



December 18, 2017

School District 68 (Nanaimo-Ladysmith) 395 Wakesiah Road Nanaimo, BC V9R 3K6 ISSUED FOR USE FILE: 704-ENW.VENW03140-01 Via Email: BHackwood@sd68.bc.ca; Chris.Baker@sd68.bc.ca

Attention: Mr. Brian Hackwood, Maintenance Manager

Subject: Domestic Water Testing (Lead) Inventory – Quennell Gym

1.0 INTRODUCTION

Tetra Tech Canada Inc. (Tetra Tech) was retained School District 68 Nanaimo-Ladysmith (SD 68) to conduct a domestic water testing inventory at Quennell Gym located in SD 68. Tetra Tech understands that the BC Ministry of Education has issued a directive to protect drinking water. The directive requires that a systematic investigation of public drinking water supplies at select schools in the District be undertaken. The investigation is based on procedures set forth by the Vancouver Island Health Authority (VIHA), modified per Health Canada guidelines, to ascertain risk and mitigation.

Tetra Tech understands that the sampling schedule, collection, testing and reporting of results needs to be completed by December 22, 2017 in order to allow sufficient time for SD 68 to implement mitigation measures prior to its deadline of March 31, 2018.

Carrie McVeigh, of SD 68, provided Tetra Tech with authorization to proceed with the inventory on October 24, 2017.

2.0 METHODOLOGY

Tetra Tech completed the domestic water testing inventory program at Quennell Gym on November 6th and 27th, 2017. The 2017 sampling program was conducted as per the protocols established during the 2016 program. The methodologies employed during the field program are detailed in the following subsections.

2.1 Sampling Locations

Tetra Tech reviewed plans for the facility prior to commencing the field work to identify potential sampling locations. The facility was then assessed in the field and sampling locations were selected based on the probability of human consumption at a location. The sampling locations included one point that was closest to the location where the water supply enters the building, one that is the furthest point from where the water supply enters the building and from points where human consumption of water occurred or was reasonably likely to occur. The sampling locations for Quennell Gym are shown on the attached Figure 1.



Drinking fountains and kitchen sinks were all considered to have a high probability of human consumption of water and were always sampled. Sinks with visible evidence of human consumption of water, such as water bottles, cups, or electric kettles were also considered to have a high probability of human consumption of water and were sampled. Washrooms and utility sinks, unless there was other evidence of human consumption of water (such as an electric kettle) were considered to be a low probability of human consumption of water and only representative samples were collected.

2.2 Drinking Water Sampling

Sampling was conducted in the early hours of Monday, November 6th and 27th, 2017 in order collect water samples representative of an approximate worse-case scenario of water that had remained in contact with the facility's plumbing over the course of a weekend. Two samples were collected at each sample location; the first collected immediately prior to any water line flushing (0 second sample); the second collected after thirty seconds of water line flushing (30 second sample).

The process for the sequence of analysis for a sample location is as follows:

- Only the pre-flush (0 second) sample is initially submitted for laboratory analysis;
- If the analytical result exceeds the *Guidelines for Canadian Drinking Water Quality* (GCDWQ) Maximum Allowable Concentration (MAC), the 30 second sample would be submitted for further analysis; and
- If the 30 second sample analytical result exceeds the GCDWQ MAC, additional samples would be collected after flushing with cold water for 2 minutes and 5 minutes at a subsequent sampling event and both samples submitted for analysis.

Water samples were collected directly from the sample point into clean, labeled, new laboratory-supplied containers pre-charged with preservative for total lead. Sampling personnel wore new nitrile gloves prior to collecting each sample. Samples were kept in a cooler with ice after collection until being brought back to Tetra Tech's Nanaimo office, where samples not immediately submitted to the laboratory were stored in refrigerated conditions.

2.3 Analytical Testing

Maxxam is a Canadian Association for Laboratory Accreditation (CALA) accredited laboratory that is qualified to analyze the samples using British Columbia Ministry of Environment (MOE)-approved procedures. All water samples submitted were analyzed for total lead.

2.4 Quality Assurance / Quality Control

During the sampling program, Tetra Tech implemented a Quality Assurance/Quality Control (QA/QC) program to ensure the integrity of the sampling methodology and analytical testing. The QA/QC program adhered to Tetra Tech's in-house Quality Management System (QMS), which was designed to generate representative samples, minimize the potential for cross-contamination between sampling locations and samples, and reduce the potential for systematic bias.

The QA/QC program included the following tasks:

- Recording the results of field activities in the field concurrently with the activities;
- Use of clean, new sampling gloves at each sampling location;
- Placing samples into new, labeled laboratory-supplied containers;





- Transporting samples to Maxxam in chilled coolers using chain-of-custody procedures;
- Using a Canadian Association for Laboratory Accreditation (CALA) accredited laboratory that is qualified to analyze the samples using MOE-approved procedures;
- Independently verifying the sample concentrations flagged by Maxxam as being greater than Health Canada guidelines; and
- Conducting a review of this report by a qualified senior Tetra Tech professional to ensure that the report meets Tetra Tech technical and reporting requirements.

Laboratory Quality Assurance / Quality Control Program

Water samples were submitted to Maxxam, a CALA accredited laboratory. Laboratory testing was conducted using methods outlined in the British Columbia Environmental Laboratory Manual. Laboratory QA/QC reports are attached to the laboratory reports presented in Appendix B. Samples included in the QA/QC reports consist of laboratory batches and will include random samples from the lab report and potentially other projects to complete a batch.

The Laboratories noted any sample deficiencies, such as unacceptable headspace, broken jars or bottles, etc. As well, the laboratory measured the temperature of samples received by the laboratory in Burnaby.

3.0 ASSESSMENT STANDARDS

As per the guidance from the Vancouver Island Health Authority (VIHA), Tetra Tech compared the sample analytical results to the *Guidelines for Canadian Drinking Water Quality* (GCDWQ) published by Health Canada, February 2017. The guidelines list a Maximum Acceptable Concentration (MAC) for lead of 10 µg/L (0.010 mg/L). The MAC for lead is based on chronic effects and is intended to apply to average concentrations in water consumed for extended periods. No immediately toxic concentration for lead is listed, however exposure to lead should nevertheless be kept to a minimum.

4.0 ANALYTICAL RESULTS

A total of 3 sample locations were identified; two samples were collected at each location (i.e., 0 second sample and 30 second sample). Tetra Tech collected water 0 and 30 second samples from Quennell Gym on November 6th, 2017. All three pre-flush (0 second) samples were submitted for laboratory analysis of total lead.

Two of the 0 second samples contained concentration of total lead greater than the GCDWQ MAC.

Sample QG01 was collected from a bathroom sink in the boy's washroom and sample QG02 was collected from a drinking fountain in the girl's locker room, both on the lower floor. The 30 second sample for both these locations was submitted for laboratory analysis of total lead.

The 30 second sample at QG01 contained concentrations of total lead greater than the GCDWQ MAC.

Tetra Tech collected 2 minute and 5 minute flush samples from QG01on November 27th and submitted them for laboratory analysis of total lead.

Both the 2 minute and 5 minute samples at QG01 contained total lead concentrations less than the GCDWQ MAC.





Sampling locations are shown on Figure 1. Laboratory testing results for Quennell Gym are summarized in the table below. The complete laboratory certificate is provided as Appendix B.

Table 1: Laboratory Testing Results

| Sample ID | Sample Date | MAC | Total Lead (µg/L) |
|-----------|-------------|-----------|-------------------|
| | 0 Second | l Samples | |
| QG01-0s | 11/6/2017 | | 208 |
| QG02-0s | 11/6/2017 | 10 µg/L | 15.4 |
| QG04-0s | 11/6/2017 | | 6.24 |
| | 30 Secon | d Samples | |
| QG01-30s | 11/6/2017 | 10 ug/l | 33.6 |
| QG02-30s | 11/6/2017 | 10 μg/L | 2.72 |
| | 2 Minute | e Sample | |
| QG01-2m | 11/27/2017 | 10 µg/L | 0.91 |
| | 5 Minute | e Sample | |
| QG01-5m | 11/27/2017 | 10 µg/L | 2.33 |
| Notes: | Grey Fill | Ex | ceeds GCDWQ MAC |

5.0 DISCUSSION AND RECOMMENDATIONS

Tetra Tech's sampling program was based upon guidance from the Ministry of Health, found in the document *Guidance on Controlling Corrosion in Drinking Water Distribution Systems* (2009). The rationale is that for each sampling point, if the pre-flush (0 second) sample (Tier 1) contained elevated lead concentrations, it could indicate that the faucet or fittings are the likely be the source of lead. If a subsequent 30 second flush sample (Tier 2) contained elevated lead concentrations, the source of the lead would likely be the piping (plumbing) leading to the faucet; whereas low lead concentrations in the 30 second sample would further indicate that the source was likely the faucet and fittings. Finally, 2 and 5 minute flush samples (if required) should be drawing water directly from the water supply piping within the building and would indicate if flushing is feasible for lowering the lead concentration in water within the building.

The Health Canada guidance recommend that Tier 2 sampling (30 second samples) take place when Tier 1 sampling identifies more than 10% of sites with lead concentrations above the MAC, and then only at the 10% of sampling sites with the highest lead concentration. Rather, Tetra Tech ran every 30 second sample for locations where the 0 second sample was above the MAC to show that flushing was adequate to lower the lead concentration in the drinking water at each point of concern.

The guidance from the Ministry of Health recommended that samples be collected after the sampling points had been stagnant for a minimum of 8 hours but not longer than 24 hours in order to simulate the worst case daily scenario for lead in drinking water consumption. Based on guidance from VIHA, SD 68 directed Tetra Tech to collect samples Monday mornings prior to any staff or students arriving at the facilities in order to simulate a worst-case scenario for stagnant water. As such, lead concentrations reported represent what could be expected following a weekend and would likely be lower on subsequent weekday mornings.



Two of the 3 pre-flush (0 second) samples collected at Quennell Gym contained concentrations of lead greater than the GCDWQ MAC. Lead concentrations at sample location QG02 exceeded the MAC for the 0 second samples (15.4 μ g/L) but was below the guideline for the 30 second sample (2.72 μ g/L). Lead concentrations at QG01 exceeded the MAC for both 0 and 30 second samples (208 and 33.6 μ g/L, respectively) but were below in the guideline for the 2 and 5 minute samples.

As previously noted, where lead concentrations are elevated in 0 second samples, the contributing source is likely the fixture (i.e., faucet or fittings). Where the 30 second sample is also elevated the source is likely the plumbing immediately behind the fixture. Since lead concentrations at location QG02 exceeded the MAC for the 0 second sample but not for the 30 second sample, there is potentially a lead source in the fixture. At QG01 the plumbing behind the fixture may also be a contributing source.

Flushing is adequate to lower the lead concentrations at all sample points in Quennell Gym. Signage stating "Water Quality – First thing in the morning... Run the water for two minutes before drinking. Throughout the day... Let the water run until it is cold before drinking" should be maintained throughout the facility at each point where drinking water could be consumed.

6.0 SUMMARY AND CONCLUSIONS

Two pre-flush (0 second) samples (QG01 and QG02) collected at Quennell Gym contained concentrations of total lead greater than the GCDWQ MAC of 10µg/L (0.010 mg/L). Sample QG01 had a concentration of lead exceeding the GCDWQ for the 0 second and 30 second samples but was below for the 2 minute and 5 minute sample.

Tetra Tech recommends that SD 68 continue with its ongoing procedure of conducting a 2 minute flush at each drinking water consumption point each morning; and running taps/faucets until cold prior to consuming water. Signage stating "Water Quality – First thing in the morning... Run the water for two minutes before drinking. Throughout the day... Let the water run until it is cold before drinking" should be maintained at all water consumption points.

Tetra Tech recommends that the facility be inspected on a routine basis to ensure that the above noted signage is present and in good condition at each point where drinking water could be consumed. Tetra Tech further recommends that a bulletin be provided to staff summarizing the drinking water quality results at the facility and reminding them of the above procedure. Staff should then instruct students and visitors in the drinking water procedure.







7.0 CLOSURE

This report has been prepared based on the scope of work and for the use of School District 68, which includes distribution as required for the purposes for which this assessment was commissioned. The assessment has been carried out in accordance with generally accepted professional practice. No other warranty is made, either express or implied. Professional judgment has been applied in developing the recommendations in this report.

This report was prepared by personnel with professional experience in investigations of this nature and who specifically conducted the investigations at this Site. Reference should be made to the 'Geoenvironmental Report – Limitations on the Use of this Document' attached in Appendix A that forms a part of this report.

We trust this report meets your present requirements. If you have any questions or comments, please contact the undersigned.

Respectfully submitted, Tetra Tech Canada Inc.

Malter

Shawneen Walker, B.Sc., R.P.Bio., P.Biol. Biologist Environment Practice Direct Line: 250.756.3966 x245 Shawneen.Walker@tetratech.com

/dr

Attachments: Figure 1 - Quennell Gym Sample Locations Appendix A - Limitations on the Use of this Document Appendix B - Laboratory Report

Nigel Cavanagn, NI.Sc., K.P.Bio., P.Biol. Senior Aquatic Biologist Environment Practice Direct Line: 250.756.3966 x240 Nigel.Cavanagh@tetratech.com





FIGURES

Figure 1 Quennell Gym Sample Locations





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| | OFFICE EDM | DATE December | 2017 | | i igure i |



APPENDIX A

LIMITATIONS ON THE USE OF THIS DOCUMENT



GEOENVIRONMENTAL

1.1 USE OF DOCUMENT AND OWNERSHIP

This document pertains to a specific site, a specific development, and a specific scope of work. The document may include plans, drawings, profiles and other supporting documents that collectively constitute the document (the "Professional Document").

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Where TETRA TECH submits electronic file and/or hard copy versions of the Professional Document or any drawings or other project-related documents and deliverables (collectively termed TETRA TECH's "Instruments of Professional Service"), only the signed and/or sealed versions shall be considered final. The original signed and/or sealed electronic file and/or hard copy version archived by TETRA TECH shall be deemed to be the original. TETRA TECH will archive a protected digital copy of the original signed and/or sealed version for a period of 10 years.

Both electronic file and/or hard copy versions of TETRA TECH's Instruments of Professional Service shall not, under any circumstances, be altered by any party except TETRA TECH. TETRA TECH's Instruments of Professional Service will be used only and exactly as submitted by TETRA TECH.

Electronic files submitted by TETRA TECH have been prepared and submitted using specific software and hardware systems. TETRA TECH makes no representation about the compatibility of these files with the Client's current or future software and hardware systems.

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Services performed by TETRA TECH for the Professional Document have been conducted in accordance with the Contract, in a manner

consistent with the level of skill ordinarily exercised by members of the profession currently practicing under similar conditions in the jurisdiction in which the services are provided. Professional judgment has been applied in developing the conclusions and/or recommendations provided in this Professional Document. No warranty or guarantee, express or implied, is made concerning the test results, comments, recommendations, or any other portion of the Professional Document.

If any error or omission is detected by the Client or an Authorized Party, the error or omission must be immediately brought to the attention of TETRA TECH.

1.4 DISCLOSURE OF INFORMATION BY CLIENT

The Client acknowledges that it has fully cooperated with TETRA TECH with respect to the provision of all available information on the past, present, and proposed conditions on the site, including historical information respecting the use of the site. The Client further acknowledges that in order for TETRA TECH to properly provide the services contracted for in the Contract, TETRA TECH has relied upon the Client with respect to both the full disclosure and accuracy of any such information.

1.5 INFORMATION PROVIDED TO TETRA TECH BY OTHERS

During the performance of the work and the preparation of this Professional Document, TETRA TECH may have relied on information provided by persons other than the Client.

While TETRA TECH endeavours to verify the accuracy of such information, TETRA TECH accepts no responsibility for the accuracy or the reliability of such information even where inaccurate or unreliable information impacts any recommendations, design or other deliverables and causes the Client or an Authorized Party loss or damage.

1.6 GENERAL LIMITATIONS OF DOCUMENT

This Professional Document is based solely on the conditions presented and the data available to TETRA TECH at the time the data were collected in the field or gathered from available databases.

The Client, and any Authorized Party, acknowledges that the Professional Document is based on limited data and that the conclusions, opinions, and recommendations contained in the Professional Document are the result of the application of professional judgment to such limited data.

The Professional Document is not applicable to any other sites, nor should it be relied upon for types of development other than those to which it refers. Any variation from the site conditions present, or variation in assumed conditions which might form the basis of design or recommendations as outlined in this report, at or on the development proposed as of the date of the Professional Document requires a supplementary investigation and assessment.

TETRA TECH is neither qualified to, nor is it making, any recommendations with respect to the purchase, sale, investment or development of the property, the decisions on which are the sole responsibility of the Client.

1.7 NOTIFICATION OF AUTHORITIES

In certain instances, the discovery of hazardous substances or conditions and materials may require that regulatory agencies and other persons be informed and the client agrees that notification to such bodies or persons as required may be done by TETRA TECH in its reasonably exercised discretion.





APPENDIX B

LABORATORY REPORT



Your Project #: ENW.VENW03140-01

Attention:Shawneen Walker

TETRA TECH CANADA INC. #1 - 4376 BOBAN DRIVE NANAIMO, BC Canada V9T 6A7

Your C.O.C. #: 540307-01-01, 540307-02-01, 540307-05-01, 540307-04-01

Report Date: 2017/11/30 Report #: R2484553 Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B799079 Received: 2017/11/07, 08:50

Sample Matrix: DRINKING WATER # Samples Received: 38

| | | Date | Date | | |
|-------------------------------|----------|------------|------------|-------------------|----------------------|
| Analyses | Quantity | Extracted | Analyzed | Laboratory Method | Analytical Method |
| Elements by CRC ICPMS (total) | 37 | N/A | 2017/11/09 | BBY7SOP-00003, | BCLM2005,EPA6020bR2m |
| Elements by CRC ICPMS (total) | 1 | 2017/11/09 | 2017/11/10 | BBY7SOP-00003, | BCLM2005,EPA6020bR2m |

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.



Your Project #: ENW.VENW03140-01

Attention:Shawneen Walker

TETRA TECH CANADA INC. #1 - 4376 BOBAN DRIVE NANAIMO, BC Canada V9T 6A7

Your C.O.C. #: 540307-01-01, 540307-02-01, 540307-05-01, 540307-04-01

Report Date: 2017/11/30 Report #: R2484553 Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B799079 Received: 2017/11/07, 08:50

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager. Letitia Prefontaine, B.Sc., Senior Project Manager Email: LPrefontaine@maxxam.ca Phone# (604)639-2616

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



LATE OF ANALYSIS – REVIS





Report Date: 2017/11/30

TETRA TECH CANADA INC. Client Project #: ENW.VENW03140-01 Sampler Initials: SW

ELEMENTS BY ATOMIC SPECTROSCOPY (DRINKING WATER)

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| COC Number S40307-01-01 S40307-02-01 S40307-02-01 <td>Sampling Date</td> <td></td> <td></td> <td></td> <td>2017/1</td> <td>1/06</td> <td></td> <td></td> <td>2017,</td> <td>/11/06</td> <td></td> <td></td> <td>2017,</td> <td>/11/06</td> <td></td> <td></td> <td></td> | Sampling Date | | | | 2017/1 | 1/06 | | | 2017, | /11/06 | | | 2017, | /11/06 | | | | |
| Total Metals by ICPMS Total Lead (Pb) ug/L 10 3.37 0.20 8823586 287 1.0 8825449 28.2 0.20 8823586 No Fill No Exceedance Exceeds 1 criteria policy/level Exceeds 1 criteria policy/level Exceeds 5 criteria policy/level Exceeds 5 criteria policy/level Black Exceeds both criteria/levels Exceeds both criteria/levels SK7433 SK7434 SK7436 SK7437 SK7438 SK7439 Image: Criteria policy/level Black Exceeds both criteria/levels Exceeds both criteria/levels SK7433 SK7434 SK7436 SK7437 SK7438 SK7439 Image: Criteria policy/level Black Exceeds both criteria/levels Lis#10-0S Lis#13-0S Lis#14-0S RDL QC I In Metals by ICPMS Image: Criteria policy/level Exceeds 1 criteria policy/level Exceeds 1 criteria/levels Excee | | | | | 540307- | -01-01 | | | 54030 | 7-01-01 | | | 54030 | 7-01-01 | | | | |
| Total Lead (Pb) ug/L 10 3.37 0.20 8823586 287 1.0 8825449 28.2 0.20 8823586 No Fill No Exceedance Exceeds 1 criteria policy/level Exceeds 1 criteria policy/levels Exceeds 1 criteria policy/levels Exceeds 1 criteria policy/level 2017/11/06 <td></td> <td></td> <td>UNITS</td> <td>MAG</td> <td>C LS#06</td> <td>5-0S</td> <td>RDL</td> <td>QC Batch</td> <td>LS#(</td> <td>07-0S</td> <td>RDL (</td> <td>QC Batch</td> <td>LS#(</td> <td>08-0S</td> <td>RDL</td> <td>QC Ba</td> <td>tch</td> | | | UNITS | MAG | C LS#06 | 5-0S | RDL | QC Batch | LS#(| 07-0S | RDL (| QC Batch | LS#(| 08- 0 S | RDL | QC Ba | tch | |
| No Fill No Exceedance Grey Exceeds 1 criteria policy/level Black Exceeds both criteria/levels RDL = Reportable Detection Limit SK7433 SK7434 SK7436 SK7437 SK7438 SK7439 cxam ID SK7433 SK7434 SK7436 SK7437 SK7438 SK7439 Image: Stress of the stress of | Total Metals by ICPI | vis | | | • | | <u> </u> | | | | | | | | | <u> </u> | | |
| Skceeds 1 criteria policy/level Black Exceeds both criteria/levels RDL = Reportable Detection Limit SK7433 SK7434 SK7436 SK7437 SK7438 SK7439 Image: Strate St | Total Lead (Pb) | | ug/L | 10 | 3.3 | 7 | 0.20 | 8823586 | 2 | 87 | 1.0 8 | 3825449 | 2 | 8.2 | 0.20 | 88235 | 86 | |
| Black Exceeds both criteria/levels RDL = Reportable Detection Limit SK7433 SK7434 SK7436 SK7437 SK7438 SK7439 Image: Colspan="6">Colspan="6">Colspan="6">Colspan="6"Colspan=" | No Fill | No E | xceeda | ance | | | 1 1 | | | | | | | | | | | |
| Black Exceeds both criteria/levels RDL = Reportable Detection Limit SK7433 SK7436 SK7437 SK7438 SK7439 Image: Strate S | Grey | Exce | eds 1 d | riteria | a policy/lev | vel | | | | | | | | | | | | |
| RD1 = Reportable Detection Limit xxam ID SK7433 SK7434 SK7436 SK7437 SK7438 SK7439 Image: SK7439 | | Exce | eds bo | th crit | teria/levels | 5 | | | | | | | | | | | | |
| kxam ID SK7433 SK7434 SK7436 SK7437 SK7438 SK7439 Image: SK7439 SK7439 SK7439 SK7439 SK7439 SK7439 SK7439 SK7439 SK7437 SK7438 SK7439 SK7437 SK7438 SK7439 SK7439 SK7439 SK7439 SK7439 SK7439 St7437 St0307-02-01 540307-02-01 540307-02-01 540307-02-01 540307-02-01 S40307-02-01 S40307-02-01 S482 O.59 O.20 882 o Fill No Exceedance Exceeds both criteria/levels Exceeds 1 criteria/levels SK7441 SK7442 SK7443 SK7444 SK7445 Image: SK7440 SK7441 SK7442 SK7443 SK7444 | | | | | , | | | | | | | | | | | | | |
| Inpling Date Image: Marking State Image: State | | | | | | | | | | | | | | | | | | |
| Number S40307-01-01 540307-01-01 540307-02-01 | xxam ID | | | S | K7433 | SK | 7434 | SK74 | 36 | SK74 | 137 | SK74 | 38 | SK74 | 39 | | | |
| UNITS MAC LS#09-0S LS#10-0S LS#11-0S LS#12-0S LS#13-0S LS#14-0S RDL QC R al Metals by ICPMS ug/L 10 32.0 0.92 41.1 111 3.23 0.59 0.20 882 o Fill No Exceeds - cce Exceeds 1 criteria policy/level Exceeds 1 criteria policy/levels Exceeds 5 oth criteria/levels Exceeds 5 oth criteria/levels Exceeds 5 oth criteria/levels SK7440 SK7441 SK7442 SK7443 SK7444 SK7445 Image: colored for the | npling Date | | | 201 | 7/11/06 | 2017 | /11/06 | 5 2017/1 | 1/06 | 2017/2 | 1/06 | 2017/1 | 1/06 | 2017/1 | 1/06 | | | |
| al Metals by ICPMS al Lead (Pb) ug/L 10 32.0 0.92 41.1 111 3.23 0.59 0.20 882. o Fill No Exceedance Exceeds 1 criteria policy/level Exceeds 1 criteria policy/level 540307.02.01 547440 5K7441 5K7442 5K7443 5K7444 5K7445 1 1 ack Exceeds both criteria/levels 2017/11/06 2017/11/06 2017/11/06 2017/11/06 2017/11/06 1 0 1 0 0 0 2017/11/06 1 0 0 0 1 0 0 0 2017/11/06 1 0 | C Number | | | 5403 | 07-01-01 | 54030 | 07-01-0 | 1 540307- | 02-01 | 540307 | -02-01 | 540307- | 02-01 | 540307- | 02-01 | | | |
| al Lead (Pb) ug/L 10 32.0 0.92 41.1 111 3.23 0.59 0.20 882 o Fill No Exceedance Exceeds review Exceeds 1 criteria policy/level 50.59 0.20 882 ack Exceeds both criteria/levels Exceeds both criteria/levels 50.59 0.20 882 = Reportable Detection Limit 5K7440 5K7441 5K7442 5K7443 5K7444 5K7445 1 npling Date 2017/11/06 2017/11/06 2017/11/06 2017/11/06 2017/11/06 2017/11/06 2017/11/06 1 1 1 1 1 0.20 882 c Number 540307-02-01 540307- | | UNITS | MAC | LS | #09-0S | LS# | 10-0S | LS#11 | -0S | LS#1 | 2-0S | LS#13 | -0S | LS#14 | -0S | RDL | QC B | |
| Image: Constraint of the | al Metals by ICPMS | | | | | | | | | | | | | | | | | |
| rey Exceeds 1 criteria policy/level ack Exceeds both criteria/levels = Reportable Detection Exceeds both criteria/levels = Reportable Detection Impling Date variable Date Impling Date 1 2017/11/06 2017/11/06 2017/11/06 2017 Impling Date Impling Date Impling Date Impling Date 1 1 2017/11/06 2017/11/06 2017/11/06 2017/11/06 2017/11/06 2017 1 1 540307-02-01 540307-02-01 540307-02-01 540307-02-01 540307-02-01 540307-02-01 540307-02-01 540307-02-01 540307-02-01 540307-02-01 540307-02-01 540307-02-01 540307-02-01 540307-02-01 540307-02-01 540307-02-01 540307-02-01 540307-02-01 540307-02-01 640 | al Lead (Pb) | ug/L | 10 | | 32.0 | C | .92 | 41. | 1 | 11 | 1 | 3.23 | 3 | 0.5 | 9 | 0.20 | 8823 | |
| Exceeds both criteria/levels Exceeds both criteria/levels = Reportable Detection Limit xxam ID SK7440 SK7441 SK7442 SK7443 SK7444 SK7445 a npling Date a 2017/11/06 | o Fill | No Excee | dance | | | | | | | | | | | | | | | |
| = Reportable Detection Limit xxam ID SK7440 SK7440 SK7441 SK7442 SK7443 SK7444 SK7445 Impling Date 2017/11/06 2017/ | rey | Exceeds 1 | L criter | ia poli | icy/level | | | | | | | | | | | | | |
| xxam ID SK7440 SK7441 SK7442 SK7443 SK7444 SK7445 Impling Date appling Date 2017/11/06 2010/11/06 2017/11/06 2010/11/06< | lack | Exceeds b | ooth cr | iteria/ | /levels | | | | | | | | | | | | | |
| Impling Date Impling Date< | . = Reportable Detection | Limit | | | | | | | | | | | | | | | | |
| Number 540307-02-01 540307-02-01 540307-02-01 540307-02-01 540307-02-01 540307-02-01 540307-02-01 540307-02-01 640307-02-01 | xxam ID | | | S | K7440 | SK | 7441 | SK74 | 42 | SK74 | 143 | SK74 | 44 | SK74 | 45 | | | |
| UNITS MAC LS#15-0S LS#16-0S LS#17-0S LS#18-0S LS#19-0S LS#20-0S RDL QC E al Metals by ICPMS al Lead (Pb) ug/L 10 1.06 49.3 48.6 3.28 10.7 3.19 0.20 882 o Fill No Exceedance Exceeds 1 criteria policy/level 5.28 | npling Date | | | 201 | 7/11/06 | 2017 | /11/06 | 5 2017/1 | 1/06 | 2017/2 | 11/06 | 2017/1 | 1/06 | 2017/1 | 1/06 | | | |
| Image: second | C Number | | | 5403 | 07-02-01 | 54030 | 07-02-0 | 1 540307 | 02-01 | 540307 | -02-01 | 540307- | 02-01 | 540307- | 02-01 | | | |
| al Lead (Pb) ug/L 10 1.06 49.3 48.6 3.28 10.7 3.19 0.20 882 o Fill No Exceedance Exceeds 1 criteria policy/level Exceeds 1 criteria policy/level 0.20 882 | | UNITS | MAC | LS | #15-0S | LS# | 16-0S | LS#17 | '-0S | LS#1 | 8-0S | LS#19 | -0S | LS#20 |)-0S | RDL | QC B | |
| o Fill No Exceedance rey Exceeds 1 criteria policy/level | al Metals by ICPMS | | | | | | | | | | | | | | | | | |
| rey Exceeds 1 criteria policy/level | al Lead (Pb) | ug/L | 10 | | 1.06 | 4 | 9.3 | 48. | 6 | 3.2 | .8 | 10.7 | 7 | 3.1 | 9 | 0.20 | 8823 | |
| | o Fill | No Excee | dance | • | | | | | | | | | | | | 1 | | |
| | rey | Exceeds 1 | L criter | ia poli | icy/level | | | | | | | | | | | | | |
| | , | | | • | • | | | | | | | | | | | | | |
| | = Reportable Detection | | | | | | | | | | | | | | | | | |

RDL = Reportable Detection Limit

Maxxam Job #: B799079 Report Date: 2017/11/30

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TETRA TECH CANADA INC. Client Project #: ENW.VENW03140-01 Sampler Initials: SW

ELEMENTS BY ATOMIC SPECTROSCOPY (DRINKING WATER)

| Maxxam ID | | | SK7457 | SK7458 | SK7459 | SK7460 | SK7461 | SK7462 | | |
|---------------------------|-----------|---------|-----------------|--------------|--------------|--------------|--------------|--------------|------|----------|
| Sampling Date | | | 2017/11/06 | 2017/11/06 | 2017/11/06 | 2017/11/06 | 2017/11/06 | 2017/11/06 | | |
| COC Number | | | 540307-05-01 | 540307-05-01 | 540307-05-01 | 540307-05-01 | 540307-05-01 | 540307-05-01 | | |
| | UNITS | MAC | PH#01-0S | PH#02-0S | PH#03-0S | PH#04-0S | PH#05-0S | PH#06-0S | RDL | QC Batch |
| Total Metals by ICPMS | | | | | | | | | | |
| Total Lead (Pb) | ug/L | 10 | 2.25 | 2.02 | 5.13 | 2.58 | 0.23 | 0.72 | 0.20 | 8823664 |
| No Fill | No Excee | dance | | | | | | | | |
| Grey | Exceeds 1 | criter | ia policy/level | | | | | | | |
| Black | Exceeds b | ooth cr | iteria/levels | | | | | | | |
| RDL = Reportable Detectio | n Limit | | | | | | | | | |



Report Date: 2017/11/30

Success Through Science®

TETRA TECH CANADA INC. Client Project #: ENW.VENW03140-01 Sampler Initials: SW

ELEMENTS BY ATOMIC SPECTROSCOPY (DRINKING WATER)

| Maxxam ID | | | SK7463 | SK7464 | SK7465 | SK7466 | SK7490 | SK7491 | | |
|---------------------------|-----------|---------|-----------------|--------------|--------------|--------------|--------------|--------------|------|----------|
| Sampling Date | | | 2017/11/06 | 2017/11/06 | 2017/11/06 | 2017/11/06 | 2017/11/06 | 2017/11/06 | | |
| COC Number | | | 540307-05-01 | 540307-05-01 | 540307-05-01 | 540307-05-01 | 540307-04-01 | 540307-04-01 | | |
| | UNITS | MAC | PH#07-0S | PH#08-0S | PH#09-0S | PH#10-0S | PH#11-0S | PH#12-0S | RDL | QC Batch |
| Total Metals by ICPMS | | | | | | | | | | |
| Total Lead (Pb) | ug/L | 10 | 2.33 | 0.60 | 5.29 | 2.35 | 0.26 | 5.28 | 0.20 | 8823664 |
| No Fill | No Excee | dance | | | | | | | | |
| Grey | Exceeds 1 | criter | ia policy/level | | | | | | | |
| Black | Exceeds b | oth cr | iteria/levels | | | | | | | |
| RDL = Reportable Detectio | n Limit | | | | | | | | | |
| | | i | CV7400 | 01/7400 | CV7404 | 01/7405 | 0V7400 | 01/7407 | | |
| Maxxam ID | | | SK7492 | SK7493 | SK7494 | SK7495 | SK7496 | SK7497 | | |
| Sampling Date | | | 2017/11/06 | 2017/11/06 | 2017/11/06 | 2017/11/06 | 2017/11/06 | 2017/11/06 | | |
| COC Number | | | 540307-04-01 | 540307-04-01 | 540307-04-01 | 540307-04-01 | 540307-04-01 | 540307-04-01 | | |
| | UNITS | MAC | QG#01-0S | QG#02-0S | DUP#1-0S | DUP#2-0S | QG#04-0S | PH#13-0S | RDL | QC Batch |
| Total Metals by ICPMS | | | | | | | | | | |
| Total Lead (Pb) | ug/L | 10 | 208 | 15.4 | 1.42 | 0.33 | 6.24 | 1.44 | 0.20 | 8823664 |
| No Fill | No Excee | dance | | | | | | | | |
| Grey | Exceeds 1 | criter | ia policy/level | | | | | | | |
| Black | Exceeds b | ooth cr | iteria/levels | | | | | | | |
| RDL = Reportable Detectio | n Limit | | | | | | | | | |
| | | | | | | | | | | - |



Maxxam Job #: B799079 Report Date: 2017/11/30 TETRA TECH CANADA INC. Client Project #: ENW.VENW03140-01 Sampler Initials: SW

GENERAL COMMENTS

| Each t | emperature is the a | verage of up to t | three cooler temperatures taken at receipt |
|---------------------|---|---------------------|---|
| | Package 1 | 1.7°C | |
| Versior | 2: Report reissued | with revised sam | nple IDs. |
| Sample | PH#13-0S : Receiv | ed but not listed o | f Custody. Sampling times not provided. on CoC. ed in this report have been taken from the Canadian Drinking Water Quality Summary Table, February 20. |
| | | | ration (MAC) / Criteria B = Aesthetic Objectives (AO) / Criteria C = Operational Guidance Values (OG) nes when interpreting your data since there are non-numerical guidelines that are not included on this |
| Turbidi | ty Guidelines: | | |
| 1. Cher at any f | | ation: less than o | or equal to 0.3 NTU in 95% of the measurements or 95% of the time each month. Shall not exceed 1.0 NTU |
| | sand / diatomaced 3.0 NTU at any tim | | n: less than or equal to 1.0 NTU in 95% of the measurements or 95% of the time each month. Shall not |
| | brane filtration: les 0.3 NTU at any tim | | to 0.1 NTU in 99% of the measurements made or at least 99% of the time each calendar month. Shall not |
| | | ELE | EMENTS BY ATOMIC SPECTROSCOPY (DRINKING WATER) Comments |
| Matrix | Spike Elements by | CRC ICPMS (total | I): RDL raised due to concentration over linear range, sample dilution required |
| - | | | RC ICPMS (total): RDL raised due to concentration over linear range, sample dilution required |
| Sampl | e SK7431 [LS#07-09 |] Elements by CF | RC ICPMS (total): RDL raised due to concentration over linear range, sample dilution required |
| Result | s relate only to the | items tested. | |



Maxxam Job #: B799079

Report Date: 2017/11/30

QUALITY ASSURANCE REPORT

TETRA TECH CANADA INC. Client Project #: ENW.VENW03140-01 Sampler Initials: SW

| | | | Matrix | Spike | Spiked | Blank | Method B | lank | RPI |) |
|----------|-----------------|------------|------------|-----------|------------|-----------|----------|-------|-----------|-----------|
| QC Batch | Parameter | Date | % Recovery | QC Limits | % Recovery | QC Limits | Value | UNITS | Value (%) | QC Limits |
| 8823586 | Total Lead (Pb) | 2017/11/09 | NC | 80 - 120 | 97 | 80 - 120 | <0.20 | ug/L | 5.7 | 20 |
| 8823664 | Total Lead (Pb) | 2017/11/09 | 99 | 80 - 120 | 100 | 80 - 120 | <0.20 | ug/L | 1.1 | 20 |
| 8825449 | Total Lead (Pb) | 2017/11/10 | 93 | 80 - 120 | 94 | 80 - 120 | <0.20 | ug/L | 7.0 | 20 |

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)



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Maxxam Job #: B799079 Report Date: 2017/11/30 TETRA TECH CANADA INC. Client Project #: ENW.VENW03140-01 Sampler Initials: SW

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Analyt

Andy Lu, Ph.D., P.Chem., Scientific Specialist

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

| Ipany Name lact Name | #1433 TETR/ Shawneen Wa #1 - 4376 BOB | INVOICE TO: A TECH CANADA INC. Iker NAN DRIVE | | Cont | pany Namu lact Name | Shawneen | Report Info Walker | rmati | on | | Quotation #P.O. # | | Project Info B71611 | W03140-01 | B | 99079 | COC | | nly Bottle Orde | |
|-------------------------|---|--|--------------|-------------|------------------------|--------------|-----------------------|-----------------------|-----------------------------|-----|---|-----|------------------------|-----------------|------------|---|---|--|-------------------------------|-------|
| ness Ne | NANAIMO BC (250) 756-225 | V9T 6A7 | 56-2686 x | Phor Ema | . Sho | stiwalized | valler (6 | BAL | abdata@tetratech | com | Project # Project Name Site # Sampled By | | 5.00 | | PEST. | | Chain Of Custopy Neuron C#540307-01-01 | | Project Mar Letitia Prefor | nager |
| Regulatory Cri | TOT | | | = | Special In | aiructione | | | | | S REQUESTED (PL | _ | | | | | Turnaround Time | (TAT) Requ | iired: | |
| CSR | r Quality | | | | | | | (N) X) L Da | tter | | | | | | | (will be appl Standard TA Please note | Elesse provide source andard) TAT; led if Rush TAT is not specified IT = 5-7 Working days for most : Standard TAT for certain tests ict your Project Manager for det |): fests i such as BOD | | |
| Other | IPLES MUST BE KE | EPT COOL (< 10°C) FROM TIME O | F SAMPLING U | INTIL DEL | IVERY TO | MAXXAM | | Metals Field Filtered | Lead - Drinking Water | | | | | | | 1 DAY | Ic Rush TAT (If applies to ent 2 Day 3 Day mation Number. | Date Require | | - [|
| | Barcode Label | Sample (Location) Identifica | | Date Samp | | Time Sampled | Matrix | Metal | a pea | | | | | | | # of Botties | | Comments | | |
| Jampie | Dailcook Carra | LS#01-05 | | 1016 | | | Nata | | X | - | | | | | | | | | | _ |
| | | LS#02-05 | | 1 | | | 1 | | X | | | | | | | | | | | |
| | | LS#03-0 | | 1 | | 1 | | | X | | | | | | | | | | | |
| | | LS#04-0 | 5 | 1 | | | | | X | - | | | | | | | | | | |
| - | | LS#6-05 | | + | | | +++ | | X | | | - | | | | | | | | |
| | | 15#06-05 | | + | + | | | | $\hat{\mathbf{v}}$ | | - | - | | | | | | | 1 | |
| | | LS#00-0 | | 1 | | | + | \vdash | $\widehat{\mathbf{\nabla}}$ | | | - | | | _ | | | | | |
| | | 15#00 | <u>></u> | - | | | | | 2 | | | - | | | | | | | | |
| | | Lotto A | 2 | - | | 21 - 22 - V | | | 5 | | | | | | - | | | | | |
| | | LS#10-0 | с С | - | - | | | | × × | - | | | | | | | | | | |
| * RELIN | QUISHED BY: (Signat | Mall | Date: (YY/MN | 1001 | Time | 1 | RECEIV | ED B | r: (Sjgnature/Print) | | Date: (YY/MM/ | DD) | Time | # jars used and | | | Lab Use On | ty | | |
| Nhe | anwalker | Mall | 17/11/0 | 6 (| БQ | 00 | | Сн | | | 2017/11/0 | | 05:50 | M | Time Serre | | erature (°C) on Receipt | arrested as a local division of the local di | leal intact on Coo | MA |

Maxxam Analytics International Corporation o/a Maxxam Analytics

| | | 4606 Canada Way, Burnaby, British Co INVOICE TO: | | | | Report Inform | | | | Project Info | ormation | | caracies ar a moli II | ily |
|---------------------|-------------------------------------|---|---|--|--------------------------|---------------|----------------------------|---|-------------------------------|-----------------|----------------------------------|--------------------------|--|-----------------------------|
| mpany Name | #1433 TETR Shawneen Wa | A TECH CANADA INC. | | Company Na | Channer | - 14/-11 | | | Quotation # | - B71611 | | | 9079_COC | Dotte Order #, |
| ntact Name dress | #1 - 4376 BOB | and the second se | | Contact Nam Address | Shawnee | n Walker | | | P.O. # | ENW VEN | W03140-01 | - 0/9 | | 540307 |
| russ. | NANAIMO BO | | | | | | 2.2.2.2.1 | | Project # Project Name | | | the Mart | Chain Of Custody Record | Project Manager |
| ne | (250) 756-225 | 6 x Fax: (250) 756-268 | the second se | COLUMN TO A DESCRIPTION OF A DESCRIPTION | | Bobalos EBA | | tech.com | Site # | | 1949 - C. | | | Letitia Prefontaine |
| egulatory Cr | | ales, concerences agreen agen. con | | Email Specia | Instructions | Bannes, EBA | Labuata@te | and the second se | Sampled By REQUESTED (PLEA | SE BE SPECIFIC) | | | C#540307-02-01 Turnaround Time (TAT) | Required: |
| | er Quality | | 1 | | | | Water | | | | | (will i Stan Pleas | Plesse provide advance notice alar (Standard) TAT: be applied if Rush TAT is not specified): dard TAT = 5-7 Working days for most feets. se note: Standard TAT for certain tests such a - contact your Project Manager for details. | ļ |
| | MPLES MUST GE KI e Barcode Label | EPT COOL (< 10°C) FROM TIME OF SAMPI Sample (Location) Identification | | DELIVERY T | D MAXXAM Time Sampled | Macrix | Total Lead - Drinking W | | | | | 1 D/ | h Confirmation Number. | (call leb for #) |
| | | LS#11-05 | NO | 1617 | | Water | X | | | | | | | |
| | | LS#12-05 | 1 | | | 11 | X | | | | | 9 | | |
| | | 15#13-05 | | | | Π | X | | | | | | | |
| | | LS#14-05 | | | | | X | | | | | | | |
| | | LS#15-05 | | | | | X | | | | | | | |
| | | LS#16-05 | | | | | X | | | | | 5 | | |
| | | LS #17-05 | | | | | \times | | | | | | | |
| | | LS#18-05 | | | | | \times | | | | | - | | |
| | | LS#19-05 | | | | | \times | | | | | | | |
| | | LS# 20-05 | | \forall | | \checkmark | \times | | | | | | | |
| | QUISHED BY: (Signat | Lev Milalla 171 | (YY/MM/DD) | O CO | - | RECEIVED | BY: (Signature)Pr | | Date: (YY/MM/DD | 1 Time | # jars used and not submitted | Tinte Sensitive | Lab Use Only | tody Seal Intact on Coology |

Maxxam Analytics International Corporation o/a Maxxam Analytics

| | | INVOICE TO: | | | Report Info | rmation | | | Project Infe | ormation | | <i>特别和新闻的</i> 的时候,那时 | Pa |
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| ne (2 | 250) 756-225 | 6 x Fax: (250) 756-2686 | X Phone | shawne | an.wal | ceratet | rated.com | Project Name ' | | 1.1.46.0 | | | 11110 |
| a | mwalker@et | e ea; EBA Labdata@tetratech.com | Email | Smwalker | @eba.ca ;EB | A.Labdata@te | tratech.com | Sampled By | | | 10.00 | C#540307-05-01 | IIII Letitia Prefi |
| egulatory Criteria | E | _ | | ipecial Instructions | | | ANALYSIS | EQUESTED (PLEA | SE BE SPECIFIC) | | | Turnaround Time | |
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Maxxem Analytics International Corporation o/a Mexxam Analytics

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| | | LING UNTIL DELIVERY TO MA | | 9 5 | | | | 1 DAY | 2 Day 3 Day Date Re | quired: |
| Sample Barcode La | that Sample // ception' Identification | | AXXAM | Is Field Fi | | | | Rush Co | onfirmation Number. | (call lab for #) |
| Bampie Baicode ca | | Date Sampled Tin | | Lead | | | | # of Bottle | | |
| | | | | | | | | | | |
| | PH#11-Os | NOV G/M | Water | X | | | | - | | |
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| RELINQUISHED BY | (Signature/Print) A LOW Date: | (YY/MMUDD) Time | RECEIVE | D BY: (Signature/Print) | Date: (YY/MS | NDD) Time # | i jars used and | | Lab Use Only | - |
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Maxxam Analytics International Corporation ola Maxxam Analytics

Max am A Bureau Veritas Group Company

> Your Project #: ENW.VENW03140-01 Site Location: SDS8 DW TESTING PROGRAM Your C.O.C. #: 540796-01-01, 540796-02-01

Attention:Shawneen Walker

TETRA TECH CANADA INC. #1 - 4376 BOBAN DRIVE NANAIMO, BC Canada V9T 6A7

> Report Date: 2017/11/21 Report #: R2480145 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7A1859 Received: 2017/11/16, 08:35

Sample Matrix: DRINKING WATER # Samples Received: 12

| | | Date | Date | | |
|-------------------------------|----------|-------------|-----------|-------------------|----------------------|
| Analyses | Quantity | y Extracted | Analyzed | Laboratory Method | Analytical Method |
| Elements by CRC ICPMS (total) | 12 | N/A | 2017/11/2 | 0 BBY7SOP-00003, | BCLM2005,EPA6020bR2m |

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager. Letitia Prefontaine, B.Sc., Senior Project Manager Email: LPrefontaine@maxxam.ca Phone# (604)639-2616

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total Cover Pages : 1 Page 1 of 7





Report Date: 2017/11/21

TETRA TECH CANADA INC. Client Project #: ENW.VENW03140-01 Site Location: SDS8 DW TESTING PROGRAM Sampler Initials: SW

TOTAL METALS FOR DRINKING WATER (DRINKING WATER)

| Sampling Date 2017/11/06 2017 | | | | | | | | | | | |
|--|----------------------------|-----------|----------|-----------------|--------------|--------------|--------------|--------------|--------------|------|----------|
| CC Number S40796-01-01 540796-01-01 <td>Maxxam ID</td> <td></td> <td></td> <td>SM3983</td> <td>SM3984</td> <td>SM3985</td> <td>SM3986</td> <td>SM3987</td> <td>SM3988</td> <td></td> <td></td> | Maxxam ID | | | SM3983 | SM3984 | SM3985 | SM3986 | SM3987 | SM3988 | | |
| UNITS MAC LS#01-305 LS#05-305 LS#07-305 LS#08-305 LS#09-305 LS#11-305 RDL QC Batch Total Metals by ICPMS ug/L 10 4.46 5.59 6.13 10.6 1.44 4.81 0.20 8835521 No Fill No Exceedarce Exceeds 1 criteria policy/level Exceeds 1 criteria policy/level 8835521 Black Exceeds both criteria/levels Exceeds 5000 SM3990 SM3991 SM3992 SM3993 SM3994 0 0 Sampling Date 2017/11/06 2017/11/06 2017/11/06 2017/11/06 2017/11/06 2017/11/06 2017/11/06 0 | Sampling Date | | | 2017/11/06 | 2017/11/06 | 2017/11/06 | 2017/11/06 | 2017/11/06 | 2017/11/06 | | |
| Total Metals by ICPMS Local Local Local Content Local Local Local Content Local Local Local Content Local Local Content Local Local Content Local Content <thlocal <="" content<="" td=""><td>COC Number</td><td></td><td></td><td>540796-01-01</td><td>540796-01-01</td><td>540796-01-01</td><td>540796-01-01</td><td>540796-01-01</td><td>540796-01-01</td><td></td><td></td></thlocal> | COC Number | | | 540796-01-01 | 540796-01-01 | 540796-01-01 | 540796-01-01 | 540796-01-01 | 540796-01-01 | | |
| Total Lead (Pb) ug/L 10 4.46 5.59 6.13 10.6 1.44 4.81 0.20 8835521 No Fill No Exceedance Exceeds 1 criteria policy/level Exceeds 1 criteria policy/level Exceeds both criteria/levels Exceeds both criteria/levels Exceeds both criteria/levels Exceeds both criteria/levels Exceeds 1 criteria policy/level Maxam ID SM3989 SM3990 SM3991 SM3992 SM3993 SM3994 Image: Control in the control in t | | UNITS | MAC | LS#01-30S | LS#05-30S | LS#07-30S | LS#08-30S | LS#09-30S | LS#11-30S | RDL | QC Batch |
| No Fill No Exceedance Exceeds 1 criteria policy/level Black Exceeds both criteria/levels Exceeds both criteria/levels RDL = Reportable Detection Limit SM3989 SM3990 SM3991 SM3992 SM3993 SM3994 Grey Exceeds both criteria/levels Exceeds 00000000000000000000000000000000000 | Total Metals by ICPMS | | | | | | | | | | |
| Grey Exceeds 1 criteria policy/level Black Exceeds both criteria/levels RDL = Reportable Detection Limit SM3989 SM3990 SM3991 SM3992 SM3993 SM3994 Output Maxxam ID SM3989 SM3990 SM3991 SM3992 SM3993 SM3994 Output | Total Lead (Pb) | ug/L | 10 | 4.46 | 5.59 | 6.13 | 10.6 | 1.44 | 4.81 | 0.20 | 8835521 |
| Black Exceeds both criteria/levels RDL = Reportable Detection Limit Maxxam ID SM3989 SM3990 SM3991 SM3993 SM3994 a Maxxam ID SM3989 SM3990 SM3991 SM3993 SM3994 a Maxxam ID SM3999 SM3991 SM3992 SM3993 SM3994 a Maxxam ID SM3990 SM3991 SM3992 SM3993 SM3994 a SM3992 SM3993 SM3994 a SM3992 SM3993 SM3994 a SM3992 SM3993 SM3994 a SM3990 SM3991 SM3992 SM3993 SM3994 a SM3992 SM3993 SM396 SM3796 </td <td>No Fill</td> <td>No Excee</td> <td>dance</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> | No Fill | No Excee | dance | | | | | | | | |
| SM3989 SM3990 SM3991 SM3992 SM3993 SM3994 Image: SM394 | Grey | Exceeds 1 | . criter | ia policy/level | | | | | | | |
| Maxxam ID Image: SM3989 SM3990 SM3991 SM3992 SM3993 SM3994 Image: SM394 Image: SM3 | Black | Exceeds b | oth cr | iteria/levels | | | | | | | |
| Sampling Date 2017/11/06 2017 | RDL = Reportable Detection | on Limit | | | | | | | | | |
| COC Number 540796-01-01 540796-01-01 540796-01-01 540796-01-01 540796-02-01 540796-02-01 540796-02-01 0 UNITS MAC LS#12-30S LS#16-30S LS#17-30S LS#19-30S QG#01-30S QG#02-30S RDL QC Batch Total Metals by ICPMS ug/L 10 16.2 41.4 34.2 1.38 33.6 2.72 0.20 8835521 No Fill No Exceedance Exceeds 1 criteria policy/level Exceeds 5 oth criteria/levels Exceeds 5 | Maxxam ID | | | SM3989 | SM3990 | SM3991 | SM3992 | SM3993 | SM3994 | | |
| UNITS MAC LS#12-30S LS#16-30S LS#17-30S LS#19-30S QG#01-30S QG#02-30S RDL QC Batch Total Metals by ICPMS ug/L 10 16.2 41.4 34.2 1.38 33.6 2.72 0.20 8835521 No Fill No Exceedance Exceeds 1 criteria policy/level Exceeds 1 criteria/levels | Sampling Date | | | 2017/11/06 | 2017/11/06 | 2017/11/06 | 2017/11/06 | 2017/11/06 | 2017/11/06 | | |
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| Total Lead (Pb) ug/L 10 16.2 41.4 34.2 1.38 33.6 2.72 0.20 8835521 No Fill No Exceedance Exceeds 1 criteria policy/level Exceeds 1 criteria policy/level Exceeds both criteria/levels Exceeds both criteria/levels | | UNITS | MAC | LS#12-30S | LS#16-30S | LS#17-30S | LS#19-30S | QG#01-30S | QG#02-30S | RDL | QC Batch |
| No Fill No Exceedance Grey Exceeds 1 criteria policy/level Black Exceeds both criteria/levels | Total Metals by ICPMS | | | | | | · | | | | |
| Grey Exceeds 1 criteria policy/level Black Exceeds both criteria/levels | Total Lead (Pb) | ug/L | 10 | 16.2 | 41.4 | 34.2 | 1.38 | 33.6 | 2.72 | 0.20 | 8835521 |
| Black Exceeds both criteria/levels | No Fill | No Excee | dance | | | | | | | | |
| | Grey | Exceeds 1 | criter | ia policy/level | | | | | | | |
| RDL = Reportable Detection Limit | Black | Exceeds b | oth cr | iteria/levels | | | | | | | |
| | RDL = Reportable Detection | on Limit | | | | | | | | | |



TETRA TECH CANADA INC. Client Project #: ENW.VENW03140-01 Site Location: SDS8 DW TESTING PROGRAM Sampler Initials: SW

GENERAL COMMENTS

| Each tempe | erature is the a | average of up to | three cooler temperatures taken at receipt |
|--|--|--|--|
| Ра | ckage 1 | 4.3°C | |
| • | | • | of Custody. Sampling times not provided. Ied in this report have been taken from the Canadian Drinking Water Quality Summary Table, February 2017. |
| | | • | tration (MAC) / Criteria B = Aesthetic Objectives (AO) / Criteria C = Operational Guidance Values (OG) ines when interpreting your data since there are non-numerical guidelines that are not included on this |
| at any time. 2. Slow sanc exceed 3.0 N 3. Membrar | y assisted filtr I / diatomaced NTU at any tim | ous earth filtratio ne. ss than or equal | or equal to 0.3 NTU in 95% of the measurements or 95% of the time each month. Shall not exceed 1.0 NTU on: less than or equal to 1.0 NTU in 95% of the measurements or 95% of the time each month. Shall not to 0.1 NTU in 99% of the measurements made or at least 99% of the time each calendar month. Shall not |
| Results rela | ate only to the | e items tested. | |



Maxxam Job #: B7A1859 Report Date: 2017/11/21

QUALITY ASSURANCE REPORT

TETRA TECH CANADA INC. Client Project #: ENW.VENW03140-01

Site Location: SDS8 DW TESTING PROGRAM Sampler Initials: SW

| | | | Matrix | Spike | Spiked | Blank | Method B | lank | RPD | | | | |
|----------------|--|--------------------|------------------|-----------------|------------------|-----------|----------|-------|-----------|-----------|--|--|--|
| QC Batch | Parameter | Date | % Recovery | QC Limits | % Recovery | QC Limits | Value | UNITS | Value (%) | QC Limits | | | |
| 8835521 | 3835521 Total Lead (Pb) 2017/11/20 92 80 - 120 93 80 - 120 <0.20 ug/L 0.067 20 | | | | | | | | | | | | |
| Duplicate: Pai | Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement. | | | | | | | | | | | | |
| Matrix Spike: | A sample to which a known amount of the analyte of in | terest has been a | dded. Used to e | valuate sampl | e matrix interfe | erence. | | | | | | | |
| Spiked Blank: | Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy. | | | | | | | | | | | | |
| Method Blank | : A blank matrix containing all reagents used in the ana | lytical procedure. | Used to identify | y laboratory co | ontamination. | | | | | | | | |



Report Date: 2017/11/21

TETRA TECH CANADA INC. Client Project #: ENW.VENW03140-01 Site Location: SDS8 DW TESTING PROGRAM Sampler Initials: SW

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Briefften

Andy Lu, Ph.D., P.Chem., Scientific Specialist

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

| 400 | | INVOICE TO: | | | | Report in | forma | tion | 18-200 Barrison | 1 | | Project Infe | ormation | | II NYAI | | Page of |
|---------------------------------|--|--|-----------------|---|--------------|-----------|-----------------------|----------------------|-----------------|---------------------------|----------|--------------|----------------------------------|--------------|--------------------------------------|---|---------------------------------|
| ompany Name | #1433 TETH | RA TECH CANADA INC. | | Company Name | | | | | | Quotation # | | B60578 | T | — в | 7A1 | 859_COC | Bottie Order #: |
| ontact Name | Shawneen W | A | | Contact Name | Shawneen | Walker | | 101 | | P.O.# | | | | | -1 | | I WILLIAM WILLIAM |
| ddress | #1 - 4376 BO | | | Address | | | | | | Project # | | | W03140-01 | | | | 540796 |
| | NANAIMO BO | | 760 0000 | | | _ | | | | Project Name | | 8202 | Witestin | Pray | 31 | Chain Of Custody Record | Project Manager |
| hone mail | (250) 756-225 Shawneen W | alker@tetratech.com; EB |) 756-2686 x | Phone Email | Showneen | Walker® | Intra | Fax: | Rintrat | Site # | | C 11 1 | 1 | 5 0 | _ | | Letitia Prefontaine |
| 00 | and the second sec | anen@renatech.com, co | | Contraction of the second s | abructions | valkelig | I | | ~ | Sampled By REQUESTED (| PIEASEI | S.Wel | Fal | r | _ | C#540796-01-01 Turnaround Time (TA | T) Depuited |
| Regulatory Cr | ntena | | | opecialiti | ISO GEODIE | | 1 | <u> </u> | INPL TOID I | AEQUESTED (| FLEMAL I | BE SPECIFIC) | | | | Please provide advance note | |
| CSR CCME BC Wate Other | er Quality | | | | | | | Drinking | | | | | | | (will be ap Standard Please no | Standard) TAT: splied if Rush TAT is not specified) TAT = 5-7 Working days for most test the Standard TAT for certain tests suc riact your Project Manager for details. | . 2 |
| 1 | MPLES MUST BE K | EPT COOL (< 10°C) FROM TIM Sample (Location) Identi | | | | | Metals Field Filtered | Total Pb- | | | | | | 1 | 1 DAY | nfirmation Number: | te Required: [(call lab for #) |
| Sample | e Belcode Labet | | | | Time Sampled | Matrix | - | | - | | - | | | - | 1.112 | - | |
| | | LS#01-305 | | 11/06 | | WATER | N | X | _ | | | | | | 1 | Samples refr Tetra Tech A | generated at |
| - | | L5#15-305 | | 1 | | 1 | P | X | 1 | | | | | | T. | Tetra Tech A | Janama |
| | | LS #07 - 305 | | | | | P | X | | | | | | | 1 | SINCE Sampli | na data |
| | | LS #08-305 | | | | | N | X | | | | | | | 1 | | 5 |
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| | | INVOICE TO: | | 1 2 2 | | Report Infor | nation | - | - | | 1000 | Project la | nformation | | | | | Page |
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| ompany Name | #1433 TETH | RA TECH CANADA INC. | | Company Name | 3 | | | 100 | | uctation # | 1.1 | B60578 | 1000 | B7 | A18: | 59_COC | | Bottle Order |
| ontact Name | Shawneen W | alker | | Contact Name | Shawneen V | Valker | | | | .0.# | | - | | - | | | | |
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| 000 | (250) 756-22 | 56 x Fax (250 |) 756-2686 x | Phone | | 1.1.1 | Fax | | | ite # | | | | Progra | m. | NAMES AND ADDRESS OF TAXABLE PARTY. | | No. No. State |
| haif | Shawneen.W | alker@tetratech.com; EB/ | A.Labdata@tetr | a Email | Shawneen.W | Walker@tet | | m; EBA.Labdata@ | | ampled By | | S.wa | ller | . J. J. | T | C#540796-02-01 | | Letitia Prefonta |
| Regulatory Cri | iteria: | | | Special In | structions | | | ANA | LYSIS REC | UESTED (P | LEASE | BE SPECIFIC |) | | 10 | Turnaround 1 | Time (TAT) R | equired: |
| 1000000 | | | 1 | | | | 1 | | | | | | 1 | | | Please provide adv | ance notice for | rush projects |
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| K CCME | | | | | | | Drinking | | | | | | | | 192212 | plied if Rush TAT is not spec | olifed) | |
| - | | | | | | 1 | - 2. | 2 | | | | | | | 1000 F 12-Y | TAT = 5-7 Working days for | | |
| K BC Wate | er Quality | | | | | THE OTHER | Ē | Ku | | | | | | | | te: Standard TAT for certain | | IOD and Dioxins/Furans |
| Other | | | | | | - | | | | | | 1 1 | | | | itact your Project Manager fo | | |
| | - | | | | | 1 | 8 | | | | | | | | Job Spe | cific Rush TAT (if applies t | o entire submi | ssion) |
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| SAN | APLES MUST BE K | EPT COOL (< 10°C) FROM TIME | E OF SAMPLING UN | TIL DELIVERY TO I | MAXXAM | 4 | 2 | 3 | | | | 1 1 | | | | | · · · · · · | (call lab for #) |
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| • RELINO | UISHED BY: (Signal | um/Print) | Date: (YY/MM/C | D) Time | 1 | RECEIVED | BY. (Signa | 1 (Internet) | 1 | Date: (YY/MA | MDDi | Time | # jars used and | | 1.5 | Lab Us | - Only | |
| Wrozda | Don M | KE GALLO | 17/11/14 | 17:00 | En Sister | + Fur | LCur | PA | | 017/11 | | 08:3 | | Time Sensitiv | /# Tes | nperature (°C) on Receipt | | ly Seal Intact on Cooler |
| 11 million | - ip | - Grieder | - marine | - Inter | - cun oyur | 4 241 | | | - 4 | | | | - | | 1.000 | G414 | N/A | Yes No |
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