-19

Lab Sample ID: L2363905-4

Matrix: Water

PAGE 4 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000187		mg/L	0.005		16-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 18-OCT-19

PO No.: 1517879

WO No.: L2363905

LSD:

Project Ref: LORD SELKIRK ELEMENTARY

Sample ID: PLAY AREA FS

Sampled By: Robin Lemay

Date Collected: 10-OCT-19

Lab Sample ID: L2363905-5

Matrix: Water

PAGE 5 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000166		mg/L	0.005		16-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 18-OCT-19

PO No.: 1517879

WO No.: L2363905

LSD:

Project Ref: LORD SELKIRK ELEMENTARY

Sample ID: BUILD 109C KIT SINK

Sampled By: Robin Lemay

Date Collected: 10-OCT-19

Lab Sample ID: L2363905-6

Matrix: Water

PAGE 6 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00325		mg/L	0.005		16-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 18-OCT-19

PO No.: 1517879

WO No.: L2363905

LSD:

Project Ref: LORD SELKIRK ELEMENTARY

Sample ID: RM. 102 BUILD 109C DF

Sampled By: Robin Lemay

Date Collected: 10-OCT-19

Lab Sample ID: L2363905-7

Matrix: Water

PAGE 7 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00386		mg/L	0.005		16-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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Guidelines & Objectives

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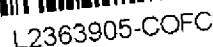
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

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COC Number: 17 - 762166

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1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 09-OCT-19

PO No.: 1517879

WO No.: L2357713

LSD:

Project Ref: LORD STRATHCONA ELEMENTARY

Sample ID: CORR 020 FS

Sampled By: Robin Lemay

Date Collected: 01-OCT-19

Lab Sample ID: L2357713-1

Matrix: Water

PAGE 1 of 3

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000121		mg/L	0.005		04-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 09-OCT-19

PO No.: 1517879

WO No.: L2357713

LSD:

Project Ref: LORD STRATHCONA ELEMENTARY

Sample ID: CORR 117 RM 116 FS

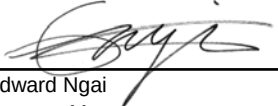
Sampled By: Robin Lemay

Date Collected: 01-OCT-19

Lab Sample ID: L2357713-2

Matrix: Water

PAGE 2 of 3

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	<0.000050		mg/L	0.005		04-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

*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 ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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 of 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.
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

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D.L. - The reporting limit.

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Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878



L2357713-COFC

COC Number: 17 - 762154

Page of

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Report To		Report Format / Distribution		Select Service Level below - Contact your AM to confirm all E&P TATs (surcharges may apply)	
Company: <u>Vancouver School Board</u>		Select Report Format: ☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)		Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply	
Contact: <u>Stephen Thomas</u>		Quality Control (QC) Report with Report ☐ YES ☐ NO		4 day [P4-20%] ☐	
Phone: <u>604-713-5637</u>		☐ Compare Results to Criteria on Report - provide details below if box checked		3 day [P3-25%] ☐	
Company address below will appear on the final report		Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX		2 day [P2-50%] ☐	
Street: <u>1549 Clark Dr.</u>		Email 1 or Fax: <u>sssthenas@vsb.bc.ca</u>		1 Business day [E - 100%]	
City/Province: <u>Vancouver B.C.</u>		Email 2: <u>rlamay@vsb.bc.ca</u>		Same Day, Weekend or Statutory holiday [E2 - 200% (Laboratory opening fees may apply)]	
Postal Code:		Email 3:		Date and Time Required for all E&P TATs: dd-mm-yy hh:mm	
Invoice To: Same as Report To ☒ YES ☐ NO		Invoice Distribution: ☒ EMAIL ☐ MAIL ☐ FAX		For tests that cannot be performed according to the service level selected, you will be contacted.	
Copy of Invoice with Report ☐ YES ☐ NO		Email 1 or Fax: <u>sssthenas@vsb.bc.ca</u>		Analysis Request	
Company:		Email 2: <u>rlamay@vsb.bc.ca</u>		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below	
Contact:		Oil and Gas Required Fields (client use)		NUMBER OF CONTAINERS	
Project Information		AFE/Cost Center: PO#		Lead	
ALS Account # / Quote #:		Major/Minor Code: Routing Code:		SAMPLES ON HOLD	
Job #: <u>Lord Sikeathcona Elementary</u>		Requisitioner:		SUSPECTED HAZARD (see Special Instructions)	
PO / AFE:		Location:			
LSD:		ALS Contact:			
ALS Lab Work Order # (lab use only):		Sampler: <u>Robin Lemay</u>			
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type	
	<u>Corr 020 FS</u>	<u>01-10-19</u>	<u>11:43am</u>	<u>water</u>	
	<u>Corr 117 Rm. 116 FS</u>	<u>01-10-19</u>	<u>11:48am</u>	<u>water</u>	
Drinking Water (DW) Samples* (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		SAMPLE CONDITION AS RECEIVED (lab use only)	
Are samples taken from a Regulated DW System? ☐ YES ☐ NO		No preservatives added		Frozen ☐ SIF Observations Yes ☐ No ☐	
Are samples for human consumption/ use? ☐ YES ☐ NO				Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐	
				Cooling Initiated ☒	
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)	
Released by:	Date:	Time:	Received by:	Date:	Time:
				<u>17A</u>	<u>10/1</u>

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JUNE 2018 FORM

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 16-OCT-19

PO No.: 1517879

WO No.: L2362044

LSD:

Project Ref: LORD TENNYSON ELEMENTARY

Sample ID: CORR 108 RM.107 SSDF

Sampled By: ROBIN LEMAY

Date Collected: 08-OCT-19

Lab Sample ID: L2362044-1

Matrix: WATER

PAGE 1 of 4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000561		mg/L	0.005		11-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 16-OCT-19

PO No.: 1517879

WO No.: L2362044

LSD:

Project Ref: LORD TENNYSON ELEMENTARY

Sample ID: PLAY AREA 011 DF

Sampled By: ROBIN LEMAY

Date Collected: 08-OCT-19

Lab Sample ID: L2362044-2

Matrix: WATER

PAGE 2 of 4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000443		mg/L	0.005		12-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 16-OCT-19

PO No.: 1517879

WO No.: L2362044

LSD:

Project Ref: LORD TENNYSON ELEMENTARY

Sample ID: CORR 001 RM.003 SSDF

Sampled By: ROBIN LEMAY

Date Collected: 08-OCT-19

Lab Sample ID: L2362044-3

Matrix: WATER

PAGE 3 of 4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00263		mg/L	0.005		12-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

*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 ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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.
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.

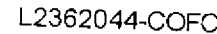
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Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



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REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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LINE 2010 FRONT

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-OCT-19

PO No.: 1517879

WO No.: L2355216

LSD:

Project Ref: CHIEF MAQUINNA ELEMENTARY

Sample ID: COR 126 DF

Sampled By: Robin Lemay

Date Collected: 26-SEP-19

Lab Sample ID: L2355216-1

Matrix: Water

PAGE 1 of 5

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000609		mg/L	0.005		30-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-OCT-19

PO No.: 1517879

WO No.: L2355216

LSD:

Project Ref: CHIEF MAQUINNA ELEMENTARY

Sample ID: COR 001 DF

Sampled By: Robin Lemay

Date Collected: 26-SEP-19

Lab Sample ID: L2355216-2

Matrix: Water

PAGE 2 of 5

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00201		mg/L	0.005		30-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-OCT-19

PO No.: 1517879

WO No.: L2355216

LSD:

Project Ref: CHIEF MAQUINNA ELEMENTARY

Sample ID: COR 116 DF

Sampled By: Robin Lemay

Date Collected: 26-SEP-19

Lab Sample ID: L2355216-3

Matrix: Water

PAGE 3 of 5

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000536		mg/L	0.005		30-SEP-19
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-OCT-19

PO No.: 1517879

WO No.: L2355216

LSD:

Project Ref: CHIEF MAQUINNA ELEMENTARY

Sample ID: COR 100 RM 104 DF

Sampled By: Robin Lemay

Date Collected: 26-SEP-19

Lab Sample ID: L2355216-4

Matrix: Water

PAGE 4 of 5

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000650		mg/L	0.005		30-SEP-19
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L2355216-COFC

COC Number: 17 - 762149

Page of

Report To Contact and company name below will appear on the final report:		Report Format / Distribution		Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)																									
Company: <u>Vancouver School Board</u>		Select Report Format: ☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)		Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply																									
Contact: <u>Stephen Thomas</u>		Quality Control (QC) Report with Report ☐ YES ☐ NO		4 day [P4-20%] ☐ 1 Business day [E - 100%] ☐																									
Phone: <u>604-713-5637</u>		☐ Compare Results to Criteria on Report - provide details below if box checked		3 day [P3-25%] ☐ Same Day, Weekend or Statutory holiday [E2 - 200%] ☐																									
Company address below will appear on the final report		Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX		2 day [P2-50%] ☐ (Laboratory opening fees may apply)																									
Street: <u>Clark Dr. 1549</u>		Email 1 or Fax: <u>ssthenas@vsb.bc.ca</u>		Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm																									
City/Province: <u>Vancouver B.C.</u>		Email 2: <u>rlemay@vsb.bc.ca</u>		For tests that can not be performed according to the service level selected, you will be contacted.																									
Postal Code:		Email 3:		Analysis Request																									
Invoice To: Same as Report To ☒ YES ☐ NO		Invoice Distribution		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td colspan="12">Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below</td> </tr> <tr> <td colspan="12" style="height: 150px; vertical-align: middle; text-align: center;"> NUMBER OF CONTAINERS Lead SAMPLES ON HOLD SUSPECTED HAZARD (see Special Instructions) </td> </tr> </table>		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below												NUMBER OF CONTAINERS Lead SAMPLES ON HOLD SUSPECTED HAZARD (see Special Instructions)											
Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below																													
NUMBER OF CONTAINERS Lead SAMPLES ON HOLD SUSPECTED HAZARD (see Special Instructions)																													
Copy of Invoice with Report ☐ YES ☐ NO		Select Invoice Distribution: ☒ EMAIL ☐ MAIL ☐ FAX																											
Company:		Email 1 or Fax: <u>ssthenas@vsb.bc.ca</u>																											
Contact:		Email 2: <u>rlemay@vsb.bc.ca</u>																											
Project Information		Oil and Gas Required Fields (client use)																											
ALS Account # / Quote #:		AFE/Cost Center: PO#																											
Job #: <u>Chief Maggiquin Elementary</u>		Major/Minor Code: Routing Code:																											
PO / AFE:		Requisitioner:																											
LSD:		Location:																											
ALS Lab Work Order # (lab use only):		ALS Contact:		Sampler: <u>Robin Lemay</u>																									
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																									
	<u>Cor 126 DF</u>	<u>26-09-19</u>	<u>2:00pm</u>	<u>water</u>																									
	<u>Cor 001 DF</u>	<u>26-09-19</u>	<u>2:12pm</u>	<u>water</u>																									
	<u>Cor 116 DF</u>	<u>26-09-19</u>	<u>2:20pm</u>	<u>water</u>																									
	<u>Corr 100 Rm. 104 DF</u>	<u>26-09-19</u>	<u>2:25pm</u>	<u>water</u>																									
Drinking Water (DW) Samples¹ (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		SAMPLE CONDITION AS RECEIVED (lab use only)																									
Are samples taken from a Regulated DW System? ☐ YES ☐ NO		<u>No preservatives added</u>		Frozen ☐ SIF Observations Yes ☐ No ☐																									
Are samples for human consumption/ use? ☐ YES ☐ NO				Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐																									
				Cooling Initiated ☒																									
				INITIAL COOLER TEMPERATURES °C																									
				FINAL COOLER TEMPERATURES °C																									
				4																									
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)																									
Released by:	Date:	Received by:	Date:	Received by:	Date:																								
				<u>WA</u>	<u>9/26</u>																								
					<u>L2529</u>																								

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY

YELLOW - CLIENT COPY

JUNE 2016 PRINT

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 04-JUN-19

PO No.: 1517879

WO No.: L2282548

LSD:

Project Ref: MOUNT PLEASANT ELEMENTARY

Sample ID: RM 135

Sampled By: Chris Carrell

Date Collected: 30-MAY-19

Lab Sample ID: L2282548-1

Matrix: water

PAGE 1 of 6

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000158		mg/L	0.005		31-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 04-JUN-19

PO No.: 1517879

WO No.: L2282548

LSD:

Project Ref: MOUNT PLEASANT ELEMENTARY

Sample ID: RM 219

Sampled By: Chris Carrell

Date Collected: 30-MAY-19

Lab Sample ID: L2282548-2

Matrix: water

PAGE 2 of 6

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00161		mg/L	0.005		31-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 04-JUN-19

PO No.: 1517879

WO No.: L2282548

LSD:

Project Ref: MOUNT PLEASANT ELEMENTARY

Sample ID: RM 221

Sampled By: Chris Carrell

Date Collected: 30-MAY-19

Lab Sample ID: L2282548-3

Matrix: water

PAGE 3 of 6

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000464		mg/L	0.005		31-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 04-JUN-19

PO No.: 1517879

WO No.: L2282548

LSD:

Project Ref: MOUNT PLEASANT ELEMENTARY

Sample ID: RM 133

Sampled By: Chris Carrell

Date Collected: 30-MAY-19

Lab Sample ID: L2282548-4

Matrix: water

PAGE 4 of 6

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000557		mg/L	0.005		31-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 04-JUN-19

PO No.: 1517879

WO No.: L2282548

LSD:

Project Ref: MOUNT PLEASANT ELEMENTARY

Sample ID: RM 123

Sampled By: Chris Carrell

Date Collected: 30-MAY-19

Lab Sample ID: L2282548-5

Matrix: water

PAGE 5 of 6

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00114		mg/L	0.005		31-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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

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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 ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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.



Chain of Custody (COC) / Analytical
Request Form

Canada Toll Free: 1 800 668 9878



L2282548-COFC

COC Number: 17 - 765040

Page of

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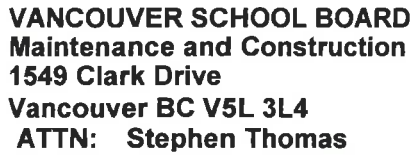
Report To		Report Format / Distribution		Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)	
Company:	Vancouver School Board	Select Report Format:	☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)	Regular [R]	☒ Standard TAT if received by 3 pm - business days - no surcharges apply
Contact:	Stephen Thomas	Quality Control (QC) Report with Report	☐ YES ☐ NO	PRIORITY (Business Days)	4 day [P4-20%] ☐ 3 day [P3-25%] ☐ 2 day [P2-50%] ☐
Phone:	604 - 713 - 5637	☐ Compare Results to Criteria on Report - provide details below if box checked		EMERGENCY	1 Business day [E - 100%] Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)]
Company address below will appear on the final report		Select Distribution:	☒ EMAIL ☐ MAIL ☐ FAX	Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm	
Street:	1549 Clark Dr.	Email 1 or Fax	SSThomas@VSB.bc.ca	For tests that can not be performed according to the service level selected, you will be contacted.	
City/Province:	Vancouver / BC	Email 2		Analysis Request	
Postal Code:		Email 3		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (FP) below	
Invoice To	Same as Report To ☒ YES ☐ NO	Invoice Distribution		NUMBER OF CONTAINERS LEAD	SAMPLES ON HOLD
	Copy of Invoice with Report ☐ YES ☐ NO	Select Invoice Distribution:	☒ EMAIL ☐ MAIL ☐ FAX		
Company:		Email 1 or Fax	SSThomas@VSB.bc.ca		
Contact:		Email 2			
Project Information		Oil and Gas Required Fields (client use)			
ALS Account # / Quote #:		AFE/Cost Center:	PO#		
Job #:	Mount Pleasant Elementary	Major/Minor Code:	Routing Code:		
PO / AFE:		Requisitioner:			
LSD:		Location:			
ALS Lab Work Order # (lab use only):		ALS Contact:	Sampler: Chris Carrell		
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	
	RM 135	30-May-19	07:19	water	
	RM 219	30-May-19	08:15	water	
	RM 221	30-May-19	08:18	water	
	RM 133	30-May-19	08:25	water	
	RM 123	30-May-19	08:28	water	
Drinking Water (DW) Samples (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		SAMPLE CONDITION AS RECEIVED (lab use only)	
Are samples taken from a Regulated DW System? ☐ YES ☐ NO		No preservatives added		Frozen ☐ SIF Observations Yes ☐ No ☐	
Are samples for human consumption/ use? ☐ YES ☐ NO				Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐	
				Cooling Initiated ☒	
				INITIAL COOLER TEMPERATURES °C	
				FINAL COOLER TEMPERATURES °C	
				K	
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)	
Released by:	Date:	Time:	Received by:	Date:	Time:
				HA	5/30
					2130p

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JUNE 2018 FROST

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



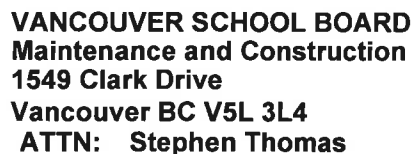
Matrix: WATER

PAGE 5 of 7

Approved by

Edward Ngai
Account Manager

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



Date: 10-OCT-19
PO No.: 1517879
WO No.: L2359361

LSD:

Project Ref: NOOTKA ELEMENTARY

Sample ID: CORR 183 RM 167 SSDF

Sampled By: ROBIN LENAY

Date Collected: 03-OCT-19

Lab Sample ID: L2359361-6

Matrix: WATER

PAGE 6 of 7

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



NOT IN SERVICE

VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 10-OCT-19
PO No.: 1517879
WO No.: L2359361
LSD:
Project Ref: NOOTKA ELEMENTARY
Sample ID: CORR 131 RM 106 SSDF
Sampled By: ROBIN LENAY
Date Collected: 03-OCT-19
Lab Sample ID: L2359361-4
Matrix: WATER

PAGE 4 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.000594		mg/L	0.005		08-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019						
* 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


Edward Ngai
Account Manager

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



NOT IN SERVICE

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2358683

LSD:

Project Ref: POINT GREY SECONDARY

Sample ID: CORR 300 RM 317 DF

Sampled By: Robin Lemay

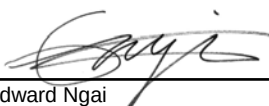
Date Collected: 02-OCT-19

Lab Sample ID: L2358683-1

Matrix: Water

VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

PAGE 1 of 15

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.00775		mg/L	0.005		06-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2358683

LSD:

Project Ref: POINT GREY SECONDARY

Sample ID: CORR 300 RM 314 FS

Sampled By: Robin Lemay

Date Collected: 02-OCT-19

Lab Sample ID: L2358683-2

Matrix: Water

PAGE 2 of 15

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000722		mg/L	0.005		06-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2358683

LSD:

Project Ref: POINT GREY SECONDARY

Sample ID: CORR 300 RM 324 DF

Sampled By: Robin Lemay

Date Collected: 02-OCT-19

Lab Sample ID: L2358683-3

Matrix: Water

PAGE 3 of 15

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000933		mg/L	0.005		06-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



NOT IN SERVICE

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2358683

LSD:

Project Ref: POINT GREY SECONDARY

Sample ID: CORR 300 RM 305 SSDF

Sampled By: Robin Lemay

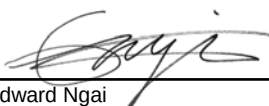
Date Collected: 02-OCT-19

Lab Sample ID: L2358683-4

Matrix: Water

VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

PAGE 4 of 15

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.0714		mg/L	0.005		06-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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 						
Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2358683

LSD:

Project Ref: POINT GREY SECONDARY

Sample ID: CORR 233 RM 236 FS

Sampled By: Robin Lemay

Date Collected: 02-OCT-19

Lab Sample ID: L2358683-5

Matrix: Water

PAGE 5 of 15

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000228		mg/L	0.005		06-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2358683

LSD:

Project Ref: POINT GREY SECONDARY

Sample ID: RM 241 SSDF

Sampled By: Robin Lemay

Date Collected: 02-OCT-19

Lab Sample ID: L2358683-6

Matrix: Water

PAGE 6 of 15

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000776		mg/L	0.005		06-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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NOT IN SERVICE

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2358683

LSD:

Project Ref: POINT GREY SECONDARY

Sample ID: RM 247 DF

Sampled By: Robin Lemay

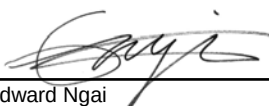
Date Collected: 02-OCT-19

Lab Sample ID: L2358683-7

Matrix: Water

VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

PAGE 7 of 15

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.0188		mg/L	0.005		06-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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 						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2358683

LSD:

Project Ref: POINT GREY SECONDARY

Sample ID: CORR 420 RM 421 DF

Sampled By: Robin Lemay

Date Collected: 02-OCT-19

Lab Sample ID: L2358683-8

Matrix: Water

PAGE 8 of 15

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00114		mg/L	0.005		06-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2358683

LSD:

Project Ref: POINT GREY SECONDARY

Sample ID: CORR 420 RM 417 DF

Sampled By: Robin Lemay

Date Collected: 02-OCT-19

Lab Sample ID: L2358683-9

Matrix: Water

PAGE 9 of 15

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00126		mg/L	0.005		06-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2358683

LSD:

Project Ref: POINT GREY SECONDARY

Sample ID: RM 404 BUB

Sampled By: Robin Lemay

Date Collected: 02-OCT-19

Lab Sample ID: L2358683-10

Matrix: Water

PAGE 10 of 15

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00135		mg/L	0.005		06-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2358683

LSD:

Project Ref: POINT GREY SECONDARY

Sample ID: RM 405 BUB

Sampled By: Robin Lemay

Date Collected: 02-OCT-19

Lab Sample ID: L2358683-11

Matrix: Water

PAGE 11 of 15

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00121		mg/L	0.005		06-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2358683

LSD:

Project Ref: POINT GREY SECONDARY

Sample ID: CORR 200 RM 232 DF

Sampled By: Robin Lemay

Date Collected: 02-OCT-19

Lab Sample ID: L2358683-12

Matrix: Water

PAGE 12 of 15

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000242		mg/L	0.005		06-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2358683

LSD:

Project Ref: POINT GREY SECONDARY

Sample ID: CORR 200 RM 220 SSDF

Sampled By: Robin Lemay

Date Collected: 02-OCT-19

Lab Sample ID: L2358683-13

Matrix: Water

PAGE 13 of 15

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000372		mg/L	0.005		06-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2358683

LSD:

Project Ref: POINT GREY SECONDARY

Sample ID: CORR 100 RM 100A DF

Sampled By: Robin Lemay

Date Collected: 02-OCT-19

Lab Sample ID: L2358683-14

Matrix: Water

PAGE 14 of 15

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000689		mg/L	0.005		06-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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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.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

*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 rationing cations to anions
Bicarbonate	See Alkalinity. Report as the anion HCO ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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 of 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.
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.

Chain of Custody (COC) / Analytical Request Form

www.atsglobal.com

Canada Toll Free: 1 800 668 9878



L2358683-CQFC

COC Number: 17 - 762158

Page 2 of 2

[illegible]

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JUNE 2018 FRONT

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



L2358683-COFC

COC Number: 17 - 762159

Page 1 of 2

Report To Contact and company name below will appear on the final report		Report Format / Distribution		Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)																																																																																																																																																																				
Company: <u>Vancouver School Board</u>		Select Report Format: ☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)		Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply																																																																																																																																																																				
Contact: <u>Stephen Thomas</u>		Quality Control (QC) Report with Report ☐ YES ☐ NO		4 day [P4-20%] ☐ 1 Business day [E - 100%] ☐																																																																																																																																																																				
Phone: <u>604 713-5637</u>		☐ Compare Results to Criteria on Report - provide details below if box checked		3 day [P3-25%] ☐ Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐																																																																																																																																																																				
Company address below will appear on the final report		Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX		2 day [P2-50%] ☐																																																																																																																																																																				
Street: <u>1549 Clark Dr.</u>		Email 1 or Fax: <u>sssthenas@vsb.bc.ca</u>		Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm																																																																																																																																																																				
City/Province: <u>Vancouver Bc</u>		Email 2: <u>clenay@vsb.bc.ca</u>		For tests that can not be performed according to the service level selected, you will be contacted.																																																																																																																																																																				
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Contact:		Email 2: <u>clenay@vsb.bc.ca</u>																																																																																																																																																																						
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Drinking Water (DW) Samples¹ (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		SAMPLE CONDITION AS RECEIVED (lab use only)																																																																																																																																																																				
Are samples taken from a Regulated DW System? ☐ YES ☐ NO		<u>No preservatives added</u>		Frozen ☐ SIF Observations Yes ☐ No ☐																																																																																																																																																																				
Are samples for human consumption/ use? ☐ YES ☐ NO				Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐																																																																																																																																																																				
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Released by: _____ Date: _____ Time: _____		Received by: _____ Date: _____ Time: _____		Received by: <u>ltc</u> Date: <u>10/2</u> Time: <u>5:30p</u>																																																																																																																																																																				

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JUNE 2015 PRINT

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



NOT IN SERVICE

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2358685

LSD:

Project Ref: PRINCE OF WALES SECONDARY

Sample ID: CORR C200 RM C201 DF

Sampled By: Robin Lemay

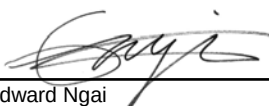
Date Collected: 02-OCT-19

Lab Sample ID: L2358685-1

Matrix: Water

VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

PAGE 1 of 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.00545		mg/L	0.005		08-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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 						
Edward Ngai Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2358685

LSD:

Project Ref: PRINCE OF WALES SECONDARY

Sample ID: CORR D205 RM. D202 DF

Sampled By: Robin Lemay

Date Collected: 02-OCT-19

Lab Sample ID: L2358685-2

Matrix: Water

PAGE 2 of 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00297		mg/L	0.005		08-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Maintenance and Construction
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Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2358685

LSD:

Project Ref: PRINCE OF WALES SECONDARY

Sample ID: RM. D116E DF

Sampled By: Robin Lemay

Date Collected: 02-OCT-19

Lab Sample ID: L2358685-3

Matrix: Water

PAGE 3 of 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000822		mg/L	0.005		08-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2358685

LSD:

Project Ref: PRINCE OF WALES SECONDARY

Sample ID: RM. D125D DF

Sampled By: Robin Lemay

Date Collected: 02-OCT-19

Lab Sample ID: L2358685-4

Matrix: Water

PAGE 4 of 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00483		mg/L	0.005		08-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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NOT IN SERVICE

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2358685

LSD:

Project Ref: PRINCE OF WALES SECONDARY

Sample ID: RM D101 FS

Sampled By: Robin Lemay

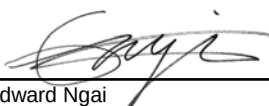
Date Collected: 02-OCT-19

Lab Sample ID: L2358685-5

Matrix: Water

VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

PAGE 5 of 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.00627		mg/L	0.005		08-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2358685

LSD:

Project Ref: PRINCE OF WALES SECONDARY

Sample ID: CORR A 125 RM A101A DF

Sampled By: Robin Lemay

Date Collected: 02-OCT-19

Lab Sample ID: L2358685-6

Matrix: Water

PAGE 6 of 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000801		mg/L	0.005		08-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2358685

LSD:

Project Ref: PRINCE OF WALES SECONDARY

Sample ID: RM B102 BOB

Sampled By: Robin Lemay

Date Collected: 02-OCT-19

Lab Sample ID: L2358685-7

Matrix: Water

PAGE 7 of 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00137		mg/L	0.005		08-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2358685

LSD:

Project Ref: PRINCE OF WALES SECONDARY

Sample ID: CORR B100 RM B103 DF

Sampled By: Robin Lemay

Date Collected: 02-OCT-19

Lab Sample ID: L2358685-8

Matrix: Water

PAGE 8 of 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000617		mg/L	0.005		08-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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NOT IN SERVICE

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2358685

LSD:

Project Ref: PRINCE OF WALES SECONDARY

Sample ID: RM 106 MINI DF

Sampled By: Robin Lemay

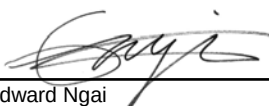
Date Collected: 02-OCT-19

Lab Sample ID: L2358685-9

Matrix: Water

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

PAGE 9 of 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.00714		mg/L	0.005		08-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2358685

LSD:

Project Ref: PRINCE OF WALES SECONDARY

Sample ID: RM 105 MINI DF

Sampled By: Robin Lemay

Date Collected: 02-OCT-19

Lab Sample ID: L2358685-10

Matrix: Water

PAGE 10 of 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00135		mg/L	0.005		08-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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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.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

*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 rationing cations to anions
Bicarbonate	See Alkalinity. Report as the anion HCO ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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 of 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.
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.

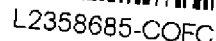
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COC Number: 17 - 762157

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LINE 2018 FROM

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 20-JUN-19

PO No.:

WO No.: L2292995

LSD:

Project Ref: QUEEN ELIZABETH ANNEX

Sample ID: RM 105A

Sampled By: Chris Carrell

Date Collected: 17-JUN-19

Lab Sample ID: L2292995-1

Matrix: Water

PAGE 1 of 4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000851		mg/L	0.005		19-JUN-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 20-JUN-19

PO No.:

WO No.: L2292995

LSD:

Project Ref: QUEEN ELIZABETH ANNEX

Sample ID: RM 109

Sampled By: Chris Carrell

Date Collected: 17-JUN-19

Lab Sample ID: L2292995-2

Matrix: Water

PAGE 2 of 4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000262		mg/L	0.005		19-JUN-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 20-JUN-19

PO No.:

WO No.: L2292995

LSD:

Project Ref: QUEEN ELIZABETH ANNEX

Sample ID: RM 111

Sampled By: Chris Carrell

Date Collected: 17-JUN-19

Lab Sample ID: L2292995-3

Matrix: Water

PAGE 3 of 4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000501		mg/L	0.005		19-JUN-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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 ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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.

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

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

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D.L. - The reporting limit.

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Chain of Custody (COC) / Analytical Request Form



COC Number: 17 - 765236

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LINE 30A FROM

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 16-OCT-19

PO No.: 1517879

WO No.: L2362041

LSD:

Project Ref: QUEEN VICTORIA ELEMENTARY

Sample ID: RM.115 DF

Sampled By: ROBIN LEMAY

Date Collected: 08-OCT-19

Lab Sample ID: L2362041-1

Matrix: WATER

PAGE 1 of 4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000276		mg/L	0.005		13-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 16-OCT-19

PO No.: 1517879

WO No.: L2362041

LSD:

Project Ref: QUEEN VICTORIA ELEMENTARY

Sample ID: RM.122A DF

Sampled By: ROBIN LEMAY

Date Collected: 08-OCT-19

Lab Sample ID: L2362041-2

Matrix: WATER

PAGE 2 of 4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000163		mg/L	0.005		11-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 16-OCT-19

PO No.: 1517879

WO No.: L2362041

LSD:

Project Ref: QUEEN VICTORIA ELEMENTARY

Sample ID: RM.125 DF

Sampled By: ROBIN LEMAY

Date Collected: 08-OCT-19

Lab Sample ID: L2362041-3

Matrix: WATER

PAGE 3 of 4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000260		mg/L	0.005		12-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Guidelines & Objectives

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E. Coli*	Criteria is 0 CFU/100 mL. Certain E. Coli bacteria can be life threatening.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

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

Aesthetic Objective Concentration Levels

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Conductance	Physical test measuring water salinity (dissolved ions or solids)
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Magnesium	See hardness. Common major cation of water chemistry. Elevated levels (>125 mg/L) may exert a cathartic or diuretic action.
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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.
Heterotrophic	
Plate Count	Criteria is 500 cfu/mL Measure of heterotrophic bacteria present.

GLOSSARY OF REPORT TERMS

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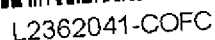
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JUNE 2018 FROM

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 16-OCT-19

PO No.: 1517879

WO No.: L2362041

LSD:

Project Ref: QUEEN VICTORIA ELEMENTARY

Sample ID: RM.115 DF

Sampled By: ROBIN LEMAY

Date Collected: 08-OCT-19

Lab Sample ID: L2362041-1

Matrix: WATER

PAGE 1 of 4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000276		mg/L	0.005		13-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 16-OCT-19

PO No.: 1517879

WO No.: L2362041

LSD:

Project Ref: QUEEN VICTORIA ELEMENTARY

Sample ID: RM.122A DF

Sampled By: ROBIN LEMAY

Date Collected: 08-OCT-19

Lab Sample ID: L2362041-2

Matrix: WATER

PAGE 2 of 4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000163		mg/L	0.005		11-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 16-OCT-19

PO No.: 1517879

WO No.: L2362041

LSD:

Project Ref: QUEEN VICTORIA ELEMENTARY

Sample ID: RM.125 DF

Sampled By: ROBIN LEMAY

Date Collected: 08-OCT-19

Lab Sample ID: L2362041-3

Matrix: WATER

PAGE 3 of 4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
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CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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*Health Canada Canadian Drinking Water Quality Guidelines (MAC limit)

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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.
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Heterotrophic	
Plate Count	Criteria is 500 cfu/mL Measure of heterotrophic bacteria present.

GLOSSARY OF REPORT TERMS

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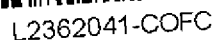
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IC Number: 17 - 756189

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LINE 201A FREQ

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2358680

LSD:

Project Ref: QUILCHENA ELEMENTARY

Sample ID: CORR 301 RM 303 DF

Sampled By: Robin Lemay

Date Collected: 02-OCT-19

Lab Sample ID: L2358680-1

Matrix: Water

PAGE 1 of 5

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000307		mg/L	0.005		06-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2358680

LSD:

Project Ref: QUILCHENA ELEMENTARY

Sample ID: CORR 201 RM 201A DF

Sampled By: Robin Lemay

Date Collected: 02-OCT-19

Lab Sample ID: L2358680-2

Matrix: Water

PAGE 2 of 5

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00168		mg/L	0.005		06-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2358680

LSD:

Project Ref: QUILCHENA ELEMENTARY

Sample ID: RM 111 DF

Sampled By: Robin Lemay

Date Collected: 02-OCT-19

Lab Sample ID: L2358680-3

Matrix: Water

PAGE 3 of 5

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000155		mg/L	0.005		06-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2358680

LSD:

Project Ref: QUILCHENA ELEMENTARY

Sample ID: RM 107 DF

Sampled By: Robin Lemay

Date Collected: 02-OCT-19

Lab Sample ID: L2358680-4

Matrix: Water

PAGE 4 of 5

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000249		mg/L	0.005		06-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

*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 rationing cations to anions
Bicarbonate	See Alkalinity. Report as the anion HCO ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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 of 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.
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.

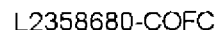
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UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

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



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REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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LINE 2018 FROM

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 16-OCT-19

PO No.: 1517879

WO No.: L2362043

LSD:

Project Ref: SHAUGHNESSY ELEMENTARY

Sample ID: CORR 210 RM.213 SSDF

Sampled By: ROBIN LEMAY

Date Collected: 08-OCT-19

Lab Sample ID: L2362043-1

Matrix: WATER

PAGE 1 of 5

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000117		mg/L	0.005		11-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 16-OCT-19

PO No.: 1517879

WO No.: L2362043

LSD:

Project Ref: SHAUGHNESSY ELEMENTARY

Sample ID: CORR 110 RM 112 FS

Sampled By: ROBIN LEMAY

Date Collected: 08-OCT-19

Lab Sample ID: L2362043-2

Matrix: WATER

PAGE 2 of 5

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000116		mg/L	0.005		11-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 16-OCT-19

PO No.: 1517879

WO No.: L2362043

LSD:

Project Ref: SHAUGHNESSY ELEMENTARY

Sample ID: CORR 100 RM 115 DF

Sampled By: ROBIN LEMAY

Date Collected: 08-OCT-19

Lab Sample ID: L2362043-3

Matrix: WATER

PAGE 3 of 5

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000300		mg/L	0.005		11-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 16-OCT-19

PO No.: 1517879

WO No.: L2362043

LSD:

Project Ref: SHAUGHNESSY ELEMENTARY

Sample ID: RM 114 DF

Sampled By: ROBIN LEMAY

Date Collected: 08-OCT-19

Lab Sample ID: L2362043-4

Matrix: WATER

PAGE 4 of 5

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000718		mg/L	0.005		12-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

Aesthetic Objective Concentration Levels

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Bicarbonate	See Alkalinity. Report as the anion HCO ₃ -1
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Hardness	Classical measure of 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.
Heterotrophic	
Plate Count	Criteria is 500 cfu/mL Measure of heterotrophic bacteria present.

GLOSSARY OF REPORT TERMS

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

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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.

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Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878



L2362043-COFC

COC Number: 17 - 756188

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[illegible]

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

LINE 201A FROM:



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 23-SEP-19

PO No.: 1517879

WO No.: L2347344

LSD:

Project Ref: SIMON FRASER ELEMENTARY

Sample ID: RM. 116 SSDF

Sampled By: Robin Lemay

Date Collected: 13-SEP-19

Lab Sample ID: L2347344-1

Matrix: Water

PAGE 1 of 5

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000482		mg/L	0.005		16-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 23-SEP-19

PO No.: 1517879

WO No.: L2347344

LSD:

Project Ref: SIMON FRASER ELEMENTARY

Sample ID: RM. 114 SSDF

Sampled By: Robin Lemay

Date Collected: 13-SEP-19

Lab Sample ID: L2347344-2

Matrix: Water

PAGE 2 of 5

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00171		mg/L	0.005		16-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 23-SEP-19

PO No.: 1517879

WO No.: L2347344

LSD:

Project Ref: SIMON FRASER ELEMENTARY

Sample ID: ENTRY 133 SSDF

Sampled By: Robin Lemay

Date Collected: 13-SEP-19

Lab Sample ID: L2347344-3

Matrix: Water

PAGE 3 of 5

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00131		mg/L	0.005		16-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 23-SEP-19
PO No.: 1517879
WO No.: L2347344

LSD:

Project Ref: SIMON FRASER ELEMENTARY

Sample ID: RM. 128 SSDF

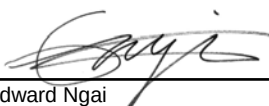
Sampled By: Robin Lemay

Date Collected: 13-SEP-19

Lab Sample ID: L2347344-4

Matrix: Water

PAGE 4 of 5

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000363		mg/L	0.005		16-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

Guidelines & Objectives

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Sodium	Common major cation of water chemistry. Measure of salinity (saltiness).
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Plate Count	Criteria is 500 cfu/mL Measure of heterotrophic bacteria present.

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Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com



L2347344-COFC

COC Number: 17 - 762138

Page of

Report To Contact and company name below will appear on the final report.		Report Format / Distribution		Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)			
Company:	Vancouver School Board	Select Report Format:	☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)	Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply			
Contact:	Stephen Thomas	Quality Control (QC) Report with Report	☐ YES ☐ NO	4 day [P4-20%] ☐			
Phone:	604-713-5637	☐ Compare Results to Criteria on Report - provide details below if box checked		3 day [P3-25%] ☐			
Company address below will appear on the final report		Select Distribution:	☒ EMAIL ☐ MAIL ☐ FAX	2 day [P2-50%] ☐			
Street:	1549 Clark Dr.	Email 1 or Fax	sstthomas@vsb.bc.ca	1 Business day [E - 100%] ☐			
City/Province:	Vancouver B.C.	Email 2	rlemay@vsb.bc.ca	Same Day, Weekend or Statutory holiday [E2 -200%] ☐			
Postal Code:		Email 3		(Laboratory opening fees may apply)			
Invoice To	Same as Report To ☒ YES ☐ NO	Invoice Distribution		Date and Time Required for all E&P TATs: dd-mm-yy hh:mm			
	Copy of Invoice with Report ☐ YES ☐ NO	Select Invoice Distribution:	☒ EMAIL ☐ MAIL ☐ FAX	For tests that can not be performed according to the service level selected, you will be contacted.			
Company:		Email 1 or Fax	sstthomas@vsb.bc.ca	Analysis Request			
Contact:		Email 2	rlemay@vsb.bc.ca	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below			
Project Information		Oil and Gas Required Fields (client use)		NUMBER OF CONTAINERS			
ALS Account # / Quote #:		AFE/Cost Center:	PO#	Lead			
Job #:	Simon Fraser Elementary	Major/Minor Code:	Routing Code:				
PO / AFE:		Requisitioner:					
LSD:		Location:					
ALS Lab Work Order # (lab use only):		ALS Contact:	Sampler: Robin Lemay	SAMPLES ON HOLD SUSPECTED HAZARD (see Special Instructions)			
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)			Sample Type	
	Rm. 116 SSDF	13-09-19	1:30 pm			water	
	Rm. 114 SSDF	13-09-19	1:34 pm			water	
	Entry 133 SSDF	13-09-19	1:38 pm			water	
	Rm. 128 SSDF	13-09-19	1:54 pm			water	
Drinking Water (DW) Samples¹ (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)				SAMPLE CONDITION AS RECEIVED (lab use only)	
Are samples taken from a Regulated DW System?	☐ YES ☐ NO	No preservatives added				Frozen ☐ SIF Observations Yes ☐ No ☐	
Are samples for human consumption/ use?	☐ YES ☐ NO					Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐	
						Cooling Initiated ☒	
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)			
Released by:	Date:	Time:	Received by:	Date:	Time:		
				9/13	4pm		

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 16-OCT-19

PO No.: 1517879

WO No.: L2362048

LSD:

Project Ref: SIR CHARLES TUPPER SECONDARY

Sample ID: RM.407 DF

Sampled By: ROBIN LEMAY

Date Collected: 08-OCT-19

Lab Sample ID: L2362048-1

Matrix: WATER

PAGE 1 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000952		mg/L	0.005		12-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 16-OCT-19

PO No.: 1517879

WO No.: L2362048

LSD:

Project Ref: SIR CHARLES TUPPER SECONDARY

Sample ID: RM.405 DF

Sampled By: ROBIN LEMAY

Date Collected: 08-OCT-19

Lab Sample ID: L2362048-2

Matrix: WATER

PAGE 2 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000496		mg/L	0.005		11-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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ATTN: Stephen Thomas

Date: 16-OCT-19

PO No.: 1517879

WO No.: L2362048

LSD:

Project Ref: SIR CHARLES TUPPER SECONDARY

Sample ID: RM.305DF

Sampled By: ROBIN LEMAY

Date Collected: 08-OCT-19

Lab Sample ID: L2362048-3

Matrix: WATER

PAGE 3 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000847		mg/L	0.005		12-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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ATTN: Stephen Thomas

Date: 16-OCT-19

PO No.: 1517879

WO No.: L2362048

LSD:

Project Ref: SIR CHARLES TUPPER SECONDARY

Sample ID: RM.306 SSDF

Sampled By: ROBIN LEMAY

Date Collected: 08-OCT-19

Lab Sample ID: L2362048-4

Matrix: WATER

PAGE 4 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000395		mg/L	0.005		11-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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ATTN: Stephen Thomas

Date: 16-OCT-19

PO No.: 1517879

WO No.: L2362048

LSD:

Project Ref: SIR CHARLES TUPPER SECONDARY

Sample ID: RM.307 DF

Sampled By: ROBIN LEMAY

Date Collected: 08-OCT-19

Lab Sample ID: L2362048-5

Matrix: WATER

PAGE 5 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000757		mg/L	0.005		11-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Date: 16-OCT-19

PO No.: 1517879

WO No.: L2362048

LSD:

Project Ref: SIR CHARLES TUPPER SECONDARY

Sample ID: RM.204 SSDF

Sampled By: ROBIN LEMAY

Date Collected: 08-OCT-19

Lab Sample ID: L2362048-6

Matrix: WATER

PAGE 6 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00117		mg/L	0.005		11-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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ATTN: Stephen Thomas

Date: 16-OCT-19

PO No.: 1517879

WO No.: L2362048

LSD:

Project Ref: SIR CHARLES TUPPER SECONDARY

Sample ID: RM.200 DF

Sampled By: ROBIN LEMAY

Date Collected: 08-OCT-19

Lab Sample ID: L2362048-7

Matrix: WATER

PAGE 7 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00177		mg/L	0.005		11-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Date: 16-OCT-19

PO No.: 1517879

WO No.: L2362048

LSD:

Project Ref: SIR CHARLES TUPPER SECONDARY

Sample ID: RM.119A DF

Sampled By: ROBIN LEMAY

Date Collected: 08-OCT-19

Lab Sample ID: L2362048-8

Matrix: WATER

PAGE 8 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000563		mg/L	0.005		12-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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PO No.: 1517879

WO No.: L2362048

LSD:

Project Ref: SIR CHARLES TUPPER SECONDARY

Sample ID: RM.112 DF

Sampled By: ROBIN LEMAY

Date Collected: 08-OCT-19

Lab Sample ID: L2362048-9

Matrix: WATER

PAGE 9 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00180		mg/L	0.005		12-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Date: 16-OCT-19

PO No.: 1517879

WO No.: L2362048

LSD:

Project Ref: SIR CHARLES TUPPER SECONDARY

Sample ID: CORR.100 RM 104 DF

Sampled By: ROBIN LEMAY

Date Collected: 08-OCT-19

Lab Sample ID: L2362048-10

Matrix: WATER

PAGE 10 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000238		mg/L	0.005		11-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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ATTN: Stephen Thomas

Date: 16-OCT-19

PO No.: 1517879

WO No.: L2362048

LSD:

Project Ref: SIR CHARLES TUPPER SECONDARY

Sample ID: CORR.110 RM.108 FS

Sampled By: ROBIN LEMAY

Date Collected: 08-OCT-19

Lab Sample ID: L2362048-11

Matrix: WATER

PAGE 11 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00137		mg/L	0.005		11-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Date: 16-OCT-19

PO No.: 1517879

WO No.: L2362048

LSD:

Project Ref: SIR CHARLES TUPPER SECONDARY

Sample ID: CORR.125 RM 109B SSDF

Sampled By: ROBIN LEMAY

Date Collected: 08-OCT-19

Lab Sample ID: L2362048-12

Matrix: WATER

PAGE 12 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000399		mg/L	0.005		11-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Date: 16-OCT-19

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WO No.: L2362048

LSD:

Project Ref: SIR CHARLES TUPPER SECONDARY

Sample ID: CORR.125 RM103C DF

Sampled By: ROBIN LEMAY

Date Collected: 08-OCT-19

Lab Sample ID: L2362048-13

Matrix: WATER

PAGE 13 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000592		mg/L	0.005		12-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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ATTN: Stephen Thomas

Date: 16-OCT-19

PO No.: 1517879

WO No.: L2362048

LSD:

Project Ref: SIR CHARLES TUPPER SECONDARY

Sample ID: RM114 BUB

Sampled By: ROBIN LEMAY

Date Collected: 08-OCT-19

Lab Sample ID: L2362048-14

Matrix: WATER

PAGE 14 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00166		mg/L	0.005		11-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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ATTN: Stephen Thomas

Date: 16-OCT-19

PO No.: 1517879

WO No.: L2362048

LSD:

Project Ref: SIR CHARLES TUPPER SECONDARY

Sample ID: RM 100 BUB

Sampled By: ROBIN LEMAY

Date Collected: 08-OCT-19

Lab Sample ID: L2362048-15

Matrix: WATER

PAGE 15 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000931		mg/L	0.005		11-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Date: 16-OCT-19

PO No.: 1517879

WO No.: L2362048

LSD:

Project Ref: SIR CHARLES TUPPER SECONDARY

Sample ID: RM 115 BUB

Sampled By: ROBIN LEMAY

Date Collected: 08-OCT-19

Lab Sample ID: L2362048-16

Matrix: WATER

PAGE 16 of 17

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00137		mg/L	0.005		11-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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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.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

*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 ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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 of 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.
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.



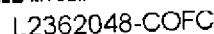
L2362048-COFC

Report To Contact and company name below will appear on the final report			Report Form			Low - Contact your AM to confirm all E&P TATs (surcharges may apply)																																																																			
Company: <u>Vancouver School Board</u>			Select Report Format: ☒ PDF			Standard TAT If received by 3 pm - business days - no surcharges apply																																																																			
Contact: <u>Stephen Thomas</u>			Quality Control (QC) Report with Report ☐ YES ☐ NO			4 day [P4-20%] ☐																																																																			
Phone: <u>604 713-5637</u>			☐ Compare Results to Criteria on Report - provide details below if box checked			3 day [P3-25%] ☐																																																																			
Company address below will appear on the final report			Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX			2 day [P2-50%] ☐																																																																			
Street: <u>1549 Clark Dr</u>			Email 1 or Fax: <u>ssstomas@vsb.bc.ca</u>			1 Business day [E - 100%]																																																																			
City/Province: <u>Vancouver B.C.</u>			Email 2: <u>clenay@vsb.bc.ca</u>			Same Day, Weekend or Statutory holiday [E2 - 200% (Laboratory opening fees may apply)]																																																																			
Postal Code:			Email 3:			Date and Time Required for all E&P TATs: dd-mm-yy hh:mm																																																																			
Invoice To: Same as Report To ☒ YES ☐ NO			Invoice Distribution			For tests that can not be performed according to the service level selected, you will be contacted.																																																																			
Copy of Invoice with Report ☐ YES ☐ NO			Select Invoice Distribution: ☒ EMAIL ☐ MAIL ☐ FAX			Analysis Request																																																																			
Company:			Email 1 or Fax: <u>ssstomas@vsb.bc.ca</u>			<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td colspan="12">Indicate Filtered (F), Preserved (P) or Filtered and Preserved (FP) below</td> </tr> <tr> <td colspan="12" style="height: 150px; vertical-align: middle; text-align: center;"> NUMBER OF CONTAINERS Lead SAMPLES ON HOLD SUSPECTED HAZARD (see Special Instructions) </td> </tr> </table>			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (FP) below												NUMBER OF CONTAINERS Lead SAMPLES ON HOLD SUSPECTED HAZARD (see Special Instructions)																																																				
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Contact:			Email 2: <u>clenay@vsb.bc.ca</u>																																																																						
Project Information			Oil and Gas Required Fields (client use)																																																																						
ALS Account # / Quote #:			AFE/Cost Center:																																																																						
Job #: <u>Sir Charles Tupper Secondary</u>			Major/Minor Code:																																																																						
PO / AFE:			Routing Code:																																																																						
LSD:			Requisitioner:																																																																						
ALS Lab Work Order # (lab use only):			Location:																																																																						
ALS Contact:			Sampler: <u>Robin Lenay</u>																																																																						
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>ALS Sample # (lab use only)</th> <th>Sample Identification and/or Coordinates (This description will appear on the report)</th> <th>Date (dd-mm-yy)</th> <th>Time (h:mm)</th> <th>Sample Type</th> </tr> </thead> <tbody> <tr><td></td><td>Rm. 407 DF</td><td>08-10-19</td><td>10:04am</td><td>water</td></tr> <tr><td></td><td>Rm. 405 DF</td><td>08-10-19</td><td>10:08am</td><td>water</td></tr> <tr><td></td><td>Rm. 305 DF</td><td>08-10-19</td><td>10:17am</td><td>water</td></tr> <tr><td></td><td>Rm. 306 SSDF</td><td>08-10-19</td><td>10:26am</td><td>water</td></tr> <tr><td></td><td>Rm. 307 DF</td><td>08-10-19</td><td>10:26am</td><td>water</td></tr> <tr><td></td><td>Rm. 204 SSDF</td><td>08-10-19</td><td>10:32am</td><td>water</td></tr> <tr><td></td><td>Rm. 200 DF</td><td>08-10-19</td><td>10:37am</td><td>water</td></tr> <tr><td></td><td>Rm. 119A DF</td><td>08-10-19</td><td>10:42am</td><td>water</td></tr> <tr><td></td><td>Rm. 112 DF</td><td>08-10-19</td><td>10:46am</td><td>water</td></tr> <tr><td></td><td>Corr. 100 Rm. 104 DF</td><td>08-10-19</td><td>10:51am</td><td>water</td></tr> <tr><td></td><td>Corr. 110 Rm. 108 FS</td><td>08-10-19</td><td>10:55am</td><td>water</td></tr> <tr><td></td><td>Corr. 125 Rm. 109b SSDF</td><td>08-10-19</td><td>11:03am</td><td>water</td></tr> </tbody> </table>									ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (h:mm)	Sample Type		Rm. 407 DF	08-10-19	10:04am	water		Rm. 405 DF	08-10-19	10:08am	water		Rm. 305 DF	08-10-19	10:17am	water		Rm. 306 SSDF	08-10-19	10:26am	water		Rm. 307 DF	08-10-19	10:26am	water		Rm. 204 SSDF	08-10-19	10:32am	water		Rm. 200 DF	08-10-19	10:37am	water		Rm. 119A DF	08-10-19	10:42am	water		Rm. 112 DF	08-10-19	10:46am	water		Corr. 100 Rm. 104 DF	08-10-19	10:51am	water		Corr. 110 Rm. 108 FS	08-10-19	10:55am	water		Corr. 125 Rm. 109b SSDF	08-10-19	11:03am	water
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	Corr. 125 Rm. 109b SSDF	08-10-19	11:03am	water																																																																					
Drinking Water (DW) Samples (client use)			Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)			SAMPLE CONDITION AS RECEIVED (lab use only)																																																																			
Are samples taken from a Regulated DW System? ☐ YES ☐ NO			No preservatives added			Frozen ☐ SIF Observations Yes ☐ No ☐																																																																			
Are samples for human consumption/ use? ☐ YES ☐ NO						Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐																																																																			
						Cooling Initiated ☒																																																																			
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SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)																																																																			
Released by:			Received by:			Received by: <u>HA</u>																																																																			
Date:			Date:			Date: <u>10/8</u>																																																																			
Time:			Time:			Time: <u>2:40P</u>																																																																			



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COC Number: 17 - 756192

Page 2 of 2

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JUNE 2018 5501

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 19-SEP-19

PO No.: 1517879

WO No.: L2345645

LSD:

Project Ref: SIR JAMES DOUGLAS ANNEX

Sample ID: RM 129 DF

Sampled By: Robin Lemay

Date Collected: 11-SEP-19

Lab Sample ID: L2345645-1

Matrix: Water

PAGE 1 of 4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000311		mg/L	0.005		13-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 19-SEP-19

PO No.: 1517879

WO No.: L2345645

LSD:

Project Ref: SIR JAMES DOUGLAS ANNEX

Sample ID: RM 126 DF

Sampled By: Robin Lemay

Date Collected: 11-SEP-19

Lab Sample ID: L2345645-2

Matrix: Water

PAGE 2 of 4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000801		mg/L	0.005		13-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 19-SEP-19

PO No.: 1517879

WO No.: L2345645

LSD:

Project Ref: SIR JAMES DOUGLAS ANNEX

Sample ID: RM 118 FS

Sampled By: Robin Lemay

Date Collected: 11-SEP-19

Lab Sample ID: L2345645-3

Matrix: Water

PAGE 3 of 4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00165		mg/L	0.005		13-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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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.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

*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 ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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 of 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.
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.

Chain of Custody (COC) / Analytical Request Form

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Canada Toll Free: 1 800 668 9878



L2345645-COFC

COC Number: 17 - 756176

Page of

[illegible]

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

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LINE 2010 FROM



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 18-SEP-19

PO No.: 1517879

WO No.: L2344650

LSD:

Project Ref: SIR JOHN FRANKLIN ELEMENTARY

Sample ID: CORR 300 DF

Sampled By: ROBIN LEMAY

Date Collected: 10-SEP-19

Lab Sample ID: L2344650-1

Matrix: WATER

PAGE 1 of 5

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000297		mg/L	0.005		18-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 18-SEP-19

PO No.: 1517879

WO No.: L2344650

LSD:

Project Ref: SIR JOHN FRANKLIN ELEMENTARY

Sample ID: CORR 200 DF

Sampled By: ROBIN LEMAY

Date Collected: 10-SEP-19

Lab Sample ID: L2344650-2

Matrix: WATER

PAGE 2 of 5

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000158		mg/L	0.005		18-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 18-SEP-19

PO No.: 1517879

WO No.: L2344650

LSD:

Project Ref: SIR JOHN FRANKLIN ELEMENTARY

Sample ID: RM 112 DF

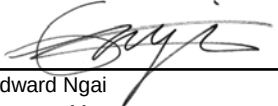
Sampled By: ROBIN LEMAY

Date Collected: 10-SEP-19

Lab Sample ID: L2344650-3

Matrix: WATER

PAGE 3 of 5

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000432		mg/L	0.005		18-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 18-SEP-19

PO No.: 1517879

WO No.: L2344650

LSD:

Project Ref: SIR JOHN FRANKLIN ELEMENTARY

Sample ID: RM 105 FS

Sampled By: ROBIN LEMAY

Date Collected: 10-SEP-19

Lab Sample ID: L2344650-4

Matrix: WATER

PAGE 4 of 5

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000080		mg/L	0.005		18-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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Guidelines & Objectives

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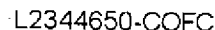
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

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COC Number: 17 - 763422

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LINE 2018 FROM

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-JUN-19

PO No.: 1517879

WO No.: L2281686

LSD:

Project Ref: SIR MATTHEW BEGBIE ELEMENTRY

Sample ID: RM 104

Sampled By: Chris Carrell

Date Collected: 29-MAY-19

Lab Sample ID: L2281686-1

Matrix: water

PAGE 1 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000239		mg/L	0.005		01-JUN-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-JUN-19

PO No.: 1517879

WO No.: L2281686

LSD:

Project Ref: SIR MATTHEW BEGBIE ELEMENTRY

Sample ID: RM 010

Sampled By: Chris Carrell

Date Collected: 29-MAY-19

Lab Sample ID: L2281686-2

Matrix: water

PAGE 2 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000642		mg/L	0.005		01-JUN-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-JUN-19

PO No.: 1517879

WO No.: L2281686

LSD:

Project Ref: SIR MATTHEW BEGBIE ELEMENTRY

Sample ID: RM 007

Sampled By: Chris Carrell

Date Collected: 29-MAY-19

Lab Sample ID: L2281686-3

Matrix: water

PAGE 3 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00115		mg/L	0.005		01-JUN-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-JUN-19

PO No.: 1517879

WO No.: L2281686

LSD:

Project Ref: SIR MATTHEW BEGBIE ELEMENTRY

Sample ID: RM 106

Sampled By: Chris Carrell

Date Collected: 29-MAY-19

Lab Sample ID: L2281686-4

Matrix: water

PAGE 4 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000303		mg/L	0.005		01-JUN-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-JUN-19

PO No.: 1517879

WO No.: L2281686

LSD:

Project Ref: SIR MATTHEW BEGBIE ELEMENTRY

Sample ID: RM 204

Sampled By: Chris Carrell

Date Collected: 29-MAY-19

Lab Sample ID: L2281686-5

Matrix: water

PAGE 5 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000494		mg/L	0.005		01-JUN-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-JUN-19

PO No.: 1517879

WO No.: L2281686

LSD:

Project Ref: SIR MATTHEW BEGBIE ELEMENTRY

Sample ID: RM 113

Sampled By: Chris Carrell

Date Collected: 29-MAY-19

Lab Sample ID: L2281686-6

Matrix: water

PAGE 6 of 7

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00334		mg/L	0.005		01-JUN-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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

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 ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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.



Chain of Custody (COC) / Analytical
Request Form

Canada Toll Free: 1 800 668 9878



L2281686-COFC

COC Number: 17 - 829280

Page of

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Report To Contact and company name below will appear on the final report.		Report Format / Distribution		Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)	
Company:	Vancouver School Board	Select Report Format:	☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)	Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply	
Contact:	Stephen Thomas	Quality Control (QC) Report with Report	☒ YES ☐ NO	4 day [P4-20%] ☐ 1 Business day [E - 100%] ☐	
Phone:	604-713-5637	☐ Compare Results to Criteria on Report - provide details below if box checked		3 day [P3-25%] ☐ Same Day, Weekend or Statutory holiday [E2 -200%] ☐	
Company address below will appear on the final report		Select Distribution:	☒ EMAIL ☐ MAIL ☐ FAX	2 day [P2-50%] ☐ (Laboratory opening fees may apply) ☐	
Street:	1544 Clark Dr.	Email 1 or Fax	SSThomas@VSL.bc.ca	Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm	
City/Province:	Vancouver / BC	Email 2		For tests that can not be performed according to the service level selected, you will be contacted.	
Postal Code:		Email 3		Analysis Request	
Invoice To	Same as Report To ☒ YES ☐ NO	Invoice Distribution		NUMBER OF CONTAINERS LEAD SAMPLES ON HOLD SUSPECTED HAZARD (see Special Instructions)	
	Copy of Invoice with Report ☐ YES ☐ NO	Select Invoice Distribution:	☒ EMAIL ☐ MAIL ☐ FAX		
Company:		Email 1 or Fax	SSThomas@VSL.bc.ca		
Contact:		Email 2			
Project Information		Oil and Gas Required Fields (client use)			
ALS Account # / Quote #:		AFE/Cost Center:	PO#		
Job #:	Sir Matthew Begbie Elementary	Major/Minor Code:	Routing Code:		
PO/AFE:		Requisitioner:			
LSD:		Location:			
ALS Lab Work Order # (lab use only):		ALS Contact:	Sampler: Chris Carrell		
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	
	RM 104	29-May-19	10:21	Water	
	RM 010	29-May-19	10:10	Water	
	RM 007	29-May-19	10:07	Water	
	RM 106	29-May-19	10:18	Water	
	RM 204	29-May-19	10:24	Water	
	RM 113	29-May-19	10:15	Water	
	RM				
Drinking Water (DW) Samples¹ (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		SAMPLE CONDITION AS RECEIVED (lab use only)	
Are samples taken from a Regulated DW System? ☐ YES ☐ NO		No preservatives added		Frozen ☐ SIF Observations Yes ☐ No ☐	
Are samples for human consumption/ use? ☐ YES ☐ NO				Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐	
				Cooling Initiated ☒	
				INITIAL COOLER TEMPERATURES °C	
				18	
				FINAL COOLER TEMPERATURES °C	
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)	
Released by:	Date:	Time:	Received by:	Date:	Time:
				29/5/19	2:55pm

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY

YELLOW - CLIENT COPY

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 15-MAY-19

PO No.: 1517879

WO No.: L2269898

LSD:

Project Ref: SIR RICHARD MCBRIDE ANNEX

Sample ID: RM 112

Sampled By: Chris Carrell

Date Collected: 08-MAY-19

Lab Sample ID: L2269898-1

Matrix: Water

PAGE 1 of 4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000486		mg/L	0.005		11-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 15-MAY-19

PO No.: 1517879

WO No.: L2269898

LSD:

Project Ref: SIR RICHARD MCBRIDE ANNEX

Sample ID: RM 123

Sampled By: Chris Carrell

Date Collected: 08-MAY-19

Lab Sample ID: L2269898-2

Matrix: Water

PAGE 2 of 4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000323		mg/L	0.005		11-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 15-MAY-19

PO No.: 1517879

WO No.: L2269898

LSD:

Project Ref: SIR RICHARD MCBRIDE ANNEX

Sample ID: RM 113

Sampled By: Chris Carrell

Date Collected: 08-MAY-19

Lab Sample ID: L2269898-3

Matrix: Water

PAGE 3 of 4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00108		mg/L	0.005		11-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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

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 ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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.

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878



L2269898-COFC

COC Number: 17 - 829277

Page of

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[illegible]

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JUNE 2014 EDITION

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-OCT-19

PO No.: 1517879

WO No.: L2355206

LSD:

Project Ref: SIR RICHARD MCBRIDE ELEMENTARY

Sample ID: COR 211 RM 211A DF

Sampled By: Robin Lemay

Date Collected: 26-SEP-19

Lab Sample ID: L2355206-1

Matrix: Water

PAGE 1 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000177		mg/L	0.005		30-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-OCT-19

PO No.: 1517879

WO No.: L2355206

LSD:

Project Ref: SIR RICHARD MCBRIDE ELEMENTARY

Sample ID: COR 120 RM 120 B DF

Sampled By: Robin Lemay

Date Collected: 26-SEP-19

Lab Sample ID: L2355206-2

Matrix: Water

PAGE 2 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000465		mg/L	0.005		30-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-OCT-19

PO No.: 1517879

WO No.: L2355206

LSD:

Project Ref: SIR RICHARD MCBRIDE ELEMENTARY

Sample ID: PLAY AREA 003 DF

Sampled By: Robin Lemay

Date Collected: 26-SEP-19

Lab Sample ID: L2355206-3

Matrix: Water

PAGE 3 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000196		mg/L	0.005		30-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-OCT-19

PO No.: 1517879

WO No.: L2355206

LSD:

Project Ref: SIR RICHARD MCBRIDE ELEMENTARY

Sample ID: PLAY AREA 005 FS

Sampled By: Robin Lemay

Date Collected: 26-SEP-19

Lab Sample ID: L2355206-4

Matrix: Water

PAGE 4 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000113		mg/L	0.005		30-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-OCT-19

PO No.: 1517879

WO No.: L2355206

LSD:

Project Ref: SIR RICHARD MCBRIDE ELEMENTARY

Sample ID: RM 014 DF

Sampled By: Robin Lemay

Date Collected: 26-SEP-19

Lab Sample ID: L2355206-5

Matrix: Water

PAGE 5 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00200		mg/L	0.005		30-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-OCT-19

PO No.: 1517879

WO No.: L2355206

LSD:

Project Ref: SIR RICHARD MCBRIDE ELEMENTARY

Sample ID: RM 012 DF

Sampled By: Robin Lemay

Date Collected: 26-SEP-19

Lab Sample ID: L2355206-6

Matrix: Water

PAGE 6 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000410		mg/L	0.005		30-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-OCT-19

PO No.: 1517879

WO No.: L2355206

LSD:

Project Ref: SIR RICHARD MCBRIDE ELEMENTARY

Sample ID: COR 009 RM 001 DF

Sampled By: Robin Lemay

Date Collected: 26-SEP-19

Lab Sample ID: L2355206-7

Matrix: Water

PAGE 7 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000350		mg/L	0.005		30-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

*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 rationing cations to anions
Bicarbonate	See Alkalinity. Report as the anion HCO ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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 of 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.
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.



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com



L2355206-COFC

COC Number: 17 - 762148

Page of

Report To		Report Format / Distribution		Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)	
Contact and company name below will appear on the final report		Select Report Format: ☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)		Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply	
Company:	Vancouver School Board	Quality Control (QC) Report with Report ☐ YES ☒ NO		1 Business day [E - 100%]	
Contact:	Stephen Thomas	☐ Compare Results to Criteria on Report - provide details below if box checked		Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)]	
Phone:	604-713-5637	Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX		Date and Time Required for all E&P TATs: dd-mm-yy hh:mm	
Company address below will appear on the final report		Email 1 or Fax: ssthanas@vsb.bc.ca		For tests that cannot be performed according to the service level selected, you will be contacted.	
Street:	1549 Clark Dr.	Email 2: rlenay@vsb.bc.ca		Analysis Request	
City/Province:	Vancouver B.C.	Email 3:		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below	
Postal Code:				NUMBER OF CONTAINERS	
Invoice To	Same as Report To ☒ YES ☐ NO	Select Invoice Distribution: ☒ EMAIL ☐ MAIL ☐ FAX		SAMPLES ON HOLD	
	Copy of Invoice with Report ☐ YES ☐ NO	Email 1 or Fax: ssthanas@vsb.bc.ca		SUSPECTED HAZARD (see Special Instructions)	
Company:		Email 2: rlenay@vsb.bc.ca			
Contact:					
Project Information		Oil and Gas Required Fields (client use)			
ALS Account # / Quote #:		AFE/Cost Center:			
Job #:	Sir Richard McBride Elementary	Major/Minor Code:			
PO / AFE:		Requisitioner:			
LSD:		Location:			
ALS Lab Work Order # (lab use only):		ALS Contact:		Sampler: Robin Lennay	
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type	
	Cor 211 Rm. 211A DF	26-09-19	12:35pm	water	
	Cor 120 Rm. 120B DF	26-09-19	12:48pm	water	
	Play Area 003 DF	26-09-19	12:54pm	water	
	Play Area 005 FS	26-09-19	12:58pm	water	
	Rm. 014 DF	26-09-19	1:02pm	water	
	Rm. 012 DF	26-09-19	1:07pm	water	
	Cor 009 Rm. 001 DF	26-09-19	1:13pm	water	
Drinking Water (DW) Samples (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		SAMPLE CONDITION AS RECEIVED (lab use only)	
Are samples taken from a Regulated DW System?				Frozen ☐ SIF Observations Yes ☐ No ☐	
☐ YES ☐ NO				Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐	
Are samples for human consumption/ use?				Cooling Initiated ☒	
☐ YES ☐ NO				INITIAL COOLER TEMPERATURES °C	
				FINAL COOLER TEMPERATURES °C	
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)	
Released by:	Date:	Time:	Received by:	Date:	Time:
				9/26	2:52p

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JUNE 2016 FRONT

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



Date: 22-JUL-19

PO No.: 1517879

WO No.: L2310054

LSD:

Project Ref:

Sample ID: RM. B106

Sampled By: Robin Lemay

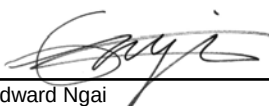
Date Collected: 15-JUL-19

Lab Sample ID: L2310054-1

Matrix:

VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

PAGE 1 of 2

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.0128		mg/L	0.005		17-JUL-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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 						
Edward Ngai Account Manager						

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

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 ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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.



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878



L2310054-COFC

COC Number: 17 - 828778

Page of

www.alsglobal.com

Report To Contact and company name below will appear on the final report		Report Format / Distribution		Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)			
Company:	Vancouver School Board	Select Report Format:	☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)	Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply			
Contact:	Stephen Thomas	Quality Control (QC) Report with Report	☐ YES ☒ NO	4 day [P4-20%] ☐			
Phone:	604-713-5637	☐ Compare Results to Criteria on Report - provide details below if box checked		3 day [P3-25%] ☐			
Company address below will appear on the final report		Select Distribution:	☒ EMAIL ☐ MAIL ☐ FAX	2 day [P2-50%] ☐			
Street:	1549 Clark Dr.	Email 1 or Fax	ss.thomas@vsb.bc.ca	1 Business day [E - 100%] ☐			
City/Province:	Vancouver B.C.	Email 2	rlamay@vsb.bc.ca	Same Day, Weekend or Statutory holiday [E2 - 200%] ☐			
Postal Code:		Email 3		(Laboratory opening fees may apply)			
Invoice To		Invoice Distribution		Date and Time Required for all E&P TATs:			
Same as Report To	☒ YES ☐ NO	Select Invoice Distribution:	☒ EMAIL ☐ MAIL ☐ FAX	dd-mmm-yy hh:mm			
Copy of Invoice with Report	☐ YES ☐ NO	Email 1 or Fax	ss.thomas@vsb.bc.ca	For tests that can not be performed according to the service level selected, you will be contacted.			
Company:	Sir Wilfred Grenfell	Email 2	rlamay@vsb.bc.ca	Analysis Request			
Contact:				Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below			
Project Information		Oil and Gas Required Fields (client use)		NUMBER OF CONTAINERS			
ALS Account # / Quote #:		AFE/Cost Center:	PO#	Lead			
Job #:		Major/Minor Code:	Routing Code:				
PO / AFE:		Requisitioner:					
LSD:		Location:					
ALS Lab Work Order # (lab use only):		ALS Contact:	Sampler: Robin Lemay	SAMPLES ON HOLD			
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)			SUSPECTED HAZARD (see Special Instructions)	
	Rm. B106	15-07-19	1:50				
Drinking Water (DW) Samples¹ (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		SAMPLE CONDITION AS RECEIVED (lab use only)			
Are samples taken from a Regulated DW System?		No Preservatives added		Frozen ☒ SIF Observations Yes ☐ No ☐			
☐ YES ☐ NO				Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐			
Are samples for human consumption/ use?				Cooling Initiated ☒			
☐ YES ☐ NO				INITIAL COOLER TEMPERATURES °C			
				FINAL COOLER TEMPERATURES °C			
				17			
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)			
Released by:	Date:	Time:	Received by:	Date:	Time:		
				July 15	2:31pm		

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY

YELLOW - CLIENT COPY

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-OCT-19

PO No.: 1517879

WO No.: L2354288

LSD:

Project Ref: SIR WILFRED LAURIER ELEMENTARY

Sample ID: LOR 117 RM 104 SSDF

Sampled By: Robin Lemay

Date Collected: 25-SEP-19

Lab Sample ID: L2354288-1

Matrix: Water

PAGE 1 of 4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000161		mg/L	0.005		27-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-OCT-19

PO No.: 1517879

WO No.: L2354288

LSD:

Project Ref: SIR WILFRED LAURIER ELEMENTARY

Sample ID: RM. 020C SSDF

Sampled By: Robin Lemay

Date Collected: 25-SEP-19

Lab Sample ID: L2354288-2

Matrix: Water

PAGE 2 of 4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000191		mg/L	0.005		27-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-OCT-19

PO No.: 1517879

WO No.: L2354288

LSD:

Project Ref: SIR WILFRED LAURIER ELEMENTARY

Sample ID: RM. 020 SSDF

Sampled By: Robin Lemay

Date Collected: 25-SEP-19

Lab Sample ID: L2354288-3

Matrix: Water

PAGE 3 of 4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000160		mg/L	0.005		27-SEP-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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

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Carbonate	See Alkalinity. Reported at the anion CO ₃ -2
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Chloride	Common major anion of water chemistry.
Conductance	Physical test measuring water salinity (dissolved ions or solids)
Hardness	Classical measure of 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.
Heterotrophic	
Plate Count	Criteria is 500 cfu/mL Measure of heterotrophic bacteria present.

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

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

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< - Less than.

D.L. - The reporting limit.

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

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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.



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878



L2354288-COFC

COC Number: 17 - 762145

Page of

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Report To Contact and company name below will appear on the final report		Report Format / Distribution		Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)	
Company:	Vancouver School Board	Select Report Format:	☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)	Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply	
Contact:	Stephen Thomas	Quality Control (QC) Report with Report	☐ YES ☐ NO	4 day [P4-20%] ☐ 1 Business day [E - 100%] ☐	
Phone:	604-713-5637	☐ Compare Results to Criteria on Report - provide details below if box checked		3 day [P3-25%] ☐ Same Day, Weekend or Statutory holiday [E2 -200%] ☐	
Company address below will appear on the final report		Select Distribution:	☒ EMAIL ☐ MAIL ☐ FAX	2 day [P2-50%] ☐ (Laboratory opening fees may apply)	
Street:	1549 Clark Dr.	Email 1 or Fax	ss.thomas@vsb.bc.ca	Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm	
City/Province:	Vancouver B.C.	Email 2	rlemay@vsb.bc.ca	For tests that can not be performed according to the service level selected, you will be contacted.	
Postal Code:		Email 3		Analysis Request	
Invoice To	Same as Report To ☒ YES ☐ NO	Invoice Distribution		NUMBER OF CONTAINERS Lead SAMPLES ON HOLD SUSPECTED HAZARD (see Special Instructions)	
Copy of Invoice with Report	☐ YES ☐ NO	Select Invoice Distribution:	☒ EMAIL ☐ MAIL ☐ FAX		
Company:		Email 1 or Fax	ss.thomas@vsb.bc.ca		
Contact:		Email 2	rlemay@vsb.bc.ca		
Project Information		Oil and Gas Required Fields (client use)			
ALS Account # / Quote #:		AFE/Cost Center:	PO#		
Job #:	Sir Wilfred Laurier Elementary	Major/Minor Code:	Routing Code:		
PO / AFE:		Requisitioner:			
LSD:		Location:			
ALS Lab Work Order # (lab use only):		ALS Contact:			
		Sampler: Robin Lemay			
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	
	Cov 117 Rm. 104 SSDF	25-09-19	12:58	water	
	Rm. 020C SSDF	25-09-19	1:12pm	water	
	Rm. 020 SSDF	25-09-19	1:17pm	water	
Drinking Water (DW) Samples¹ (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		SAMPLE CONDITION AS RECEIVED (lab use only)	
Are samples taken from a Regulated DW System?	☐ YES ☐ NO	No preservatives added		Frozen ☐ SIF Observations Yes ☐ No ☐	
Are samples for human consumption/ use?	☐ YES ☐ NO			Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐	
				Cooling Initiated ☒	
				INITIAL COOLER TEMPERATURES °C	
				FINAL COOLER TEMPERATURES °C	
				14	
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)	
Released by:	Date:	Time:	Received by:	Date:	Time:
				9/25	3:19

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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JUNE 2018 FROST

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-JUN-19

PO No.: 1517879

WO No.: L2282546

LSD:

Project Ref: SIR WILLIAM OSLER ELEMENTRY

Sample ID: RM 127A

Sampled By: Chris Carrell

Date Collected: 30-MAY-19

Lab Sample ID: L2282546-1

Matrix:

PAGE 1 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000420		mg/L	0.005		03-JUN-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-JUN-19

PO No.: 1517879

WO No.: L2282546

LSD:

Project Ref: SIR WILLIAM OSLER ELEMENTRY

Sample ID: RM 129

Sampled By: Chris Carrell

Date Collected: 30-MAY-19

Lab Sample ID: L2282546-2

Matrix:

PAGE 2 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000778		mg/L	0.005		03-JUN-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-JUN-19

PO No.: 1517879

WO No.: L2282546

LSD:

Project Ref: SIR WILLIAM OSLER ELEMENTRY

Sample ID: RM 119

Sampled By: Chris Carrell

Date Collected: 30-MAY-19

Lab Sample ID: L2282546-3

Matrix:

PAGE 3 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000460		mg/L	0.005		03-JUN-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-JUN-19

PO No.: 1517879

WO No.: L2282546

LSD:

Project Ref: SIR WILLIAM OSLER ELEMENTRY

Sample ID: RM 109

Sampled By: Chris Carrell

Date Collected: 30-MAY-19

Lab Sample ID: L2282546-4

Matrix:

PAGE 4 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00111		mg/L	0.005		03-JUN-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-JUN-19

PO No.: 1517879

WO No.: L2282546

LSD:

Project Ref: SIR WILLIAM OSLER ELEMENTRY

Sample ID: RM 124

Sampled By: Chris Carrell

Date Collected: 30-MAY-19

Lab Sample ID: L2282546-5

Matrix:

PAGE 5 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000704		mg/L	0.005		03-JUN-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-JUN-19

PO No.: 1517879

WO No.: L2282546

LSD:

Project Ref: SIR WILLIAM OSLER ELEMENTRY

Sample ID: RM 213

Sampled By: Chris Carrell

Date Collected: 30-MAY-19

Lab Sample ID: L2282546-6

Matrix:

PAGE 6 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00113		mg/L	0.005		03-JUN-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 03-JUN-19

PO No.: 1517879

WO No.: L2282546

LSD:

Project Ref: SIR WILLIAM OSLER ELEMENTRY

Sample ID: RM 215

Sampled By: Chris Carrell

Date Collected: 30-MAY-19

Lab Sample ID: L2282546-7

Matrix:

PAGE 7 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000533		mg/L	0.005		03-JUN-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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

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 ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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.

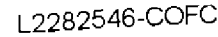
Test results reported relate only to the samples as received by the laboratory.

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.



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JUNE 2018 FRONT

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-OCT-19

PO No.: 1517879

WO No.: L2363044

LSD:

Project Ref: SIR WILLIAM VAN HORNE ELEMENTARY

Sample ID: RM. 202 SSDF

Sampled By: Robin Lemay

Date Collected: 09-OCT-19

Lab Sample ID: L2363044-1

Matrix: Water

PAGE 1 of 6

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000185		mg/L	0.005		12-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-OCT-19

PO No.: 1517879

WO No.: L2363044

LSD:

Project Ref: SIR WILLIAM VAN HORNE ELEMENTARY

Sample ID: RM. 102 SSDF

Sampled By: Robin Lemay

Date Collected: 09-OCT-19

Lab Sample ID: L2363044-2

Matrix: Water

PAGE 2 of 6

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000147		mg/L	0.005		12-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-OCT-19

PO No.: 1517879

WO No.: L2363044

LSD:

Project Ref: SIR WILLIAM VAN HORNE ELEMENTARY

Sample ID: RM. 010 DF

Sampled By: Robin Lemay

Date Collected: 09-OCT-19

Lab Sample ID: L2363044-3

Matrix: Water

PAGE 3 of 6

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000129		mg/L	0.005		12-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-OCT-19

PO No.: 1517879

WO No.: L2363044

LSD:

Project Ref: SIR WILLIAM VAN HORNE ELEMENTARY

Sample ID: RM. 001 SSDF

Sampled By: Robin Lemay

Date Collected: 09-OCT-19

Lab Sample ID: L2363044-4

Matrix: Water

PAGE 4 of 6

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000075		mg/L	0.005		12-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-OCT-19

PO No.: 1517879

WO No.: L2363044

LSD:

Project Ref: SIR WILLIAM VAN HORNE ELEMENTARY

Sample ID: CORR 012 DF

Sampled By: Robin Lemay

Date Collected: 09-OCT-19

Lab Sample ID: L2363044-5

Matrix: Water

PAGE 5 of 6

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000466		mg/L	0.005		12-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

Guidelines & Objectives

Health Canada MAC Health Related Criteria Limits

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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.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

*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 rationing cations to anions
Bicarbonate	See Alkalinity. Report as the anion HCO ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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 of 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.
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.

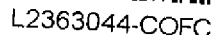
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

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



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COC Number: 17 - 762162

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LINE 2014 FROM

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 09-MAY-19

PO No.: 1517879

WO No.: L2267538

LSD:

Project Ref:

Sample ID: RM 122

Sampled By: Chris Carrell

Date Collected: 03-MAY-19

Lab Sample ID: L2267538-1

Matrix: Water

PAGE 1 of 9

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00400		mg/L	0.005		06-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 09-MAY-19

PO No.: 1517879

WO No.: L2267538

LSD:

Project Ref:

Sample ID: RM 117

Sampled By: Chris Carrell

Date Collected: 03-MAY-19

Lab Sample ID: L2267538-3

Matrix: Water

PAGE 3 of 9

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00445		mg/L	0.005		06-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 09-MAY-19

PO No.: 1517879

WO No.: L2267538

LSD:

Project Ref:

Sample ID: RM 131

Sampled By: Chris Carrell

Date Collected: 03-MAY-19

Lab Sample ID: L2267538-5

Matrix: Water

PAGE 5 of 9

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.00528		mg/L	0.005		06-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 09-MAY-19

PO No.: 1517879

WO No.: L2267538

LSD:

Project Ref:

Sample ID: RM 132

Sampled By: Chris Carrell

Date Collected: 03-MAY-19

Lab Sample ID: L2267538-6

Matrix: Water

PAGE 6 of 9

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.00652		mg/L	0.005		06-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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 						
Joanne Lee Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 09-MAY-19

PO No.: 1517879

WO No.: L2267538

LSD:

Project Ref:

Sample ID: RM 145

Sampled By: Chris Carrell

Date Collected: 03-MAY-19

Lab Sample ID: L2267538-7

Matrix: Water

PAGE 7 of 9

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00379		mg/L	0.005		07-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 09-MAY-19

PO No.: 1517879

WO No.: L2267538

LSD:

Project Ref:

Sample ID: RM 148

Sampled By: Chris Carrell

Date Collected: 03-MAY-19

Lab Sample ID: L2267538-8

Matrix: Water

PAGE 8 of 9

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.00615		mg/L	0.005		07-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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.						
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Joanne Lee Account Manager						

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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 ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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.



L2267538-COFC

COC Number: 17 - 811841

Page of

Report To Contact and company name below will appear on the final report			Report Format / Di			Contact your AM to confirm all E&P TATs (surcharges may apply)																																																																	
Company: <u>Vancouver School Board.</u>			Select Report Format: ☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)			Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply																																																																	
Contact: <u>Steve Thomas</u>			Quality Control (QC) Report with Report ☐ YES ☐ NO			4 day [P4-20%] ☐																																																																	
Phone: <u>604-713-5637</u>			☐ Compare Results to Criteria on Report - provide details below if box checked			3 day [P3-25%] ☐																																																																	
Company address below will appear on the final report			Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX			2 day [P2-50%] ☐																																																																	
Street: <u>1549 Clark Dr</u>			Email 1 or Fax: <u>SSThomas@USB.BC.ca</u>			1 Business day [E - 100%] ☐																																																																	
City/Province: <u>Vancouver BC.</u>			Email 2			Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐																																																																	
Postal Code:			Email 3			Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm																																																																	
Invoice To: Same as Report To ☐ YES ☐ NO			Invoice Distribution			For tests that can not be performed according to the service level selected, you will be contacted.																																																																	
Copy of Invoice with Report ☐ YES ☐ NO			Select Invoice Distribution: ☒ EMAIL ☐ MAIL ☐ FAX			Analysis Request																																																																	
Company:			Email 1 or Fax: <u>SSThomas@USB.BC.ca</u>			<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td rowspan="5" style="writing-mode: vertical-rl; transform: rotate(180deg);">NUMBER OF CONTAINERS</td> <td colspan="12">Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below</td> <td rowspan="5" style="writing-mode: vertical-rl; transform: rotate(180deg);">SAMPLES ON HOLD</td> <td rowspan="5" style="writing-mode: vertical-rl; transform: rotate(180deg);">SUSPECTED HAZARD (see Special Instructions)</td> </tr> <tr><td colspan="12"></td></tr> <tr><td colspan="12"></td></tr> <tr><td colspan="12"></td></tr> <tr><td colspan="12"></td></tr> </table>			NUMBER OF CONTAINERS	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below												SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)																																																
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Contact:			Email 2																																																																				
Project Information			Oil and Gas Required Fields (client use)																																																																				
ALS Account # / Quote #:			AFE/Cost Center:			PO#																																																																	
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PO / AFE:			Requisitioner:																																																																				
LSD:			Location:																																																																				
ALS Lab Work Order # (lab use only):			ALS Contact:			Sampler: <u>Chris Carradi</u>																																																																	
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																																																																		
	RM 122		3 May 19	1024																																																																			
	RM 129		3 May 19	1021																																																																			
	RM 117		3 May 19	1028																																																																			
	RM 112A		3 May 19	1034																																																																			
	RM 131		3 May 19	1046																																																																			
	RM 132		3 May 19	1049																																																																			
	RM 145		3 May 19	1053																																																																			
	RM 148		3 May 19	1057																																																																			
Drinking Water (DW) Samples (client use)			Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)			SAMPLE CONDITION AS RECEIVED (lab use only)																																																																	
Are samples taken from a Regulated DW System? ☐ YES ☐ NO			<u>No preservatives added.</u>			Frozen ☐ SIF Observations Yes ☐ No ☐																																																																	
Are samples for human consumption/ use? ☐ YES ☐ NO						Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐																																																																	
						Cooling Initiated ☒																																																																	
						INITIAL COOLER TEMPERATURES °C																																																																	
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SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)																																																																	
Released by:			Received by:			Received by: <u>HK</u>																																																																	
Date:			Date:			Date: <u>5/13</u>																																																																	
Time:			Time:			Time: <u>2:43 PM</u>																																																																	

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JUNE 2018 FORM



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 14-MAY-19

PO No.: 1517879

WO No.: L2269000

LSD:

Project Ref: CHURCHILL

Sample ID: RM 002

Sampled By: Chris Carnell

Date Collected: 07-MAY-19

Lab Sample ID: L2269000-1

Matrix: Water

PAGE 1 of 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.0162		mg/L	0.005		08-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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 						
Joanne Lee Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 14-MAY-19

PO No.: 1517879

WO No.: L2269000

LSD:

Project Ref: CHURCHILL

Sample ID: RM 132

Sampled By: Chris Carnell

Date Collected: 07-MAY-19

Lab Sample ID: L2269000-2

Matrix: Water

PAGE 2 of 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00480		mg/L	0.005		08-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 14-MAY-19

PO No.: 1517879

WO No.: L2269000

LSD:

Project Ref: CHURCHILL

Sample ID: RM 110

Sampled By: Chris Carnell

Date Collected: 07-MAY-19

Lab Sample ID: L2269000-3

Matrix: Water

PAGE 3 of 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000368		mg/L	0.005		08-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 14-MAY-19

PO No.: 1517879

WO No.: L2269000

LSD:

Project Ref: CHURCHILL

Sample ID: RM 145

Sampled By: Chris Carnell

Date Collected: 07-MAY-19

Lab Sample ID: L2269000-4

Matrix: Water

PAGE 4 of 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000756		mg/L	0.005		08-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 14-MAY-19

PO No.: 1517879

WO No.: L2269000

LSD:

Project Ref: CHURCHILL

Sample ID: RM 148

Sampled By: Chris Carnell

Date Collected: 07-MAY-19

Lab Sample ID: L2269000-5

Matrix: Water

PAGE 5 of 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000472		mg/L	0.005		08-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 14-MAY-19

PO No.: 1517879

WO No.: L2269000

LSD:

Project Ref: CHURCHILL

Sample ID: RM 115

Sampled By: Chris Carnell

Date Collected: 07-MAY-19

Lab Sample ID: L2269000-6

Matrix: Water

PAGE 6 of 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00263		mg/L	0.005		08-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 14-MAY-19

PO No.: 1517879

WO No.: L2269000

LSD:

Project Ref: CHURCHILL

Sample ID: RM 151

Sampled By: Chris Carnell

Date Collected: 07-MAY-19

Lab Sample ID: L2269000-7

Matrix: Water

PAGE 7 of 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000178		mg/L	0.005		08-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 14-MAY-19

PO No.: 1517879

WO No.: L2269000

LSD:

Project Ref: CHURCHILL

Sample ID: RM 157

Sampled By: Chris Carnell

Date Collected: 07-MAY-19

Lab Sample ID: L2269000-8

Matrix: Water

PAGE 8 of 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000277		mg/L	0.005		08-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 14-MAY-19

PO No.: 1517879

WO No.: L2269000

LSD:

Project Ref: CHURCHILL

Sample ID: RM 158

Sampled By: Chris Carnell

Date Collected: 07-MAY-19

Lab Sample ID: L2269000-9

Matrix: Water

PAGE 9 of 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00275		mg/L	0.005		08-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 14-MAY-19

PO No.: 1517879

WO No.: L2269000

LSD:

Project Ref: CHURCHILL

Sample ID: RM 117

Sampled By: Chris Carnell

Date Collected: 07-MAY-19

Lab Sample ID: L2269000-10

Matrix: Water

PAGE 10 of 11

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00133		mg/L	0.005		08-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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.						
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ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company

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 ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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.



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com



L2269000-COFC

COC Number: 17 - 828497

Page of

Report To		Report Form		Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)	
Company:	Vancouver School Board	Select Report Format:	☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)	Regular [R]	☒ Standard TAT if received by 3 pm - business days - no surcharges apply
Contact:	Stephen Thomas	Quality Control (QC) Report with Report	☐ YES ☐ NO	PRIORITY (Business Days)	4 day [P4-20%] ☐
Phone:	604 713 5637	☐ Compare Results to Criteria on Report - provide details below if box checked		3 day [P3-25%] ☐	1 Business day [E - 100%] ☐
Company address below will appear on the final report		Select Distribution:	☒ EMAIL ☐ MAIL ☐ FAX	2 day [P2-50%] ☐	Same Day, Weekend or Statutory holiday [E2 - 200% (Laboratory opening fees may apply)] ☐
Street:	1549 Clark Dr	Email 1 or Fax	SSThomas@VSB.BC.CA	Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm	
City/Province:	Vancouver BC	Email 2		For tests that can not be performed according to the service level selected, you will be contacted.	
Postal Code:		Email 3		Analysis Request	
Invoice To	Same as Report To ☒ YES ☐ NO	Invoice Distribution		NUMBER OF CONTAINERS Lead	
Copy of Invoice with Report	☐ YES ☐ NO	Select Invoice Distribution:	☒ EMAIL ☐ MAIL ☐ FAX		
Company:		Email 1 or Fax	SSThomas@VSB.BC.CA		
Contact:		Email 2			
Project Information		Oil and Gas Required Fields (client use)			
ALS Account # / Quote #:		AFE/Cost Center:	PO#		
Job #:	Churchill	Major/Minor Code:	Routing Code:		
PO / AFE:		Requisitioner:			
LSD:		Location:			
ALS Lab Work Order # (lab use only):		ALS Contact:	Sampler: Chris Carroll		
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	SAMPLES ON HOLD SUSPECTED HAZARD (see Special Instructions)
	RM 002	07 May 19	1:02		
	RM 132	07 May 19	11:52		
	RM 110	07 May 19	12:01		
	RM 145	07 May 19	11:57		
	RM 148	07 May 19	12:06		
	RM 115	07 May 19	12:48		
	RM 151	07 May 19	12:56		
	RM 157	07 May 19	1:11		
	RM 158	07 May 19	1:14		
	RM 117	07 May 19	12:53		
Drinking Water (DW) Samples (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		SAMPLE CONDITION AS RECEIVED (lab use only)	
Are samples taken from a Regulated DW System? ☐ YES ☐ NO				Frozen ☐ SIF Observations Yes ☐ No ☐	
Are samples for human consumption/ use? ☐ YES ☐ NO				Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐	
				Cooling Initiated ☒	
				INITIAL COOLER TEMPERATURES °C	
				FINAL COOLER TEMPERATURES °C	
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)	
Released by:	Date:	Time:	Received by:	Date:	Time:
				Received by: HA	Date: 5/7
					Time: 2:50pm

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JUNE 2018 FRONT

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 15-MAY-19

PO No.: 1517879

WO No.: L2269892

LSD:

Project Ref: CHURCHILL SECONDARY

Sample ID: A 116

Sampled By: Chris Carrell

Date Collected: 08-MAY-19

Lab Sample ID: L2269892-1

Matrix: Water

PAGE 1 of 12

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000136		mg/L	0.005		11-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 15-MAY-19

PO No.: 1517879

WO No.: L2269892

LSD:

Project Ref: CHURCHILL SECONDARY

Sample ID: 231

Sampled By: Chris Carrell

Date Collected: 08-MAY-19

Lab Sample ID: L2269892-2

Matrix: Water

PAGE 2 of 12

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000688		mg/L	0.005		11-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 15-MAY-19

PO No.: 1517879

WO No.: L2269892

LSD:

Project Ref: CHURCHILL SECONDARY

Sample ID: 201

Sampled By: Chris Carrell

Date Collected: 08-MAY-19

Lab Sample ID: L2269892-3

Matrix: Water

PAGE 3 of 12

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00161		mg/L	0.005		11-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 15-MAY-19

PO No.: 1517879

WO No.: L2269892

LSD:

Project Ref: CHURCHILL SECONDARY

Sample ID: 213

Sampled By: Chris Carrell

Date Collected: 08-MAY-19

Lab Sample ID: L2269892-4

Matrix: Water

PAGE 4 of 12

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000292		mg/L	0.005		11-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 15-MAY-19

PO No.: 1517879

WO No.: L2269892

LSD:

Project Ref: CHURCHILL SECONDARY

Sample ID: 215

Sampled By: Chris Carrell

Date Collected: 08-MAY-19

Lab Sample ID: L2269892-5

Matrix: Water

PAGE 5 of 12

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000332		mg/L	0.005		11-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 15-MAY-19

PO No.: 1517879

WO No.: L2269892

LSD:

Project Ref: CHURCHILL SECONDARY

Sample ID: A 214

Sampled By: Chris Carrell

Date Collected: 08-MAY-19

Lab Sample ID: L2269892-6

Matrix: Water

PAGE 6 of 12

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00228		mg/L	0.005		11-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 15-MAY-19

PO No.: 1517879

WO No.: L2269892

LSD:

Project Ref: CHURCHILL SECONDARY

Sample ID: 331

Sampled By: Chris Carrell

Date Collected: 08-MAY-19

Lab Sample ID: L2269892-7

Matrix: Water

PAGE 7 of 12

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000518		mg/L	0.005		11-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 15-MAY-19

PO No.: 1517879

WO No.: L2269892

LSD:

Project Ref: CHURCHILL SECONDARY

Sample ID: 313

Sampled By: Chris Carrell

Date Collected: 08-MAY-19

Lab Sample ID: L2269892-8

Matrix: Water

PAGE 8 of 12

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000389		mg/L	0.005		11-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 15-MAY-19

PO No.: 1517879

WO No.: L2269892

LSD:

Project Ref: CHURCHILL SECONDARY

Sample ID: 301

Sampled By: Chris Carrell

Date Collected: 08-MAY-19

Lab Sample ID: L2269892-9

Matrix: Water

PAGE 9 of 12

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00216		mg/L	0.005		11-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 15-MAY-19

PO No.: 1517879

WO No.: L2269892

LSD:

Project Ref: CHURCHILL SECONDARY

Sample ID: 315

Sampled By: Chris Carrell

Date Collected: 08-MAY-19

Lab Sample ID: L2269892-10

Matrix: Water

PAGE 10 of 12

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000532		mg/L	0.005		11-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 15-MAY-19

PO No.: 1517879

WO No.: L2269892

LSD:

Project Ref: CHURCHILL SECONDARY

Sample ID: A 313

Sampled By: Chris Carrell

Date Collected: 08-MAY-19

Lab Sample ID: L2269892-11

Matrix: Water

PAGE 11 of 12

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00272		mg/L	0.005		11-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						

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

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 ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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.

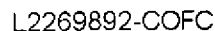
Test results reported relate only to the samples as received by the laboratory.

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.



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JUNE 2018 FROM

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 20-JUN-19

PO No.:

WO No.: L2292996

LSD:

Project Ref: SOUTHLANDS ELEMENTARY

Sample ID: RM 223C

Sampled By: Chris Carrell

Date Collected: 17-JUN-19

Lab Sample ID: L2292996-1

Matrix: Water

PAGE 1 of 5

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000554		mg/L	0.005		19-JUN-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 20-JUN-19

PO No.:

WO No.: L2292996

LSD:

Project Ref: SOUTHLANDS ELEMENTARY

Sample ID: RM 113

Sampled By: Chris Carrell

Date Collected: 17-JUN-19

Lab Sample ID: L2292996-2

Matrix: Water

PAGE 2 of 5

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00186		mg/L	0.005		19-JUN-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 20-JUN-19

PO No.:

WO No.: L2292996

LSD:

Project Ref: SOUTHLANDS ELEMENTARY

Sample ID: RM 109

Sampled By: Chris Carrell

Date Collected: 17-JUN-19

Lab Sample ID: L2292996-3

Matrix: Water

PAGE 3 of 5

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000394		mg/L	0.005		19-JUN-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 20-JUN-19

PO No.:

WO No.: L2292996

LSD:

Project Ref: SOUTHLANDS ELEMENTARY

Sample ID: RM 206

Sampled By: Chris Carrell

Date Collected: 17-JUN-19

Lab Sample ID: L2292996-4

Matrix: Water

PAGE 4 of 5

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000292		mg/L	0.005		19-JUN-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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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 ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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.

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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.

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Chain of Custody (COC) / Analytical
Request Form

Canada Toll Free: 1 800 668 9878



L2292996-COFC

COC Number: 17 - 765039

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Report To		Report Format / Distribution		Select Service Level below - Contact your AM to confirm all E&P TATs (surcharges may apply)						
Company:	Vancouver School Board	Select Report Format:	☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)	Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply						
Contact:	Stephen Thomas	Quality Control (QC) Report with Report	☐ YES ☐ NO	PRIORITY (Business Days)	4 day [P4-20%] ☐ 3 day [P3-25%] ☐ 2 day [P2-50%] ☐					
Phone:	604-713-5637	☐ Compare Results to Criteria on Report - provide details below if box checked		EMERGENCY	1 Business day [E - 100%] Same Day, Weekend or Statutory holiday [E2 - 200%] (Laboratory opening fees may apply)					
Company address below will appear on the final report		Select Distribution:	☒ EMAIL ☐ MAIL ☐ FAX	Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm						
Street:	1549 Clark Dr.	Email 1 or Fax	STThomas@vsb.bc.ca	For tests that can not be performed according to the service level selected, you will be contacted.						
City/Province:	Vancouver / B.C.	Email 2		Analysis Request						
Postal Code:		Email 3		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below						
Invoice To	Same as Report To ☒ YES ☐ NO	Invoice Distribution		NUMBER OF CONTAINERS LEAD		SAMPLES ON HOLD		SUSPECTED HAZARD (see Special Instructions)		
Copy of Invoice with Report	☐ YES ☐ NO	Select Invoice Distribution:	☐ EMAIL ☐ MAIL ☐ FAX							
Company:		Email 1 or Fax	STThomas@vsb.bc.ca							
Contact:		Email 2								
Project Information		Oil and Gas Required Fields (client use)								
ALS Account # / Quote #:		AFE/Cost Center:	PO#							
Job #:	Southlands Elementary	Major/Minor Code:	Routing Code:							
PO / AFE:		Requisitioner:								
LSD:		Location:								
ALS Lab Work Order # (lab use only):		ALS Contact:	Sampler:	Chris Carren						
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						
	RM 223C	17-Jun-19	08:50	WATER						
	RM 113	17-Jun-19	08:39	WATER						
	RM 109	17-Jun-19	08:42	WATER						
	RM 206	17-Jun-19	08:47	WATER						
Drinking Water (DW) Samples (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		SAMPLE CONDITION AS RECEIVED (lab use only)						
Are samples taken from a Regulated DW System? ☐ YES ☐ NO		No preservatives added		Frozen ☐ SIF Observations Yes ☐ No ☐						
Are samples for human consumption/ use? ☐ YES ☐ NO				Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐						
				Cooling Initiated ☒						
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)						
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:		
						HA	6/17	2:45P		

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JUNE 2018 FORM

Results Summary VA20A2761

Project	TECUMSEH ANNEX
Report To	Stephen Thomas, Vancouver School Board
Date Received	04-Mar-2020 14:55
Issue Date	06-Mar-2020 13:41
Amendment	0

Client Sample ID			RM104	RM116A	RM202
Date Sampled			04-Mar-2020	04-Mar-2020	04-Mar-2020
Time Sampled			10:29	10:32	10:34
ALS Sample ID			VA20A2761-001	VA20A2761-002	VA20A2761-003
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water
Total Metals (Matrix: Water)					
lead, total	0.000050	mg/L	0.000074	0.000179	0.000097



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 15-OCT-19

PO No.: 1517879

WO No.: L2361078

LSD:

Project Ref: TEMPLETON SECONDARY

Sample ID: CORR 318 RM. 317 DF

Sampled By: Robin Lemay

Date Collected: 07-OCT-19

Lab Sample ID: L2361078-1

Matrix: Water

PAGE 1 of 14

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00107		mg/L	0.005		09-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 15-OCT-19

PO No.: 1517879

WO No.: L2361078

LSD:

Project Ref: TEMPLETON SECONDARY

Sample ID: CORR 300 RM. 314 DF

Sampled By: Robin Lemay

Date Collected: 07-OCT-19

Lab Sample ID: L2361078-2

Matrix: Water

PAGE 2 of 14

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00108		mg/L	0.005		09-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 15-OCT-19

PO No.: 1517879

WO No.: L2361078

LSD:

Project Ref: TEMPLETON SECONDARY

Sample ID: CORR 200 RM. 213 DF

Sampled By: Robin Lemay

Date Collected: 07-OCT-19

Lab Sample ID: L2361078-3

Matrix: Water

PAGE 3 of 14

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00241		mg/L	0.005		09-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 15-OCT-19

PO No.: 1517879

WO No.: L2361078

LSD:

Project Ref: TEMPLETON SECONDARY

Sample ID: CORR 230 RM. 223 DF

Sampled By: Robin Lemay

Date Collected: 07-OCT-19

Lab Sample ID: L2361078-4

Matrix: Water

PAGE 4 of 14

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00161		mg/L	0.005		09-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 15-OCT-19

PO No.: 1517879

WO No.: L2361078

LSD:

Project Ref: TEMPLETON SECONDARY

Sample ID: CORR 133 RM. 136 DF

Sampled By: Robin Lemay

Date Collected: 07-OCT-19

Lab Sample ID: L2361078-5

Matrix: Water

PAGE 5 of 14

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00193		mg/L	0.005		09-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 15-OCT-19

PO No.: 1517879

WO No.: L2361078

LSD:

Project Ref: TEMPLETON SECONDARY

Sample ID: RM. 120 BUB

Sampled By: Robin Lemay

Date Collected: 07-OCT-19

Lab Sample ID: L2361078-6

Matrix: Water

PAGE 6 of 14

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00301		mg/L	0.005		09-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 15-OCT-19

PO No.: 1517879

WO No.: L2361078

LSD:

Project Ref: TEMPLETON SECONDARY

Sample ID: CORR 173 RM. 185 FS

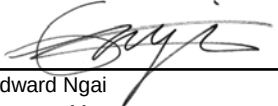
Sampled By: Robin Lemay

Date Collected: 07-OCT-19

Lab Sample ID: L2361078-7

Matrix: Water

PAGE 7 of 14

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00291		mg/L	0.005		09-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 15-OCT-19

PO No.: 1517879

WO No.: L2361078

LSD:

Project Ref: TEMPLETON SECONDARY

Sample ID: CORR 159 RM. 171 FS

Sampled By: Robin Lemay

Date Collected: 07-OCT-19

Lab Sample ID: L2361078-8

Matrix: Water

PAGE 8 of 14

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000388		mg/L	0.005		09-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 15-OCT-19

PO No.: 1517879

WO No.: L2361078

LSD:

Project Ref: TEMPLETON SECONDARY

Sample ID: RM. 163 DF

Sampled By: Robin Lemay

Date Collected: 07-OCT-19

Lab Sample ID: L2361078-9

Matrix: Water

PAGE 9 of 14

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00393		mg/L	0.005		09-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 15-OCT-19

PO No.: 1517879

WO No.: L2361078

LSD:

Project Ref: TEMPLETON SECONDARY

Sample ID: CORR 100 RM. 109 DF

Sampled By: Robin Lemay

Date Collected: 07-OCT-19

Lab Sample ID: L2361078-10

Matrix: Water

PAGE 10 of 14

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00247		mg/L	0.005		09-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 15-OCT-19

PO No.: 1517879

WO No.: L2361078

LSD:

Project Ref: TEMPLETON SECONDARY

Sample ID: RM. 129 BUB

Sampled By: Robin Lemay

Date Collected: 07-OCT-19

Lab Sample ID: L2361078-11

Matrix: Water

PAGE 11 of 14

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00246		mg/L	0.005		09-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 15-OCT-19

PO No.: 1517879

WO No.: L2361078

LSD:

Project Ref: TEMPLETON SECONDARY

Sample ID: RM. 125 BUB

Sampled By: Robin Lemay

Date Collected: 07-OCT-19

Lab Sample ID: L2361078-12

Matrix: Water

PAGE 12 of 14

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000904		mg/L	0.005		09-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 15-OCT-19

PO No.: 1517879

WO No.: L2361078

LSD:

Project Ref: TEMPLETON SECONDARY

Sample ID: RM. 127 BUB

Sampled By: Robin Lemay

Date Collected: 07-OCT-19

Lab Sample ID: L2361078-13

Matrix: Water

PAGE 13 of 14

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000940		mg/L	0.005		09-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

*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 rationing cations to anions
Bicarbonate	See Alkalinity. Report as the anion HCO ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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 of 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.
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.



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com



L2361078-COFC

COC Number: 17 - 756186

Page of

Report To		Report Format / Distribution		Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)	
Company:	Vancouver School Board	Select Report Format:	☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)	Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply	
Contact:	Stephen Thomas	Quality Control (QC) Report with Report	☐ YES ☐ NO	4 day [P4-20%] ☐ 1 Business day [E - 100%] ☐	
Phone:	604-713-5637	☐ Compare Results to Criteria on Report - provide details below if box checked		3 day [P3-25%] ☐ Same Day, Weekend or Statutory holiday [E2 -200%] (Laboratory opening fees may apply) ☐	
Company address below will appear on the final report		Select Distribution:	☒ -EMAIL ☐ MAIL ☐ FAX	2 day [P2-50%] ☐	
Street:	1549 Clark Dr.	Email 1 or Fax	ssthenas@vsb.bc.ca	Date and Time Required for all E&P TATs: dd-mm-yy hh:mm	
City/Province:	Vancouver B.C.	Email 2	rlamay@vsb.bc.ca	For tests that can not be performed according to the service level selected, you will be contacted.	
Postal Code:		Email 3		Analysis Request	
Invoice To	Same as Report To ☒ YES ☐ NO	Invoice Distribution		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below NUMBER OF CONTAINERS Lead SAMPLES ON HOLD SUSPECTED HAZARD (see Special Instructions)	
	Copy of Invoice with Report ☐ YES ☐ NO	Select Invoice Distribution: ☒ EMAIL ☐ MAIL ☐ FAX			
Company:		Email 1 or Fax ssthenas@vsb.bc.ca			
Contact:		Email 2 rlamay@vsb.bc.ca			
Project Information		Oil and Gas Required Fields (client use)			
ALS Account # / Quote #:		AFE/Cost Center:	PO#		
Job #:	Templeton Secondary	Major/Minor Code:	Routing Code:		
PO / AFE:		Requisitioner:			
LSD:		Location:			
ALS Lab Work Order # (lab use only):		ALS Contact:	Sampler: Robin Lemay		
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type	
	Corr 100 Rm. 109 DF	07-10-19	8:47am	water	
	Rm. 129 Bub	07-10-19	8:55am	water	
	Rm. 125 Bub	07-10-19	9:01am	water	
	Rm. 127 Bub	07-10-19	9:06am	water	
Drinking Water (DW) Samples (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		SAMPLE CONDITION AS RECEIVED (lab use only)	
Are samples taken from a Regulated DW System? ☐ YES ☐ NO		No Preservatives added		Frozen ☐ SIF Observations Yes ☐ No ☐	
Are samples for human consumption/ use? ☐ YES ☐ NO				Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐	
				Cooling Initiated ☒	
				INITIAL COOLER TEMPERATURES °C	
				FINAL COOLER TEMPERATURES °C	
				8	
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)	
Released by:	Date:	Time:	Received by:	Date:	Time:
				HA	10/7 2130P

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JUNE 2015 FRONT



Environmental

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Chain of Custody (COC) / Analytical Request Form

L2361078-COFC

COC Number: 17 - 756185

Page 1 of 2

Report To		Contact and company name below will appear on the final report		Report Format / Distribution	
Company:	Vancouver School Board	Select Report Format:	☒ PDF ☐ EXCEL ☐ EDC (DIGITAL)	Select Service Level Below - Contact your A/E to confirm all E&P T&Ts (surcharges may apply)	
Contact:	Stephen Thomas	Quality Control (QC) Report with Report	☐ YES ☐ NO	Regular (R) ☒ Standard T&T* if received by 3 pm - business days - no surcharges apply	
Phone:	604 713-5637	Compare Results to Criteria or Report - provide details below if box checked		3 day (P3-25%) ☐	
Company address below will appear on the final report		Select Distribution:	☒ EMAIL ☐ MAIL ☐ FAX	EMERGENCY ☐	
Street:	1549 Clark Dr.	Email 1 or Fax	stthomas@vsb.bc.ca	1 Business day (E - 100%)	
City/Province:	Vancouver B.C.	Email 2	clemay@vsb.bc.ca	Same Day, Weekend or Statutory holiday (E2 - 200% (Laboratory opening fees may apply))	
Postal Code:		Email 3		Date and Time Required for all E&P T&Ts: dd-mm-yy hh:mm	
Invoice To	Same as Report To	Invoice Distribution		Analysis Request	
Copy of Invoice with Report	☒ YES ☐ NO	Select Invoice Distribution:	☒ EMAIL ☐ MAIL ☐ FAX	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F&P) below	
Company:		Email 1 or Fax	stthomas@vsb.bc.ca		
Contact:		Email 2	clemay@vsb.bc.ca		
Project Information		Oil and Gas Required Fields (client use)			
ALS Account # / Quote #:		AFECost Center:	PO#:		
Job #:	Templeton Secondary	Major/Minor Code:	Routing Code:		
PO / A/E:		Requisitioner:			
LSD:		Location:			
ALS Lab Work Order # (lab use only):		ALS Contact:	Sampler:	NUMBER OF CONTAINERS	
			Robin Lemay	Lead	
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	SAMPLES ON HOLD	
				SUSPECTED HAZARD (see Special Instructions)	
	Corr 318 Km. 317 DF	07-10-19	7:25am		
	Corr 300 Km. 314 DF	07-10-19	7:36am		
	Corr 200 Km. 213 DF	07-10-19	7:43am		
	Corr 230 Km. 223 DF	07-10-19	7:57am		
	Corr 133 Km. 136 DF	07-10-19	8:05am		
	Km. 120 Sub	07-10-19	8:14am		
	Corr 173 Km. 185 FS	07-10-19	8:23am		
	Corr 159 Km. 171 FS	07-10-19	8:31am		
	Km. 163 DF	07-10-19	8:39am		
Drinking Water (DW) Samples (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		SAMPLE CONDITION AS RECEIVED (lab use only)	
Are samples taken from a Regulated DW System?				Frozen ☐	
Are samples for human consumption use?				Ice Packs ☒	
No preservatives added				Ice Cubes ☐	
				Custody seal intact Yes ☐ No ☐	
SHIPPING RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		Cooling Initiated ☒	
Released by:	Date:	Time:	Received by:	Time:	Received by:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

ALS 2017 FORM



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-OCT-19

PO No.: 1517879

WO No.: L2363038

LSD:

Project Ref: THUNDERBIRD ELEMENTARY

Sample ID: RM. 119 DF

Sampled By:

Date Collected: 09-OCT-19

Lab Sample ID: L2363038-1

Matrix: Water

PAGE 1 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000338		mg/L	0.005		16-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-OCT-19

PO No.: 1517879

WO No.: L2363038

LSD:

Project Ref: THUNDERBIRD ELEMENTARY

Sample ID: CORR 124 RM. 127 SSDF

Sampled By:

Date Collected: 09-OCT-19

Lab Sample ID: L2363038-2

Matrix: Water

PAGE 2 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000124		mg/L	0.005		16-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-OCT-19

PO No.: 1517879

WO No.: L2363038

LSD:

Project Ref: THUNDERBIRD ELEMENTARY

Sample ID: CORR 150 RM. 156 FS

Sampled By:

Date Collected: 09-OCT-19

Lab Sample ID: L2363038-3

Matrix: Water

PAGE 3 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	<0.000050		mg/L	0.005		16-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-OCT-19

PO No.: 1517879

WO No.: L2363038

LSD:

Project Ref: THUNDERBIRD ELEMENTARY

Sample ID: RM. 133A DF

Sampled By:

Date Collected: 09-OCT-19

Lab Sample ID: L2363038-4

Matrix: Water

PAGE 4 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000339		mg/L	0.005		16-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-OCT-19

PO No.: 1517879

WO No.: L2363038

LSD:

Project Ref: THUNDERBIRD ELEMENTARY

Sample ID: CORR 133 RM. 134 FS

Sampled By:

Date Collected: 09-OCT-19

Lab Sample ID: L2363038-5

Matrix: Water

PAGE 5 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000400		mg/L	0.005		16-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-OCT-19

PO No.: 1517879

WO No.: L2363038

LSD:

Project Ref: THUNDERBIRD ELEMENTARY

Sample ID: RM. 010 FS

Sampled By:

Date Collected: 09-OCT-19

Lab Sample ID: L2363038-6

Matrix: Water

PAGE 6 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000135		mg/L	0.005		16-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-OCT-19

PO No.: 1517879

WO No.: L2363038

LSD:

Project Ref: THUNDERBIRD ELEMENTARY

Sample ID: CORR 022 RM 26 DF

Sampled By:

Date Collected: 09-OCT-19

Lab Sample ID: L2363038-7

Matrix: Water

PAGE 7 of 8

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000742		mg/L	0.005		16-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

*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 rationing cations to anions
Bicarbonate	See Alkalinity. Report as the anion HCO ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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 of 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.
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.



L2363038-COFC

COC Number: 17 - 762165

Page of

Report To Contact and company name below will appear on the final report			Report Format / Distribution			Priority - Contact your AM to confirm all E&P TATs (surcharges may apply)					
Company: <u>Vancouver School Board</u>			Select Report Format: ☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)			Regular [R] ☒ Standard TAT If received by 3 pm - business days - no surcharges apply					
Contact: <u>Stephen Thomas</u>			Quality Control (QC) Report with Report ☐ YES ☐ NO			4 day [P4-20%] ☐		3 day [P3-25%] ☐		2 day [P2-50%] ☐	
Phone: <u>604 713-5637</u>			☐ Compare Results to Criteria on Report - provide details below if box checked			1 Business day [E - 100%]		Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)]			
Company address below will appear on the final report			Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX			Date and Time Required for all E&P TATs: dd-mm-yy hh:mm					
Street: <u>1549 Clark Dr</u>			Email 1 or Fax: <u>ss.thomas@vsb.bc.ca</u>			For tests that can not be performed according to the service level selected, you will be contacted.					
City/Province: <u>Vancouver B.C.</u>			Email 2: <u>clmay@vsb.bc.ca</u>			Analysis Request					
Postal Code:			Email 3:			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (FP) below					
Invoice To: Same as Report To ☒ YES ☐ NO			Invoice Distribution			NUMBER OF CONTAINERS Lead SAMPLES ON HOLD SUSPECTED HAZARD (see Special Instructions)					
Copy of Invoice with Report ☐ YES ☐ NO			Select Invoice Distribution: ☒ EMAIL ☐ MAIL ☐ FAX								
Company:			Email 1 or Fax: <u>ss.thomas@vsb.bc.ca</u>								
Contact:			Email 2: <u>clmay@vsb.bc.ca</u>								
Project Information			Oil and Gas Required Fields (client use)								
ALS Account # / Quote #:			AFE/Cost Center:								
Job #: <u>Thunderbird Elementary</u>			Major/Minor Code:								
PO / AFE:			Routing Code:								
LSD:			Requisitioner:								
ALS Lab Work Order # (lab use only):			Location:								
ALS Contact:			Sampler:								
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)		Date (dd-mm-yy)	Time (hh:mm)	Sample Type						
	Rm. 119 DF		09-10-19	1:33pm	water						
	Corr 124 Rm. 127 SSDF		09-10-19	1:38pm	water						
	Corr 150 Rm. 156 FS		09-10-19	1:43pm	water						
	Rm. 133A DF		09-10-19	1:47pm	water						
	Corr 133 Rm. 134 FS		09-10-19	1:50pm	water						
	Rm. 010 FS		09-10-19	1:54pm	water						
	Corr 022 Rm 26 DF		09-10-19	1:59pm	water						
Drinking Water (DW) Samples (client use)			Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)			SAMPLE CONDITION AS RECEIVED (lab use only)					
Are samples taken from a Regulated DW System? ☐ YES ☐ NO			<u>No preservatives added</u>			Frozen ☐ SIF Observations Yes ☐ No ☐					
Are samples for human consumption/ use? ☐ YES ☐ NO						Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐					
						Cooling Initiated ☒					
						INITIAL COOLER TEMPERATURES °C					
						FINAL COOLER TEMPERATURES °C					
						7					
SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)					
Released by:		Date:	Received by:		Date:	Received by:		Date:		Time:	
						LTA		10/5		2:35p	



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 16-OCT-19

PO No.: 1517879

WO No.: L2362037

LSD:

Project Ref: TILlicum Elementary

Sample ID: RM.121 DF

Sampled By: ROBIN LEMAY

Date Collected: 08-OCT-19

Lab Sample ID: L2362037-1

Matrix: WATER

PAGE 1 of 4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000166		mg/L	0.005		11-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 16-OCT-19

PO No.: 1517879

WO No.: L2362037

LSD:

Project Ref: TILlicum Elementary

Sample ID: RM.102 DF

Sampled By: ROBIN LEMAY

Date Collected: 08-OCT-19

Lab Sample ID: L2362037-2

Matrix: WATER

PAGE 2 of 4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000070		mg/L	0.005		11-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 16-OCT-19

PO No.: 1517879

WO No.: L2362037

LSD:

Project Ref: TILlicum Elementary

Sample ID: RM.105 DF

Sampled By: ROBIN LEMAY

Date Collected: 08-OCT-19

Lab Sample ID: L2362037-3

Matrix: WATER

PAGE 3 of 4

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000228		mg/L	0.005		11-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

*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 rationing cations to anions
Bicarbonate	See Alkalinity. Report as the anion HCO ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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 of 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.
Heterotrophic	
Plate Count	Criteria is 500 cfu/mL Measure of heterotrophic bacteria present.

GLOSSARY OF REPORT TERMS

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

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D.L. - The reporting limit.

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

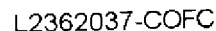
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Canada Toll Free: 1 800 668 9878



COC Number: 17 - 756190

Page of

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REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

LINE 201A FROM

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 18-OCT-19

PO No.: 1517879

WO No.: L2363903

LSD:

Project Ref: TOTAL EDUCATION

Sample ID: CORE 129 RM. 119 SSDF

Sampled By: Robin Lemay

Date Collected: 10-OCT-19

Lab Sample ID: L2363903-1

Matrix: Water

PAGE 1 of 2

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00100		mg/L	0.005		13-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

Guidelines & Objectives

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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.
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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.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

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

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Alkalinity	Acid neutralizing capacity. Usually a measure of carbonate and bicarbonates and calculated and reported as calcium carbonate.
Balance	Quality control parameter rationing cations to anions
Bicarbonate	See Alkalinity. Report as the anion HCO ₃ -1
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Hardness	Classical measure of 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.
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Magnesium	See hardness. Common major cation of water chemistry. Elevated levels (>125 mg/L) may exert a cathartic or diuretic action.
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Sodium	Common major cation of water chemistry. Measure of salinity (saltiness).
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Heterotrophic	
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[illegible]



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-OCT-19

PO No.: 1517879

WO No.: L2363045

LSD:

Project Ref: PIERRE ELLIOTT TRUDEAU ELEMENTARY

Sample ID: RM. 110 SSDF

Sampled By: Robin Lemay

Date Collected: 09-OCT-19

Lab Sample ID: L2363045-1

Matrix: Water

PAGE 1 of 5

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000155		mg/L	0.005		16-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-OCT-19

PO No.: 1517879

WO No.: L2363045

LSD:

Project Ref: PIERRE ELLIOTT TRUDEAU ELEMENTARY

Sample ID: RM. 112 DF

Sampled By: Robin Lemay

Date Collected: 09-OCT-19

Lab Sample ID: L2363045-2

Matrix: Water

PAGE 2 of 5

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000606		mg/L	0.005		16-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-OCT-19

PO No.: 1517879

WO No.: L2363045

LSD:

Project Ref: PIERRE ELLIOTT TRUDEAU ELEMENTARY

Sample ID: RM. 127 DF

Sampled By: Robin Lemay

Date Collected: 09-OCT-19

Lab Sample ID: L2363045-3

Matrix: Water

PAGE 3 of 5

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000446		mg/L	0.005		16-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 17-OCT-19

PO No.: 1517879

WO No.: L2363045

LSD:

Project Ref: PIERRE ELLIOTT TRUDEAU ELEMENTARY

Sample ID: RM. 151 DF

Sampled By: Robin Lemay

Date Collected: 09-OCT-19

Lab Sample ID: L2363045-4

Matrix: Water

PAGE 4 of 5

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000342		mg/L	0.005		16-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

Guidelines & Objectives

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Heterotrophic	
Plate Count	Criteria is 500 cfu/mL Measure of heterotrophic bacteria present.

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Chain of Custody (COC) / Analytical
Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com



L2363045-COFC

COC Number: 17 - 762161

Page of

Report To		Report Format / Distribution		Contact your AM to confirm all E&P TATs (surcharges may apply)	
Company: <u>Vancouver School Board</u>		Select Report Format: ☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)		Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply	
Contact: <u>Stephen Thomas</u>		Quality Control (QC) Report with Report ☐ YES ☐ NO		4 day [P4-20%] ☐	
Phone: <u>604 713-5637</u>		☐ Compare Results to Criteria on Report - provide details below if box checked		3 day [P3-25%] ☐	
Company address below will appear on the final report		Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX		2 day [P2-50%] ☐	
Street: <u>1549 Clark Dr.</u>		Email 1 or Fax: <u>ss.thomas@vsb.bc.ca</u>		Date and Time Required for all E&P TATs: dd-mm-yy hh:mm	
City/Province: <u>Vancouver B.C.</u>		Email 2: <u>rlemay@vsb.bc.ca</u>		For tests that can not be performed according to the service level selected, you will be contacted.	
Postal Code:		Email 3:		Analysis Request	
Invoice To: Same as Report To ☒ YES ☐ NO		Invoice Distribution		NUMBER OF CONTAINERS Lead SAMPLES ON HOLD SUSPECTED HAZARD (see Special Instructions)	
Copy of Invoice with Report ☐ YES ☐ NO		Select Invoice Distribution: ☒ EMAIL ☐ MAIL ☐ FAX			
Company:		Email 1 or Fax: <u>ss.thomas@vsb.bc.ca</u>			
Contact:		Email 2: <u>rlemay@vsb.bc.ca</u>			
Project Information		Oil and Gas Required Fields (client use)			
ALS Account # / Quote #:		AFE/Cost Center:			
Job #: <u>Pierre Elliott Trudeau Elementary</u>		Major/Minor Code:			
PO / AFE:		Routing Code:			
LSD:		Requisitioner:			
ALS Lab Work Order # (lab use only):		Location:			
ALS Contact:		Sampler: <u>Robin Lemay</u>			
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type	
	<u>Rm. 110 SSDF</u>	<u>09-10-19</u>	<u>7:32am</u>	<u>water</u>	
	<u>Rm. 112 DF</u>	<u>09-10-19</u>	<u>7:36am</u>	<u>water</u>	
	<u>Rm. 127 DF</u>	<u>09-10-19</u>	<u>7:40am</u>	<u>water</u>	
	<u>Rm. 151 DF</u>	<u>09-10-19</u>	<u>7:44am</u>	<u>water</u>	
Drinking Water (DW) Samples ¹ (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		SAMPLE CONDITION AS RECEIVED (lab use only)	
Are samples taken from a Regulated DW System? ☐ YES ☐ NO		<u>No preservatives added</u>		Frozen ☐ SIF Observations Yes ☐ No ☐	
Are samples for human consumption/ use? ☐ YES ☐ NO				Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐	
				Cooling Initiated ☒	
				INITIAL COOLER TEMPERATURES °C	
				FINAL COOLER TEMPERATURES °C	
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)	
Released by:	Date:	Time:	Received by:	Date:	Time:
				<u>HA</u>	<u>10/9</u>

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2358678

LSD:

Project Ref: TYEE ELEMENTARY

Sample ID: CORR 214 RM 202B SSFD

Sampled By: Robin Lemay

Date Collected: 02-OCT-19

Lab Sample ID: L2358678-1

Matrix: Water

PAGE 1 of 3

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000185		mg/L	0.005		08-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2358678

LSD:

Project Ref: TYEE ELEMENTARY

Sample ID: CORR 111 RM 106 SSDF

Sampled By: Robin Lemay

Date Collected: 02-OCT-19

Lab Sample ID: L2358678-2

Matrix: Water

PAGE 2 of 3

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000186		mg/L	0.005		08-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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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.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

*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 ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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 of 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.
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.

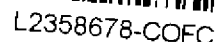
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

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



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COC Number: 17 - 756180

Page of

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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JUNE 2018 FROM

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 13-MAY-19

PO No.: 1517879

WO No.: L2265251

LSD:

Project Ref: UNIVERSITY HILL ELEM.

Sample ID: RM159 D.F.

Sampled By: Chris Carrell

Date Collected: 30-APR-19

Lab Sample ID: L2265251-1

Matrix: Water

PAGE 1 of 5

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000089		mg/L	0.005		01-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						
13-MAY-2019 Updated with " University Hill Elem".						

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 13-MAY-19

PO No.: 1517879

WO No.: L2265251

LSD:

Project Ref: UNIVERSITY HILL ELEM.

Sample ID: RM115 D.F.

Sampled By: Chris Carrell

Date Collected: 30-APR-19

Lab Sample ID: L2265251-2

Matrix: Water

PAGE 2 of 5

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	<0.000050		mg/L	0.005		01-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager						
13-MAY-2019 Updated with " University Hill Elem".						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 13-MAY-19

PO No.: 1517879

WO No.: L2265251

LSD:

Project Ref: UNIVERSITY HILL ELEM.

Sample ID: RM109 D.F.

Sampled By: Chris Carrell

Date Collected: 30-APR-19

Lab Sample ID: L2265251-3

Matrix: Water

PAGE 3 of 5

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	<0.000050		mg/L	0.005		01-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager 13-MAY-2019 Updated with " University Hill Elem".						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 13-MAY-19

PO No.: 1517879

WO No.: L2265251

LSD:

Project Ref: UNIVERSITY HILL ELEM.

Sample ID: RM129 D.F.

Sampled By: Chris Carrell

Date Collected: 30-APR-19

Lab Sample ID: L2265251-4

Matrix: Water

PAGE 4 of 5

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	<0.000050		mg/L	0.005		01-MAY-19
CDWQG = Health Canada Guideline Limits updated MAY 2018 * 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  Joanne Lee Account Manager 13-MAY-2019 Updated with " University Hill Elem".						

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Guidelines & Objectives

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

Aesthetic Objective Concentration Levels

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Carbonate	See Alkalinity. Reported at the anion CO ₃ -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

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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.



LINE 3018 CROWN



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 09-OCT-19

PO No.: 1517879

WO No.: L2357714

LSD:

Project Ref: VANCOUVER TECHNICAL SCHOOL

Sample ID: CORR 453 RM 411 FS

Sampled By: Robin Lemay

Date Collected: 01-OCT-19

Lab Sample ID: L2357714-1

Matrix: Water

PAGE 1 of 9

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00147		mg/L	0.005		04-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 09-OCT-19

PO No.: 1517879

WO No.: L2357714

LSD:

Project Ref: VANCOUVER TECHNICAL SCHOOL

Sample ID: CORR 453 RM 421 DF

Sampled By: Robin Lemay

Date Collected: 01-OCT-19

Lab Sample ID: L2357714-2

Matrix: Water

PAGE 2 of 9

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000647		mg/L	0.005		04-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 09-OCT-19

PO No.: 1517879

WO No.: L2357714

LSD:

Project Ref: VANCOUVER TECHNICAL SCHOOL

Sample ID: CORR 353 RM 317 FS

Sampled By: Robin Lemay

Date Collected: 01-OCT-19

Lab Sample ID: L2357714-3

Matrix: Water

PAGE 3 of 9

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000095		mg/L	0.005		04-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 09-OCT-19

PO No.: 1517879

WO No.: L2357714

LSD:

Project Ref: VANCOUVER TECHNICAL SCHOOL

Sample ID: CORR 258 RM 207 FS

Sampled By: Robin Lemay

Date Collected: 01-OCT-19

Lab Sample ID: L2357714-4

Matrix: Water

PAGE 4 of 9

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000677		mg/L	0.005		04-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 09-OCT-19

PO No.: 1517879

WO No.: L2357714

LSD:

Project Ref: VANCOUVER TECHNICAL SCHOOL

Sample ID: AUTO SHOP RM 602 BUB

Sampled By: Robin Lemay

Date Collected: 01-OCT-19

Lab Sample ID: L2357714-5

Matrix: Water

PAGE 5 of 9

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000353		mg/L	0.005		04-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 09-OCT-19

PO No.: 1517879

WO No.: L2357714

LSD:

Project Ref: VANCOUVER TECHNICAL SCHOOL

Sample ID: RM 616 SSDF

Sampled By: Robin Lemay

Date Collected: 01-OCT-19

Lab Sample ID: L2357714-6

Matrix: Water

PAGE 6 of 9

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000299		mg/L	0.005		04-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 09-OCT-19

PO No.: 1517879

WO No.: L2357714

LSD:

Project Ref: VANCOUVER TECHNICAL SCHOOL

Sample ID: COR 700 RM 700A FS

Sampled By: Robin Lemay

Date Collected: 01-OCT-19

Lab Sample ID: L2357714-7

Matrix: Water

PAGE 7 of 9

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000884		mg/L	0.005		04-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 09-OCT-19

PO No.: 1517879

WO No.: L2357714

LSD:

Project Ref: VANCOUVER TECHNICAL SCHOOL

Sample ID: CAFE RM 803 FS

Sampled By: Robin Lemay

Date Collected: 01-OCT-19

Lab Sample ID: L2357714-8

Matrix: Water

PAGE 8 of 9

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000624		mg/L	0.005		04-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

*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 rationing cations to anions
Bicarbonate	See Alkalinity. Report as the anion HCO ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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 of 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.
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.

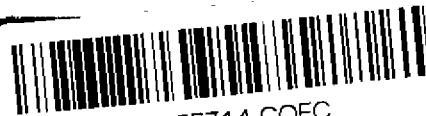
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com



COC Number: 17-762153

Page of

Report To		Report Format		Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)			
Company: <u>Vancouver School Board</u>		Select Report Format: ☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)		Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply			
Contact: <u>Stephen Thomas</u>		Quality Control (QC) Report with Report ☐ YES ☐ NO		4 day [P4-20%] ☐ 1 Business day [E - 100%] ☐			
Phone: <u>604-713-5637</u>		☐ Compare Results to Criteria on Report - provide details below if box checked		3 day [P3-25%] ☐ Same Day, Weekend or Statutory holiday [E2 - 200% (Laboratory opening fees may apply)] ☐			
Company address below will appear on the final report		Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX		2 day [P2-50%] ☐			
Street: <u>1549 Clark Drive</u>		Email 1 or Fax: <u>sstthomas@vsb.bc.ca</u>		Date and Time Required for all E&P TATs: dd-mm-yy hh:mm			
City/Province: <u>Vancouver B.C.</u>		Email 2: <u>rlamay@vsb.bc.ca</u>		For tests that can not be performed according to the service level selected, you will be contacted.			
Postal Code:		Email 3:		Analysis Request			
Invoice To: Same as Report To ☒ YES ☐ NO		Invoice Distribution		NUMBER OF CONTAINERS Lead SAMPLES ON HOLD SUSPECTED HAZARD (see Special Instructions)			
Copy of Invoice with Report ☐ YES ☐ NO		Select Invoice Distribution: ☒ EMAIL ☐ MAIL ☐ FAX					
Company:		Email 1 or Fax: <u>sstthomas@vsb.bc.ca</u>					
Contact:		Email 2: <u>rlamay@vsb.bc.ca</u>					
Project Information		Oil and Gas Required Fields (client use)					
ALS Account # / Quote #:		AFE/Cost Center: PO#					
Job #: <u>Vancouver Technical School</u>		Major/Minor Code: Routing Code:					
PO / AFE:		Requisitioner:					
LSD:		Location:					
ALS Lab Work Order # (lab use only):		ALS Contact:					
ALS Sample # (lab use only)		Date (dd-mm-yy)		Time (hh:mm)		Sample Type	
Sample Identification and/or Coordinates (This description will appear on the report)							
<u>Corr 453 Rm. 411 FS</u>		<u>01-10-19</u>		<u>7:16am</u>		<u>water</u>	
<u>Corr 453 Rm. 421 DF</u>		<u>01-10-19</u>		<u>7:20am</u>		<u>water</u>	
<u>Corr 353 Rm. 317 FS</u>		<u>01-10-19</u>		<u>7:27am</u>		<u>water</u>	
<u>Corr 258 Rm. 207 FS</u>		<u>01-10-19</u>		<u>7:33am</u>		<u>water</u>	
<u>Auto Shop Rm 602 Bub</u>		<u>01-10-19</u>		<u>7:48am</u>		<u>water</u>	
<u>Rm 616 SSDF</u>		<u>01-10-19</u>		<u>7:53am</u>		<u>water</u>	
<u>Corr 700 Rm. 700A FS</u>		<u>01-10-19</u>		<u>8:08am</u>		<u>water</u>	
<u>Cafe Rm. 803 FS</u>		<u>01-10-19</u>		<u>8:17am</u>		<u>water</u>	
Drinking Water (DW) Samples (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		SAMPLE CONDITION AS RECEIVED (lab use only)			
Are samples taken from a Regulated DW System? ☐ YES ☐ NO		<u>No Preservatives added</u>		Frozen: ☐ SIF Observations Yes ☐ No ☐			
Are samples for human consumption/ use? ☐ YES ☐ NO				Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐			
				Cooling Initiated ☒			
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)			
Released by: Date: Time:		Received by: Date: Time:		Received by: <u>HN</u> Date: <u>10/11</u> Time: <u>5:05P</u>			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JUNE 2018 PRINT



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 18-OCT-19

PO No.: 1517879

WO No.: L2363898

LSD:

Project Ref: WAVERLEY AMEX, SPECTRUM

Sample ID: VEST 118 RM. 104 DF

Sampled By: Robin Lemay

Date Collected: 10-OCT-19

Lab Sample ID: L2363898-1

Matrix: Water

PAGE 1 of 2

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000612		mg/L	0.005		13-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

Guidelines & Objectives

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Chloride	Common major anion of water chemistry.
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Heterotrophic	
Plate Count	Criteria is 500 cfu/mL Measure of heterotrophic bacteria present.

GLOSSARY OF REPORT TERMS

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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

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< - 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.



Chain of Custody (COC) / Analytical
Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com



L2363898-COFC

COC Number: 17-762171

Page of

Report To Contact and company name below will appear on the final report		Report Format / Distribution		Standard TAT (surcharges may apply)	
Company:	Vancouver School Board	Select Report Format:	☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)	Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply	
Contact:	Stephen Thomas	Quality Control (QC) Report with Report	☐ YES ☐ NO	4 day [P4-20%] ☐ 1 Business day [E - 100%]	
Phone:	604 713-5637	☐ Compare Results to Criteria on Report - provide details below if box checked		3 day [P3-25%] ☐ Same Day, Weekend or Statutory holiday [E2 - 200%] (Laboratory opening fees may apply)	
Company address below will appear on the final report		Select Distribution:	☒ EMAIL ☐ MAIL ☐ FAX	2 day [P2-50%] ☐	
Street:	1549 Clark Dr.	Email 1 or Fax:	stthomas@vsb.bc.ca	Date and Time Required for all E&P TATs: dd-mm-yy hh:mm	
City/Province:	Vancouver B.C.	Email 2:	rlamay@vsb.bc.ca	For tests that can not be performed according to the service level selected, you will be contacted.	
Postal Code:		Email 3:		Analysis Request	
Invoice To		Invoice Distribution		NUMBER OF CONTAINERS Lead SAMPLES ON HOLD SUSPECTED HAZARD (see Special Instructions)	
Same as Report To	☒ YES ☐ NO	Select Invoice Distribution:	☒ EMAIL ☐ MAIL ☐ FAX		
Copy of Invoice with Report	☐ YES ☐ NO	Email 1 or Fax:	stthomas@vsb.bc.ca		
Company:		Email 2:	rlamay@vsb.bc.ca		
Contact:					
Project Information		Oil and Gas Required Fields (client use)			
ALS Account # / Quote #:		AFE/Cost Center:	PO#		
Job #:	Waverley Amex, Spectrum	Major/Minor Code:	Routing Code:		
PD / AFE:		Requisitioner:			
LSD:		Location:			
ALS Lab Work Order # (lab use only):		ALS Contact:	Sampler:	Robin Lemay	
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type	
	Vest 118 Rm. 104 DF	10-10-19	2:06 pm	water	
Drinking Water (DW) Samples¹ (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		SAMPLE CONDITION AS RECEIVED (lab use only)	
Are samples taken from a Regulated DW System? ☐ YES ☐ NO		No preservatives added		Frozen ☐ SIF Observations Yes ☐ No ☐	
Are samples for human consumption/ use? ☐ YES ☐ NO				Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐	
				Cooling Initiated ☒	
				INITIAL COOLER TEMPERATURES °C	
				FINAL COOLER TEMPERATURES °C	
				9	
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)	
Released by:	Date:	Time:	Received by:	Date:	Time:
				HA	10/10 2:40p

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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YELLOW - CLIENT COPY

JUNE 2016 FRONT

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 18-OCT-19

PO No.: 1517879

WO No.: L2363900

LSD:

Project Ref: WAVERLEY ELEMENTARY

Sample ID: RM. 186 BUB

Sampled By: Robin Lemay

Date Collected: 10-OCT-19

Lab Sample ID: L2363900-1

Matrix: Water

PAGE 1 of 18

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000068		mg/L	0.005		17-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 18-OCT-19

PO No.: 1517879

WO No.: L2363900

LSD:

Project Ref: WAVERLEY ELEMENTARY

Sample ID: RM. 187 BUB

Sampled By: Robin Lemay

Date Collected: 10-OCT-19

Lab Sample ID: L2363900-2

Matrix: Water

PAGE 2 of 18

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000161		mg/L	0.005		17-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 18-OCT-19

PO No.: 1517879

WO No.: L2363900

LSD:

Project Ref: WAVERLEY ELEMENTARY

Sample ID: RM. 184 BUB

Sampled By: Robin Lemay

Date Collected: 10-OCT-19

Lab Sample ID: L2363900-3

Matrix: Water

PAGE 3 of 18

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000050		mg/L	0.005		17-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 18-OCT-19

PO No.: 1517879

WO No.: L2363900

LSD:

Project Ref: WAVERLEY ELEMENTARY

Sample ID: RM. 183 BUB

Sampled By: Robin Lemay

Date Collected: 10-OCT-19

Lab Sample ID: L2363900-4

Matrix: Water

PAGE 4 of 18

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	<0.000050		mg/L	0.005		17-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 18-OCT-19

PO No.: 1517879

WO No.: L2363900

LSD:

Project Ref: WAVERLEY ELEMENTARY

Sample ID: RM. 188 BUB

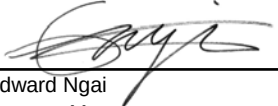
Sampled By: Robin Lemay

Date Collected: 10-OCT-19

Lab Sample ID: L2363900-5

Matrix: Water

PAGE 5 of 18

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	<0.000050		mg/L	0.005		17-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 18-OCT-19

PO No.: 1517879

WO No.: L2363900

LSD:

Project Ref: WAVERLEY ELEMENTARY

Sample ID: RM. 189 BUB

Sampled By: Robin Lemay

Date Collected: 10-OCT-19

Lab Sample ID: L2363900-6

Matrix: Water

PAGE 6 of 18

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	<0.000050		mg/L	0.005		17-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 18-OCT-19

PO No.: 1517879

WO No.: L2363900

LSD:

Project Ref: WAVERLEY ELEMENTARY

Sample ID: RM. 182 BUB

Sampled By: Robin Lemay

Date Collected: 10-OCT-19

Lab Sample ID: L2363900-7

Matrix: Water

PAGE 7 of 18

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	<0.000050		mg/L	0.005		17-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 18-OCT-19

PO No.: 1517879

WO No.: L2363900

LSD:

Project Ref: WAVERLEY ELEMENTARY

Sample ID: RM. 190 BUB

Sampled By: Robin Lemay

Date Collected: 10-OCT-19

Lab Sample ID: L2363900-8

Matrix: Water

PAGE 8 of 18

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000158		mg/L	0.005		17-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 18-OCT-19

PO No.: 1517879

WO No.: L2363900

LSD:

Project Ref: WAVERLEY ELEMENTARY

Sample ID: RM. 181 BUB

Sampled By: Robin Lemay

Date Collected: 10-OCT-19

Lab Sample ID: L2363900-9

Matrix: Water

PAGE 9 of 18

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000934		mg/L	0.005		17-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 18-OCT-19

PO No.: 1517879

WO No.: L2363900

LSD:

Project Ref: WAVERLEY ELEMENTARY

Sample ID: RM. 113 DF

Sampled By: Robin Lemay

Date Collected: 10-OCT-19

Lab Sample ID: L2363900-10

Matrix: Water

PAGE 10 of 18

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000157		mg/L	0.005		17-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 18-OCT-19

PO No.: 1517879

WO No.: L2363900

LSD:

Project Ref: WAVERLEY ELEMENTARY

Sample ID: CORR. 152 RM. 121 SSDF

Sampled By: Robin Lemay

Date Collected: 10-OCT-19

Lab Sample ID: L2363900-11

Matrix: Water

PAGE 11 of 18

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000504		mg/L	0.005		17-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 18-OCT-19

PO No.: 1517879

WO No.: L2363900

LSD:

Project Ref: WAVERLEY ELEMENTARY

Sample ID: CORR. 126 RM. 122 SSDF

Sampled By: Robin Lemay

Date Collected: 10-OCT-19

Lab Sample ID: L2363900-12

Matrix: Water

PAGE 12 of 18

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000063		mg/L	0.005		17-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 18-OCT-19

PO No.: 1517879

WO No.: L2363900

LSD:

Project Ref: WAVERLEY ELEMENTARY

Sample ID: CORR. 126 RM. 125 SSDF

Sampled By: Robin Lemay

Date Collected: 10-OCT-19

Lab Sample ID: L2363900-13

Matrix: Water

PAGE 13 of 18

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000082		mg/L	0.005		17-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 18-OCT-19

PO No.: 1517879

WO No.: L2363900

LSD:

Project Ref: WAVERLEY ELEMENTARY

Sample ID: CORR. 100 RM. 135 SSDF

Sampled By: Robin Lemay

Date Collected: 10-OCT-19

Lab Sample ID: L2363900-14

Matrix: Water

PAGE 14 of 18

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000450		mg/L	0.005		17-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 18-OCT-19

PO No.: 1517879

WO No.: L2363900

LSD:

Project Ref: WAVERLEY ELEMENTARY

Sample ID: RM. 169 DF

Sampled By: Robin Lemay

Date Collected: 10-OCT-19

Lab Sample ID: L2363900-15

Matrix: Water

PAGE 15 of 18

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000528		mg/L	0.005		17-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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NOT IN SERVICE

Date: 18-OCT-19

PO No.: 1517879

WO No.: L2363900

LSD:

Project Ref: WAVERLEY ELEMENTARY

Sample ID: RM. 161 DF

Sampled By: Robin Lemay

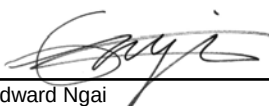
Date Collected: 10-OCT-19

Lab Sample ID: L2363900-16

Matrix: Water

VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

PAGE 16 of 18

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals						
Lead (Pb)-Total	0.0109		mg/L	0.005		17-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 18-OCT-19

PO No.: 1517879

WO No.: L2363900

LSD:

Project Ref: WAVERLEY ELEMENTARY

Sample ID: CORR. 157 RM. 159 SSDF

Sampled By: Robin Lemay

Date Collected: 10-OCT-19

Lab Sample ID: L2363900-17

Matrix: Water

PAGE 17 of 18

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000128		mg/L	0.005		17-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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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.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

*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 rationing cations to anions
Bicarbonate	See Alkalinity. Report as the anion HCO ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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 of 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.
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.

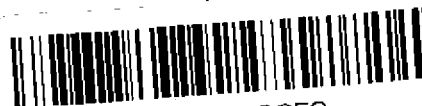
D.L. - The reporting limit.

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.



L2363900-COFC

COC Number: 17 - 762170

Page 1 of 2

Report To Contact and company name below will appear on the final report			Report For Institution			Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)																																																																																																																													
Company: <u>Vancouver School Board</u>			Select Report Format: ☒ PDF ☐ EXCEL ☐ EDD (DIGITAL)			Regular [R] ☒ Standard TAT if received by 3 pm - business days - no surcharges apply																																																																																																																													
Contact: <u>Stephen Thomas</u>			Quality Control (QC) Report with Report ☐ YES ☐ NO			PRIORITY (business days) 4 day [P4-20%] ☐ 3 day [P3-25%] ☐ 2 day [P2-50%] ☐		EMERGENCY 1 Business day [E - 100%] Same Day, Weekend or Statutory holiday [E2 - 200%] (Laboratory opening fees may apply)																																																																																																																											
Phone: <u>604 713-5637</u>			☐ Compare Results to Criteria on Report - provide details below if box checked Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX																																																																																																																																
Company address below will appear on the final report			Email 1 or Fax: <u>ss.thomas@usb.bc.ca</u>			Date and Time Required for all E&P TATs: dd-mm-yy hh:mm																																																																																																																													
Street: <u>1549 Clark Dr.</u>			Email 2: <u>rlenay@usb.bc.ca</u>			For tests that can not be performed according to the service level selected, you will be contacted.																																																																																																																													
City/Province: <u>Vancouver B.C.</u>			Email 3:			Analysis Request																																																																																																																													
Postal Code:			Invoice Distribution			<table border="1" style="width:100%; height: 300px;"> <tr> <th colspan="12">Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below</th> </tr> <tr> <td colspan="12" style="text-align: center;"> NUMBER OF CONTAINERS SAMPLES ON HOLD SUSPECTED HAZARD (see Special Instructions) </td> </tr> <tr><td colspan="12"></td></tr> <tr><td colspan="12"></td></tr> <tr><td colspan="12"></td></tr> <tr><td colspan="12"></td></tr> <tr><td colspan="12"></td></tr> <tr><td colspan="12"></td></tr> <tr><td colspan="12"></td></tr> <tr><td colspan="12"></td></tr> </table>						Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below												NUMBER OF CONTAINERS SAMPLES ON HOLD SUSPECTED HAZARD (see Special Instructions)																																																																																																											
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Copy of Invoice with Report ☐ YES ☐ NO			Email 1 or Fax: <u>ss.thomas@usb.bc.ca</u>																																																																																																																																
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ALS Lab Work Order # (lab use only):			Location:																																																																																																																																
ALS Contact:			Sampler: <u>Robin Leno</u>																																																																																																																																
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)		Date (dd-mm-yy)	Time (hh:mm)	Sample Type																																																																																																																														
1	Rm. 186 Bub		10-10-19	12:18pm	water																																																																																																																														
2	Rm. 187 Bub		10-10-19	12:25pm	water																																																																																																																														
3	Rm. 184 Bub		10-10-19	12:28pm	water																																																																																																																														
4	Rm. 183 Bub		10-10-19	12:31pm	water																																																																																																																														
5	Rm. 188 Bub		10-10-19	12:34pm	water																																																																																																																														
6	Rm. 189 Bub		10-10-19	12:37pm	water																																																																																																																														
7	Rm. 182 Bub		10-10-19	12:39pm	water																																																																																																																														
8	Rm. 190 Bub		10-10-19	12:42pm	water																																																																																																																														
9	Rm. 181 Bub		10-10-19	12:48pm	water																																																																																																																														
10	Rm. 113 DF		10-10-19	12:51pm	water																																																																																																																														
11	Corr. 152 Rm. 121 SSDF		10-10-19	12:56pm	water																																																																																																																														
12	Corr. 126 Rm. 122 SSDF		10-10-19	1:18pm	water																																																																																																																														
Drinking Water (DW) Samples¹ (client use)			Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)																																																																																																																																
Are samples taken from a Regulated DW System? ☐ YES ☐ NO			No preservatives added																																																																																																																																
Are samples for human consumption/ use? ☐ YES ☐ NO																																																																																																																																			
Frozen ☐			SIF Observations Yes ☐ No ☐																																																																																																																																
Ice Packs ☒ Ice Cubes ☐			Custody seal intact Yes ☐ No ☐																																																																																																																																
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			Received by: <u>WA</u> Date: <u>10/10</u> Time: <u>2:40p</u>																																																																																																																																

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JUNE 2015 FORM

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

COC Number: 17-762169

Page 2 of 2



L2363900-COFC

Report To		Report For		Below - Contact your AM to confirm all E&P TATs (surcharges may apply)							
Company:	Vancouver School Board	Select Report Format:	☒ PDF ☐ EXCEL	Standard TAT if received by 3 pm - business days - no surcharges apply							
Contact:	Stephen Thomas	Quality Control (QC) Report with Report	☐ YES ☐ NO	4 day (P1-25%) ☐ 3 day (P3-25%) ☐ 2 day (P2-50%) ☐ 1 Business day [E - 100%] ☐ Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐							
Phone:	604-713-5637	☐ Compare Results to Criteria on Report - provide details below if box checked									
Company address below will appear on the final report		Select Distribution:	☒ EMAIL ☐ MAIL ☐ FAX	Date and Time Required for all E&P TATs: dd-mm-yy hh:mm							
Street:	1549 Clark Dr	Email 1 or Fax:	ss.thomas@vsb.bc.ca	For tests that can not be performed according to the service level selected, you will be contacted.							
City/Province:	Vancouver B.C.	Email 2:	rlamay@vsb.bc.ca	Analysis Request							
Postal Code:		Email 3:		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below							
Invoice To	Same as Report To ☒ YES ☐ NO	Invoice Distribution		NUMBER OF CONTAINERS Lead		SAMPLES ON HOLD		SUSPECTED HAZARD (see Special Instructions)			
Copy of Invoice with Report	☐ YES ☐ NO	Select Invoice Distribution:	☒ EMAIL ☐ MAIL ☐ FAX								
Company:		Email 1 or Fax:	ss.thomas@vsb.bc.ca								
Contact:		Email 2:	rlamay@vsb.bc.ca								
Project Information		Oil and Gas Required Fields (client use)									
ALS Account # / Quote #:		AFE/Cost Center:		PO#							
Job #:		Major/Minor Code:		Routing Code:							
PO / AFE:		Requisitioner:									
LSD:		Location:									
ALS Lab Work Order # (lab use only):		ALS Contact:		Sampler:		Robin Lemay					
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)		Date (dd-mm-yy)	Time (hh:mm)	Sample Type						
13	Corr. 126 Rm. 125 SSDF		10-10-19	1:20pm	water						
14	Corr. 100 Rm. 135 SSDF		10-10-19	1:23pm	water						
15	Rm. 169 DF		10-10-19	1:27pm	water						
16	Rm. 161 DF		10-10-19	1:32pm	water						
17	Corr. 157 Rm. 159 SSDF		10-10-19	1:36pm	water						
Drinking Water (DW) Samples (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		SAMPLE CONDITION AS RECEIVED (lab use only)							
Are samples taken from a Regulated DW System? ☐ YES ☐ NO		No preservatives added		Frozen ☐ SIF Observations Yes ☐ No ☐ Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐ Cooling Initiated ☒							
Are samples for human consumption/ use? ☐ YES ☐ NO				INITIAL COOLER TEMPERATURES °C FINAL COOLER TEMPERATURES °C							
				INITIAL SHIPMENT RECEPTION (lab use only) Received by: 11A Date: 10/10 Time: 2:40P							
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)							
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY

YELLOW - CLIENT COPY

JUNE 2018 FRONT



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2359358

LSD:

Project Ref: WINDERMERE SECONDARY

Sample ID: RM 131 FS

Sampled By: ROBIN LENAY

Date Collected: 03-OCT-19

Lab Sample ID: L2359358-1

Matrix: WATER

PAGE 1 of 16

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000502		mg/L	0.005		08-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2359358

LSD:

Project Ref: WINDERMERE SECONDARY

Sample ID: CORR 139 RM106 DF

Sampled By: ROBIN LENAY

Date Collected: 03-OCT-19

Lab Sample ID: L2359358-2

Matrix: WATER

PAGE 2 of 16

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00190		mg/L	0.005		08-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2359358

LSD:

Project Ref: WINDERMERE SECONDARY

Sample ID: CORR 146 RM114C DF

Sampled By: ROBIN LENAY

Date Collected: 03-OCT-19

Lab Sample ID: L2359358-3

Matrix: WATER

PAGE 3 of 16

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000568		mg/L	0.005		08-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2359358

LSD:

Project Ref: WINDERMERE SECONDARY

Sample ID: RM 116 BUB

Sampled By: ROBIN LENAY

Date Collected: 03-OCT-19

Lab Sample ID: L2359358-4

Matrix: WATER

PAGE 4 of 16

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000743		mg/L	0.005		08-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2359358

LSD:

Project Ref: WINDERMERE SECONDARY

Sample ID: RM118 BUB

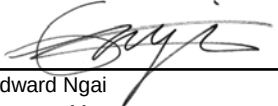
Sampled By: ROBIN LENAY

Date Collected: 03-OCT-19

Lab Sample ID: L2359358-5

Matrix: WATER

PAGE 5 of 16

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00102		mg/L	0.005		08-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2359358

LSD:

Project Ref: WINDERMERE SECONDARY

Sample ID: CORR 240 RM 217 DF

Sampled By: ROBIN LENAY

Date Collected: 03-OCT-19

Lab Sample ID: L2359358-6

Matrix: WATER

PAGE 6 of 16

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000618		mg/L	0.005		08-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Maintenance and Construction
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Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2359358

LSD:

Project Ref: WINDERMERE SECONDARY

Sample ID: CORR 240 RM 207 DF

Sampled By: ROBIN LENAY

Date Collected: 03-OCT-19

Lab Sample ID: L2359358-7

Matrix: WATER

PAGE 7 of 16

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000393		mg/L	0.005		08-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2359358

LSD:

Project Ref: WINDERMERE SECONDARY

Sample ID: RM 250 DF

Sampled By: ROBIN LENAY

Date Collected: 03-OCT-19

Lab Sample ID: L2359358-8

Matrix: WATER

PAGE 8 of 16

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000482		mg/L	0.005		08-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2359358

LSD:

Project Ref: WINDERMERE SECONDARY

Sample ID: RM 224 FS

Sampled By: ROBIN LENAY

Date Collected: 03-OCT-19

Lab Sample ID: L2359358-9

Matrix: WATER

PAGE 9 of 16

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000406		mg/L	0.005		08-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2359358

LSD:

Project Ref: WINDERMERE SECONDARY

Sample ID: CORR 327 RM 328 SSDF

Sampled By: ROBIN LENAY

Date Collected: 03-OCT-19

Lab Sample ID: L2359358-10

Matrix: WATER

PAGE 10 of 16

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000815		mg/L	0.005		08-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2359358

LSD:

Project Ref: WINDERMERE SECONDARY

Sample ID: CORR 332 RM 317 D

Sampled By: ROBIN LENAY

Date Collected: 03-OCT-19

Lab Sample ID: L2359358-11

Matrix: WATER

PAGE 11 of 16

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000322		mg/L	0.005		08-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2359358

LSD:

Project Ref: WINDERMERE SECONDARY

Sample ID: RM 302 FS

Sampled By: ROBIN LENAY

Date Collected: 03-OCT-19

Lab Sample ID: L2359358-12

Matrix: WATER

PAGE 12 of 16

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000720		mg/L	0.005		08-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2359358

LSD:

Project Ref: WINDERMERE SECONDARY

Sample ID: CORR 201 RM 202 DF

Sampled By: ROBIN LENAY

Date Collected: 03-OCT-19

Lab Sample ID: L2359358-13

Matrix: WATER

PAGE 13 of 16

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000991		mg/L	0.005		08-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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.						
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1549 Clark Drive
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ATTN: Stephen Thomas

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2359358

LSD:

Project Ref: WINDERMERE SECONDARY

Sample ID: RM 236 BUB

Sampled By: ROBIN LENAY

Date Collected: 03-OCT-19

Lab Sample ID: L2359358-14

Matrix: WATER

PAGE 14 of 16

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.000752		mg/L	0.005		08-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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



VANCOUVER SCHOOL BOARD
Maintenance and Construction
1549 Clark Drive
Vancouver BC V5L 3L4
ATTN: Stephen Thomas

Date: 10-OCT-19

PO No.: 1517879

WO No.: L2359358

LSD:

Project Ref: WINDERMERE SECONDARY

Sample ID: RM 237 BUB

Sampled By: ROBIN LENAY

Date Collected: 03-OCT-19

Lab Sample ID: L2359358-15

Matrix: WATER

PAGE 15 of 16

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals Lead (Pb)-Total	0.00182		mg/L	0.005		08-OCT-19
CDWQG = Health Canada Guideline Limits updated JUNE 2019 * 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  Edward Ngai Account Manager						

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

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.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

*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 ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -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 of 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.
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.



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L2359358-COFC

COC Number: 17 - 756182

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Report To		Report Format / Dis		Contact your AM to confirm all E&P TATs (surcharges may apply)																																																																																																																																																			
Company:	Vancouver School Board	Select Report Format:	☒ PDF ☐ EXCEL ☐ WORD (DIGITAL)	Regular [R]	☒ Standard TAT if received by 3 pm - business days - no surcharges apply																																																																																																																																																		
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Phone:	604-713-5637	☐ Compare Results to Criteria on Report - provide details below if box checked		3 day [P3-25%]	☐ Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)]																																																																																																																																																		
Company address below will appear on the final report		Select Distribution:	☒ EMAIL ☐ MAIL ☐ FAX	2 day [P2-50%]	☐																																																																																																																																																		
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City/Province:	Vancouver B.C.	Email 2	r.lamay@vsb.bc.ca	For tests that can not be performed according to the service level selected, you will be contacted.																																																																																																																																																			
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Invoice To	Same as Report To ☒ YES ☐ NO	Invoice Distribution		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below <table border="1"><thead><tr><th colspan="12">NUMBER OF CONTAINERS</th><th rowspan="2">SUSPECTED HAZARD (see Special Instructions)</th></tr><tr><th colspan="12">Lead</th></tr></thead><tbody><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td rowspan="10">SAMPLES ON HOLD</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></tbody></table>		NUMBER OF CONTAINERS												SUSPECTED HAZARD (see Special Instructions)	Lead																								SAMPLES ON HOLD																																																																																																												
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	Corr 139 Rm. 106 DF	03-10-19	7:09am	water																																																																																																																																																			
	Corr 146 Rm. 114c DF	03-10-19	7:15am	water																																																																																																																																																			
	Rm. 116 Bub	03-10-19	7:21am	water																																																																																																																																																			
	Rm. 118 Bub	03-10-19	7:26am	water																																																																																																																																																			
	Corr 240 Rm. 217 DF	03-10-19	7:37am	water																																																																																																																																																			
	Corr 240 Rm. 207 DF	03-10-19	7:42am	water																																																																																																																																																			
	Rm. 250 DF	03-10-19	7:49am	water																																																																																																																																																			
	Rm. 224 FS	03-10-19	7:59am	water																																																																																																																																																			
	Corr 327 Rm. 328 SSDF	03-10-19	8:07am	water																																																																																																																																																			
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Drinking Water (DW) Samples ¹ (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		SAMPLE CONDITION AS RECEIVED (lab use only)																																																																																																																																																			
Are samples taken from a Regulated DW System? ☐ YES ☐ NO		No preservatives added		Frozen ☐ SIF Observations Yes ☐ No ☐																																																																																																																																																			
Are samples for human consumption/ use? ☐ YES ☐ NO				Ice Packs ☒ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐																																																																																																																																																			
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REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY

YELLOW - CLIENT COPY

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

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1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

— LIVE 2018 PERSON