

Summer Schulte / Hidden River Environmental  
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Project: -  
Project Number: -  
Project Manager: -

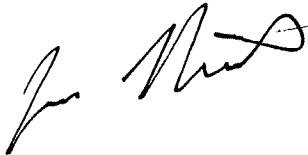
**Work Order:** N806071

**RECEIVED:** 12-Jun-18

**REPORTED:** 10-Jul-18

All analyses were performed in accordance with standard procedures published by BC MoE, Health Canada, Environment Canada, the American Public Health Association, or the US EPA.

**Northern Laboratories (2010) Ltd.**



Laboratory Manager

## ANALYTICAL REPORT

Summer Schulte / Hidden River Environmental

Work Order: N806071

| Analyte | Result | Guideline<br>(CDWG) | MRL Units | Analyzed | Method Ref. | Notes |
|---------|--------|---------------------|-----------|----------|-------------|-------|
|---------|--------|---------------------|-----------|----------|-------------|-------|

Sample ID: **Site #1** (N806071-01), Sampled: **08-Jun-18 11:15**

**Calculated Parameters**

|                                         |             |   |            |           |                   |
|-----------------------------------------|-------------|---|------------|-----------|-------------------|
| Hardness, Total (as CaCO <sub>3</sub> ) | <b>20.5</b> | - | 0.500 mg/L | 20-Jun-18 | SM 2340 B* (2011) |
|-----------------------------------------|-------------|---|------------|-----------|-------------------|

**Total Metals**

|                   |                 |             |               |           |            |
|-------------------|-----------------|-------------|---------------|-----------|------------|
| Aluminum, total   | <b>0.0401</b>   | OG < 0.1    | 0.0050 mg/L   | 20-Jun-18 | EPA 6020B  |
| Antimony, total   | <0.00020        | MAC = 0.006 | 0.00020 mg/L  | 20-Jun-18 | EPA 6020B  |
| Arsenic, total    | <0.00050        | MAC = 0.01  | 0.00050 mg/L  | 20-Jun-18 | EPA 6020B  |
| Barium, total     | <b>0.0099</b>   | MAC = 1     | 0.0050 mg/L   | 20-Jun-18 | EPA 6020B  |
| Beryllium, total  | <0.00010        | -           | 0.00010 mg/L  | 20-Jun-18 | EPA 6020B  |
| Bismuth, total    | <0.00010        | -           | 0.00010 mg/L  | 20-Jun-18 | EPA 6020B  |
| Boron, total      | <b>0.0065</b>   | MAC = 5     | 0.0050 mg/L   | 20-Jun-18 | EPA 6020B  |
| Cadmium, total    | <b>0.000026</b> | MAC = 0.005 | 0.000010 mg/L | 20-Jun-18 | EPA 6020B  |
| Calcium, total    | <b>6.98</b>     | -           | 0.20 mg/L     | 20-Jun-18 | EPA 6020B  |
| Chromium, total   | <0.00050        | MAC = 0.05  | 0.00050 mg/L  | 20-Jun-18 | EPA 6020B  |
| Cobalt, total     | <0.00010        | -           | 0.00010 mg/L  | 20-Jun-18 | EPA 6020B  |
| Copper, total     | <b>0.00081</b>  | AO <= 1     | 0.00040 mg/L  | 20-Jun-18 | EPA 6020B  |
| Iron, total       | <b>0.145</b>    | AO <= 0.3   | 0.010 mg/L    | 20-Jun-18 | EPA 6020B  |
| Lead, total       | <0.00020        | MAC = 0.01  | 0.00020 mg/L  | 20-Jun-18 | EPA 6020B  |
| Lithium, total    | <b>0.00036</b>  | -           | 0.00010 mg/L  | 20-Jun-18 | EPA 6020B  |
| Magnesium, total  | <b>0.729</b>    | -           | 0.010 mg/L    | 20-Jun-18 | EPA 6020B  |
| Manganese, total  | <b>0.00706</b>  | AO <= 0.05  | 0.00020 mg/L  | 20-Jun-18 | EPA 6020B  |
| Mercury, total    | <0.000010       | MAC = 0.001 | 0.000010 mg/L | 21-Jun-18 | EPA 245.7* |
| Molybdenum, total | <b>0.00073</b>  | -           | 0.00010 mg/L  | 20-Jun-18 | EPA 6020B  |
| Nickel, total     | <0.00040        | -           | 0.00040 mg/L  | 20-Jun-18 | EPA 6020B  |
| Phosphorus, total | <0.050          | -           | 0.050 mg/L    | 20-Jun-18 | EPA 6020B  |
| Potassium, total  | <b>0.32</b>     | -           | 0.10 mg/L     | 20-Jun-18 | EPA 6020B  |
| Selenium, total   | <0.00050        | MAC = 0.05  | 0.00050 mg/L  | 20-Jun-18 | EPA 6020B  |
| Silicon, total    | <b>1.5</b>      | -           | 1.0 mg/L      | 20-Jun-18 | EPA 6020B  |
| Silver, total     | <0.000050       | -           | 0.000050 mg/L | 20-Jun-18 | EPA 6020B  |
| Sodium, total     | <b>2.50</b>     | AO <= 200   | 0.10 mg/L     | 20-Jun-18 | EPA 6020B  |
| Strontium, total  | <b>0.0379</b>   | -           | 0.0010 mg/L   | 20-Jun-18 | EPA 6020B  |
| Sulfur, total     | <3.0            | -           | 3.0 mg/L      | 20-Jun-18 | EPA 6020B  |
| Tellurium, total  | <0.00050        | -           | 0.00050 mg/L  | 20-Jun-18 | EPA 6020B  |
| Thallium, total   | <0.000020       | -           | 0.000020 mg/L | 20-Jun-18 | EPA 6020B  |
| Thorium, total    | <0.00010        | -           | 0.00010 mg/L  | 20-Jun-18 | EPA 6020B  |
| Tin, total        | <0.00020        | -           | 0.00020 mg/L  | 20-Jun-18 | EPA 6020B  |
| Titanium, total   | <0.0050         | -           | 0.0050 mg/L   | 20-Jun-18 | EPA 6020B  |
| Tungsten, total   | <0.0010         | -           | 0.0010 mg/L   | 20-Jun-18 | EPA 6020B  |
| Uranium, total    | <b>0.000116</b> | MAC = 0.02  | 0.000020 mg/L | 20-Jun-18 | EPA 6020B  |
| Vanadium, total   | <0.0010         | -           | 0.0010 mg/L   | 20-Jun-18 | EPA 6020B  |

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**ANALYTICAL REPORT**

Summer Schulte / Hidden River Environmental

Work Order: N806071

| Analyte | Result | Guideline (CDWG) | MRL Units | Analyzed | Method Ref. | Notes |
|---------|--------|------------------|-----------|----------|-------------|-------|
|---------|--------|------------------|-----------|----------|-------------|-------|

Sample ID: **Site #1** (N806071-01), Sampled: **08-Jun-18 11:15**

**Total Metals**

|                  |               |         |              |           |           |  |
|------------------|---------------|---------|--------------|-----------|-----------|--|
| Zinc, total      | <b>0.0502</b> | AO <= 5 | 0.0040 mg/L  | 20-Jun-18 | EPA 6020B |  |
| Zirconium, total | <0.00010      | -       | 0.00010 mg/L | 20-Jun-18 | EPA 6020B |  |

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| Analyte | Result | Guideline (CDWG) | MRL Units | Analyzed | Method Ref. | Notes |
|---------|--------|------------------|-----------|----------|-------------|-------|
|---------|--------|------------------|-----------|----------|-------------|-------|

 Sample ID: **Site #2** (N806071-02), Sampled: **08-Jun-18 11:21**
**Calculated Parameters**

 Hardness, Total (as CaCO<sub>3</sub>)      **27.2**      -      0.500 mg/L      20-Jun-18      SM 2340 B\* (2011)

**Total Metals**

|                   |                 |             |               |           |            |
|-------------------|-----------------|-------------|---------------|-----------|------------|
| Aluminum, total   | <b>0.0452</b>   | OG < 0.1    | 0.0050 mg/L   | 20-Jun-18 | EPA 6020B  |
| Antimony, total   | <0.00020        | MAC = 0.006 | 0.00020 mg/L  | 20-Jun-18 | EPA 6020B  |
| Arsenic, total    | <0.00050        | MAC = 0.01  | 0.00050 mg/L  | 20-Jun-18 | EPA 6020B  |
| Barium, total     | <b>0.0116</b>   | MAC = 1     | 0.0050 mg/L   | 20-Jun-18 | EPA 6020B  |
| Beryllium, total  | <0.00010        | -           | 0.00010 mg/L  | 20-Jun-18 | EPA 6020B  |
| Bismuth, total    | <0.00010        | -           | 0.00010 mg/L  | 20-Jun-18 | EPA 6020B  |
| Boron, total      | <b>0.0059</b>   | MAC = 5     | 0.0050 mg/L   | 20-Jun-18 | EPA 6020B  |
| Cadmium, total    | <b>0.000010</b> | MAC = 0.005 | 0.000010 mg/L | 20-Jun-18 | EPA 6020B  |
| Calcium, total    | <b>9.26</b>     | -           | 0.20 mg/L     | 20-Jun-18 | EPA 6020B  |
| Chromium, total   | <0.00050        | MAC = 0.05  | 0.00050 mg/L  | 20-Jun-18 | EPA 6020B  |
| Cobalt, total     | <0.00010        | -           | 0.00010 mg/L  | 20-Jun-18 | EPA 6020B  |
| Copper, total     | <b>0.00074</b>  | AO <= 1     | 0.00040 mg/L  | 20-Jun-18 | EPA 6020B  |
| Iron, total       | <b>0.142</b>    | AO <= 0.3   | 0.010 mg/L    | 20-Jun-18 | EPA 6020B  |
| Lead, total       | <0.00020        | MAC = 0.01  | 0.00020 mg/L  | 20-Jun-18 | EPA 6020B  |
| Lithium, total    | <b>0.00045</b>  | -           | 0.00010 mg/L  | 20-Jun-18 | EPA 6020B  |
| Magnesium, total  | <b>0.996</b>    | -           | 0.010 mg/L    | 20-Jun-18 | EPA 6020B  |
| Manganese, total  | <b>0.00807</b>  | AO <= 0.05  | 0.00020 mg/L  | 20-Jun-18 | EPA 6020B  |
| Mercury, total    | <0.000010       | MAC = 0.001 | 0.000010 mg/L | 21-Jun-18 | EPA 245.7* |
| Molybdenum, total | <b>0.00076</b>  | -           | 0.00010 mg/L  | 20-Jun-18 | EPA 6020B  |
| Nickel, total     | <0.00040        | -           | 0.00040 mg/L  | 20-Jun-18 | EPA 6020B  |
| Phosphorus, total | <0.050          | -           | 0.050 mg/L    | 20-Jun-18 | EPA 6020B  |
| Potassium, total  | <b>0.41</b>     | -           | 0.10 mg/L     | 20-Jun-18 | EPA 6020B  |
| Selenium, total   | <0.00050        | MAC = 0.05  | 0.00050 mg/L  | 20-Jun-18 | EPA 6020B  |
| Silicon, total    | <b>1.9</b>      | -           | 1.0 mg/L      | 20-Jun-18 | EPA 6020B  |
| Silver, total     | <0.000050       | -           | 0.000050 mg/L | 20-Jun-18 | EPA 6020B  |
| Sodium, total     | <b>2.63</b>     | AO <= 200   | 0.10 mg/L     | 20-Jun-18 | EPA 6020B  |
| Strontium, total  | <b>0.0464</b>   | -           | 0.0010 mg/L   | 20-Jun-18 | EPA 6020B  |
| Sulfur, total     | <3.0            | -           | 3.0 mg/L      | 20-Jun-18 | EPA 6020B  |
| Tellurium, total  | <0.00050        | -           | 0.00050 mg/L  | 20-Jun-18 | EPA 6020B  |
| Thallium, total   | <0.000020       | -           | 0.000020 mg/L | 20-Jun-18 | EPA 6020B  |
| Thorium, total    | <0.00010        | -           | 0.00010 mg/L  | 20-Jun-18 | EPA 6020B  |
| Tin, total        | <0.00020        | -           | 0.00020 mg/L  | 20-Jun-18 | EPA 6020B  |
| Titanium, total   | <0.0050         | -           | 0.0050 mg/L   | 20-Jun-18 | EPA 6020B  |
| Tungsten, total   | <0.0010         | -           | 0.0010 mg/L   | 20-Jun-18 | EPA 6020B  |
| Uranium, total    | <b>0.000129</b> | MAC = 0.02  | 0.000020 mg/L | 20-Jun-18 | EPA 6020B  |
| Vanadium, total   | <0.0010         | -           | 0.0010 mg/L   | 20-Jun-18 | EPA 6020B  |

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|---------|--------|------------------|-----------|----------|-------------|-------|
|---------|--------|------------------|-----------|----------|-------------|-------|

Sample ID: **Site #2** (N806071-02), Sampled: **08-Jun-18 11:21**

**Total Metals**

|                  |          |         |              |           |           |  |
|------------------|----------|---------|--------------|-----------|-----------|--|
| Zinc, total      | <0.0040  | AO <= 5 | 0.0040 mg/L  | 20-Jun-18 | EPA 6020B |  |
| Zirconium, total | <0.00010 | -       | 0.00010 mg/L | 20-Jun-18 | EPA 6020B |  |

**Glossary of Terms**

**MRL** Method Reporting Limit  
 < Less than the reported detection limit (RDL).  
 > Greater than the reported value.

**Units**

mg/L Milligrams per Litre

**Method**

SM 2340 B\* (2011) Total Metals by ICPMS  
 EPA 6020B Total Metals by ICPMS  
 EPA 245.7\* Mercury by CVAFS

**Guidelines Referenced**

**CDWG** Canadian Drinking Water Quality Guidelines (2014)  
[http://www.hc-sc.gc.ca/ewh-semt/alt\\_formats/pdf/pubs/water-eau/sum\\_guide-res\\_recom/sum\\_guide-res\\_recom-eng.pdf](http://www.hc-sc.gc.ca/ewh-semt/alt_formats/pdf/pubs/water-eau/sum_guide-res_recom/sum_guide-res_recom-eng.pdf)

**MAC** Maximum Acceptable Concentration. Values above MAC are formatted with red text and solid outline.

**AO** Aesthetic Objective (not health related). Values above AO are formatted with underline and dashed outline.