

**From:** [Environmental Compliance ENV:EX](#)  
**To:** [Fraleigh, Connor ENV:EX](#); [Payette, Leslie ENV:EX](#)  
**Cc:** [Bilawchuk, Maureen ENV:EX](#)  
**Subject:** FW: 2017-10-15 SPOMO1701 WQ Rpt Req  
**Date:** Tuesday, October 17, 2017 7:36:24 AM  
**Attachments:** 2017 Ground Water Quality DATA-CLOSURE PLAN.pdf  
CHH COA 2\_September 2017.pdf  
2017 Surface Water Quality DATA-CLOSURE PLAN.pdf  
Progress Report-Oct 15 2017.pdf  
CHH COA 2\_September 2017.xls

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FYI only – already filed

[P:\WANSHARE\ROB\Authorizations 10400-60\105809 Cobble Hill Holdings Ltd\04c Spill Prevention Order MO1701\01 Correspondence](#)

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**From:** spomo1701@outlook.com [mailto:spomo1701@outlook.com]  
**Sent:** Monday, October 16, 2017 8:17 PM  
**To:** Environmental Compliance ENV:EX  
**Subject:** 2017-10-15 SPOMO1701 WQ Rpt Req

- ***Please find information regarding the Leachate reporting requirements for the October 15, 2017 reporting period as per SPILL PREVENTION ORDER : MO1701 Section 1d***

LEACHATE COLLECTED= 11.51 m<sup>3</sup>

LEACHATE STORED= 13.41 m<sup>3</sup>

LEACHATE TRANSPORTED= 0 m<sup>3</sup>

- ***Attached is information regarding water quality as per Section 6biii of File 311372 August 11, 2017 letter***

*Sampling Summary for September 2017*

1. *SHA-SW1 Sampled September 25, 2017*
2. *SHA-SW2-(Dry Conditions) September 6, 2017*
3. *MW6 Sampled September 25, 2017*
4. *MW3 Sampled September 25, 2017*
5. *MW2 Sampled September 25, 2017*
6. *SHA-LE-1 Sampled September 6, 2017*
7. *SHA-LD-1 (Dry Conditions) September 6, 2017*

*Laboratory QA/QC presented in attached Certificate of Analysis displays recovery from reference samples for a number of dissolved metals are biased high.*

- ***Attached is the QP Progress Report for Oct 15, 2017 as per File 311372 August 11, 2017 letter***

***Thank you***

Table GW1: Analytical Results for Nutrients in Groundwater

| Sample Location                          | CSR Standards <sup>(a)</sup> |                | MW-6       | MW-2       | MW-3S      | MW-3D      | Field Blank |
|------------------------------------------|------------------------------|----------------|------------|------------|------------|------------|-------------|
| As-built Well Depths                     |                              |                | 47m        | 43m        | 23m        | 46m        |             |
| Sample ID                                |                              |                | MW6        | MW2        | MW3S       | MW3D       | FB          |
| Date Sampled                             | Aquatic Life                 | Drinking Water | 7092382-03 | 7092382-04 | 7092382-05 | 7092382-06 | 7092382-07  |
| Physical Tests                           |                              |                | 2017-09-25 | 2017-09-25 | 2017-09-25 | 2017-09-25 | 2017-09-25  |
| Colour, True (TCU)                       | -                            | -              | 6.2        | <5.0       | <5.0       | 7          | <5.0        |
| Conductivity (uS/cm)                     | -                            | -              | 1330       | 251        | 342        | 250        | <2.0        |
| Hardness (as CaCO3) mg/L                 | -                            | -              | 599        | 126        | 138        | 99.9       | <0.500      |
| pH (pH Units)                            | -                            | -              | 7.31       | 7.58       | 7.58       | 7.63       | 6.13        |
| Total Suspended Solids mg/L              |                              |                | 14.8       | 29.4       | 6.8        | 77         | <2.0        |
| Total Dissolved Solids mg/L              | -                            | -              | -          | -          | -          | -          | -           |
| Turbidity (NTU)                          | -                            | -              | 10.6       | 7.79       | 3.96       | 31.6       | <0.10       |
| Anions and Nutrients mg/L                |                              |                |            |            |            |            |             |
| Alkalinity, Total (as CaCO3)             | -                            | -              | 640        | 111        | 128        | 106        | <1.0        |
| Chloride (Cl)                            | 1500                         | 250            | 39.3       | 4.8        | 6.47       | 2.62       | <0.10       |
| Fluoride (F)                             | 2 (H < 50)<br>3 (H ≥ 50)     | 1.5            |            |            |            |            | <0.10       |
| Nitrate (as N)                           | 400                          | 10             | <0.10      | 0.26       | 0.22       | 0.25       |             |
| Nitrite (as N) <sup>(b)</sup> Cl <2 mg/L | 0.2                          | 3.2            | 0.018      | 0.165      | <0.010     | 0.015      | <0.010      |
| Cl 2 - <4 mg/L                           | 0.4                          |                |            |            |            | <0.010     |             |
| Cl 4 - <6 mg/L                           | 0.6                          |                |            | <0.010     |            |            |             |
| Cl 6 - <8 mg/L                           | 0.8                          |                |            |            | <0.010     |            |             |
| Cl 8 - <10 mg/L                          | 1                            |                |            |            |            |            |             |
| Cl ≥ 10 mg/L                             | 2                            |                | <0.010     |            |            |            |             |
| Sulfate (SO4)                            | 1000                         | 500            | 83.3       | <1.0       | 44.3       | 22         | <1.0        |

Notes: Refer to Table Endnotes (attached)

Table GW2: Analytical Results for Total Metals in Groundwater

| Sample Location                  | CSR Standards <sup>(a)</sup> |                | MW-6       | MW-2       | MW-3S      | MW-3D      | Field Blank |
|----------------------------------|------------------------------|----------------|------------|------------|------------|------------|-------------|
| As-built Well Depths             |                              |                | 47m        | 43m        | 23m        | 46m        |             |
| Sample ID                        |                              |                | MW6        | MW2        | MW3S       | MW3D       | FB          |
| Date Sampled                     | Aquatic Life                 | Drinking Water | 7092382-03 | 7092382-04 | 7092382-05 | 7092382-06 | 7092382-07  |
| Physical Tests mg/L              |                              |                | 2017-09-25 | 2017-09-25 | 2017-09-25 | 2017-09-25 | 2017-09-25  |
| Hardness (as CaCO <sub>3</sub> ) | -                            | -              | 599        | 126        | 138        | 99.9       | <0.500      |
| Total Metals mg/L                |                              |                |            |            |            |            |             |
| Aluminum (Al)-Total              | -                            | -              | 0.0272     | 0.849      | 0.0507     | 0.215      | <0.0050     |
| Antimony (Sb)-Total              | -                            | -              | 0.00026    | <0.00020   | <0.00020   | 0.00021    | <0.00020    |
| Arsenic (As)-Total               | -                            | -              | 0.00373    | 0.00187    | 0.00073    | 0.00138    | <0.00050    |
| Barium (Ba)-Total                | -                            | -              | 0.0892     | 0.0315     | 0.036      | 0.0217     | <0.0050     |
| Beryllium (Be)-Total             | -                            | -              | <0.00010   | <0.00010   | <0.00010   | <0.00010   | <0.00010    |
| Bismuth (Bi)-Total               | -                            | -              | <0.00010   | <0.00010   | <0.00010   | <0.00010   | <0.00010    |
| Boron (B)-Total                  | -                            | -              | 0.0872     | 0.0318     | 0.0264     | 0.0294     | <0.0050     |
| Cadmium (Cd)-Total               | -                            | -              | 0.000017   | 0.000071   | 0.000394   | 0.000292   | <0.000010   |
| Calcium (Ca)-Total               | -                            | -              | 186        | 39.5       | 49.6       | 35.9       | <0.20       |
| Chromium (Cr)-Total              | -                            | -              | <0.00050   | 0.00133    | 0.00059    | <0.00050   | <0.00050    |
| Cobalt (Co)-Total                | -                            | -              | 0.00222    | 0.00098    | 0.00045    | 0.00047    | <0.00010    |
| Copper (Cu)-Total                | -                            | -              | 0.00072    | 0.00109    | 0.00126    | 0.00057    | <0.00040    |
| Iron (Fe)-Total                  | -                            | -              | 0.896      | 1.44       | 0.058      | 0.2        | <0.010      |
| Lead (Pb)-Total                  | -                            | -              | 0.00029    | 0.00024    | <0.00020   | <0.00020   | <0.00020    |
| Lithium (Li)-Total               | -                            | -              | 0.0132     | 0.00024    | 0.00015    | 0.0002     | <0.00010    |
| Magnesium (Mg)-Total             | -                            | -              | 37.1       | 7.62       | 7.39       | 6          | <0.010      |
| Manganese (Mn)-Total             | -                            | -              | 2.12       | 0.508      | 0.289      | 0.323      | <0.00020    |
| Mercury (Hg)-Total               | -                            | -              | <0.000010  | <0.000010  | <0.000010  | <0.000010  | <0.000010   |
| Molybdenum (Mo)-Total            | -                            | -              | 0.00084    | 0.00426    | 0.00656    | 0.00754    | <0.00010    |
| Nickel (Ni)-Total                | -                            | -              | 0.00495    | 0.00202    | 0.00207    | 0.0023     | <0.00040    |
| Phosphorus (P)-Total             | -                            | -              | <0.050     | 0.201      | 0.066      | 0.104      | <0.050      |
| Potassium (K)-Total              | -                            | -              | 4.16       | 0.75       | 1.06       | 0.71       | <0.10       |
| Selenium (Se)-Total              | -                            | -              | <0.00050   | <0.00050   | <0.00050   | <0.00050   | <0.00050    |
| Silicon (Si)-Total               | -                            | -              | 12         | 8.2        | 6.6        | 7.3        | <1.0        |
| Silver (Ag)-Total                | -                            | -              | <0.000050  | <0.000050  | <0.000050  | <0.000050  | <0.000050   |
| Sodium (Na)-Total                | -                            | -              | 74         | 9.28       | 16.3       | 12.7       | <0.10       |
| Strontium (Sr)-Total             | -                            | -              | 0.601      | 0.168      | 0.24       | 0.209      | <0.0010     |
| Sulfur (S)-Total                 | -                            | -              | 27.8       | 7.4        | 15.6       | 9.5        | <3.0        |
| Tellurium (Te)-Total             | -                            | -              | <0.00050   | <0.00050   | <0.00050   | <0.00050   | <0.00050    |
| Thallium (Tl)-Total              | -                            | -              | 0.000022   | 0.000021   | 0.000025   | 0.000023   | <0.000020   |
| Thorium (Th)-Total               | -                            | -              | <0.00010   | 0.00011    | <0.00010   | 0.00036    | <0.00010    |
| Tin (Sn)-Total                   | -                            | -              | 0.00067    | 0.0002     | 0.00027    | 0.0003     | <0.00020    |
| Titanium (Ti)-Total              | -                            | -              | <0.0050    | 0.046      | <0.0050    | <0.0050    | <0.0050     |
| Uranium (U)-Total                | -                            | -              | 0.00855    | 0.00101    | 0.00131    | 0.000911   | <0.000020   |
| Vanadium (V)-Total               | -                            | -              | <0.0010    | 0.0033     | <0.0010    | <0.0010    | <0.0010     |
| Zinc (Zn)-Total                  | -                            | -              | 0.0051     | 0.0052     | <0.0040    | <0.0040    | <0.0040     |
| Zirconium (Zr)-Total             | -                            | -              | 0.00017    | 0.0002     | <0.00010   | 0.00022    | <0.00010    |

Notes: Refer to Table Endnotes (attached)

Table GW3: Analytical Results for Dissolved Metals in Groundwater

| Sample Location                  | CSR Standards <sup>(a)</sup> |                | MW-6       | MW-2       | MW-3S      | MW-3D      | Field Blank |
|----------------------------------|------------------------------|----------------|------------|------------|------------|------------|-------------|
| As-built Well Depths             |                              |                | 47m        | 43m        | 23m        | 46m        |             |
| Sample ID                        |                              |                | MW6        | MW2        | MW3S       | MW3D       | FB          |
|                                  |                              |                | 7092382-03 | 7092382-04 | 7092382-05 | 7092382-06 | 7092382-07  |
| Date Sampled                     | Aquatic Life                 | Drinking Water | 2017-09-25 | 2017-09-25 | 2017-09-25 | 2017-09-25 | 2017-09-25  |
| Physical Tests mg/L              |                              |                |            |            |            |            |             |
| Hardness (as CaCO <sub>3</sub> ) | -                            | -              | 599        | 126        | 138        | 99.9       | <0.500      |
| Dissolved Metals mg/L            |                              |                |            |            |            |            |             |
| Aluminum (Al)-Dissolved          | -                            | 9.5            | <0.0050    | <0.0050    | <0.0050    | <0.0050    | <0.0050     |
| Antimony (Sb)-Dissolved          | 0.2                          | 0.006          | <0.00020   | <0.00020   | <0.00020   | 0.00037    | <0.00020    |
| Arsenic (As)-Dissolved           | 0.05                         | 0.01           | 0.00445    | 0.00193    | 0.00073    | 0.00132    | <0.00050    |
| Barium (Ba)-Dissolved            | 10                           | 1              | 0.096      | 0.026      | 0.0302     | 0.0161     | <0.0050     |
| Beryllium (Be)-Dissolved         | 0.053                        | -              | <0.00010   | <0.00010   | <0.00010   | <0.00010   | <0.00010    |
| Bismuth (Bi)-Dissolved           | -                            | -              | <0.00010   | <0.00010   | <0.00010   | <0.00010   | <0.00010    |
| Boron (B)-Dissolved              | 50                           | 5              | 0.0939     | 0.0303     | 0.0238     | 0.0262     | <0.0050     |
| Cadmium (Cd)-Dissolved           | 0.0001 (H<30)                | 0.005          |            |            |            |            | <0.000010   |
|                                  | 0.0003 (H=30-<90)            |                |            |            |            |            |             |
|                                  | 0.0005 (H=90-<150)           |                | <0.000010  | <0.000010  | 0.000024   | 0.000013   |             |
|                                  | 0.0006 (H=150-<210)          |                |            |            |            |            |             |
| Calcium (Ca)-Dissolved           | -                            | -              | 178        | 38.5       | 44.2       | 31.1       | <0.20       |
| Chromium (Cr)-Dissolved          | 0.01                         | 0.05           | <0.00050   | <0.00050   | <0.00050   | <0.00050   | <0.00050    |
| Cobalt (Co)-Dissolved            | 0.04                         | -              | 0.00233    | 0.00039    | 0.00044    | 0.00039    | <0.00010    |
| Copper (Cu)-Dissolved            | 0.02 (H<50)                  | 1              |            |            |            |            | <0.00040    |
|                                  | 0.03 (H=50-<75)              |                |            |            |            |            |             |
|                                  | 0.04 (H=75-<100)             |                |            |            |            | <0.00040   |             |
|                                  | 0.05 (H=100-<125)            |                |            |            |            |            |             |
|                                  | 0.06 (H=125-<150)            |                |            | <0.00040   | <0.00040   |            |             |
|                                  | 0.07 (H=150-<175)            |                |            |            |            |            |             |
|                                  | 0.08 (H=175-<200)            |                |            |            |            |            |             |
|                                  | 0.09 (H=200)                 |                | <0.00040   |            |            |            |             |
| Iron (Fe)-Dissolved              | -                            | 6.5            | 0.988      | 0.207      | 0.025      | 0.119      | <0.010      |
| Lead (Pb)-Dissolved              | 0.04 (H<50)                  | 0.01           |            |            |            |            | <0.00020    |
|                                  | 0.05 (H=50-<100)             |                |            |            |            | <0.00020   |             |
|                                  | 0.06 (H=100-<200)            |                |            | <0.00020   | <0.00020   |            |             |
|                                  | 0.11 (H=200-<300)            |                |            |            |            |            |             |
|                                  | 0.16 (H=300)                 |                | <0.00020   |            |            |            |             |
| Lithium (Li)-Dissolved           | -                            | -              | 0.0146     | <0.00010   | <0.00010   | <0.00010   | <0.00010    |
| Magnesium (Mg)-Dissolved         | -                            | 100            | 37.1       | 7.29       | 6.82       | 5.37       | <0.010      |
| Manganese (Mn)-Dissolved         | -                            | 0.55           | 2.3        | 0.632      | 0.265      | 0.324      | <0.00020    |
| Mercury (Hg)-Dissolved           | 0.001                        | 0.001          | <0.000010  | <0.000010  | <0.000010  | <0.000010  | <0.000010   |
| Molybdenum (Mo)-Dissolved        | 10                           | 0.25           | 0.00083    | 0.00444    | 0.00601    | 0.00688    | <0.00010    |
| Nickel (Ni)-Dissolved            | 0.25 (H<60)                  | -              |            |            |            |            | <0.00040    |
|                                  | 0.65 (H=60-<120)             |                |            |            |            | 0.00185    |             |
|                                  | 1.1 (H=120-<180)             |                |            | 0.00127    | 0.00199    |            |             |
|                                  | 1.5 (H=180)                  |                | 0.00482    |            |            |            |             |
| Phosphorus (P)-Dissolved         | -                            | -              | <0.050     | 0.131      | 0.057      | 0.093      | <0.050      |
| Potassium (K)-Dissolved          | -                            | -              | 4.44       | 0.71       | 0.97       | 0.63       | <0.10       |
| Selenium (Se)-Dissolved          | 0.01                         | 0.01           | <0.00050   | <0.00050   | <0.00050   | <0.00050   | <0.00050    |
| Silicon (Si)-Dissolved           | -                            | -              | 12.2       | 7          | 6.1        | 6.1        | <1.0        |
| Silver (Ag)-Dissolved            | 0.0005 (H<=100)              | -              |            |            |            | <0.000050  | <0.000050   |
|                                  | 0.015 (H>100)                |                | <0.000050  | <0.000050  | <0.000050  |            |             |
| Sodium (Na)-Dissolved            | -                            | 200            | 91.8       | 9.58       | 15.3       | 11.7       | <0.10       |
| Strontium (Sr)-Dissolved         | -                            | -              | 0.616      | 0.167      | 0.221      | 0.19       | <0.0010     |
| Sulfur (S)-Dissolved             | -                            | -              | 29.6       | 7.7        | 14.4       | 8.6        | <3.0        |
| Tellurium (Te)-Dissolved         | -                            | -              | <0.00050   | <0.00050   | <0.00050   | <0.00050   | <0.00050    |
| Thallium (Tl)-Dissolved          | 0.003                        | -              | 0.000027   | <0.000020  | 0.000023   | <0.000020  | <0.000020   |
| Thorium (Th)-Dissolved           | -                            | -              | <0.00010   | <0.00010   | <0.00010   | <0.00010   | <0.00010    |
| Tin (Sn)-Dissolved               | -                            | -              | 0.00027    | <0.00020   | <0.00020   | <0.00020   | <0.00020    |
| Titanium (Ti)-Dissolved          | 1                            | -              | <0.0050    | <0.0050    | <0.0050    | <0.0050    | <0.0050     |
| Uranium (U)-Dissolved            | 3                            | 0.02           | 0.00916    | 0.00102    | 0.00117    | 0.000718   | <0.000020   |
| Vanadium (V)-Dissolved           | -                            | -              | <0.0010    | <0.0010    | <0.0010    | <0.0010    | <0.0010     |
| Zinc (Zn)-Dissolved              | 0.075 (H<90)                 | 5              |            |            |            | <0.0040    | <0.0040     |
|                                  | 0.150 (H=90-<100)            |                |            |            |            |            |             |
|                                  | 0.900 (H=100-<200)           |                |            | 0.0219     | <0.0040    |            |             |
|                                  | 1.650 (H=200-<300)           |                |            |            |            |            |             |
|                                  | 2.4 (H=300-<400)             |                | <0.0040    |            |            |            |             |
| Zirconium (Zr)-Dissolved         | -                            | -              | 0.00023    | <0.00010   | <0.00010   | <0.00010   | <0.00010    |

Notes: Refer to Table Endnotes (attached)

Table GW4: Analytical Results for Hydrocarbons and PAHs in Groundwater

| Sample Location                              | CSR Standards <sup>(1)</sup> |                | MW-6       | MW-2       | MW-3S      | MW-3D      | Field Blank |
|----------------------------------------------|------------------------------|----------------|------------|------------|------------|------------|-------------|
| As-built Well Depths                         |                              |                | 47m        | 43m        | 23m        | 46m        |             |
| Sample ID                                    |                              |                | MW6        | MW2        | MW3S       | MW3D       | FB          |
|                                              |                              |                | 7092382-03 | 7092382-04 | 7092382-05 | 7092382-06 | 7092382-07  |
| Date Sampled                                 | Aquatic Life                 | Drinking Water | 2017-09-25 | 2017-09-25 | 2017-09-25 | 2017-09-25 | 2017-09-25  |
| <b>Hydrocarbons ug/L</b>                     |                              |                |            |            |            |            |             |
| EPH10-19                                     | 5000                         | 5000           | <250       | <250       | <250       | <250       | <250        |
| EPH10-19 (SG)                                | 5000                         | 5000           | -          | -          | -          | -          | -           |
| EPH19-32                                     | -                            | -              | <250       | <250       | <250       | <250       | <250        |
| EPH19-32 (SG)                                | -                            | -              | -          | -          | -          | -          | -           |
| LEPH                                         | 500                          | -              | <250       | <250       | <250       | <250       | <250        |
| HEPH                                         | -                            | -              | <250       | <250       | <250       | <250       | <250        |
| <b>Polycyclic Aromatic Hydrocarbons ug/L</b> |                              |                |            |            |            |            |             |
| Acenaphthene                                 | 60                           | -              | <0.050     | <0.050     | <0.050     | <0.050     | <0.050      |
| Acenaphthylene                               | -                            | -              | <0.200     | <0.200     | <0.200     | <0.200     | <0.200      |
| Acridine                                     | 0.5                          | -              | <0.050     | <0.050     | <0.050     | <0.050     | <0.050      |
| Anthracene                                   | 1                            | -              | <0.010     | <0.010     | <0.010     | <0.010     | <0.010      |
| Benz(a)anthracene                            | 1                            | -              | <0.010     | <0.010     | <0.010     | <0.010     | <0.010      |
| Benzo(a)pyrene                               | 0.1                          | 0.01           | <0.010     | <0.010     | <0.010     | <0.010     | <0.010      |
| Benzo(b)fluoranthene                         | -                            | -              | <0.050     | <0.050     | <0.050     | <0.050     | <0.050      |
| Benzo(b+)fluoranthene                        | -                            | -              | <0.050     | <0.050     | <0.050     | <0.050     | <0.050      |
| Benzo(g,h,i)perylene                         | -                            | -              | <0.050     | <0.050     | <0.050     | <0.050     | <0.050      |
| Benzo(k)fluoranthene                         | -                            | -              | <0.050     | <0.050     | <0.050     | <0.050     | <0.050      |
| Chrysene                                     | 1                            | -              | <0.050     | <0.050     | <0.050     | <0.050     | <0.050      |
| Dibenz(a,h)anthracene                        | -                            | -              | <0.010     | <0.010     | <0.010     | <0.010     | <0.010      |
| Fluoranthene                                 | 2                            | -              | <0.030     | <0.030     | <0.030     | <0.030     | <0.030      |
| Fluorene                                     | 120                          | -              | <0.050     | <0.050     | <0.050     | <0.050     | <0.050      |
| Indeno(1,2,3-c,d)pyrene                      | -                            | -              | <0.050     | <0.050     | <0.050     | <0.050     | <0.050      |
| Naphthalene                                  | 10                           | -              | <0.200     | <0.200     | <0.200     | <0.200     | <0.200      |
| Phenanthrene                                 | 3                            | -              | <0.100     | <0.100     | <0.100     | <0.100     | <0.100      |
| Pyrene                                       | 0.2                          | -              | <0.020     | <0.020     | <0.020     | <0.020     | <0.020      |
| Quinoline                                    | 34                           | -              | <0.050     | <0.050     | <0.050     | <0.050     | <0.050      |

Notes: Refer to Table Endnotes (attached)

## Analytical Table Footnotes: Analytical Results for Groundwater

All concentrations in mg/L, except pH or as indicated.

"<" less than the laboratory detection limit indicated.

"\_" means not analyzed or no standard or guideline applies.

\* RPDs are not normally calculated where one or more concentrations are less than five times MDL.

(1) A compendium of CSR Schedules 6 and 10 guidelines with respect to Drinking Water (DW) and Freshwater Aquatic Life (AW).

(2) Standard is dissolved Chloride-dependent.

**BOLD, UNDERLINE**

Laboratory Detection Limit exceeds one or more applicable Standard

**BLUE SHADING**

Concentration greater than CSR Aquatic Life (AW) Standard

**BOLD, BEIGE TEXT**

Concentration greater than CSR Drinking Water (DW) Standard

**CERTIFICATE OF ANALYSIS**

**REPORTED TO** Allterra Construction  
2158 Millstream Road  
Victoria, BC V9B 6H4

**TEL** (250) 508-0726  
**FAX**

**ATTENTION** Rahim Gaidhar

**WORK ORDER** 7092382

**PO NUMBER** P15-06 SIRM

**RECEIVED / TEMP** 2017-09-26 11:45 / 15°C

**PROJECT** P17-932

**REPORTED** 2017-10-03

**PROJECT INFO**

**COC NUMBER** B58830

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**General Comments:**

CARO Analytical Services employs methods which are conducted according to procedures accepted by appropriate regulatory agencies, and/or are conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts, except where otherwise agreed to by the client.

The results in this report apply to the samples analyzed in accordance with the Chain of Custody or Sample Requisition document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing.



Authorized By:

**Bryan Shaw, Ph.D., P.Chem.**  
Account Manager

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**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 7092382  
2017-10-03

| Analysis Description                      | Method Reference         | Technique                                                                                         | Location |
|-------------------------------------------|--------------------------|---------------------------------------------------------------------------------------------------|----------|
| Alkalinity in Water                       | APHA 2320 B*             | Titration with H <sub>2</sub> SO <sub>4</sub>                                                     | Kelowna  |
| Anions by IC in Water                     | APHA 4110 B              | Ion Chromatography with Chemical Suppression of Eluent Conductivity                               | Kelowna  |
| Chromium, Hexavalent (Total) in Water     | APHA 3500-Cr B           | Colorimetry                                                                                       | Richmond |
| Colour, True in Water                     | APHA 2120 C              | Spectrophotometry (456 nm)                                                                        | Kelowna  |
| Conductivity in Water                     | APHA 2510 B              | Conductivity Meter                                                                                | Kelowna  |
| Dissolved Metals by ICPMS in Water        | APHA 3030 B / EPA 6020B  | 0.45 µm Filtration / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)                        | Richmond |
| EPH in Water                              | EPA 3511* / BCMOE EPHw   | Hexane MicroExtraction (Base/Neutral) / Gas Chromatography (GC-FID)                               | Richmond |
| Hardness (as CaCO <sub>3</sub> ) in Water | APHA 2340 B              | Calculation: 2.497 [diss Ca] + 4.118 [diss Mg]                                                    | N/A      |
| HEPHw in Water                            | BCMOE LEPH/HEPH          | Calculation                                                                                       | N/A      |
| LEPHw in Water                            | BCMOE LEPH/HEPH          | Calculation                                                                                       | N/A      |
| Mercury, dissolved by CVAFS in Water      | EPA 245.7*               | BrCl <sub>2</sub> Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)                 | Richmond |
| Mercury, total by CVAFS in Water          | EPA 245.7*               | BrCl <sub>2</sub> Oxidation / Cold Vapor Atomic Fluorescence Spectrometry (CVAFS)                 | Richmond |
| pH in Water                               | APHA 4500-H+ B           | Electrometry                                                                                      | Kelowna  |
| Polycyclic Aromatic Hydrocarbons in Water | EPA 3511* / EPA 8270D    | Hexane MicroExtraction (Base/Neutral) / GC-MS (SIM)                                               | Richmond |
| Solids, Total Suspended in Water          | APHA 2540 D*             | Gravimetry (Dried at 103-105C)                                                                    | Kelowna  |
| Total Metals by ICPMS in Water            | APHA 3030 E* / EPA 6020B | HNO <sub>3</sub> +HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS) | Richmond |
| Turbidity in Water                        | APHA 2130 B              | Nephelometry                                                                                      | Kelowna  |

**Note:** An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method

### Method Reference Descriptions:

|       |                                                                                                                                                                              |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| APHA  | Standard Methods for the Examination of Water and Wastewater, 22nd Edition, American Public Health Association/American Water Works Association/Water Environment Federation |
| BCMOE | British Columbia Environmental Laboratory Manual, 2013, British Columbia Ministry of Environment                                                                             |
| EPA   | United States Environmental Protection Agency Test Methods                                                                                                                   |

### Glossary of Terms:

|          |                                                                                                                                                                                    |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MRL      | Method Reporting Limit                                                                                                                                                             |
| <        | Less than the Reported Detection Limit (RDL) - the RDL may be higher than the MRL due to various factors such as dilutions, limited sample volume, high moisture, or interferences |
| CU       | Colour Units (referenced against a platinum cobalt standard)                                                                                                                       |
| mg/L     | Milligrams per litre                                                                                                                                                               |
| NTU      | Nephelometric Turbidity Units                                                                                                                                                      |
| pH units | pH < 7 = acidic, pH > 7 = basic                                                                                                                                                    |
| µg/L     | Micrograms per litre                                                                                                                                                               |
| µS/cm    | Microsiemens per centimetre                                                                                                                                                        |

## SAMPLE ANALYTICAL DATA

**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 7092382  
2017-10-03

| Analyte | Result / Recovery | MRL / Limits | Units | Prepared | Analyzed | Notes |
|---------|-------------------|--------------|-------|----------|----------|-------|
|---------|-------------------|--------------|-------|----------|----------|-------|

**Sample ID: SHA-SW1 (7092382-01) [Water] Sampled: 2017-09-25 10:15**

### Anions

|                |         |       |      |     |            |  |
|----------------|---------|-------|------|-----|------------|--|
| Chloride       | 49.4    | 0.10  | mg/L | N/A | 2017-10-02 |  |
| Fluoride       | < 0.10  | 0.10  | mg/L | N/A | 2017-09-29 |  |
| Nitrate (as N) | 0.476   | 0.010 | mg/L | N/A | 2017-09-29 |  |
| Nitrite (as N) | < 0.010 | 0.010 | mg/L | N/A | 2017-09-29 |  |
| Sulfate        | 122     | 1.0   | mg/L | N/A | 2017-10-02 |  |

### General Parameters

|                                                     |          |        |          |     |            |     |
|-----------------------------------------------------|----------|--------|----------|-----|------------|-----|
| Alkalinity, Total (as CaCO <sub>3</sub> )           | 206      | 1.0    | mg/L     | N/A | 2017-09-28 |     |
| Alkalinity, Phenolphthalein (as CaCO <sub>3</sub> ) | < 1.0    | 1.0    | mg/L     | N/A | 2017-09-28 |     |
| Alkalinity, Bicarbonate (as CaCO <sub>3</sub> )     | 206      | 1.0    | mg/L     | N/A | 2017-09-28 |     |
| Alkalinity, Carbonate (as CaCO <sub>3</sub> )       | < 1.0    | 1.0    | mg/L     | N/A | 2017-09-28 |     |
| Alkalinity, Hydroxide (as CaCO <sub>3</sub> )       | < 1.0    | 1.0    | mg/L     | N/A | 2017-09-28 |     |
| Chromium, Hexavalent                                | < 0.0010 | 0.0010 | mg/L     | N/A | 2017-09-28 |     |
| Colour, True                                        | 5.5      | 5.0    | CU       | N/A | 2017-09-29 |     |
| Conductivity (EC)                                   | 759      | 2.0    | µS/cm    | N/A | 2017-09-28 |     |
| pH                                                  | 7.71     | 0.10   | pH units | N/A | 2017-09-28 | HT2 |
| Solids, Total Suspended                             | 5.6      | 2.0    | mg/L     | N/A | 2017-09-28 |     |
| Turbidity                                           | 0.95     | 0.10   | NTU      | N/A | 2017-09-29 | HT1 |

### Calculated Parameters

|                                         |           |         |      |     |     |  |
|-----------------------------------------|-----------|---------|------|-----|-----|--|
| Chromium, Trivalent                     | < 0.00100 | 0.00100 | mg/L | N/A | N/A |  |
| Hardness, Total (as CaCO <sub>3</sub> ) | 361       | 0.500   | mg/L | N/A | N/A |  |

### Dissolved Metals

|                       |            |          |      |            |            |  |
|-----------------------|------------|----------|------|------------|------------|--|
| Aluminum, dissolved   | < 0.0050   | 0.0050   | mg/L | N/A        | 2017-10-03 |  |
| Antimony, dissolved   | < 0.00020  | 0.00020  | mg/L | N/A        | 2017-10-03 |  |
| Arsenic, dissolved    | < 0.00050  | 0.00050  | mg/L | N/A        | 2017-10-03 |  |
| Barium, dissolved     | 0.0253     | 0.0050   | mg/L | N/A        | 2017-10-03 |  |
| Beryllium, dissolved  | < 0.00010  | 0.00010  | mg/L | N/A        | 2017-10-03 |  |
| Bismuth, dissolved    | < 0.00010  | 0.00010  | mg/L | N/A        | 2017-10-03 |  |
| Boron, dissolved      | 0.0313     | 0.0050   | mg/L | N/A        | 2017-10-03 |  |
| Cadmium, dissolved    | 0.000010   | 0.000010 | mg/L | N/A        | 2017-10-03 |  |
| Calcium, dissolved    | 117        | 0.20     | mg/L | N/A        | 2017-10-03 |  |
| Chromium, dissolved   | < 0.00050  | 0.00050  | mg/L | N/A        | 2017-10-03 |  |
| Cobalt, dissolved     | 0.00010    | 0.00010  | mg/L | N/A        | 2017-10-03 |  |
| Copper, dissolved     | 0.00112    | 0.00040  | mg/L | N/A        | 2017-10-03 |  |
| Iron, dissolved       | < 0.010    | 0.010    | mg/L | N/A        | 2017-10-03 |  |
| Lead, dissolved       | < 0.00020  | 0.00020  | mg/L | N/A        | 2017-10-03 |  |
| Lithium, dissolved    | 0.00016    | 0.00010  | mg/L | N/A        | 2017-10-03 |  |
| Magnesium, dissolved  | 16.5       | 0.010    | mg/L | N/A        | 2017-10-03 |  |
| Manganese, dissolved  | 0.0384     | 0.00020  | mg/L | N/A        | 2017-10-03 |  |
| Mercury, dissolved    | < 0.000010 | 0.000010 | mg/L | 2017-09-29 | 2017-09-29 |  |
| Molybdenum, dissolved | 0.00229    | 0.00010  | mg/L | N/A        | 2017-10-03 |  |
| Nickel, dissolved     | 0.00076    | 0.00040  | mg/L | N/A        | 2017-10-03 |  |
| Phosphorus, dissolved | < 0.050    | 0.050    | mg/L | N/A        | 2017-10-03 |  |
| Potassium, dissolved  | 1.72       | 0.10     | mg/L | N/A        | 2017-10-03 |  |

## SAMPLE ANALYTICAL DATA

**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 7092382  
2017-10-03

| Analyte | Result / Recovery | MRL / Limits | Units | Prepared | Analyzed | Notes |
|---------|-------------------|--------------|-------|----------|----------|-------|
|---------|-------------------|--------------|-------|----------|----------|-------|

**Sample ID: SHA-SW1 (7092382-01) [Water] Sampled: 2017-09-25 10:15, Continued**

### *Dissolved Metals, Continued*

|                      |                |          |      |     |            |  |
|----------------------|----------------|----------|------|-----|------------|--|
| Selenium, dissolved  | < 0.00050      | 0.00050  | mg/L | N/A | 2017-10-03 |  |
| Silicon, dissolved   | <b>7.8</b>     | 1.0      | mg/L | N/A | 2017-10-03 |  |
| Silver, dissolved    | < 0.000050     | 0.000050 | mg/L | N/A | 2017-10-03 |  |
| Sodium, dissolved    | <b>18.6</b>    | 0.10     | mg/L | N/A | 2017-10-03 |  |
| Strontium, dissolved | <b>0.359</b>   | 0.0010   | mg/L | N/A | 2017-10-03 |  |
| Sulfur, dissolved    | <b>42.5</b>    | 3.0      | mg/L | N/A | 2017-10-03 |  |
| Tellurium, dissolved | < 0.00050      | 0.00050  | mg/L | N/A | 2017-10-03 |  |
| Thallium, dissolved  | < 0.000020     | 0.000020 | mg/L | N/A | 2017-10-03 |  |
| Thorium, dissolved   | < 0.00010      | 0.00010  | mg/L | N/A | 2017-10-03 |  |
| Tin, dissolved       | < 0.00020      | 0.00020  | mg/L | N/A | 2017-10-03 |  |
| Titanium, dissolved  | < 0.0050       | 0.0050   | mg/L | N/A | 2017-10-03 |  |
| Uranium, dissolved   | <b>0.00289</b> | 0.000020 | mg/L | N/A | 2017-10-03 |  |
| Vanadium, dissolved  | < 0.0010       | 0.0010   | mg/L | N/A | 2017-10-03 |  |
| Zinc, dissolved      | < 0.0040       | 0.0040   | mg/L | N/A | 2017-10-03 |  |
| Zirconium, dissolved | < 0.00010      | 0.00010  | mg/L | N/A | 2017-10-03 |  |

### *Total Metals*

|                   |                 |          |      |            |            |  |
|-------------------|-----------------|----------|------|------------|------------|--|
| Aluminum, total   | <b>0.0303</b>   | 0.0050   | mg/L | 2017-10-02 | 2017-10-03 |  |
| Antimony, total   | < 0.00020       | 0.00020  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Arsenic, total    | < 0.00050       | 0.00050  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Barium, total     | <b>0.0255</b>   | 0.0050   | mg/L | 2017-10-02 | 2017-10-03 |  |
| Beryllium, total  | < 0.00010       | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Bismuth, total    | < 0.00010       | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Boron, total      | <b>0.0548</b>   | 0.0050   | mg/L | 2017-10-02 | 2017-10-03 |  |
| Cadmium, total    | <b>0.000012</b> | 0.000010 | mg/L | 2017-10-02 | 2017-10-03 |  |
| Calcium, total    | <b>123</b>      | 0.20     | mg/L | 2017-10-02 | 2017-10-03 |  |
| Chromium, total   | < 0.00050       | 0.00050  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Cobalt, total     | <b>0.00025</b>  | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Copper, total     | <b>0.00150</b>  | 0.00040  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Iron, total       | <b>0.029</b>    | 0.010    | mg/L | 2017-10-02 | 2017-10-03 |  |
| Lead, total       | < 0.00020       | 0.00020  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Lithium, total    | <b>0.00032</b>  | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Magnesium, total  | <b>17.0</b>     | 0.010    | mg/L | 2017-10-02 | 2017-10-03 |  |
| Manganese, total  | <b>0.120</b>    | 0.00020  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Mercury, total    | < 0.000010      | 0.000010 | mg/L | 2017-10-02 | 2017-10-03 |  |
| Molybdenum, total | <b>0.00235</b>  | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Nickel, total     | <b>0.00090</b>  | 0.00040  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Phosphorus, total | < 0.050         | 0.050    | mg/L | 2017-10-02 | 2017-10-03 |  |
| Potassium, total  | <b>1.72</b>     | 0.10     | mg/L | 2017-10-02 | 2017-10-03 |  |
| Selenium, total   | < 0.00050       | 0.00050  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Silicon, total    | <b>7.8</b>      | 1.0      | mg/L | 2017-10-02 | 2017-10-03 |  |
| Silver, total     | < 0.000050      | 0.000050 | mg/L | 2017-10-02 | 2017-10-03 |  |
| Sodium, total     | <b>18.6</b>     | 0.10     | mg/L | 2017-10-02 | 2017-10-03 |  |
| Strontium, total  | <b>0.374</b>    | 0.0010   | mg/L | 2017-10-02 | 2017-10-03 |  |
| Sulfur, total     | <b>45.6</b>     | 3.0      | mg/L | 2017-10-02 | 2017-10-03 |  |
| Tellurium, total  | < 0.00050       | 0.00050  | mg/L | 2017-10-02 | 2017-10-03 |  |

## SAMPLE ANALYTICAL DATA

**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 7092382  
2017-10-03

| Analyte | Result / Recovery | MRL / Limits | Units | Prepared | Analyzed | Notes |
|---------|-------------------|--------------|-------|----------|----------|-------|
|---------|-------------------|--------------|-------|----------|----------|-------|

**Sample ID: SHA-SW1 (7092382-01) [Water] Sampled: 2017-09-25 10:15, Continued**

### Total Metals, Continued

|                  |                |          |      |            |            |  |
|------------------|----------------|----------|------|------------|------------|--|
| Thallium, total  | < 0.000020     | 0.000020 | mg/L | 2017-10-02 | 2017-10-03 |  |
| Thorium, total   | < 0.00010      | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Tin, total       | < 0.00020      | 0.00020  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Titanium, total  | < 0.0050       | 0.0050   | mg/L | 2017-10-02 | 2017-10-03 |  |
| Uranium, total   | <b>0.00294</b> | 0.000020 | mg/L | 2017-10-02 | 2017-10-03 |  |
| Vanadium, total  | < 0.0010       | 0.0010   | mg/L | 2017-10-02 | 2017-10-03 |  |
| Zinc, total      | < 0.0040       | 0.0040   | mg/L | 2017-10-02 | 2017-10-03 |  |
| Zirconium, total | < 0.00010      | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |  |

### BCMOE Aggregate Hydrocarbons

|                                      |       |        |      |            |            |  |
|--------------------------------------|-------|--------|------|------------|------------|--|
| EPHw10-19                            | < 250 | 250    | µg/L | 2017-09-30 | 2017-10-03 |  |
| EPHw19-32                            | < 250 | 250    | µg/L | 2017-09-30 | 2017-10-03 |  |
| LEPHw                                | < 250 | 250    | µg/L | N/A        | N/A        |  |
| HEPHw                                | < 250 | 250    | µg/L | N/A        | N/A        |  |
| Surrogate: 2-Methylnonane (EPH/F2-4) | 92    | 60-140 | %    | 2017-09-30 | 2017-10-03 |  |

### Polycyclic Aromatic Hydrocarbons (PAH)

|                           |         |        |      |            |            |  |
|---------------------------|---------|--------|------|------------|------------|--|
| Acenaphthene              | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Acenaphthylene            | < 0.200 | 0.200  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Acridine                  | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Anthracene                | < 0.010 | 0.010  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Benz(a)anthracene         | < 0.010 | 0.010  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Benzo(a)pyrene            | < 0.010 | 0.010  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Benzo(b)fluoranthene      | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Benzo(b+j)fluoranthene    | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Benzo(g,h,i)perylene      | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Benzo(k)fluoranthene      | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Chrysene                  | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Dibenz(a,h)anthracene     | < 0.010 | 0.010  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Fluoranthene              | < 0.030 | 0.030  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Fluorene                  | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Indeno(1,2,3-cd)pyrene    | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Naphthalene               | < 0.200 | 0.200  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Phenanthrene              | < 0.100 | 0.100  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Pyrene                    | < 0.020 | 0.020  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Quinoline                 | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Surrogate: Acridine-d9    | 95      | 50-140 | %    | 2017-09-30 | 2017-10-02 |  |
| Surrogate: Naphthalene-d8 | 120     | 50-140 | %    | 2017-09-30 | 2017-10-02 |  |
| Surrogate: Perylene-d12   | 120     | 50-140 | %    | 2017-09-30 | 2017-10-02 |  |

**Sample ID: DUP SW1 (7092382-02) [Water] Sampled: 2017-09-25 10:30**

### Anions

|                |              |       |      |     |            |  |
|----------------|--------------|-------|------|-----|------------|--|
| Chloride       | <b>47.9</b>  | 0.10  | mg/L | N/A | 2017-10-02 |  |
| Fluoride       | < 0.10       | 0.10  | mg/L | N/A | 2017-09-29 |  |
| Nitrate (as N) | <b>0.498</b> | 0.010 | mg/L | N/A | 2017-09-29 |  |

## SAMPLE ANALYTICAL DATA

**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 7092382  
2017-10-03

| Analyte | Result / Recovery | MRL / Limits | Units | Prepared | Analyzed | Notes |
|---------|-------------------|--------------|-------|----------|----------|-------|
|---------|-------------------|--------------|-------|----------|----------|-------|

**Sample ID: DUP SW1 (7092382-02) [Water] Sampled: 2017-09-25 10:30, Continued**

### Anions, Continued

|                |            |       |      |     |            |  |
|----------------|------------|-------|------|-----|------------|--|
| Nitrite (as N) | < 0.010    | 0.010 | mg/L | N/A | 2017-09-29 |  |
| Sulfate        | <b>124</b> | 1.0   | mg/L | N/A | 2017-10-02 |  |

### General Parameters

|                                                     |             |        |          |     |            |     |
|-----------------------------------------------------|-------------|--------|----------|-----|------------|-----|
| Alkalinity, Total (as CaCO <sub>3</sub> )           | <b>197</b>  | 1.0    | mg/L     | N/A | 2017-09-28 |     |
| Alkalinity, Phenolphthalein (as CaCO <sub>3</sub> ) | < 1.0       | 1.0    | mg/L     | N/A | 2017-09-28 |     |
| Alkalinity, Bicarbonate (as CaCO <sub>3</sub> )     | <b>197</b>  | 1.0    | mg/L     | N/A | 2017-09-28 |     |
| Alkalinity, Carbonate (as CaCO <sub>3</sub> )       | < 1.0       | 1.0    | mg/L     | N/A | 2017-09-28 |     |
| Alkalinity, Hydroxide (as CaCO <sub>3</sub> )       | < 1.0       | 1.0    | mg/L     | N/A | 2017-09-28 |     |
| Chromium, Hexavalent                                | < 0.0010    | 0.0010 | mg/L     | N/A | 2017-09-28 |     |
| Colour, True                                        | <b>5.5</b>  | 5.0    | CU       | N/A | 2017-09-29 |     |
| Conductivity (EC)                                   | <b>761</b>  | 2.0    | µS/cm    | N/A | 2017-09-28 |     |
| pH                                                  | <b>7.72</b> | 0.10   | pH units | N/A | 2017-09-28 | HT2 |
| Solids, Total Suspended                             | <b>4.2</b>  | 2.0    | mg/L     | N/A | 2017-09-28 |     |
| Turbidity                                           | <b>0.90</b> | 0.10   | NTU      | N/A | 2017-09-29 | HT1 |

### Calculated Parameters

|                                         |            |         |      |     |     |  |
|-----------------------------------------|------------|---------|------|-----|-----|--|
| Chromium, Trivalent                     | < 0.00100  | 0.00100 | mg/L | N/A | N/A |  |
| Hardness, Total (as CaCO <sub>3</sub> ) | <b>357</b> | 0.500   | mg/L | N/A | N/A |  |

### Dissolved Metals

|                       |                |          |      |            |            |  |
|-----------------------|----------------|----------|------|------------|------------|--|
| Aluminum, dissolved   | < 0.0050       | 0.0050   | mg/L | N/A        | 2017-10-03 |  |
| Antimony, dissolved   | < 0.00020      | 0.00020  | mg/L | N/A        | 2017-10-03 |  |
| Arsenic, dissolved    | < 0.00050      | 0.00050  | mg/L | N/A        | 2017-10-03 |  |
| Barium, dissolved     | <b>0.0251</b>  | 0.0050   | mg/L | N/A        | 2017-10-03 |  |
| Beryllium, dissolved  | < 0.00010      | 0.00010  | mg/L | N/A        | 2017-10-03 |  |
| Bismuth, dissolved    | < 0.00010      | 0.00010  | mg/L | N/A        | 2017-10-03 |  |
| Boron, dissolved      | <b>0.0300</b>  | 0.0050   | mg/L | N/A        | 2017-10-03 |  |
| Cadmium, dissolved    | < 0.000010     | 0.000010 | mg/L | N/A        | 2017-10-03 |  |
| Calcium, dissolved    | <b>115</b>     | 0.20     | mg/L | N/A        | 2017-10-03 |  |
| Chromium, dissolved   | < 0.00050      | 0.00050  | mg/L | N/A        | 2017-10-03 |  |
| Cobalt, dissolved     | < 0.00010      | 0.00010  | mg/L | N/A        | 2017-10-03 |  |
| Copper, dissolved     | <b>0.00114</b> | 0.00040  | mg/L | N/A        | 2017-10-03 |  |
| Iron, dissolved       | < 0.010        | 0.010    | mg/L | N/A        | 2017-10-03 |  |
| Lead, dissolved       | < 0.00020      | 0.00020  | mg/L | N/A        | 2017-10-03 |  |
| Lithium, dissolved    | <b>0.00015</b> | 0.00010  | mg/L | N/A        | 2017-10-03 |  |
| Magnesium, dissolved  | <b>16.7</b>    | 0.010    | mg/L | N/A        | 2017-10-03 |  |
| Manganese, dissolved  | <b>0.0367</b>  | 0.00020  | mg/L | N/A        | 2017-10-03 |  |
| Mercury, dissolved    | < 0.000010     | 0.000010 | mg/L | 2017-09-29 | 2017-09-29 |  |
| Molybdenum, dissolved | <b>0.00222</b> | 0.00010  | mg/L | N/A        | 2017-10-03 |  |
| Nickel, dissolved     | <b>0.00075</b> | 0.00040  | mg/L | N/A        | 2017-10-03 |  |
| Phosphorus, dissolved | < 0.050        | 0.050    | mg/L | N/A        | 2017-10-03 |  |
| Potassium, dissolved  | <b>1.67</b>    | 0.10     | mg/L | N/A        | 2017-10-03 |  |
| Selenium, dissolved   | < 0.00050      | 0.00050  | mg/L | N/A        | 2017-10-03 |  |
| Silicon, dissolved    | <b>7.8</b>     | 1.0      | mg/L | N/A        | 2017-10-03 |  |
| Silver, dissolved     | < 0.000050     | 0.000050 | mg/L | N/A        | 2017-10-03 |  |

## SAMPLE ANALYTICAL DATA

**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 7092382  
2017-10-03

| Analyte | Result / Recovery | MRL / Limits | Units | Prepared | Analyzed | Notes |
|---------|-------------------|--------------|-------|----------|----------|-------|
|---------|-------------------|--------------|-------|----------|----------|-------|

**Sample ID: DUP SW1 (7092382-02) [Water] Sampled: 2017-09-25 10:30, Continued**

### *Dissolved Metals, Continued*

|                      |            |          |      |     |            |  |
|----------------------|------------|----------|------|-----|------------|--|
| Sodium, dissolved    | 18.7       | 0.10     | mg/L | N/A | 2017-10-03 |  |
| Strontium, dissolved | 0.359      | 0.0010   | mg/L | N/A | 2017-10-03 |  |
| Sulfur, dissolved    | 42.6       | 3.0      | mg/L | N/A | 2017-10-03 |  |
| Tellurium, dissolved | < 0.00050  | 0.00050  | mg/L | N/A | 2017-10-03 |  |
| Thallium, dissolved  | < 0.000020 | 0.000020 | mg/L | N/A | 2017-10-03 |  |
| Thorium, dissolved   | < 0.00010  | 0.00010  | mg/L | N/A | 2017-10-03 |  |
| Tin, dissolved       | < 0.00020  | 0.00020  | mg/L | N/A | 2017-10-03 |  |
| Titanium, dissolved  | < 0.0050   | 0.0050   | mg/L | N/A | 2017-10-03 |  |
| Uranium, dissolved   | 0.00286    | 0.000020 | mg/L | N/A | 2017-10-03 |  |
| Vanadium, dissolved  | < 0.0010   | 0.0010   | mg/L | N/A | 2017-10-03 |  |
| Zinc, dissolved      | 0.0067     | 0.0040   | mg/L | N/A | 2017-10-03 |  |
| Zirconium, dissolved | < 0.00010  | 0.00010  | mg/L | N/A | 2017-10-03 |  |

### *Total Metals*

|                   |            |          |      |            |            |  |
|-------------------|------------|----------|------|------------|------------|--|
| Aluminum, total   | 0.0255     | 0.0050   | mg/L | 2017-10-02 | 2017-10-03 |  |
| Antimony, total   | < 0.00020  | 0.00020  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Arsenic, total    | < 0.00050  | 0.00050  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Barium, total     | 0.0259     | 0.0050   | mg/L | 2017-10-02 | 2017-10-03 |  |
| Beryllium, total  | < 0.00010  | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Bismuth, total    | < 0.00010  | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Boron, total      | 0.0372     | 0.0050   | mg/L | 2017-10-02 | 2017-10-03 |  |
| Cadmium, total    | < 0.000010 | 0.000010 | mg/L | 2017-10-02 | 2017-10-03 |  |
| Calcium, total    | 125        | 0.20     | mg/L | 2017-10-02 | 2017-10-03 |  |
| Chromium, total   | < 0.00050  | 0.00050  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Cobalt, total     | 0.00023    | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Copper, total     | 0.00144    | 0.00040  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Iron, total       | 0.024      | 0.010    | mg/L | 2017-10-02 | 2017-10-03 |  |
| Lead, total       | < 0.00020  | 0.00020  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Lithium, total    | 0.00022    | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Magnesium, total  | 17.1       | 0.010    | mg/L | 2017-10-02 | 2017-10-03 |  |
| Manganese, total  | 0.108      | 0.00020  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Mercury, total    | < 0.000010 | 0.000010 | mg/L | 2017-10-02 | 2017-10-03 |  |
| Molybdenum, total | 0.00237    | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Nickel, total     | 0.00084    | 0.00040  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Phosphorus, total | < 0.050    | 0.050    | mg/L | 2017-10-02 | 2017-10-03 |  |
| Potassium, total  | 1.73       | 0.10     | mg/L | 2017-10-02 | 2017-10-03 |  |
| Selenium, total   | < 0.00050  | 0.00050  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Silicon, total    | 8.0        | 1.0      | mg/L | 2017-10-02 | 2017-10-03 |  |
| Silver, total     | < 0.000050 | 0.000050 | mg/L | 2017-10-02 | 2017-10-03 |  |
| Sodium, total     | 18.6       | 0.10     | mg/L | 2017-10-02 | 2017-10-03 |  |
| Strontium, total  | 0.376      | 0.0010   | mg/L | 2017-10-02 | 2017-10-03 |  |
| Sulfur, total     | 45.5       | 3.0      | mg/L | 2017-10-02 | 2017-10-03 |  |
| Tellurium, total  | < 0.00050  | 0.00050  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Thallium, total   | < 0.000020 | 0.000020 | mg/L | 2017-10-02 | 2017-10-03 |  |
| Thorium, total    | < 0.00010  | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Tin, total        | < 0.00020  | 0.00020  | mg/L | 2017-10-02 | 2017-10-03 |  |

## SAMPLE ANALYTICAL DATA

**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 7092382  
2017-10-03

| Analyte | Result / Recovery | MRL / Limits | Units | Prepared | Analyzed | Notes |
|---------|-------------------|--------------|-------|----------|----------|-------|
|---------|-------------------|--------------|-------|----------|----------|-------|

**Sample ID: DUP SW1 (7092382-02) [Water] Sampled: 2017-09-25 10:30, Continued**

### Total Metals, Continued

|                  |                |          |      |            |            |  |
|------------------|----------------|----------|------|------------|------------|--|
| Titanium, total  | < 0.0050       | 0.0050   | mg/L | 2017-10-02 | 2017-10-03 |  |
| Uranium, total   | <b>0.00302</b> | 0.000020 | mg/L | 2017-10-02 | 2017-10-03 |  |
| Vanadium, total  | < 0.0010       | 0.0010   | mg/L | 2017-10-02 | 2017-10-03 |  |
| Zinc, total      | < 0.0040       | 0.0040   | mg/L | 2017-10-02 | 2017-10-03 |  |
| Zirconium, total | < 0.00010      | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |  |

### BCMOE Aggregate Hydrocarbons

|                                      |       |        |      |            |            |  |
|--------------------------------------|-------|--------|------|------------|------------|--|
| EPHw10-19                            | < 250 | 250    | µg/L | 2017-09-30 | 2017-10-03 |  |
| EPHw19-32                            | < 250 | 250    | µg/L | 2017-09-30 | 2017-10-03 |  |
| LEPHw                                | < 250 | 250    | µg/L | N/A        | N/A        |  |
| HEPHw                                | < 250 | 250    | µg/L | N/A        | N/A        |  |
| Surrogate: 2-Methylnonane (EPH/F2-4) | 96    | 60-140 | %    | 2017-09-30 | 2017-10-03 |  |

### Polycyclic Aromatic Hydrocarbons (PAH)

|                           |         |        |      |            |            |  |
|---------------------------|---------|--------|------|------------|------------|--|
| Acenaphthene              | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Acenaphthylene            | < 0.200 | 0.200  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Acridine                  | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Anthracene                | < 0.010 | 0.010  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Benz(a)anthracene         | < 0.010 | 0.010  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Benzo(a)pyrene            | < 0.010 | 0.010  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Benzo(b)fluoranthene      | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Benzo(b+j)fluoranthene    | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Benzo(g,h,i)perylene      | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Benzo(k)fluoranthene      | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Chrysene                  | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Dibenz(a,h)anthracene     | < 0.010 | 0.010  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Fluoranthene              | < 0.030 | 0.030  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Fluorene                  | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Indeno(1,2,3-cd)pyrene    | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Naphthalene               | < 0.200 | 0.200  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Phenanthrene              | < 0.100 | 0.100  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Pyrene                    | < 0.020 | 0.020  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Quinoline                 | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Surrogate: Acridine-d9    | 96      | 50-140 | %    | 2017-09-30 | 2017-10-02 |  |
| Surrogate: Naphthalene-d8 | 117     | 50-140 | %    | 2017-09-30 | 2017-10-02 |  |
| Surrogate: Perylene-d12   | 84      | 50-140 | %    | 2017-09-30 | 2017-10-02 |  |

**Sample ID: MW6 (7092382-03) [Water] Sampled: 2017-09-25 08:00**

### Anions

|                |              |       |      |     |            |  |
|----------------|--------------|-------|------|-----|------------|--|
| Chloride       | <b>39.3</b>  | 0.10  | mg/L | N/A | 2017-10-02 |  |
| Fluoride       | < 0.10       | 0.10  | mg/L | N/A | 2017-09-29 |  |
| Nitrate (as N) | <b>0.018</b> | 0.010 | mg/L | N/A | 2017-09-29 |  |
| Nitrite (as N) | < 0.010      | 0.010 | mg/L | N/A | 2017-09-29 |  |
| Sulfate        | <b>83.3</b>  | 1.0   | mg/L | N/A | 2017-10-02 |  |

### General Parameters

## SAMPLE ANALYTICAL DATA

**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 7092382  
2017-10-03

| Analyte | Result / Recovery | MRL / Limits | Units | Prepared | Analyzed | Notes |
|---------|-------------------|--------------|-------|----------|----------|-------|
|---------|-------------------|--------------|-------|----------|----------|-------|

**Sample ID: MW6 (7092382-03) [Water] Sampled: 2017-09-25 08:00, Continued**

### General Parameters, Continued

|                                                     |       |      |          |     |            |     |
|-----------------------------------------------------|-------|------|----------|-----|------------|-----|
| Alkalinity, Total (as CaCO <sub>3</sub> )           | 640   | 1.0  | mg/L     | N/A | 2017-09-28 |     |
| Alkalinity, Phenolphthalein (as CaCO <sub>3</sub> ) | < 1.0 | 1.0  | mg/L     | N/A | 2017-09-28 |     |
| Alkalinity, Bicarbonate (as CaCO <sub>3</sub> )     | 640   | 1.0  | mg/L     | N/A | 2017-09-28 |     |
| Alkalinity, Carbonate (as CaCO <sub>3</sub> )       | < 1.0 | 1.0  | mg/L     | N/A | 2017-09-28 |     |
| Alkalinity, Hydroxide (as CaCO <sub>3</sub> )       | < 1.0 | 1.0  | mg/L     | N/A | 2017-09-28 |     |
| Colour, True                                        | 6.2   | 5.0  | CU       | N/A | 2017-09-29 |     |
| Conductivity (EC)                                   | 1330  | 2.0  | µS/cm    | N/A | 2017-09-28 |     |
| pH                                                  | 7.31  | 0.10 | pH units | N/A | 2017-09-28 | HT2 |
| Solids, Total Suspended                             | 14.8  | 2.0  | mg/L     | N/A | 2017-09-28 |     |
| Turbidity                                           | 10.6  | 0.10 | NTU      | N/A | 2017-09-29 | HT1 |

### Calculated Parameters

|                                         |     |       |      |     |     |  |
|-----------------------------------------|-----|-------|------|-----|-----|--|
| Hardness, Total (as CaCO <sub>3</sub> ) | 599 | 0.500 | mg/L | N/A | N/A |  |
|-----------------------------------------|-----|-------|------|-----|-----|--|

### Dissolved Metals

|                       |            |          |      |            |            |  |
|-----------------------|------------|----------|------|------------|------------|--|
| Aluminum, dissolved   | < 0.0050   | 0.0050   | mg/L | N/A        | 2017-10-03 |  |
| Antimony, dissolved   | < 0.00020  | 0.00020  | mg/L | N/A        | 2017-10-03 |  |
| Arsenic, dissolved    | 0.00445    | 0.00050  | mg/L | N/A        | 2017-10-03 |  |
| Barium, dissolved     | 0.0960     | 0.0050   | mg/L | N/A        | 2017-10-03 |  |
| Beryllium, dissolved  | < 0.00010  | 0.00010  | mg/L | N/A        | 2017-10-03 |  |
| Bismuth, dissolved    | < 0.00010  | 0.00010  | mg/L | N/A        | 2017-10-03 |  |
| Boron, dissolved      | 0.0939     | 0.0050   | mg/L | N/A        | 2017-10-03 |  |
| Cadmium, dissolved    | < 0.000010 | 0.000010 | mg/L | N/A        | 2017-10-03 |  |
| Calcium, dissolved    | 178        | 0.20     | mg/L | N/A        | 2017-10-03 |  |
| Chromium, dissolved   | < 0.00050  | 0.00050  | mg/L | N/A        | 2017-10-03 |  |
| Cobalt, dissolved     | 0.00233    | 0.00010  | mg/L | N/A        | 2017-10-03 |  |
| Copper, dissolved     | < 0.00040  | 0.00040  | mg/L | N/A        | 2017-10-03 |  |
| Iron, dissolved       | 0.988      | 0.010    | mg/L | N/A        | 2017-10-03 |  |
| Lead, dissolved       | < 0.00020  | 0.00020  | mg/L | N/A        | 2017-10-03 |  |
| Lithium, dissolved    | 0.0146     | 0.00010  | mg/L | N/A        | 2017-10-03 |  |
| Magnesium, dissolved  | 37.1       | 0.010    | mg/L | N/A        | 2017-10-03 |  |
| Manganese, dissolved  | 2.30       | 0.00020  | mg/L | N/A        | 2017-10-03 |  |
| Mercury, dissolved    | < 0.000010 | 0.000010 | mg/L | 2017-09-29 | 2017-09-29 |  |
| Molybdenum, dissolved | 0.00083    | 0.00010  | mg/L | N/A        | 2017-10-03 |  |
| Nickel, dissolved     | 0.00482    | 0.00040  | mg/L | N/A        | 2017-10-03 |  |
| Phosphorus, dissolved | < 0.050    | 0.050    | mg/L | N/A        | 2017-10-03 |  |
| Potassium, dissolved  | 4.44       | 0.10     | mg/L | N/A        | 2017-10-03 |  |
| Selenium, dissolved   | < 0.00050  | 0.00050  | mg/L | N/A        | 2017-10-03 |  |
| Silicon, dissolved    | 12.2       | 1.0      | mg/L | N/A        | 2017-10-03 |  |
| Silver, dissolved     | < 0.000050 | 0.000050 | mg/L | N/A        | 2017-10-03 |  |
| Sodium, dissolved     | 91.8       | 0.10     | mg/L | N/A        | 2017-10-03 |  |
| Strontium, dissolved  | 0.616      | 0.0010   | mg/L | N/A        | 2017-10-03 |  |
| Sulfur, dissolved     | 29.6       | 3.0      | mg/L | N/A        | 2017-10-03 |  |
| Tellurium, dissolved  | < 0.00050  | 0.00050  | mg/L | N/A        | 2017-10-03 |  |
| Thallium, dissolved   | 0.000027   | 0.000020 | mg/L | N/A        | 2017-10-03 |  |

## SAMPLE ANALYTICAL DATA

**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 7092382  
2017-10-03

| Analyte | Result / Recovery | MRL / Limits | Units | Prepared | Analyzed | Notes |
|---------|-------------------|--------------|-------|----------|----------|-------|
|---------|-------------------|--------------|-------|----------|----------|-------|

**Sample ID: MW6 (7092382-03) [Water] Sampled: 2017-09-25 08:00, Continued**

### *Dissolved Metals, Continued*

|                      |                |          |      |     |            |
|----------------------|----------------|----------|------|-----|------------|
| Thorium, dissolved   | < 0.00010      | 0.00010  | mg/L | N/A | 2017-10-03 |
| Tin, dissolved       | <b>0.00027</b> | 0.00020  | mg/L | N/A | 2017-10-03 |
| Titanium, dissolved  | < 0.0050       | 0.0050   | mg/L | N/A | 2017-10-03 |
| Uranium, dissolved   | <b>0.00916</b> | 0.000020 | mg/L | N/A | 2017-10-03 |
| Vanadium, dissolved  | < 0.0010       | 0.0010   | mg/L | N/A | 2017-10-03 |
| Zinc, dissolved      | < 0.0040       | 0.0040   | mg/L | N/A | 2017-10-03 |
| Zirconium, dissolved | <b>0.00023</b> | 0.00010  | mg/L | N/A | 2017-10-03 |

### *Total Metals*

|                   |                 |          |      |            |            |
|-------------------|-----------------|----------|------|------------|------------|
| Aluminum, total   | <b>0.0272</b>   | 0.0050   | mg/L | 2017-10-02 | 2017-10-03 |
| Antimony, total   | <b>0.00026</b>  | 0.00020  | mg/L | 2017-10-02 | 2017-10-03 |
| Arsenic, total    | <b>0.00373</b>  | 0.00050  | mg/L | 2017-10-02 | 2017-10-03 |
| Barium, total     | <b>0.0892</b>   | 0.0050   | mg/L | 2017-10-02 | 2017-10-03 |
| Beryllium, total  | < 0.00010       | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |
| Bismuth, total    | < 0.00010       | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |
| Boron, total      | <b>0.0872</b>   | 0.0050   | mg/L | 2017-10-02 | 2017-10-03 |
| Cadmium, total    | <b>0.000017</b> | 0.000010 | mg/L | 2017-10-02 | 2017-10-03 |
| Calcium, total    | <b>186</b>      | 0.20     | mg/L | 2017-10-02 | 2017-10-03 |
| Chromium, total   | < 0.00050       | 0.00050  | mg/L | 2017-10-02 | 2017-10-03 |
| Cobalt, total     | <b>0.00222</b>  | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |
| Copper, total     | <b>0.00072</b>  | 0.00040  | mg/L | 2017-10-02 | 2017-10-03 |
| Iron, total       | <b>0.896</b>    | 0.010    | mg/L | 2017-10-02 | 2017-10-03 |
| Lead, total       | <b>0.00029</b>  | 0.00020  | mg/L | 2017-10-02 | 2017-10-03 |
| Lithium, total    | <b>0.0132</b>   | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |
| Magnesium, total  | <b>37.1</b>     | 0.010    | mg/L | 2017-10-02 | 2017-10-03 |
| Manganese, total  | <b>2.12</b>     | 0.00020  | mg/L | 2017-10-02 | 2017-10-03 |
| Mercury, total    | < 0.000010      | 0.000010 | mg/L | 2017-10-02 | 2017-10-03 |
| Molybdenum, total | <b>0.00084</b>  | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |
| Nickel, total     | <b>0.00495</b>  | 0.00040  | mg/L | 2017-10-02 | 2017-10-03 |
| Phosphorus, total | < 0.050         | 0.050    | mg/L | 2017-10-02 | 2017-10-03 |
| Potassium, total  | <b>4.16</b>     | 0.10     | mg/L | 2017-10-02 | 2017-10-03 |
| Selenium, total   | < 0.00050       | 0.00050  | mg/L | 2017-10-02 | 2017-10-03 |
| Silicon, total    | <b>12.0</b>     | 1.0      | mg/L | 2017-10-02 | 2017-10-03 |
| Silver, total     | < 0.000050      | 0.000050 | mg/L | 2017-10-02 | 2017-10-03 |
| Sodium, total     | <b>74.0</b>     | 0.10     | mg/L | 2017-10-02 | 2017-10-03 |
| Strontium, total  | <b>0.601</b>    | 0.0010   | mg/L | 2017-10-02 | 2017-10-03 |
| Sulfur, total     | <b>27.8</b>     | 3.0      | mg/L | 2017-10-02 | 2017-10-03 |
| Tellurium, total  | < 0.00050       | 0.00050  | mg/L | 2017-10-02 | 2017-10-03 |
| Thallium, total   | <b>0.000022</b> | 0.000020 | mg/L | 2017-10-02 | 2017-10-03 |
| Thorium, total    | < 0.00010       | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |
| Tin, total        | <b>0.00067</b>  | 0.00020  | mg/L | 2017-10-02 | 2017-10-03 |
| Titanium, total   | < 0.0050        | 0.0050   | mg/L | 2017-10-02 | 2017-10-03 |
| Uranium, total    | <b>0.00855</b>  | 0.000020 | mg/L | 2017-10-02 | 2017-10-03 |
| Vanadium, total   | < 0.0010        | 0.0010   | mg/L | 2017-10-02 | 2017-10-03 |
| Zinc, total       | <b>0.0051</b>   | 0.0040   | mg/L | 2017-10-02 | 2017-10-03 |
| Zirconium, total  | <b>0.00017</b>  | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |

## SAMPLE ANALYTICAL DATA

**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 7092382  
2017-10-03

| Analyte | Result / Recovery | MRL / Limits | Units | Prepared | Analyzed | Notes |
|---------|-------------------|--------------|-------|----------|----------|-------|
|---------|-------------------|--------------|-------|----------|----------|-------|

**Sample ID: MW6 (7092382-03) [Water] Sampled: 2017-09-25 08:00, Continued**

### BCMOE Aggregate Hydrocarbons

|                                      |       |        |      |            |            |  |
|--------------------------------------|-------|--------|------|------------|------------|--|
| EPHw10-19                            | < 250 | 250    | µg/L | 2017-09-30 | 2017-10-03 |  |
| EPHw19-32                            | < 250 | 250    | µg/L | 2017-09-30 | 2017-10-03 |  |
| LEPHw                                | < 250 | 250    | µg/L | N/A        | N/A        |  |
| HEPHw                                | < 250 | 250    | µg/L | N/A        | N/A        |  |
| Surrogate: 2-Methylnonane (EPH/F2-4) | 93    | 60-140 | %    | 2017-09-30 | 2017-10-03 |  |

### Polycyclic Aromatic Hydrocarbons (PAH)

|                           |         |        |      |            |            |  |
|---------------------------|---------|--------|------|------------|------------|--|
| Acenaphthene              | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Acenaphthylene            | < 0.200 | 0.200  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Acridine                  | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Anthracene                | < 0.010 | 0.010  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Benz(a)anthracene         | < 0.010 | 0.010  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Benzo(a)pyrene            | < 0.010 | 0.010  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Benzo(b)fluoranthene      | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Benzo(b+j)fluoranthene    | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Benzo(g,h,i)perylene      | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Benzo(k)fluoranthene      | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Chrysene                  | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Dibenz(a,h)anthracene     | < 0.010 | 0.010  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Fluoranthene              | < 0.030 | 0.030  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Fluorene                  | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Indeno(1,2,3-cd)pyrene    | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Naphthalene               | < 0.200 | 0.200  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Phenanthrene              | < 0.100 | 0.100  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Pyrene                    | < 0.020 | 0.020  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Quinoline                 | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Surrogate: Acridine-d9    | 117     | 50-140 | %    | 2017-09-30 | 2017-10-02 |  |
| Surrogate: Naphthalene-d8 | 122     | 50-140 | %    | 2017-09-30 | 2017-10-02 |  |
| Surrogate: Perylene-d12   | 79      | 50-140 | %    | 2017-09-30 | 2017-10-02 |  |

**Sample ID: MW2 (7092382-04) [Water] Sampled: 2017-09-25 09:40**

### Anions

|                |         |       |      |     |            |  |
|----------------|---------|-------|------|-----|------------|--|
| Chloride       | 4.80    | 0.10  | mg/L | N/A | 2017-09-29 |  |
| Fluoride       | 0.26    | 0.10  | mg/L | N/A | 2017-09-29 |  |
| Nitrate (as N) | 0.165   | 0.010 | mg/L | N/A | 2017-09-29 |  |
| Nitrite (as N) | < 0.010 | 0.010 | mg/L | N/A | 2017-09-29 |  |
| Sulfate        | < 1.0   | 1.0   | mg/L | N/A | 2017-09-29 |  |

### General Parameters

|                                        |       |     |      |     |            |  |
|----------------------------------------|-------|-----|------|-----|------------|--|
| Alkalinity, Total (as CaCO3)           | 111   | 1.0 | mg/L | N/A | 2017-09-28 |  |
| Alkalinity, Phenolphthalein (as CaCO3) | < 1.0 | 1.0 | mg/L | N/A | 2017-09-28 |  |
| Alkalinity, Bicarbonate (as CaCO3)     | 111   | 1.0 | mg/L | N/A | 2017-09-28 |  |
| Alkalinity, Carbonate (as CaCO3)       | < 1.0 | 1.0 | mg/L | N/A | 2017-09-28 |  |
| Alkalinity, Hydroxide (as CaCO3)       | < 1.0 | 1.0 | mg/L | N/A | 2017-09-28 |  |

## SAMPLE ANALYTICAL DATA

**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 7092382  
2017-10-03

| Analyte | Result / Recovery | MRL / Limits | Units | Prepared | Analyzed | Notes |
|---------|-------------------|--------------|-------|----------|----------|-------|
|---------|-------------------|--------------|-------|----------|----------|-------|

**Sample ID: MW2 (7092382-04) [Water] Sampled: 2017-09-25 09:40, Continued**

### General Parameters, Continued

|                         |             |      |          |     |            |     |
|-------------------------|-------------|------|----------|-----|------------|-----|
| Colour, True            | < 5.0       | 5.0  | CU       | N/A | 2017-09-29 |     |
| Conductivity (EC)       | <b>251</b>  | 2.0  | µS/cm    | N/A | 2017-09-28 |     |
| pH                      | <b>7.58</b> | 0.10 | pH units | N/A | 2017-09-28 | HT2 |
| Solids, Total Suspended | <b>29.4</b> | 2.0  | mg/L     | N/A | 2017-09-28 |     |
| Turbidity               | <b>7.79</b> | 0.10 | NTU      | N/A | 2017-09-29 | HT1 |

### Calculated Parameters

|                            |            |       |      |     |     |  |
|----------------------------|------------|-------|------|-----|-----|--|
| Hardness, Total (as CaCO3) | <b>126</b> | 0.500 | mg/L | N/A | N/A |  |
|----------------------------|------------|-------|------|-----|-----|--|

### Dissolved Metals

|                       |                |          |      |            |            |  |
|-----------------------|----------------|----------|------|------------|------------|--|
| Aluminum, dissolved   | < 0.0050       | 0.0050   | mg/L | N/A        | 2017-10-03 |  |
| Antimony, dissolved   | < 0.00020      | 0.00020  | mg/L | N/A        | 2017-10-03 |  |
| Arsenic, dissolved    | <b>0.00193</b> | 0.00050  | mg/L | N/A        | 2017-10-03 |  |
| Barium, dissolved     | <b>0.0260</b>  | 0.0050   | mg/L | N/A        | 2017-10-03 |  |
| Beryllium, dissolved  | < 0.00010      | 0.00010  | mg/L | N/A        | 2017-10-03 |  |
| Bismuth, dissolved    | < 0.00010      | 0.00010  | mg/L | N/A        | 2017-10-03 |  |
| Boron, dissolved      | <b>0.0303</b>  | 0.0050   | mg/L | N/A        | 2017-10-03 |  |
| Cadmium, dissolved    | < 0.000010     | 0.000010 | mg/L | N/A        | 2017-10-03 |  |
| Calcium, dissolved    | <b>38.5</b>    | 0.20     | mg/L | N/A        | 2017-10-03 |  |
| Chromium, dissolved   | < 0.00050      | 0.00050  | mg/L | N/A        | 2017-10-03 |  |
| Cobalt, dissolved     | <b>0.00039</b> | 0.00010  | mg/L | N/A        | 2017-10-03 |  |
| Copper, dissolved     | < 0.00040      | 0.00040  | mg/L | N/A        | 2017-10-03 |  |
| Iron, dissolved       | <b>0.207</b>   | 0.010    | mg/L | N/A        | 2017-10-03 |  |
| Lead, dissolved       | < 0.00020      | 0.00020  | mg/L | N/A        | 2017-10-03 |  |
| Lithium, dissolved    | < 0.00010      | 0.00010  | mg/L | N/A        | 2017-10-03 |  |
| Magnesium, dissolved  | <b>7.29</b>    | 0.010    | mg/L | N/A        | 2017-10-03 |  |
| Manganese, dissolved  | <b>0.632</b>   | 0.00020  | mg/L | N/A        | 2017-10-03 |  |
| Mercury, dissolved    | < 0.000010     | 0.000010 | mg/L | 2017-09-29 | 2017-09-29 |  |
| Molybdenum, dissolved | <b>0.00444</b> | 0.00010  | mg/L | N/A        | 2017-10-03 |  |
| Nickel, dissolved     | <b>0.00127</b> | 0.00040  | mg/L | N/A        | 2017-10-03 |  |
| Phosphorus, dissolved | <b>0.131</b>   | 0.050    | mg/L | N/A        | 2017-10-03 |  |
| Potassium, dissolved  | <b>0.71</b>    | 0.10     | mg/L | N/A        | 2017-10-03 |  |
| Selenium, dissolved   | < 0.00050      | 0.00050  | mg/L | N/A        | 2017-10-03 |  |
| Silicon, dissolved    | <b>7.0</b>     | 1.0      | mg/L | N/A        | 2017-10-03 |  |
| Silver, dissolved     | < 0.000050     | 0.000050 | mg/L | N/A        | 2017-10-03 |  |
| Sodium, dissolved     | <b>9.58</b>    | 0.10     | mg/L | N/A        | 2017-10-03 |  |
| Strontium, dissolved  | <b>0.167</b>   | 0.0010   | mg/L | N/A        | 2017-10-03 |  |
| Sulfur, dissolved     | <b>7.7</b>     | 3.0      | mg/L | N/A        | 2017-10-03 |  |
| Tellurium, dissolved  | < 0.00050      | 0.00050  | mg/L | N/A        | 2017-10-03 |  |
| Thallium, dissolved   | < 0.000020     | 0.000020 | mg/L | N/A        | 2017-10-03 |  |
| Thorium, dissolved    | < 0.00010      | 0.00010  | mg/L | N/A        | 2017-10-03 |  |
| Tin, dissolved        | < 0.00020      | 0.00020  | mg/L | N/A        | 2017-10-03 |  |
| Titanium, dissolved   | < 0.0050       | 0.0050   | mg/L | N/A        | 2017-10-03 |  |
| Uranium, dissolved    | <b>0.00102</b> | 0.000020 | mg/L | N/A        | 2017-10-03 |  |
| Vanadium, dissolved   | < 0.0010       | 0.0010   | mg/L | N/A        | 2017-10-03 |  |
| Zinc, dissolved       | <b>0.0219</b>  | 0.0040   | mg/L | N/A        | 2017-10-03 |  |

## SAMPLE ANALYTICAL DATA

**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 7092382  
2017-10-03

| Analyte | Result / Recovery | MRL / Limits | Units | Prepared | Analyzed | Notes |
|---------|-------------------|--------------|-------|----------|----------|-------|
|---------|-------------------|--------------|-------|----------|----------|-------|

**Sample ID: MW2 (7092382-04) [Water] Sampled: 2017-09-25 09:40, Continued**

***Dissolved Metals, Continued***

|                      |           |         |      |     |            |
|----------------------|-----------|---------|------|-----|------------|
| Zirconium, dissolved | < 0.00010 | 0.00010 | mg/L | N/A | 2017-10-03 |
|----------------------|-----------|---------|------|-----|------------|

***Total Metals***

|                   |            |          |      |            |            |
|-------------------|------------|----------|------|------------|------------|
| Aluminum, total   | 0.849      | 0.0050   | mg/L | 2017-10-02 | 2017-10-03 |
| Antimony, total   | < 0.00020  | 0.00020  | mg/L | 2017-10-02 | 2017-10-03 |
| Arsenic, total    | 0.00187    | 0.00050  | mg/L | 2017-10-02 | 2017-10-03 |
| Barium, total     | 0.0315     | 0.0050   | mg/L | 2017-10-02 | 2017-10-03 |
| Beryllium, total  | < 0.00010  | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |
| Bismuth, total    | < 0.00010  | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |
| Boron, total      | 0.0318     | 0.0050   | mg/L | 2017-10-02 | 2017-10-03 |
| Cadmium, total    | 0.000071   | 0.000010 | mg/L | 2017-10-02 | 2017-10-03 |
| Calcium, total    | 39.5       | 0.20     | mg/L | 2017-10-02 | 2017-10-03 |
| Chromium, total   | 0.00133    | 0.00050  | mg/L | 2017-10-02 | 2017-10-03 |
| Cobalt, total     | 0.00098    | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |
| Copper, total     | 0.00109    | 0.00040  | mg/L | 2017-10-02 | 2017-10-03 |
| Iron, total       | 1.44       | 0.010    | mg/L | 2017-10-02 | 2017-10-03 |
| Lead, total       | 0.00024    | 0.00020  | mg/L | 2017-10-02 | 2017-10-03 |
| Lithium, total    | 0.00024    | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |
| Magnesium, total  | 7.62       | 0.010    | mg/L | 2017-10-02 | 2017-10-03 |
| Manganese, total  | 0.508      | 0.00020  | mg/L | 2017-10-02 | 2017-10-03 |
| Mercury, total    | < 0.000010 | 0.000010 | mg/L | 2017-10-02 | 2017-10-03 |
| Molybdenum, total | 0.00426    | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |
| Nickel, total     | 0.00202    | 0.00040  | mg/L | 2017-10-02 | 2017-10-03 |
| Phosphorus, total | 0.201      | 0.050    | mg/L | 2017-10-02 | 2017-10-03 |
| Potassium, total  | 0.75       | 0.10     | mg/L | 2017-10-02 | 2017-10-03 |
| Selenium, total   | < 0.00050  | 0.00050  | mg/L | 2017-10-02 | 2017-10-03 |
| Silicon, total    | 8.2        | 1.0      | mg/L | 2017-10-02 | 2017-10-03 |
| Silver, total     | < 0.000050 | 0.000050 | mg/L | 2017-10-02 | 2017-10-03 |
| Sodium, total     | 9.28       | 0.10     | mg/L | 2017-10-02 | 2017-10-03 |
| Strontium, total  | 0.168      | 0.0010   | mg/L | 2017-10-02 | 2017-10-03 |
| Sulfur, total     | 7.4        | 3.0      | mg/L | 2017-10-02 | 2017-10-03 |
| Tellurium, total  | < 0.00050  | 0.00050  | mg/L | 2017-10-02 | 2017-10-03 |
| Thallium, total   | 0.000021   | 0.000020 | mg/L | 2017-10-02 | 2017-10-03 |
| Thorium, total    | 0.00011    | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |
| Tin, total        | 0.00020    | 0.00020  | mg/L | 2017-10-02 | 2017-10-03 |
| Titanium, total   | 0.0460     | 0.0050   | mg/L | 2017-10-02 | 2017-10-03 |
| Uranium, total    | 0.00101    | 0.000020 | mg/L | 2017-10-02 | 2017-10-03 |
| Vanadium, total   | 0.0033     | 0.0010   | mg/L | 2017-10-02 | 2017-10-03 |
| Zinc, total       | 0.0052     | 0.0040   | mg/L | 2017-10-02 | 2017-10-03 |
| Zirconium, total  | 0.00020    | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |

***BCMOE Aggregate Hydrocarbons***

|           |       |     |      |            |            |
|-----------|-------|-----|------|------------|------------|
| EPHw10-19 | < 250 | 250 | µg/L | 2017-09-30 | 2017-10-03 |
| EPHw19-32 | < 250 | 250 | µg/L | 2017-09-30 | 2017-10-03 |
| LEPHw     | < 250 | 250 | µg/L | N/A        | N/A        |
| HEPHw     | < 250 | 250 | µg/L | N/A        | N/A        |

## SAMPLE ANALYTICAL DATA

**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 7092382  
2017-10-03

| Analyte | Result / Recovery | MRL / Limits | Units | Prepared | Analyzed | Notes |
|---------|-------------------|--------------|-------|----------|----------|-------|
|---------|-------------------|--------------|-------|----------|----------|-------|

**Sample ID: MW2 (7092382-04) [Water] Sampled: 2017-09-25 09:40, Continued**

**BCMOE Aggregate Hydrocarbons, Continued**

|                                      |    |        |   |            |            |
|--------------------------------------|----|--------|---|------------|------------|
| Surrogate: 2-Methylnonane (EPH/F2-4) | 90 | 60-140 | % | 2017-09-30 | 2017-10-03 |
|--------------------------------------|----|--------|---|------------|------------|

**Polycyclic Aromatic Hydrocarbons (PAH)**

|                           |         |        |      |            |            |
|---------------------------|---------|--------|------|------------|------------|
| Acenaphthene              | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |
| Acenaphthylene            | < 0.200 | 0.200  | µg/L | 2017-09-30 | 2017-10-02 |
| Acridine                  | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |
| Anthracene                | < 0.010 | 0.010  | µg/L | 2017-09-30 | 2017-10-02 |
| Benz(a)anthracene         | < 0.010 | 0.010  | µg/L | 2017-09-30 | 2017-10-02 |
| Benzo(a)pyrene            | < 0.010 | 0.010  | µg/L | 2017-09-30 | 2017-10-02 |
| Benzo(b)fluoranthene      | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |
| Benzo(b+j)fluoranthene    | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |
| Benzo(g,h,i)perylene      | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |
| Benzo(k)fluoranthene      | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |
| Chrysene                  | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |
| Dibenz(a,h)anthracene     | < 0.010 | 0.010  | µg/L | 2017-09-30 | 2017-10-02 |
| Fluoranthene              | < 0.030 | 0.030  | µg/L | 2017-09-30 | 2017-10-02 |
| Fluorene                  | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |
| Indeno(1,2,3-cd)pyrene    | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |
| Naphthalene               | < 0.200 | 0.200  | µg/L | 2017-09-30 | 2017-10-02 |
| Phenanthrene              | < 0.100 | 0.100  | µg/L | 2017-09-30 | 2017-10-02 |
| Pyrene                    | < 0.020 | 0.020  | µg/L | 2017-09-30 | 2017-10-02 |
| Quinoline                 | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |
| Surrogate: Acridine-d9    | 117     | 50-140 | %    | 2017-09-30 | 2017-10-02 |
| Surrogate: Naphthalene-d8 | 119     | 50-140 | %    | 2017-09-30 | 2017-10-02 |
| Surrogate: Perylene-d12   | 115     | 50-140 | %    | 2017-09-30 | 2017-10-02 |

**Sample ID: MW3S (7092382-05) [Water] Sampled: 2017-09-25 08:45**

**Anions**

|                |         |       |      |     |            |
|----------------|---------|-------|------|-----|------------|
| Chloride       | 6.47    | 0.10  | mg/L | N/A | 2017-09-29 |
| Fluoride       | 0.22    | 0.10  | mg/L | N/A | 2017-09-29 |
| Nitrate (as N) | < 0.010 | 0.010 | mg/L | N/A | 2017-09-29 |
| Nitrite (as N) | < 0.010 | 0.010 | mg/L | N/A | 2017-09-29 |
| Sulfate        | 44.3    | 1.0   | mg/L | N/A | 2017-09-29 |

**General Parameters**

|                                        |       |      |          |     |                |
|----------------------------------------|-------|------|----------|-----|----------------|
| Alkalinity, Total (as CaCO3)           | 128   | 1.0  | mg/L     | N/A | 2017-09-28     |
| Alkalinity, Phenolphthalein (as CaCO3) | < 1.0 | 1.0  | mg/L     | N/A | 2017-09-28     |
| Alkalinity, Bicarbonate (as CaCO3)     | 128   | 1.0  | mg/L     | N/A | 2017-09-28     |
| Alkalinity, Carbonate (as CaCO3)       | < 1.0 | 1.0  | mg/L     | N/A | 2017-09-28     |
| Alkalinity, Hydroxide (as CaCO3)       | < 1.0 | 1.0  | mg/L     | N/A | 2017-09-28     |
| Colour, True                           | < 5.0 | 5.0  | CU       | N/A | 2017-09-29     |
| Conductivity (EC)                      | 342   | 2.0  | µS/cm    | N/A | 2017-09-28     |
| pH                                     | 7.58  | 0.10 | pH units | N/A | 2017-09-28 HT2 |
| Solids, Total Suspended                | 6.8   | 2.0  | mg/L     | N/A | 2017-09-28     |

## SAMPLE ANALYTICAL DATA

**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 7092382  
2017-10-03

| Analyte | Result / Recovery | MRL / Limits | Units | Prepared | Analyzed | Notes |
|---------|-------------------|--------------|-------|----------|----------|-------|
|---------|-------------------|--------------|-------|----------|----------|-------|

**Sample ID: MW3S (7092382-05) [Water] Sampled: 2017-09-25 08:45, Continued**

### General Parameters, Continued

|           |      |      |     |     |            |     |
|-----------|------|------|-----|-----|------------|-----|
| Turbidity | 3.96 | 0.10 | NTU | N/A | 2017-09-29 | HT1 |
|-----------|------|------|-----|-----|------------|-----|

### Calculated Parameters

|                                         |     |       |      |     |     |  |
|-----------------------------------------|-----|-------|------|-----|-----|--|
| Hardness, Total (as CaCO <sub>3</sub> ) | 138 | 0.500 | mg/L | N/A | N/A |  |
|-----------------------------------------|-----|-------|------|-----|-----|--|

### Dissolved Metals

|                       |            |          |      |            |            |  |
|-----------------------|------------|----------|------|------------|------------|--|
| Aluminum, dissolved   | < 0.0050   | 0.0050   | mg/L | N/A        | 2017-10-03 |  |
| Antimony, dissolved   | < 0.00020  | 0.00020  | mg/L | N/A        | 2017-10-03 |  |
| Arsenic, dissolved    | 0.00073    | 0.00050  | mg/L | N/A        | 2017-10-03 |  |
| Barium, dissolved     | 0.0302     | 0.0050   | mg/L | N/A        | 2017-10-03 |  |
| Beryllium, dissolved  | < 0.00010  | 0.00010  | mg/L | N/A        | 2017-10-03 |  |
| Bismuth, dissolved    | < 0.00010  | 0.00010  | mg/L | N/A        | 2017-10-03 |  |
| Boron, dissolved      | 0.0238     | 0.0050   | mg/L | N/A        | 2017-10-03 |  |
| Cadmium, dissolved    | 0.000024   | 0.000010 | mg/L | N/A        | 2017-10-03 |  |
| Calcium, dissolved    | 44.2       | 0.20     | mg/L | N/A        | 2017-10-03 |  |
| Chromium, dissolved   | < 0.00050  | 0.00050  | mg/L | N/A        | 2017-10-03 |  |
| Cobalt, dissolved     | 0.00044    | 0.00010  | mg/L | N/A        | 2017-10-03 |  |
| Copper, dissolved     | < 0.00040  | 0.00040  | mg/L | N/A        | 2017-10-03 |  |
| Iron, dissolved       | 0.025      | 0.010    | mg/L | N/A        | 2017-10-03 |  |
| Lead, dissolved       | < 0.00020  | 0.00020  | mg/L | N/A        | 2017-10-03 |  |
| Lithium, dissolved    | < 0.00010  | 0.00010  | mg/L | N/A        | 2017-10-03 |  |
| Magnesium, dissolved  | 6.82       | 0.010    | mg/L | N/A        | 2017-10-03 |  |
| Manganese, dissolved  | 0.265      | 0.00020  | mg/L | N/A        | 2017-10-03 |  |
| Mercury, dissolved    | < 0.000010 | 0.000010 | mg/L | 2017-09-29 | 2017-09-29 |  |
| Molybdenum, dissolved | 0.00601    | 0.00010  | mg/L | N/A        | 2017-10-03 |  |
| Nickel, dissolved     | 0.00199    | 0.00040  | mg/L | N/A        | 2017-10-03 |  |
| Phosphorus, dissolved | 0.057      | 0.050    | mg/L | N/A        | 2017-10-03 |  |
| Potassium, dissolved  | 0.97       | 0.10     | mg/L | N/A        | 2017-10-03 |  |
| Selenium, dissolved   | < 0.00050  | 0.00050  | mg/L | N/A        | 2017-10-03 |  |
| Silicon, dissolved    | 6.1        | 1.0      | mg/L | N/A        | 2017-10-03 |  |
| Silver, dissolved     | < 0.000050 | 0.000050 | mg/L | N/A        | 2017-10-03 |  |
| Sodium, dissolved     | 15.3       | 0.10     | mg/L | N/A        | 2017-10-03 |  |
| Strontium, dissolved  | 0.221      | 0.0010   | mg/L | N/A        | 2017-10-03 |  |
| Sulfur, dissolved     | 14.4       | 3.0      | mg/L | N/A        | 2017-10-03 |  |
| Tellurium, dissolved  | < 0.00050  | 0.00050  | mg/L | N/A        | 2017-10-03 |  |
| Thallium, dissolved   | 0.000023   | 0.000020 | mg/L | N/A        | 2017-10-03 |  |
| Thorium, dissolved    | < 0.00010  | 0.00010  | mg/L | N/A        | 2017-10-03 |  |
| Tin, dissolved        | < 0.00020  | 0.00020  | mg/L | N/A        | 2017-10-03 |  |
| Titanium, dissolved   | < 0.0050   | 0.0050   | mg/L | N/A        | 2017-10-03 |  |
| Uranium, dissolved    | 0.00117    | 0.000020 | mg/L | N/A        | 2017-10-03 |  |
| Vanadium, dissolved   | < 0.0010   | 0.0010   | mg/L | N/A        | 2017-10-03 |  |
| Zinc, dissolved       | < 0.0040   | 0.0040   | mg/L | N/A        | 2017-10-03 |  |
| Zirconium, dissolved  | < 0.00010  | 0.00010  | mg/L | N/A        | 2017-10-03 |  |

### Total Metals

|                 |           |         |      |            |            |  |
|-----------------|-----------|---------|------|------------|------------|--|
| Aluminum, total | 0.0507    | 0.0050  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Antimony, total | < 0.00020 | 0.00020 | mg/L | 2017-10-02 | 2017-10-03 |  |

## SAMPLE ANALYTICAL DATA

**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 7092382  
2017-10-03

| Analyte | Result / Recovery | MRL / Limits | Units | Prepared | Analyzed | Notes |
|---------|-------------------|--------------|-------|----------|----------|-------|
|---------|-------------------|--------------|-------|----------|----------|-------|

**Sample ID: MW3S (7092382-05) [Water] Sampled: 2017-09-25 08:45, Continued**

### Total Metals, Continued

|                   |            |          |      |            |            |  |
|-------------------|------------|----------|------|------------|------------|--|
| Arsenic, total    | 0.00073    | 0.00050  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Barium, total     | 0.0360     | 0.0050   | mg/L | 2017-10-02 | 2017-10-03 |  |
| Beryllium, total  | < 0.00010  | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Bismuth, total    | < 0.00010  | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Boron, total      | 0.0264     | 0.0050   | mg/L | 2017-10-02 | 2017-10-03 |  |
| Cadmium, total    | 0.000394   | 0.000010 | mg/L | 2017-10-02 | 2017-10-03 |  |
| Calcium, total    | 49.6       | 0.20     | mg/L | 2017-10-02 | 2017-10-03 |  |
| Chromium, total   | 0.00059    | 0.00050  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Cobalt, total     | 0.00045    | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Copper, total     | 0.00126    | 0.00040  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Iron, total       | 0.058      | 0.010    | mg/L | 2017-10-02 | 2017-10-03 |  |
| Lead, total       | < 0.00020  | 0.00020  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Lithium, total    | 0.00015    | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Magnesium, total  | 7.39       | 0.010    | mg/L | 2017-10-02 | 2017-10-03 |  |
| Manganese, total  | 0.289      | 0.00020  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Mercury, total    | < 0.000010 | 0.000010 | mg/L | 2017-10-02 | 2017-10-03 |  |
| Molybdenum, total | 0.00656    | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Nickel, total     | 0.00207    | 0.00040  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Phosphorus, total | 0.066      | 0.050    | mg/L | 2017-10-02 | 2017-10-03 |  |
| Potassium, total  | 1.06       | 0.10     | mg/L | 2017-10-02 | 2017-10-03 |  |
| Selenium, total   | < 0.00050  | 0.00050  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Silicon, total    | 6.6        | 1.0      | mg/L | 2017-10-02 | 2017-10-03 |  |
| Silver, total     | < 0.000050 | 0.000050 | mg/L | 2017-10-02 | 2017-10-03 |  |
| Sodium, total     | 16.3       | 0.10     | mg/L | 2017-10-02 | 2017-10-03 |  |
| Strontium, total  | 0.240      | 0.0010   | mg/L | 2017-10-02 | 2017-10-03 |  |
| Sulfur, total     | 15.6       | 3.0      | mg/L | 2017-10-02 | 2017-10-03 |  |
| Tellurium, total  | < 0.00050  | 0.00050  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Thallium, total   | 0.000025   | 0.000020 | mg/L | 2017-10-02 | 2017-10-03 |  |
| Thorium, total    | < 0.00010  | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Tin, total        | 0.00027    | 0.00020  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Titanium, total   | < 0.0050   | 0.0050   | mg/L | 2017-10-02 | 2017-10-03 |  |
| Uranium, total    | 0.00131    | 0.000020 | mg/L | 2017-10-02 | 2017-10-03 |  |
| Vanadium, total   | < 0.0010   | 0.0010   | mg/L | 2017-10-02 | 2017-10-03 |  |
| Zinc, total       | < 0.0040   | 0.0040   | mg/L | 2017-10-02 | 2017-10-03 |  |
| Zirconium, total  | < 0.00010  | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |  |

### BCMOE Aggregate Hydrocarbons

|                                      |       |        |      |            |            |  |
|--------------------------------------|-------|--------|------|------------|------------|--|
| EPHw10-19                            | < 250 | 250    | µg/L | 2017-09-30 | 2017-10-03 |  |
| EPHw19-32                            | < 250 | 250    | µg/L | 2017-09-30 | 2017-10-03 |  |
| LEPHw                                | < 250 | 250    | µg/L | N/A        | N/A        |  |
| HEPHw                                | < 250 | 250    | µg/L | N/A        | N/A        |  |
| Surrogate: 2-Methylnonane (EPH/F2-4) | 96    | 60-140 | %    | 2017-09-30 | 2017-10-03 |  |

### Polycyclic Aromatic Hydrocarbons (PAH)

|                |         |       |      |            |            |  |
|----------------|---------|-------|------|------------|------------|--|
| Acenaphthene   | < 0.050 | 0.050 | µg/L | 2017-09-30 | 2017-10-02 |  |
| Acenaphthylene | < 0.200 | 0.200 | µg/L | 2017-09-30 | 2017-10-02 |  |

## SAMPLE ANALYTICAL DATA

**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 7092382  
2017-10-03

| Analyte | Result / Recovery | MRL / Limits | Units | Prepared | Analyzed | Notes |
|---------|-------------------|--------------|-------|----------|----------|-------|
|---------|-------------------|--------------|-------|----------|----------|-------|

**Sample ID: MW3S (7092382-05) [Water] Sampled: 2017-09-25 08:45, Continued**

**Polycyclic Aromatic Hydrocarbons (PAH), Continued**

|                           |         |        |      |            |            |  |
|---------------------------|---------|--------|------|------------|------------|--|
| Acridine                  | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Anthracene                | < 0.010 | 0.010  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Benz(a)anthracene         | < 0.010 | 0.010  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Benzo(a)pyrene            | < 0.010 | 0.010  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Benzo(b)fluoranthene      | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Benzo(b+j)fluoranthene    | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Benzo(g,h,i)perylene      | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Benzo(k)fluoranthene      | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Chrysene                  | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Dibenz(a,h)anthracene     | < 0.010 | 0.010  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Fluoranthene              | < 0.030 | 0.030  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Fluorene                  | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Indeno(1,2,3-cd)pyrene    | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Naphthalene               | < 0.200 | 0.200  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Phenanthrene              | < 0.100 | 0.100  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Pyrene                    | < 0.020 | 0.020  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Quinoline                 | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Surrogate: Acridine-d9    | 114     | 50-140 | %    | 2017-09-30 | 2017-10-02 |  |
| Surrogate: Naphthalene-d8 | 117     | 50-140 | %    | 2017-09-30 | 2017-10-02 |  |
| Surrogate: Perylene-d12   | 105     | 50-140 | %    | 2017-09-30 | 2017-10-02 |  |

**Sample ID: MW3D (7092382-06) [Water] Sampled: 2017-09-25 09:00**

**Anions**

|                |         |       |      |     |            |  |
|----------------|---------|-------|------|-----|------------|--|
| Chloride       | 2.62    | 0.10  | mg/L | N/A | 2017-09-29 |  |
| Fluoride       | 0.25    | 0.10  | mg/L | N/A | 2017-09-29 |  |
| Nitrate (as N) | 0.015   | 0.010 | mg/L | N/A | 2017-09-29 |  |
| Nitrite (as N) | < 0.010 | 0.010 | mg/L | N/A | 2017-09-29 |  |
| Sulfate        | 22.0    | 1.0   | mg/L | N/A | 2017-09-29 |  |

**General Parameters**

|                                        |       |      |          |     |            |     |
|----------------------------------------|-------|------|----------|-----|------------|-----|
| Alkalinity, Total (as CaCO3)           | 106   | 1.0  | mg/L     | N/A | 2017-09-28 |     |
| Alkalinity, Phenolphthalein (as CaCO3) | < 1.0 | 1.0  | mg/L     | N/A | 2017-09-28 |     |
| Alkalinity, Bicarbonate (as CaCO3)     | 106   | 1.0  | mg/L     | N/A | 2017-09-28 |     |
| Alkalinity, Carbonate (as CaCO3)       | < 1.0 | 1.0  | mg/L     | N/A | 2017-09-28 |     |
| Alkalinity, Hydroxide (as CaCO3)       | < 1.0 | 1.0  | mg/L     | N/A | 2017-09-28 |     |
| Colour, True                           | 7.0   | 5.0  | CU       | N/A | 2017-09-29 |     |
| Conductivity (EC)                      | 250   | 2.0  | µS/cm    | N/A | 2017-09-28 |     |
| pH                                     | 7.63  | 0.10 | pH units | N/A | 2017-09-28 | HT2 |
| Solids, Total Suspended                | 77.0  | 2.0  | mg/L     | N/A | 2017-09-28 |     |
| Turbidity                              | 31.6  | 0.10 | NTU      | N/A | 2017-09-29 | HT1 |

**Calculated Parameters**

|                            |      |       |      |     |     |  |
|----------------------------|------|-------|------|-----|-----|--|
| Hardness, Total (as CaCO3) | 99.9 | 0.500 | mg/L | N/A | N/A |  |
|----------------------------|------|-------|------|-----|-----|--|

**Dissolved Metals**

## SAMPLE ANALYTICAL DATA

**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 7092382  
2017-10-03

| Analyte | Result / Recovery | MRL / Limits | Units | Prepared | Analyzed | Notes |
|---------|-------------------|--------------|-------|----------|----------|-------|
|---------|-------------------|--------------|-------|----------|----------|-------|

**Sample ID: MW3D (7092382-06) [Water] Sampled: 2017-09-25 09:00, Continued**

### *Dissolved Metals, Continued*

|                       |                 |          |      |            |            |  |
|-----------------------|-----------------|----------|------|------------|------------|--|
| Aluminum, dissolved   | < 0.0050        | 0.0050   | mg/L | N/A        | 2017-10-03 |  |
| Antimony, dissolved   | <b>0.00037</b>  | 0.00020  | mg/L | N/A        | 2017-10-03 |  |
| Arsenic, dissolved    | <b>0.00132</b>  | 0.00050  | mg/L | N/A        | 2017-10-03 |  |
| Barium, dissolved     | <b>0.0161</b>   | 0.0050   | mg/L | N/A        | 2017-10-03 |  |
| Beryllium, dissolved  | < 0.00010       | 0.00010  | mg/L | N/A        | 2017-10-03 |  |
| Bismuth, dissolved    | < 0.00010       | 0.00010  | mg/L | N/A        | 2017-10-03 |  |
| Boron, dissolved      | <b>0.0262</b>   | 0.0050   | mg/L | N/A        | 2017-10-03 |  |
| Cadmium, dissolved    | <b>0.000013</b> | 0.000010 | mg/L | N/A        | 2017-10-03 |  |
| Calcium, dissolved    | <b>31.1</b>     | 0.20     | mg/L | N/A        | 2017-10-03 |  |
| Chromium, dissolved   | < 0.00050       | 0.00050  | mg/L | N/A        | 2017-10-03 |  |
| Cobalt, dissolved     | <b>0.00039</b>  | 0.00010  | mg/L | N/A        | 2017-10-03 |  |
| Copper, dissolved     | < 0.00040       | 0.00040  | mg/L | N/A        | 2017-10-03 |  |
| Iron, dissolved       | <b>0.119</b>    | 0.010    | mg/L | N/A        | 2017-10-03 |  |
| Lead, dissolved       | < 0.00020       | 0.00020  | mg/L | N/A        | 2017-10-03 |  |
| Lithium, dissolved    | < 0.00010       | 0.00010  | mg/L | N/A        | 2017-10-03 |  |
| Magnesium, dissolved  | <b>5.37</b>     | 0.010    | mg/L | N/A        | 2017-10-03 |  |
| Manganese, dissolved  | <b>0.324</b>    | 0.00020  | mg/L | N/A        | 2017-10-03 |  |
| Mercury, dissolved    | < 0.000010      | 0.000010 | mg/L | 2017-09-29 | 2017-09-29 |  |
| Molybdenum, dissolved | <b>0.00688</b>  | 0.00010  | mg/L | N/A        | 2017-10-03 |  |
| Nickel, dissolved     | <b>0.00185</b>  | 0.00040  | mg/L | N/A        | 2017-10-03 |  |
| Phosphorus, dissolved | <b>0.093</b>    | 0.050    | mg/L | N/A        | 2017-10-03 |  |
| Potassium, dissolved  | <b>0.63</b>     | 0.10     | mg/L | N/A        | 2017-10-03 |  |
| Selenium, dissolved   | < 0.00050       | 0.00050  | mg/L | N/A        | 2017-10-03 |  |
| Silicon, dissolved    | <b>6.1</b>      | 1.0      | mg/L | N/A        | 2017-10-03 |  |
| Silver, dissolved     | < 0.000050      | 0.000050 | mg/L | N/A        | 2017-10-03 |  |
| Sodium, dissolved     | <b>11.7</b>     | 0.10     | mg/L | N/A        | 2017-10-03 |  |
| Strontium, dissolved  | <b>0.190</b>    | 0.0010   | mg/L | N/A        | 2017-10-03 |  |
| Sulfur, dissolved     | <b>8.6</b>      | 3.0      | mg/L | N/A        | 2017-10-03 |  |
| Tellurium, dissolved  | < 0.00050       | 0.00050  | mg/L | N/A        | 2017-10-03 |  |
| Thallium, dissolved   | < 0.000020      | 0.000020 | mg/L | N/A        | 2017-10-03 |  |
| Thorium, dissolved    | < 0.00010       | 0.00010  | mg/L | N/A        | 2017-10-03 |  |
| Tin, dissolved        | < 0.00020       | 0.00020  | mg/L | N/A        | 2017-10-03 |  |
| Titanium, dissolved   | < 0.0050        | 0.0050   | mg/L | N/A        | 2017-10-03 |  |
| Uranium, dissolved    | <b>0.000718</b> | 0.000020 | mg/L | N/A        | 2017-10-03 |  |
| Vanadium, dissolved   | < 0.0010        | 0.0010   | mg/L | N/A        | 2017-10-03 |  |
| Zinc, dissolved       | < 0.0040        | 0.0040   | mg/L | N/A        | 2017-10-03 |  |
| Zirconium, dissolved  | < 0.00010       | 0.00010  | mg/L | N/A        | 2017-10-03 |  |

### *Total Metals*

|                  |                |         |      |            |            |  |
|------------------|----------------|---------|------|------------|------------|--|
| Aluminum, total  | <b>0.215</b>   | 0.0050  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Antimony, total  | <b>0.00021</b> | 0.00020 | mg/L | 2017-10-02 | 2017-10-03 |  |
| Arsenic, total   | <b>0.00138</b> | 0.00050 | mg/L | 2017-10-02 | 2017-10-03 |  |
| Barium, total    | <b>0.0217</b>  | 0.0050  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Beryllium, total | < 0.00010      | 0.00010 | mg/L | 2017-10-02 | 2017-10-03 |  |
| Bismuth, total   | < 0.00010      | 0.00010 | mg/L | 2017-10-02 | 2017-10-03 |  |
| Boron, total     | <b>0.0294</b>  | 0.0050  | mg/L | 2017-10-02 | 2017-10-03 |  |

## SAMPLE ANALYTICAL DATA

**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 7092382  
2017-10-03

| Analyte | Result / Recovery | MRL / Limits | Units | Prepared | Analyzed | Notes |
|---------|-------------------|--------------|-------|----------|----------|-------|
|---------|-------------------|--------------|-------|----------|----------|-------|

**Sample ID: MW3D (7092382-06) [Water] Sampled: 2017-09-25 09:00, Continued**

### Total Metals, Continued

|                   |            |          |      |            |            |  |
|-------------------|------------|----------|------|------------|------------|--|
| Cadmium, total    | 0.000292   | 0.000010 | mg/L | 2017-10-02 | 2017-10-03 |  |
| Calcium, total    | 35.9       | 0.20     | mg/L | 2017-10-02 | 2017-10-03 |  |
| Chromium, total   | < 0.00050  | 0.00050  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Cobalt, total     | 0.00047    | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Copper, total     | 0.00057    | 0.00040  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Iron, total       | 0.200      | 0.010    | mg/L | 2017-10-02 | 2017-10-03 |  |
| Lead, total       | < 0.00020  | 0.00020  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Lithium, total    | 0.00020    | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Magnesium, total  | 6.00       | 0.010    | mg/L | 2017-10-02 | 2017-10-03 |  |
| Manganese, total  | 0.323      | 0.00020  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Mercury, total    | < 0.000010 | 0.000010 | mg/L | 2017-10-02 | 2017-10-03 |  |
| Molybdenum, total | 0.00754    | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Nickel, total     | 0.00230    | 0.00040  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Phosphorus, total | 0.104      | 0.050    | mg/L | 2017-10-02 | 2017-10-03 |  |
| Potassium, total  | 0.71       | 0.10     | mg/L | 2017-10-02 | 2017-10-03 |  |
| Selenium, total   | < 0.00050  | 0.00050  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Silicon, total    | 7.3        | 1.0      | mg/L | 2017-10-02 | 2017-10-03 |  |
| Silver, total     | < 0.000050 | 0.000050 | mg/L | 2017-10-02 | 2017-10-03 |  |
| Sodium, total     | 12.7       | 0.10     | mg/L | 2017-10-02 | 2017-10-03 |  |
| Strontium, total  | 0.209      | 0.0010   | mg/L | 2017-10-02 | 2017-10-03 |  |
| Sulfur, total     | 9.5        | 3.0      | mg/L | 2017-10-02 | 2017-10-03 |  |
| Tellurium, total  | < 0.00050  | 0.00050  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Thallium, total   | 0.000023   | 0.000020 | mg/L | 2017-10-02 | 2017-10-03 |  |
| Thorium, total    | 0.00036    | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Tin, total        | 0.00030    | 0.00020  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Titanium, total   | < 0.0050   | 0.0050   | mg/L | 2017-10-02 | 2017-10-03 |  |
| Uranium, total    | 0.000911   | 0.000020 | mg/L | 2017-10-02 | 2017-10-03 |  |
| Vanadium, total   | < 0.0010   | 0.0010   | mg/L | 2017-10-02 | 2017-10-03 |  |
| Zinc, total       | < 0.0040   | 0.0040   | mg/L | 2017-10-02 | 2017-10-03 |  |
| Zirconium, total  | 0.00022    | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |  |

### BCMOE Aggregate Hydrocarbons

|                                      |       |        |      |            |            |  |
|--------------------------------------|-------|--------|------|------------|------------|--|
| EPHw10-19                            | < 250 | 250    | µg/L | 2017-09-30 | 2017-10-03 |  |
| EPHw19-32                            | < 250 | 250    | µg/L | 2017-09-30 | 2017-10-03 |  |
| LEPHw                                | < 250 | 250    | µg/L | N/A        | N/A        |  |
| HEPHw                                | < 250 | 250    | µg/L | N/A        | N/A        |  |
| Surrogate: 2-Methylnonane (EPH/F2-4) | 93    | 60-140 | %    | 2017-09-30 | 2017-10-03 |  |

### Polycyclic Aromatic Hydrocarbons (PAH)

|                      |         |       |      |            |            |  |
|----------------------|---------|-------|------|------------|------------|--|
| Acenaphthene         | < 0.050 | 0.050 | µg/L | 2017-09-30 | 2017-10-02 |  |
| Acenaphthylene       | < 0.200 | 0.200 | µg/L | 2017-09-30 | 2017-10-02 |  |
| Acridine             | < 0.050 | 0.050 | µg/L | 2017-09-30 | 2017-10-02 |  |
| Anthracene           | < 0.010 | 0.010 | µg/L | 2017-09-30 | 2017-10-02 |  |
| Benz(a)anthracene    | < 0.010 | 0.010 | µg/L | 2017-09-30 | 2017-10-02 |  |
| Benzo(a)pyrene       | < 0.010 | 0.010 | µg/L | 2017-09-30 | 2017-10-02 |  |
| Benzo(b)fluoranthene | < 0.050 | 0.050 | µg/L | 2017-09-30 | 2017-10-02 |  |

## SAMPLE ANALYTICAL DATA

**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 7092382  
2017-10-03

| Analyte | Result / Recovery | MRL / Limits | Units | Prepared | Analyzed | Notes |
|---------|-------------------|--------------|-------|----------|----------|-------|
|---------|-------------------|--------------|-------|----------|----------|-------|

**Sample ID: MW3D (7092382-06) [Water] Sampled: 2017-09-25 09:00, Continued**

**Polycyclic Aromatic Hydrocarbons (PAH), Continued**

|                           |         |        |      |            |            |  |
|---------------------------|---------|--------|------|------------|------------|--|
| Benzo(b+j)fluoranthene    | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Benzo(g,h,i)perylene      | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Benzo(k)fluoranthene      | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Chrysene                  | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Dibenz(a,h)anthracene     | < 0.010 | 0.010  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Fluoranthene              | < 0.030 | 0.030  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Fluorene                  | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Indeno(1,2,3-cd)pyrene    | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Naphthalene               | < 0.200 | 0.200  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Phenanthrene              | < 0.100 | 0.100  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Pyrene                    | < 0.020 | 0.020  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Quinoline                 | < 0.050 | 0.050  | µg/L | 2017-09-30 | 2017-10-02 |  |
| Surrogate: Acridine-d9    | 112     | 50-140 | %    | 2017-09-30 | 2017-10-02 |  |
| Surrogate: Naphthalene-d8 | 117     | 50-140 | %    | 2017-09-30 | 2017-10-02 |  |
| Surrogate: Perylene-d12   | 114     | 50-140 | %    | 2017-09-30 | 2017-10-02 |  |

**Sample ID: FB (7092382-07) [Water] Sampled: 2017-09-25 07:50**

**Anions**

|                |         |       |      |     |            |  |
|----------------|---------|-------|------|-----|------------|--|
| Chloride       | < 0.10  | 0.10  | mg/L | N/A | 2017-09-29 |  |
| Fluoride       | < 0.10  | 0.10  | mg/L | N/A | 2017-09-29 |  |
| Nitrate (as N) | < 0.010 | 0.010 | mg/L | N/A | 2017-09-29 |  |
| Nitrite (as N) | < 0.010 | 0.010 | mg/L | N/A | 2017-09-29 |  |
| Sulfate        | < 1.0   | 1.0   | mg/L | N/A | 2017-09-29 |  |

**General Parameters**

|                                                     |        |      |          |     |            |     |
|-----------------------------------------------------|--------|------|----------|-----|------------|-----|
| Alkalinity, Total (as CaCO <sub>3</sub> )           | < 1.0  | 1.0  | mg/L     | N/A | 2017-09-28 |     |
| Alkalinity, Phenolphthalein (as CaCO <sub>3</sub> ) | < 1.0  | 1.0  | mg/L     | N/A | 2017-09-28 |     |
| Alkalinity, Bicarbonate (as CaCO <sub>3</sub> )     | < 1.0  | 1.0  | mg/L     | N/A | 2017-09-28 |     |
| Alkalinity, Carbonate (as CaCO <sub>3</sub> )       | < 1.0  | 1.0  | mg/L     | N/A | 2017-09-28 |     |
| Alkalinity, Hydroxide (as CaCO <sub>3</sub> )       | < 1.0  | 1.0  | mg/L     | N/A | 2017-09-28 |     |
| Colour, True                                        | < 5.0  | 5.0  | CU       | N/A | 2017-09-29 |     |
| Conductivity (EC)                                   | < 2.0  | 2.0  | µS/cm    | N/A | 2017-09-28 |     |
| pH                                                  | 6.13   | 0.10 | pH units | N/A | 2017-09-28 | HT2 |
| Solids, Total Suspended                             | < 2.0  | 2.0  | mg/L     | N/A | 2017-09-28 |     |
| Turbidity                                           | < 0.10 | 0.10 | NTU      | N/A | 2017-09-29 | HT1 |

**Calculated Parameters**

|                                         |         |       |      |     |     |  |
|-----------------------------------------|---------|-------|------|-----|-----|--|
| Hardness, Total (as CaCO <sub>3</sub> ) | < 0.500 | 0.500 | mg/L | N/A | N/A |  |
|-----------------------------------------|---------|-------|------|-----|-----|--|

**Dissolved Metals**

|                      |           |         |      |     |            |  |
|----------------------|-----------|---------|------|-----|------------|--|
| Aluminum, dissolved  | < 0.0050  | 0.0050  | mg/L | N/A | 2017-10-03 |  |
| Antimony, dissolved  | < 0.00020 | 0.00020 | mg/L | N/A | 2017-10-03 |  |
| Arsenic, dissolved   | < 0.00050 | 0.00050 | mg/L | N/A | 2017-10-03 |  |
| Barium, dissolved    | < 0.0050  | 0.0050  | mg/L | N/A | 2017-10-03 |  |
| Beryllium, dissolved | < 0.00010 | 0.00010 | mg/L | N/A | 2017-10-03 |  |

## SAMPLE ANALYTICAL DATA

**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 7092382  
2017-10-03

| Analyte | Result / Recovery | MRL / Limits | Units | Prepared | Analyzed | Notes |
|---------|-------------------|--------------|-------|----------|----------|-------|
|---------|-------------------|--------------|-------|----------|----------|-------|

**Sample ID: FB (7092382-07) [Water] Sampled: 2017-09-25 07:50, Continued**

### *Dissolved Metals, Continued*

|                       |            |          |      |            |            |
|-----------------------|------------|----------|------|------------|------------|
| Bismuth, dissolved    | < 0.00010  | 0.00010  | mg/L | N/A        | 2017-10-03 |
| Boron, dissolved      | < 0.0050   | 0.0050   | mg/L | N/A        | 2017-10-03 |
| Cadmium, dissolved    | < 0.000010 | 0.000010 | mg/L | N/A        | 2017-10-03 |
| Calcium, dissolved    | < 0.20     | 0.20     | mg/L | N/A        | 2017-10-03 |
| Chromium, dissolved   | < 0.00050  | 0.00050  | mg/L | N/A        | 2017-10-03 |
| Cobalt, dissolved     | < 0.00010  | 0.00010  | mg/L | N/A        | 2017-10-03 |
| Copper, dissolved     | < 0.00040  | 0.00040  | mg/L | N/A        | 2017-10-03 |
| Iron, dissolved       | < 0.010    | 0.010    | mg/L | N/A        | 2017-10-03 |
| Lead, dissolved       | < 0.00020  | 0.00020  | mg/L | N/A        | 2017-10-03 |
| Lithium, dissolved    | < 0.00010  | 0.00010  | mg/L | N/A        | 2017-10-03 |
| Magnesium, dissolved  | < 0.010    | 0.010    | mg/L | N/A        | 2017-10-03 |
| Manganese, dissolved  | < 0.00020  | 0.00020  | mg/L | N/A        | 2017-10-03 |
| Mercury, dissolved    | < 0.000010 | 0.000010 | mg/L | 2017-09-29 | 2017-09-29 |
| Molybdenum, dissolved | < 0.00010  | 0.00010  | mg/L | N/A        | 2017-10-03 |
| Nickel, dissolved     | < 0.00040  | 0.00040  | mg/L | N/A        | 2017-10-03 |
| Phosphorus, dissolved | < 0.050    | 0.050    | mg/L | N/A        | 2017-10-03 |
| Potassium, dissolved  | < 0.10     | 0.10     | mg/L | N/A        | 2017-10-03 |
| Selenium, dissolved   | < 0.00050  | 0.00050  | mg/L | N/A        | 2017-10-03 |
| Silicon, dissolved    | < 1.0      | 1.0      | mg/L | N/A        | 2017-10-03 |
| Silver, dissolved     | < 0.000050 | 0.000050 | mg/L | N/A        | 2017-10-03 |
| Sodium, dissolved     | < 0.10     | 0.10     | mg/L | N/A        | 2017-10-03 |
| Strontium, dissolved  | < 0.0010   | 0.0010   | mg/L | N/A        | 2017-10-03 |
| Sulfur, dissolved     | < 3.0      | 3.0      | mg/L | N/A        | 2017-10-03 |
| Tellurium, dissolved  | < 0.00050  | 0.00050  | mg/L | N/A        | 2017-10-03 |
| Thallium, dissolved   | < 0.000020 | 0.000020 | mg/L | N/A        | 2017-10-03 |
| Thorium, dissolved    | < 0.00010  | 0.00010  | mg/L | N/A        | 2017-10-03 |
| Tin, dissolved        | < 0.00020  | 0.00020  | mg/L | N/A        | 2017-10-03 |
| Titanium, dissolved   | < 0.0050   | 0.0050   | mg/L | N/A        | 2017-10-03 |
| Uranium, dissolved    | < 0.000020 | 0.000020 | mg/L | N/A        | 2017-10-03 |
| Vanadium, dissolved   | < 0.0010   | 0.0010   | mg/L | N/A        | 2017-10-03 |
| Zinc, dissolved       | < 0.0040   | 0.0040   | mg/L | N/A        | 2017-10-03 |
| Zirconium, dissolved  | < 0.00010  | 0.00010  | mg/L | N/A        | 2017-10-03 |

### *Total Metals*

|                  |            |          |      |            |            |
|------------------|------------|----------|------|------------|------------|
| Aluminum, total  | < 0.0050   | 0.0050   | mg/L | 2017-10-02 | 2017-10-03 |
| Antimony, total  | < 0.00020  | 0.00020  | mg/L | 2017-10-02 | 2017-10-03 |
| Arsenic, total   | < 0.00050  | 0.00050  | mg/L | 2017-10-02 | 2017-10-03 |
| Barium, total    | < 0.0050   | 0.0050   | mg/L | 2017-10-02 | 2017-10-03 |
| Beryllium, total | < 0.00010  | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |
| Bismuth, total   | < 0.00010  | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |
| Boron, total     | < 0.0050   | 0.0050   | mg/L | 2017-10-02 | 2017-10-03 |
| Cadmium, total   | < 0.000010 | 0.000010 | mg/L | 2017-10-02 | 2017-10-03 |
| Calcium, total   | < 0.20     | 0.20     | mg/L | 2017-10-02 | 2017-10-03 |
| Chromium, total  | < 0.00050  | 0.00050  | mg/L | 2017-10-02 | 2017-10-03 |
| Cobalt, total    | < 0.00010  | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |
| Copper, total    | < 0.00040  | 0.00040  | mg/L | 2017-10-02 | 2017-10-03 |

## SAMPLE ANALYTICAL DATA

**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 7092382  
2017-10-03

| Analyte | Result / Recovery | MRL / Limits | Units | Prepared | Analyzed | Notes |
|---------|-------------------|--------------|-------|----------|----------|-------|
|---------|-------------------|--------------|-------|----------|----------|-------|

Sample ID: FB (7092382-07) [Water] Sampled: 2017-09-25 07:50, Continued

### Total Metals, Continued

|                   |            |          |      |            |            |  |
|-------------------|------------|----------|------|------------|------------|--|
| Iron, total       | < 0.010    | 0.010    | mg/L | 2017-10-02 | 2017-10-03 |  |
| Lead, total       | < 0.00020  | 0.00020  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Lithium, total    | < 0.00010  | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Magnesium, total  | < 0.010    | 0.010    | mg/L | 2017-10-02 | 2017-10-03 |  |
| Manganese, total  | < 0.00020  | 0.00020  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Mercury, total    | < 0.000010 | 0.000010 | mg/L | 2017-10-02 | 2017-10-03 |  |
| Molybdenum, total | < 0.00010  | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Nickel, total     | < 0.00040  | 0.00040  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Phosphorus, total | < 0.050    | 0.050    | mg/L | 2017-10-02 | 2017-10-03 |  |
| Potassium, total  | < 0.10     | 0.10     | mg/L | 2017-10-02 | 2017-10-03 |  |
| Selenium, total   | < 0.00050  | 0.00050  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Silicon, total    | < 1.0      | 1.0      | mg/L | 2017-10-02 | 2017-10-03 |  |
| Silver, total     | < 0.000050 | 0.000050 | mg/L | 2017-10-02 | 2017-10-03 |  |
| Sodium, total     | < 0.10     | 0.10     | mg/L | 2017-10-02 | 2017-10-03 |  |
| Strontium, total  | < 0.0010   | 0.0010   | mg/L | 2017-10-02 | 2017-10-03 |  |
| Sulfur, total     | < 3.0      | 3.0      | mg/L | 2017-10-02 | 2017-10-03 |  |
| Tellurium, total  | < 0.00050  | 0.00050  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Thallium, total   | < 0.000020 | 0.000020 | mg/L | 2017-10-02 | 2017-10-03 |  |
| Thorium, total    | < 0.00010  | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Tin, total        | < 0.00020  | 0.00020  | mg/L | 2017-10-02 | 2017-10-03 |  |
| Titanium, total   | < 0.0050   | 0.0050   | mg/L | 2017-10-02 | 2017-10-03 |  |
| Uranium, total    | < 0.000020 | 0.000020 | mg/L | 2017-10-02 | 2017-10-03 |  |
| Vanadium, total   | < 0.0010   | 0.0010   | mg/L | 2017-10-02 | 2017-10-03 |  |
| Zinc, total       | < 0.0040   | 0.0040   | mg/L | 2017-10-02 | 2017-10-03 |  |
| Zirconium, total  | < 0.00010  | 0.00010  | mg/L | 2017-10-02 | 2017-10-03 |  |

### BCMOE Aggregate Hydrocarbons

|                                      |       |        |      |            |            |  |
|--------------------------------------|-------|--------|------|------------|------------|--|
| EPHw10-19                            | < 250 | 250    | µg/L | 2017-09-30 | 2017-10-03 |  |
| EPHw19-32                            | < 250 | 250    | µg/L | 2017-09-30 | 2017-10-03 |  |
| LEPHw                                | < 250 | 250    | µg/L | N/A        | N/A        |  |
| HEPHw                                | < 250 | 250    | µg/L | N/A        | N/A        |  |
| Surrogate: 2-Methylnonane (EPH/F2-4) | 92    | 60-140 | %    | 2017-09-30 | 2017-10-03 |  |

### Polycyclic Aromatic Hydrocarbons (PAH)

|                        |         |       |      |            |            |  |
|------------------------|---------|-------|------|------------|------------|--|
| Acenaphthene           | < 0.050 | 0.050 | µg/L | 2017-09-30 | 2017-10-02 |  |
| Acenaphthylene         | < 0.200 | 0.200 | µg/L | 2017-09-30 | 2017-10-02 |  |
| Acridine               | < 0.050 | 0.050 | µg/L | 2017-09-30 | 2017-10-02 |  |
| Anthracene             | < 0.010 | 0.010 | µg/L | 2017-09-30 | 2017-10-02 |  |
| Benz(a)anthracene      | < 0.010 | 0.010 | µg/L | 2017-09-30 | 2017-10-02 |  |
| Benzo(a)pyrene         | < 0.010 | 0.010 | µg/L | 2017-09-30 | 2017-10-02 |  |
| Benzo(b)fluoranthene   | < 0.050 | 0.050 | µg/L | 2017-09-30 | 2017-10-02 |  |
| Benzo(b+j)fluoranthene | < 0.050 | 0.050 | µg/L | 2017-09-30 | 2017-10-02 |  |
| Benzo(g,h,i)perylene   | < 0.050 | 0.050 | µg/L | 2017-09-30 | 2017-10-02 |  |
| Benzo(k)fluoranthene   | < 0.050 | 0.050 | µg/L | 2017-09-30 | 2017-10-02 |  |
| Chrysene               | < 0.050 | 0.050 | µg/L | 2017-09-30 | 2017-10-02 |  |
| Dibenz(a,h)anthracene  | < 0.010 | 0.010 | µg/L | 2017-09-30 | 2017-10-02 |  |

## SAMPLE ANALYTICAL DATA

**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 7092382  
2017-10-03

| Analyte | Result / Recovery | MRL / Units Limits | Prepared | Analyzed | Notes |
|---------|-------------------|--------------------|----------|----------|-------|
|---------|-------------------|--------------------|----------|----------|-------|

**Sample ID: FB (7092382-07) [Water] Sampled: 2017-09-25 07:50, Continued**

**Polycyclic Aromatic Hydrocarbons (PAH), Continued**

|                           |         |            |            |            |  |
|---------------------------|---------|------------|------------|------------|--|
| Fluoranthene              | < 0.030 | 0.030 µg/L | 2017-09-30 | 2017-10-02 |  |
| Fluorene                  | < 0.050 | 0.050 µg/L | 2017-09-30 | 2017-10-02 |  |
| Indeno(1,2,3-cd)pyrene    | < 0.050 | 0.050 µg/L | 2017-09-30 | 2017-10-02 |  |
| Naphthalene               | < 0.200 | 0.200 µg/L | 2017-09-30 | 2017-10-02 |  |
| Phenanthrene              | < 0.100 | 0.100 µg/L | 2017-09-30 | 2017-10-02 |  |
| Pyrene                    | < 0.020 | 0.020 µg/L | 2017-09-30 | 2017-10-02 |  |
| Quinoline                 | < 0.050 | 0.050 µg/L | 2017-09-30 | 2017-10-02 |  |
| Surrogate: Acridine-d9    | 110     | 50-140 %   | 2017-09-30 | 2017-10-02 |  |
| Surrogate: Naphthalene-d8 | 117     | 50-140 %   | 2017-09-30 | 2017-10-02 |  |
| Surrogate: Perylene-d12   | 121     | 50-140 %   | 2017-09-30 | 2017-10-02 |  |

**Sample / Analysis Qualifiers:**

HT1 The sample was prepared and/or analyzed past the recommended holding time.  
HT2 The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is recommended.

## APPENDIX 1: QUALITY CONTROL DATA

**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 7092382  
2017-10-03

The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- **Method Blank (Blk):** Laboratory reagent water is carried through sample preparation and analysis steps. Method Blanks indicate that results are free from contamination, i.e. not biased high from sources such as the sample container or the laboratory environment
- **Duplicate (Dup):** Preparation and analysis of a replicate aliquot of a sample. Duplicates provide a measure of the analytical method's precision, i.e. how reproducible a result is. Duplicates are only reported if they are associated with your sample data.
- **Blank Spike (BS):** A known amount of standard is carried through sample preparation and analysis steps. Blank Spikes, also known as laboratory control samples (LCS), are prepared from a different source of standard than used for the calibration. They ensure that the calibration is acceptable (i.e. not biased high or low) and also provide a measure of the analytical method's accuracy (i.e. closeness of the result to a target value).
- **Standard Reference Material (SRM):** A material of similar matrix to the samples, externally certified for the parameter(s) listed. Standard Reference Materials ensure that the preparation steps in the method are adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

| Analyte | Result | MRL Units | Spike Level | Source Result | % REC | REC Limit | % RPD | RPD Limit | Notes |
|---------|--------|-----------|-------------|---------------|-------|-----------|-------|-----------|-------|
|---------|--------|-----------|-------------|---------------|-------|-----------|-------|-----------|-------|

### Anions, Batch B7I2043

|                             |         |            |                                            |  |     |        |  |  |  |
|-----------------------------|---------|------------|--------------------------------------------|--|-----|--------|--|--|--|
| <b>Blank (B7I2043-BLK1)</b> |         |            | Prepared: 2017-09-29, Analyzed: 2017-09-29 |  |     |        |  |  |  |
| Chloride                    | < 0.10  | 0.10 mg/L  |                                            |  |     |        |  |  |  |
| Fluoride                    | < 0.10  | 0.10 mg/L  |                                            |  |     |        |  |  |  |
| Nitrate (as N)              | < 0.010 | 0.010 mg/L |                                            |  |     |        |  |  |  |
| Nitrite (as N)              | < 0.010 | 0.010 mg/L |                                            |  |     |        |  |  |  |
| Sulfate                     | < 1.0   | 1.0 mg/L   |                                            |  |     |        |  |  |  |
| <b>LCS (B7I2043-BS1)</b>    |         |            | Prepared: 2017-09-29, Analyzed: 2017-09-29 |  |     |        |  |  |  |
| Chloride                    | 16.1    | 0.10 mg/L  | 16.0                                       |  | 101 | 90-110 |  |  |  |
| Fluoride                    | 3.83    | 0.10 mg/L  | 4.00                                       |  | 96  | 88-108 |  |  |  |
| Nitrate (as N)              | 4.00    | 0.010 mg/L | 4.00                                       |  | 100 | 93-108 |  |  |  |
| Nitrite (as N)              | 1.94    | 0.010 mg/L | 2.00                                       |  | 97  | 85-114 |  |  |  |
| Sulfate                     | 15.8    | 1.0 mg/L   | 16.0                                       |  | 99  | 91-109 |  |  |  |

### BCMOE Aggregate Hydrocarbons, Batch B7I2189

|                                      |       |          |                                            |  |     |        |  |  |  |
|--------------------------------------|-------|----------|--------------------------------------------|--|-----|--------|--|--|--|
| <b>Blank (B7I2189-BLK1)</b>          |       |          | Prepared: 2017-09-30, Analyzed: 2017-10-03 |  |     |        |  |  |  |
| EPHw10-19                            | < 250 | 250 µg/L |                                            |  |     |        |  |  |  |
| EPHw19-32                            | < 250 | 250 µg/L |                                            |  |     |        |  |  |  |
| Surrogate: 2-Methylnonane (EPH/F2-4) | 417   | µg/L     | 446                                        |  | 94  | 60-140 |  |  |  |
| <b>LCS (B7I2189-BS2)</b>             |       |          | Prepared: 2017-09-30, Analyzed: 2017-10-03 |  |     |        |  |  |  |
| EPHw10-19                            | 16500 | 250 µg/L | 15500                                      |  | 106 | 70-130 |  |  |  |
| EPHw19-32                            | 23200 | 250 µg/L | 22100                                      |  | 105 | 70-130 |  |  |  |
| Surrogate: 2-Methylnonane (EPH/F2-4) | 444   | µg/L     | 445                                        |  | 100 | 60-140 |  |  |  |

### Dissolved Metals, Batch B7I2076

|                             |            |               |                                            |  |  |  |  |  |  |
|-----------------------------|------------|---------------|--------------------------------------------|--|--|--|--|--|--|
| <b>Blank (B7I2076-BLK1)</b> |            |               | Prepared: 2017-09-29, Analyzed: 2017-09-29 |  |  |  |  |  |  |
| Mercury, dissolved          | < 0.000010 | 0.000010 mg/L |                                            |  |  |  |  |  |  |
| <b>Blank (B7I2076-BLK2)</b> |            |               | Prepared: 2017-09-29, Analyzed: 2017-09-29 |  |  |  |  |  |  |
| Mercury, dissolved          | < 0.000010 | 0.000010 mg/L |                                            |  |  |  |  |  |  |

## APPENDIX 1: QUALITY CONTROL DATA

**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 7092382  
2017-10-03

| Analyte | Result | MRL | Units | Spike Level | Source Result | % REC | REC Limit | % RPD | RPD Limit | Notes |
|---------|--------|-----|-------|-------------|---------------|-------|-----------|-------|-----------|-------|
|---------|--------|-----|-------|-------------|---------------|-------|-----------|-------|-----------|-------|

### Dissolved Metals, Batch B7I2076, Continued

|                                 |            |                           |      |                                            |            |     |        |  |    |  |
|---------------------------------|------------|---------------------------|------|--------------------------------------------|------------|-----|--------|--|----|--|
| <b>Duplicate (B7I2076-DUP2)</b> |            | <b>Source: 7092382-01</b> |      | Prepared: 2017-09-29, Analyzed: 2017-09-29 |            |     |        |  |    |  |
| Mercury, dissolved              | < 0.000010 | 0.000010                  | mg/L |                                            | < 0.000010 |     |        |  | 20 |  |
| <b>Reference (B7I2076-SRM1)</b> |            |                           |      | Prepared: 2017-09-29, Analyzed: 2017-09-29 |            |     |        |  |    |  |
| Mercury, dissolved              | 0.00502    | 0.000010                  | mg/L |                                            | 0.00489    | 103 | 80-120 |  |    |  |
| <b>Reference (B7I2076-SRM2)</b> |            |                           |      | Prepared: 2017-09-29, Analyzed: 2017-09-29 |            |     |        |  |    |  |
| Mercury, dissolved              | 0.00466    | 0.000010                  | mg/L |                                            | 0.00489    | 95  | 80-120 |  |    |  |

### Dissolved Metals, Batch B7J0053

|                             |            |                                            |      |        |  |     |        |  |  |  |
|-----------------------------|------------|--------------------------------------------|------|--------|--|-----|--------|--|--|--|
| <b>Blank (B7J0053-BLK1)</b> |            | Prepared: 2017-10-03, Analyzed: 2017-10-03 |      |        |  |     |        |  |  |  |
| Aluminum, dissolved         | < 0.0050   | 0.0050                                     | mg/L |        |  |     |        |  |  |  |
| Antimony, dissolved         | < 0.00020  | 0.00020                                    | mg/L |        |  |     |        |  |  |  |
| Arsenic, dissolved          | < 0.00050  | 0.00050                                    | mg/L |        |  |     |        |  |  |  |
| Barium, dissolved           | < 0.0050   | 0.0050                                     | mg/L |        |  |     |        |  |  |  |
| Beryllium, dissolved        | < 0.00010  | 0.00010                                    | mg/L |        |  |     |        |  |  |  |
| Bismuth, dissolved          | < 0.00010  | 0.00010                                    | mg/L |        |  |     |        |  |  |  |
| Boron, dissolved            | < 0.0050   | 0.0050                                     | mg/L |        |  |     |        |  |  |  |
| Cadmium, dissolved          | < 0.000010 | 0.000010                                   | mg/L |        |  |     |        |  |  |  |
| Calcium, dissolved          | < 0.20     | 0.20                                       | mg/L |        |  |     |        |  |  |  |
| Chromium, dissolved         | < 0.00050  | 0.00050                                    | mg/L |        |  |     |        |  |  |  |
| Cobalt, dissolved           | < 0.00010  | 0.00010                                    | mg/L |        |  |     |        |  |  |  |
| Copper, dissolved           | < 0.00040  | 0.00040                                    | mg/L |        |  |     |        |  |  |  |
| Iron, dissolved             | < 0.010    | 0.010                                      | mg/L |        |  |     |        |  |  |  |
| Lead, dissolved             | < 0.00020  | 0.00020                                    | mg/L |        |  |     |        |  |  |  |
| Lithium, dissolved          | < 0.00010  | 0.00010                                    | mg/L |        |  |     |        |  |  |  |
| Magnesium, dissolved        | < 0.010    | 0.010                                      | mg/L |        |  |     |        |  |  |  |
| Manganese, dissolved        | < 0.00020  | 0.00020                                    | mg/L |        |  |     |        |  |  |  |
| Molybdenum, dissolved       | < 0.00010  | 0.00010                                    | mg/L |        |  |     |        |  |  |  |
| Nickel, dissolved           | < 0.00040  | 0.00040                                    | mg/L |        |  |     |        |  |  |  |
| Phosphorus, dissolved       | < 0.050    | 0.050                                      | mg/L |        |  |     |        |  |  |  |
| Potassium, dissolved        | < 0.10     | 0.10                                       | mg/L |        |  |     |        |  |  |  |
| Selenium, dissolved         | < 0.00050  | 0.00050                                    | mg/L |        |  |     |        |  |  |  |
| Silicon, dissolved          | < 1.0      | 1.0                                        | mg/L |        |  |     |        |  |  |  |
| Silver, dissolved           | < 0.000050 | 0.000050                                   | mg/L |        |  |     |        |  |  |  |
| Sodium, dissolved           | < 0.10     | 0.10                                       | mg/L |        |  |     |        |  |  |  |
| Strontium, dissolved        | < 0.0010   | 0.0010                                     | mg/L |        |  |     |        |  |  |  |
| Sulfur, dissolved           | < 3.0      | 3.0                                        | mg/L |        |  |     |        |  |  |  |
| Tellurium, dissolved        | < 0.00050  | 0.00050                                    | mg/L |        |  |     |        |  |  |  |
| Thallium, dissolved         | < 0.000020 | 0.000020                                   | mg/L |        |  |     |        |  |  |  |
| Thorium, dissolved          | < 0.00010  | 0.00010                                    | mg/L |        |  |     |        |  |  |  |
| Tin, dissolved              | < 0.00020  | 0.00020                                    | mg/L |        |  |     |        |  |  |  |
| Titanium, dissolved         | < 0.0050   | 0.0050                                     | mg/L |        |  |     |        |  |  |  |
| Uranium, dissolved          | < 0.000020 | 0.000020                                   | mg/L |        |  |     |        |  |  |  |
| Vanadium, dissolved         | < 0.0010   | 0.0010                                     | mg/L |        |  |     |        |  |  |  |
| Zinc, dissolved             | < 0.0040   | 0.0040                                     | mg/L |        |  |     |        |  |  |  |
| Zirconium, dissolved        | < 0.00010  | 0.00010                                    | mg/L |        |  |     |        |  |  |  |
| <b>LCS (B7J0053-BS1)</b>    |            | Prepared: 2017-10-03, Analyzed: 2017-10-03 |      |        |  |     |        |  |  |  |
| Aluminum, dissolved         | 0.0221     | 0.0050                                     | mg/L | 0.0200 |  | 110 | 80-120 |  |  |  |
| Antimony, dissolved         | 0.0190     | 0.00020                                    | mg/L | 0.0200 |  | 95  | 80-120 |  |  |  |
| Arsenic, dissolved          | 0.0193     | 0.00050                                    | mg/L | 0.0200 |  | 97  | 80-120 |  |  |  |
| Barium, dissolved           | 0.0195     | 0.0050                                     | mg/L | 0.0200 |  | 97  | 80-120 |  |  |  |
| Beryllium, dissolved        | 0.0212     | 0.00010                                    | mg/L | 0.0200 |  | 106 | 80-120 |  |  |  |
| Bismuth, dissolved          | 0.0206     | 0.00010                                    | mg/L | 0.0200 |  | 103 | 80-120 |  |  |  |

## APPENDIX 1: QUALITY CONTROL DATA

**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 7092382  
2017-10-03

| Analyte | Result | MRL Units | Spike Level | Source Result | % REC | REC Limit | % RPD | RPD Limit | Notes |
|---------|--------|-----------|-------------|---------------|-------|-----------|-------|-----------|-------|
|---------|--------|-----------|-------------|---------------|-------|-----------|-------|-----------|-------|

### Dissolved Metals, Batch B7J0053, Continued

| LCS (B7J0053-BS1), Continued |        |               |        | Prepared: 2017-10-03, Analyzed: 2017-10-03 |     |        |  |  |  |
|------------------------------|--------|---------------|--------|--------------------------------------------|-----|--------|--|--|--|
| Boron, dissolved             | 0.0207 | 0.0050 mg/L   | 0.0200 |                                            | 104 | 80-120 |  |  |  |
| Cadmium, dissolved           | 0.0203 | 0.000010 mg/L | 0.0200 |                                            | 101 | 80-120 |  |  |  |
| Calcium, dissolved           | 1.82   | 0.20 mg/L     | 2.00   |                                            | 91  | 80-120 |  |  |  |
| Chromium, dissolved          | 0.0195 | 0.00050 mg/L  | 0.0200 |                                            | 97  | 80-120 |  |  |  |
| Cobalt, dissolved            | 0.0196 | 0.00010 mg/L  | 0.0200 |                                            | 98  | 80-120 |  |  |  |
| Copper, dissolved            | 0.0208 | 0.00040 mg/L  | 0.0200 |                                            | 104 | 80-120 |  |  |  |
| Iron, dissolved              | 1.97   | 0.010 mg/L    | 2.00   |                                            | 99  | 80-120 |  |  |  |
| Lead, dissolved              | 0.0206 | 0.00020 mg/L  | 0.0200 |                                            | 103 | 80-120 |  |  |  |
| Lithium, dissolved           | 0.0213 | 0.00010 mg/L  | 0.0200 |                                            | 106 | 80-120 |  |  |  |
| Magnesium, dissolved         | 2.10   | 0.010 mg/L    | 2.00   |                                            | 105 | 80-120 |  |  |  |
| Manganese, dissolved         | 0.0195 | 0.00020 mg/L  | 0.0200 |                                            | 97  | 80-120 |  |  |  |
| Molybdenum, dissolved        | 0.0191 | 0.00010 mg/L  | 0.0200 |                                            | 96  | 80-120 |  |  |  |
| Nickel, dissolved            | 0.0201 | 0.00040 mg/L  | 0.0200 |                                            | 101 | 80-120 |  |  |  |
| Phosphorus, dissolved        | 1.86   | 0.050 mg/L    | 2.00   |                                            | 93  | 80-120 |  |  |  |
| Potassium, dissolved         | 1.93   | 0.10 mg/L     | 2.00   |                                            | 97  | 80-120 |  |  |  |
| Selenium, dissolved          | 0.0203 | 0.00050 mg/L  | 0.0200 |                                            | 102 | 80-120 |  |  |  |
| Silicon, dissolved           | 2.0    | 1.0 mg/L      | 2.00   |                                            | 101 | 80-120 |  |  |  |
| Silver, dissolved            | 0.0194 | 0.000050 mg/L | 0.0200 |                                            | 97  | 80-120 |  |  |  |
| Sodium, dissolved            | 1.98   | 0.10 mg/L     | 2.40   |                                            | 82  | 80-120 |  |  |  |
| Strontium, dissolved         | 0.0192 | 0.0010 mg/L   | 0.0200 |                                            | 96  | 80-120 |  |  |  |
| Sulfur, dissolved            | 5.2    | 3.0 mg/L      | 5.00   |                                            | 104 | 80-120 |  |  |  |
| Tellurium, dissolved         | 0.0204 | 0.00050 mg/L  | 0.0200 |                                            | 102 | 80-120 |  |  |  |
| Thallium, dissolved          | 0.0205 | 0.000020 mg/L | 0.0200 |                                            | 102 | 80-120 |  |  |  |
| Thorium, dissolved           | 0.0198 | 0.00010 mg/L  | 0.0200 |                                            | 99  | 80-120 |  |  |  |
| Tin, dissolved               | 0.0201 | 0.00020 mg/L  | 0.0200 |                                            | 101 | 80-120 |  |  |  |
| Titanium, dissolved          | 0.0194 | 0.0050 mg/L   | 0.0200 |                                            | 97  | 80-120 |  |  |  |
| Uranium, dissolved           | 0.0195 | 0.000020 mg/L | 0.0200 |                                            | 97  | 80-120 |  |  |  |
| Vanadium, dissolved          | 0.0192 | 0.0010 mg/L   | 0.0200 |                                            | 96  | 80-120 |  |  |  |
| Zinc, dissolved              | 0.0202 | 0.0040 mg/L   | 0.0200 |                                            | 101 | 80-120 |  |  |  |
| Zirconium, dissolved         | 0.0200 | 0.00010 mg/L  | 0.0200 |                                            | 100 | 80-120 |  |  |  |

| Duplicate (B7J0053-DUP1) |           |               |            | Source: 7092382-03 Prepared: 2017-10-03, Analyzed: 2017-10-03 |  |     |  |    |  |
|--------------------------|-----------|---------------|------------|---------------------------------------------------------------|--|-----|--|----|--|
| Aluminum, dissolved      | < 0.0050  | 0.0050 mg/L   | < 0.0050   |                                                               |  |     |  | 11 |  |
| Antimony, dissolved      | < 0.00020 | 0.00020 mg/L  | < 0.00020  |                                                               |  |     |  | 20 |  |
| Arsenic, dissolved       | 0.00447   | 0.00050 mg/L  | 0.00445    |                                                               |  | < 1 |  | 8  |  |
| Barium, dissolved        | 0.0990    | 0.0050 mg/L   | 0.0960     |                                                               |  | 3   |  | 7  |  |
| Beryllium, dissolved     | < 0.00010 | 0.00010 mg/L  | < 0.00010  |                                                               |  |     |  | 14 |  |
| Bismuth, dissolved       | < 0.00010 | 0.00010 mg/L  | < 0.00010  |                                                               |  |     |  | 20 |  |
| Boron, dissolved         | 0.0982    | 0.0050 mg/L   | 0.0939     |                                                               |  | 4   |  | 13 |  |
| Cadmium, dissolved       | 0.000013  | 0.000010 mg/L | < 0.000010 |                                                               |  |     |  | 20 |  |
| Calcium, dissolved       | 169       | 0.20 mg/L     | 178        |                                                               |  | 5   |  | 8  |  |
| Chromium, dissolved      | < 0.00050 | 0.00050 mg/L  | < 0.00050  |                                                               |  |     |  | 14 |  |
| Cobalt, dissolved        | 0.00225   | 0.00010 mg/L  | 0.00233    |                                                               |  | 3   |  | 10 |  |
| Copper, dissolved        | < 0.00040 | 0.00040 mg/L  | < 0.00040  |                                                               |  |     |  | 20 |  |
| Iron, dissolved          | 0.956     | 0.010 mg/L    | 0.988      |                                                               |  | 3   |  | 14 |  |
| Lead, dissolved          | < 0.00020 | 0.00020 mg/L  | < 0.00020  |                                                               |  |     |  | 20 |  |
| Lithium, dissolved       | 0.0155    | 0.00010 mg/L  | 0.0146     |                                                               |  | 6   |  | 14 |  |
| Magnesium, dissolved     | 35.8      | 0.010 mg/L    | 37.1       |                                                               |  | 4   |  | 6  |  |
| Manganese, dissolved     | 2.34      | 0.00020 mg/L  | 2.30       |                                                               |  | 2   |  | 9  |  |
| Molybdenum, dissolved    | 0.00085   | 0.00010 mg/L  | 0.00083    |                                                               |  | 2   |  | 19 |  |
| Nickel, dissolved        | 0.00462   | 0.00040 mg/L  | 0.00482    |                                                               |  | 4   |  | 20 |  |
| Phosphorus, dissolved    | < 0.050   | 0.050 mg/L    | < 0.050    |                                                               |  |     |  | 14 |  |
| Potassium, dissolved     | 4.30      | 0.10 mg/L     | 4.44       |                                                               |  | 3   |  | 8  |  |
| Selenium, dissolved      | < 0.00050 | 0.00050 mg/L  | < 0.00050  |                                                               |  |     |  | 20 |  |
| Silicon, dissolved       | 12.3      | 1.0 mg/L      | 12.2       |                                                               |  | < 1 |  | 12 |  |

## APPENDIX 1: QUALITY CONTROL DATA

**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 7092382  
2017-10-03

| Analyte | Result | MRL Units | Spike Level | Source Result | % REC | REC Limit | % RPD | RPD Limit | Notes |
|---------|--------|-----------|-------------|---------------|-------|-----------|-------|-----------|-------|
|---------|--------|-----------|-------------|---------------|-------|-----------|-------|-----------|-------|

### Dissolved Metals, Batch B7J0053, Continued

| Duplicate (B7J0053-DUP1), Continued |           | Source: 7092382-03 |  | Prepared: 2017-10-03, Analyzed: 2017-10-03 |  |  |     |    |  |
|-------------------------------------|-----------|--------------------|--|--------------------------------------------|--|--|-----|----|--|
| Silver, dissolved                   | 0.000051  | 0.000050 mg/L      |  | < 0.000050                                 |  |  |     | 20 |  |
| Sodium, dissolved                   | 87.6      | 0.10 mg/L          |  | 91.8                                       |  |  | 5   | 6  |  |
| Strontium, dissolved                | 0.613     | 0.0010 mg/L        |  | 0.616                                      |  |  | < 1 | 6  |  |
| Sulfur, dissolved                   | 28.6      | 3.0 mg/L           |  | 29.6                                       |  |  | 4   | 20 |  |
| Tellurium, dissolved                | < 0.00050 | 0.00050 mg/L       |  | < 0.00050                                  |  |  |     | 20 |  |
| Thallium, dissolved                 | 0.000029  | 0.000020 mg/L      |  | 0.000027                                   |  |  |     | 13 |  |
| Thorium, dissolved                  | < 0.00010 | 0.00010 mg/L       |  | < 0.00010                                  |  |  |     | 20 |  |
| Tin, dissolved                      | 0.00030   | 0.00020 mg/L       |  | 0.00027                                    |  |  |     | 20 |  |
| Titanium, dissolved                 | < 0.0050  | 0.0050 mg/L        |  | < 0.0050                                   |  |  |     | 20 |  |
| Uranium, dissolved                  | 0.00913   | 0.000020 mg/L      |  | 0.00916                                    |  |  | < 1 | 14 |  |
| Vanadium, dissolved                 | < 0.0010  | 0.0010 mg/L        |  | < 0.0010                                   |  |  |     | 20 |  |
| Zinc, dissolved                     | < 0.0040  | 0.0040 mg/L        |  | < 0.0040                                   |  |  |     | 11 |  |
| Zirconium, dissolved                | 0.00022   | 0.00010 mg/L       |  | 0.00023                                    |  |  |     | 20 |  |

| Reference (B7J0053-SRM1) |        | Prepared: 2017-10-03, Analyzed: 2017-10-03 |        |  |     |        |  |  |  |
|--------------------------|--------|--------------------------------------------|--------|--|-----|--------|--|--|--|
| Aluminum, dissolved      | 0.233  | 0.0050 mg/L                                | 0.233  |  | 100 | 79-114 |  |  |  |
| Antimony, dissolved      | 0.0471 | 0.00020 mg/L                               | 0.0430 |  | 109 | 89-123 |  |  |  |
| Arsenic, dissolved       | 0.451  | 0.00050 mg/L                               | 0.438  |  | 103 | 87-113 |  |  |  |
| Barium, dissolved        | 3.45   | 0.0050 mg/L                                | 3.35   |  | 103 | 85-114 |  |  |  |
| Beryllium, dissolved     | 0.238  | 0.00010 mg/L                               | 0.213  |  | 112 | 79-122 |  |  |  |
| Boron, dissolved         | 1.72   | 0.0050 mg/L                                | 1.74   |  | 99  | 79-117 |  |  |  |
| Cadmium, dissolved       | 0.239  | 0.000010 mg/L                              | 0.224  |  | 107 | 89-112 |  |  |  |
| Calcium, dissolved       | 7.56   | 0.20 mg/L                                  | 7.69   |  | 98  | 85-120 |  |  |  |
| Chromium, dissolved      | 0.458  | 0.00050 mg/L                               | 0.437  |  | 105 | 87-113 |  |  |  |
| Cobalt, dissolved        | 0.139  | 0.00010 mg/L                               | 0.128  |  | 108 | 90-117 |  |  |  |
| Copper, dissolved        | 0.912  | 0.00040 mg/L                               | 0.844  |  | 108 | 90-115 |  |  |  |
| Iron, dissolved          | 1.34   | 0.010 mg/L                                 | 1.29   |  | 104 | 86-112 |  |  |  |
| Lead, dissolved          | 0.118  | 0.00020 mg/L                               | 0.112  |  | 105 | 90-113 |  |  |  |
| Lithium, dissolved       | 0.119  | 0.00010 mg/L                               | 0.104  |  | 115 | 77-127 |  |  |  |
| Magnesium, dissolved     | 7.02   | 0.010 mg/L                                 | 6.92   |  | 101 | 84-116 |  |  |  |
| Manganese, dissolved     | 0.365  | 0.00020 mg/L                               | 0.345  |  | 106 | 85-113 |  |  |  |
| Molybdenum, dissolved    | 0.433  | 0.00010 mg/L                               | 0.426  |  | 102 | 87-112 |  |  |  |
| Nickel, dissolved        | 0.895  | 0.00040 mg/L                               | 0.840  |  | 107 | 90-114 |  |  |  |
| Phosphorus, dissolved    | 0.500  | 0.050 mg/L                                 | 0.495  |  | 101 | 74-119 |  |  |  |
| Potassium, dissolved     | 3.23   | 0.10 mg/L                                  | 3.19   |  | 101 | 78-119 |  |  |  |
| Selenium, dissolved      | 0.0343 | 0.00050 mg/L                               | 0.0331 |  | 104 | 89-123 |  |  |  |
| Sodium, dissolved        | 19.0   | 0.10 mg/L                                  | 19.1   |  | 99  | 81-117 |  |  |  |
| Strontium, dissolved     | 0.923  | 0.0010 mg/L                                | 0.916  |  | 101 | 82-111 |  |  |  |
| Thallium, dissolved      | 0.0412 | 0.000020 mg/L                              | 0.0393 |  | 105 | 90-113 |  |  |  |
| Uranium, dissolved       | 0.263  | 0.000020 mg/L                              | 0.266  |  | 99  | 87-113 |  |  |  |
| Vanadium, dissolved      | 0.896  | 0.0010 mg/L                                | 0.869  |  | 103 | 85-110 |  |  |  |
| Zinc, dissolved          | 0.931  | 0.0040 mg/L                                | 0.881  |  | 106 | 88-114 |  |  |  |

### General Parameters, Batch B7I2000

| Blank (B7I2000-BLK1)                   |       | Prepared: 2017-09-28, Analyzed: 2017-09-28 |  |  |  |  |  |  |  |
|----------------------------------------|-------|--------------------------------------------|--|--|--|--|--|--|--|
| Alkalinity, Total (as CaCO3)           | < 1.0 | 1.0 mg/L                                   |  |  |  |  |  |  |  |
| Alkalinity, Phenolphthalein (as CaCO3) | < 1.0 | 1.0 mg/L                                   |  |  |  |  |  |  |  |
| Alkalinity, Bicarbonate (as CaCO3)     | < 1.0 | 1.0 mg/L                                   |  |  |  |  |  |  |  |
| Alkalinity, Carbonate (as CaCO3)       | < 1.0 | 1.0 mg/L                                   |  |  |  |  |  |  |  |
| Alkalinity, Hydroxide (as CaCO3)       | < 1.0 | 1.0 mg/L                                   |  |  |  |  |  |  |  |
| Conductivity (EC)                      | < 2.0 | 2.0 µS/cm                                  |  |  |  |  |  |  |  |
| Blank (B7I2000-BLK2)                   |       | Prepared: 2017-09-28, Analyzed: 2017-09-28 |  |  |  |  |  |  |  |
| Alkalinity, Total (as CaCO3)           | < 1.0 | 1.0 mg/L                                   |  |  |  |  |  |  |  |

## APPENDIX 1: QUALITY CONTROL DATA

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| Analyte                                             | Result   | MRL Units     | Spike Level                                | Source Result | % REC                                      | REC Limit | % RPD | RPD Limit | Notes |
|-----------------------------------------------------|----------|---------------|--------------------------------------------|---------------|--------------------------------------------|-----------|-------|-----------|-------|
| <b>General Parameters, Batch B7I2000, Continued</b> |          |               |                                            |               |                                            |           |       |           |       |
| <b>Blank (B7I2000-BLK2), Continued</b>              |          |               | Prepared: 2017-09-28, Analyzed: 2017-09-28 |               |                                            |           |       |           |       |
| Alkalinity, Phenolphthalein (as CaCO <sub>3</sub> ) | < 1.0    | 1.0 mg/L      |                                            |               |                                            |           |       |           |       |
| Alkalinity, Bicarbonate (as CaCO <sub>3</sub> )     | < 1.0    | 1.0 mg/L      |                                            |               |                                            |           |       |           |       |
| Alkalinity, Carbonate (as CaCO <sub>3</sub> )       | < 1.0    | 1.0 mg/L      |                                            |               |                                            |           |       |           |       |
| Alkalinity, Hydroxide (as CaCO <sub>3</sub> )       | < 1.0    | 1.0 mg/L      |                                            |               |                                            |           |       |           |       |
| Conductivity (EC)                                   | < 2.0    | 2.0 µS/cm     |                                            |               |                                            |           |       |           |       |
| <b>LCS (B7I2000-BS1)</b>                            |          |               | Prepared: 2017-09-28, Analyzed: 2017-09-28 |               |                                            |           |       |           |       |
| Alkalinity, Total (as CaCO <sub>3</sub> )           | 102      | 1.0 mg/L      | 100                                        |               | 102                                        | 92-106    |       |           |       |
| <b>LCS (B7I2000-BS2)</b>                            |          |               | Prepared: 2017-09-28, Analyzed: 2017-09-28 |               |                                            |           |       |           |       |
| Alkalinity, Total (as CaCO <sub>3</sub> )           | 102      | 1.0 mg/L      | 100                                        |               | 102                                        | 92-106    |       |           |       |
| <b>LCS (B7I2000-BS3)</b>                            |          |               | Prepared: 2017-09-28, Analyzed: 2017-09-28 |               |                                            |           |       |           |       |
| Conductivity (EC)                                   | 1340     | 2.0 µS/cm     | 1410                                       |               | 95                                         | 95-104    |       |           |       |
| <b>LCS (B7I2000-BS4)</b>                            |          |               | Prepared: 2017-09-28, Analyzed: 2017-09-28 |               |                                            |           |       |           |       |
| Conductivity (EC)                                   | 1380     | 2.0 µS/cm     | 1410                                       |               | 98                                         | 95-104    |       |           |       |
| <b>Duplicate (B7I2000-DUP1)</b>                     |          |               | <b>Source: 7092382-01</b>                  |               | Prepared: 2017-09-28, Analyzed: 2017-09-28 |           |       |           |       |
| Alkalinity, Total (as CaCO <sub>3</sub> )           | 192      | 1.0 mg/L      |                                            | 206           |                                            |           | 7     | 10        |       |
| Alkalinity, Phenolphthalein (as CaCO <sub>3</sub> ) | < 1.0    | 1.0 mg/L      |                                            | < 1.0         |                                            |           |       | 10        |       |
| Alkalinity, Bicarbonate (as CaCO <sub>3</sub> )     | 192      | 1.0 mg/L      |                                            | 206           |                                            |           | 7     | 10        |       |
| Alkalinity, Carbonate (as CaCO <sub>3</sub> )       | < 1.0    | 1.0 mg/L      |                                            | < 1.0         |                                            |           |       | 10        |       |
| Alkalinity, Hydroxide (as CaCO <sub>3</sub> )       | < 1.0    | 1.0 mg/L      |                                            | < 1.0         |                                            |           |       | 10        |       |
| Conductivity (EC)                                   | 761      | 2.0 µS/cm     |                                            | 759           |                                            |           | < 1   | 5         |       |
| pH                                                  | 7.79     | 0.10 pH units |                                            | 7.71          |                                            |           | 1     | 4         | HT2   |
| <b>Reference (B7I2000-SRM1)</b>                     |          |               | Prepared: 2017-09-28, Analyzed: 2017-09-28 |               |                                            |           |       |           |       |
| pH                                                  | 7.00     | 0.10 pH units | 7.00                                       |               | 100                                        | 98-102    |       |           | HT2   |
| <b>Reference (B7I2000-SRM2)</b>                     |          |               | Prepared: 2017-09-28, Analyzed: 2017-09-28 |               |                                            |           |       |           |       |
| pH                                                  | 7.00     | 0.10 pH units | 7.00                                       |               | 100                                        | 98-102    |       |           | HT2   |
| <b>General Parameters, Batch B7I2031</b>            |          |               |                                            |               |                                            |           |       |           |       |
| <b>Blank (B7I2031-BLK1)</b>                         |          |               | Prepared: 2017-09-28, Analyzed: 2017-09-28 |               |                                            |           |       |           |       |
| Solids, Total Suspended                             | < 2.0    | 2.0 mg/L      |                                            |               |                                            |           |       |           |       |
| <b>LCS (B7I2031-BS1)</b>                            |          |               | Prepared: 2017-09-28, Analyzed: 2017-09-28 |               |                                            |           |       |           |       |
| Solids, Total Suspended                             | 100      | 2.0 mg/L      | 100                                        |               | 100                                        | 91-106    |       |           |       |
| <b>LCS Dup (B7I2031-BSD1)</b>                       |          |               | Prepared: 2017-09-28, Analyzed: 2017-09-28 |               |                                            |           |       |           |       |
| Solids, Total Suspended                             | 100      | 2.0 mg/L      | 100                                        |               | 100                                        | 91-106    | < 1   |           |       |
| <b>General Parameters, Batch B7I2044</b>            |          |               |                                            |               |                                            |           |       |           |       |
| <b>Blank (B7I2044-BLK1)</b>                         |          |               | Prepared: 2017-09-28, Analyzed: 2017-09-28 |               |                                            |           |       |           |       |
| Chromium, Hexavalent                                | < 0.0010 | 0.0010 mg/L   |                                            |               |                                            |           |       |           |       |
| <b>LCS (B7I2044-BS1)</b>                            |          |               | Prepared: 2017-09-28, Analyzed: 2017-09-28 |               |                                            |           |       |           |       |
| Chromium, Hexavalent                                | 0.101    | 0.0010 mg/L   | 0.100                                      |               | 101                                        | 90-111    |       |           |       |
| <b>General Parameters, Batch B7I2129</b>            |          |               |                                            |               |                                            |           |       |           |       |
| <b>Blank (B7I2129-BLK1)</b>                         |          |               | Prepared: 2017-09-29, Analyzed: 2017-09-29 |               |                                            |           |       |           |       |
| Colour, True                                        | < 5.0    | 5.0 CU        |                                            |               |                                            |           |       |           |       |

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| Analyte                                                      | Result  | MRL Units  | Spike Level                                | Source Result | % REC                                      | REC Limit | % RPD | RPD Limit | Notes |
|--------------------------------------------------------------|---------|------------|--------------------------------------------|---------------|--------------------------------------------|-----------|-------|-----------|-------|
| <b>General Parameters, Batch B7I2129, Continued</b>          |         |            |                                            |               |                                            |           |       |           |       |
| <b>Blank (B7I2129-BLK2)</b>                                  |         |            | Prepared: 2017-09-29, Analyzed: 2017-09-29 |               |                                            |           |       |           |       |
| Colour, True                                                 | < 5.0   | 5.0 CU     |                                            |               |                                            |           |       |           |       |
| <b>Blank (B7I2129-BLK3)</b>                                  |         |            | Prepared: 2017-09-29, Analyzed: 2017-09-29 |               |                                            |           |       |           |       |
| Colour, True                                                 | < 5.0   | 5.0 CU     |                                            |               |                                            |           |       |           |       |
| <b>LCS (B7I2129-BS1)</b>                                     |         |            | Prepared: 2017-09-29, Analyzed: 2017-09-29 |               |                                            |           |       |           |       |
| Colour, True                                                 | 10      | 5.0 CU     | 10.0                                       |               | 100                                        | 85-115    |       |           |       |
| <b>LCS (B7I2129-BS2)</b>                                     |         |            | Prepared: 2017-09-29, Analyzed: 2017-09-29 |               |                                            |           |       |           |       |
| Colour, True                                                 | 12      | 5.0 CU     | 10.0                                       |               | 115                                        | 85-115    |       |           |       |
| <b>LCS (B7I2129-BS3)</b>                                     |         |            | Prepared: 2017-09-29, Analyzed: 2017-09-29 |               |                                            |           |       |           |       |
| Colour, True                                                 | 10      | 5.0 CU     | 10.0                                       |               | 100                                        | 85-115    |       |           |       |
| <b>General Parameters, Batch B7I2160</b>                     |         |            |                                            |               |                                            |           |       |           |       |
| <b>Blank (B7I2160-BLK1)</b>                                  |         |            | Prepared: 2017-10-01, Analyzed: 2017-10-01 |               |                                            |           |       |           |       |
| Turbidity                                                    | < 0.10  | 0.10 NTU   |                                            |               |                                            |           |       |           |       |
| <b>Blank (B7I2160-BLK2)</b>                                  |         |            | Prepared: 2017-10-01, Analyzed: 2017-10-01 |               |                                            |           |       |           |       |
| Turbidity                                                    | < 0.10  | 0.10 NTU   |                                            |               |                                            |           |       |           |       |
| <b>LCS (B7I2160-BS1)</b>                                     |         |            | Prepared: 2017-10-01, Analyzed: 2017-10-01 |               |                                            |           |       |           |       |
| Turbidity                                                    | 37.9    | 0.10 NTU   | 40.0                                       |               | 95                                         | 90-110    |       |           |       |
| <b>LCS (B7I2160-BS2)</b>                                     |         |            | Prepared: 2017-10-01, Analyzed: 2017-10-01 |               |                                            |           |       |           |       |
| Turbidity                                                    | 37.8    | 0.10 NTU   | 40.0                                       |               | 94                                         | 90-110    |       |           |       |
| <b>Duplicate (B7I2160-DUP1)</b>                              |         |            | <b>Source: 7092382-01</b>                  |               | Prepared: 2017-10-01, Analyzed: 2017-10-01 |           |       |           |       |
| Turbidity                                                    | 0.96    | 0.10 NTU   |                                            | 0.95          |                                            |           | 1     | 15        |       |
| <b>Polycyclic Aromatic Hydrocarbons (PAH), Batch B7I2189</b> |         |            |                                            |               |                                            |           |       |           |       |
| <b>Blank (B7I2189-BLK1)</b>                                  |         |            | Prepared: 2017-09-30, Analyzed: 2017-10-01 |               |                                            |           |       |           |       |
| Acenaphthene                                                 | < 0.050 | 0.050 µg/L |                                            |               |                                            |           |       |           |       |
| Acenaphthylene                                               | < 0.200 | 0.200 µg/L |                                            |               |                                            |           |       |           |       |
| Acridine                                                     | < 0.050 | 0.050 µg/L |                                            |               |                                            |           |       |           |       |
| Anthracene                                                   | < 0.010 | 0.010 µg/L |                                            |               |                                            |           |       |           |       |
| Benzo(a)anthracene                                           | < 0.010 | 0.010 µg/L |                                            |               |                                            |           |       |           |       |
| Benzo(a)pyrene                                               | < 0.010 | 0.010 µg/L |                                            |               |                                            |           |       |           |       |
| Benzo(b)fluoranthene                                         | < 0.050 | 0.050 µg/L |                                            |               |                                            |           |       |           |       |
| Benzo(b+j)fluoranthene                                       | < 0.050 | 0.050 µg/L |                                            |               |                                            |           |       |           |       |
| Benzo(g,h,i)perylene                                         | < 0.050 | 0.050 µg/L |                                            |               |                                            |           |       |           |       |
| Benzo(k)fluoranthene                                         | < 0.050 | 0.050 µg/L |                                            |               |                                            |           |       |           |       |
| Chrysene                                                     | < 0.050 | 0.050 µg/L |                                            |               |                                            |           |       |           |       |
| Dibenz(a,h)anthracene                                        | < 0.010 | 0.010 µg/L |                                            |               |                                            |           |       |           |       |
| Fluoranthene                                                 | < 0.030 | 0.030 µg/L |                                            |               |                                            |           |       |           |       |
| Fluorene                                                     | < 0.050 | 0.050 µg/L |                                            |               |                                            |           |       |           |       |
| Indeno(1,2,3-cd)pyrene                                       | < 0.050 | 0.050 µg/L |                                            |               |                                            |           |       |           |       |
| Naphthalene                                                  | < 0.200 | 0.200 µg/L |                                            |               |                                            |           |       |           |       |
| Phenanthrene                                                 | < 0.100 | 0.100 µg/L |                                            |               |                                            |           |       |           |       |
| Pyrene                                                       | < 0.020 | 0.020 µg/L |                                            |               |                                            |           |       |           |       |
| Quinoline                                                    | < 0.050 | 0.050 µg/L |                                            |               |                                            |           |       |           |       |
| Surrogate: Acridine-d9                                       | 4.67    | µg/L       | 4.46                                       |               | 105                                        | 50-140    |       |           |       |
| Surrogate: Naphthalene-d8                                    | 5.36    | µg/L       | 4.46                                       |               | 120                                        | 50-140    |       |           |       |
| Surrogate: Perylene-d12                                      | 5.81    | µg/L       | 4.46                                       |               | 130                                        | 50-140    |       |           |       |

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| Analyte | Result | MRL Units | Spike Level | Source Result | % REC | REC Limit | % RPD | RPD Limit | Notes |
|---------|--------|-----------|-------------|---------------|-------|-----------|-------|-----------|-------|
|---------|--------|-----------|-------------|---------------|-------|-----------|-------|-----------|-------|

### Polycyclic Aromatic Hydrocarbons (PAH), Batch B7I2189, Continued

|                           |      |            |                                            |  |     |        |  |  |  |
|---------------------------|------|------------|--------------------------------------------|--|-----|--------|--|--|--|
| <b>LCS (B7I2189-BS1)</b>  |      |            | Prepared: 2017-09-30, Analyzed: 2017-10-01 |  |     |        |  |  |  |
| Acenaphthene              | 4.25 | 0.050 µg/L | 4.46                                       |  | 95  | 58-125 |  |  |  |
| Acenaphthylene            | 4.28 | 0.200 µg/L | 4.46                                       |  | 96  | 54-128 |  |  |  |
| Acridine                  | 3.14 | 0.050 µg/L | 4.46                                       |  | 71  | 50-112 |  |  |  |
| Anthracene                | 4.50 | 0.010 µg/L | 4.46                                       |  | 101 | 66-125 |  |  |  |
| Benz(a)anthracene         | 5.28 | 0.010 µg/L | 4.46                                       |  | 118 | 59-123 |  |  |  |
| Benzo(a)pyrene            | 4.20 | 0.010 µg/L | 4.46                                       |  | 94  | 62-116 |  |  |  |
| Benzo(b)fluoranthene      | 4.56 | 0.050 µg/L | 4.46                                       |  | 102 | 68-126 |  |  |  |
| Benzo(b+j)fluoranthene    | 9.90 | 0.050 µg/L | 8.92                                       |  | 111 | 69-121 |  |  |  |
| Benzo(g,h,i)perylene      | 3.65 | 0.050 µg/L | 4.46                                       |  | 82  | 58-129 |  |  |  |
| Benzo(k)fluoranthene      | 5.21 | 0.050 µg/L | 4.46                                       |  | 117 | 67-128 |  |  |  |
| Chrysene                  | 5.42 | 0.050 µg/L | 4.46                                       |  | 122 | 58-125 |  |  |  |
| Dibenz(a,h)anthracene     | 3.62 | 0.010 µg/L | 4.46                                       |  | 81  | 58-126 |  |  |  |
| Fluoranthene              | 5.19 | 0.030 µg/L | 4.46                                       |  | 116 | 67-133 |  |  |  |
| Fluorene                  | 4.14 | 0.050 µg/L | 4.46                                       |  | 93  | 55-122 |  |  |  |
| Indeno(1,2,3-cd)pyrene    | 3.59 | 0.050 µg/L | 4.46                                       |  | 81  | 62-126 |  |  |  |
| Naphthalene               | 4.72 | 0.200 µg/L | 4.46                                       |  | 106 | 50-130 |  |  |  |
| Phenanthrene              | 4.32 | 0.100 µg/L | 4.46                                       |  | 97  | 67-127 |  |  |  |
| Pyrene                    | 5.17 | 0.020 µg/L | 4.46                                       |  | 116 | 68-133 |  |  |  |
| Quinoline                 | 3.36 | 0.050 µg/L | 4.46                                       |  | 75  | 51-140 |  |  |  |
| Surrogate: Acridine-d9    | 5.01 | µg/L       | 4.46                                       |  | 112 | 50-140 |  |  |  |
| Surrogate: Naphthalene-d8 | 5.38 | µg/L       | 4.46                                       |  | 121 | 50-140 |  |  |  |
| Surrogate: Perylene-d12   | 5.15 | µg/L       | 4.46                                       |  | 116 | 50-140 |  |  |  |

|                               |      |            |                                            |  |     |        |     |    |  |
|-------------------------------|------|------------|--------------------------------------------|--|-----|--------|-----|----|--|
| <b>LCS Dup (B7I2189-BSD1)</b> |      |            | Prepared: 2017-09-30, Analyzed: 2017-10-01 |  |     |        |     |    |  |
| Acenaphthene                  | 4.07 | 0.050 µg/L | 4.42                                       |  | 92  | 58-125 | 4   | 16 |  |
| Acenaphthylene                | 4.06 | 0.200 µg/L | 4.42                                       |  | 92  | 54-128 | 5   | 16 |  |
| Acridine                      | 3.33 | 0.050 µg/L | 4.42                                       |  | 75  | 50-112 | 6   | 26 |  |
| Anthracene                    | 4.52 | 0.010 µg/L | 4.42                                       |  | 102 | 66-125 | < 1 | 14 |  |
| Benz(a)anthracene             | 5.31 | 0.010 µg/L | 4.42                                       |  | 120 | 59-123 | < 1 | 23 |  |
| Benzo(a)pyrene                | 4.29 | 0.010 µg/L | 4.42                                       |  | 97  | 62-116 | 2   | 16 |  |
| Benzo(b)fluoranthene          | 4.73 | 0.050 µg/L | 4.42                                       |  | 107 | 68-126 | 4   | 17 |  |
| Benzo(b+j)fluoranthene        | 9.52 | 0.050 µg/L | 8.84                                       |  | 108 | 69-121 | 4   | 14 |  |
| Benzo(g,h,i)perylene          | 3.66 | 0.050 µg/L | 4.42                                       |  | 83  | 58-129 | < 1 | 25 |  |
| Benzo(k)fluoranthene          | 5.42 | 0.050 µg/L | 4.42                                       |  | 123 | 67-128 | 4   | 18 |  |
| Chrysene                      | 5.15 | 0.050 µg/L | 4.42                                       |  | 117 | 58-125 | 5   | 24 |  |
| Dibenz(a,h)anthracene         | 3.74 | 0.010 µg/L | 4.42                                       |  | 85  | 58-126 | 3   | 23 |  |
| Fluoranthene                  | 5.35 | 0.030 µg/L | 4.42                                       |  | 121 | 67-133 | 3   | 18 |  |
| Fluorene                      | 4.04 | 0.050 µg/L | 4.42                                       |  | 91  | 55-122 | 3   | 16 |  |
| Indeno(1,2,3-cd)pyrene        | 3.63 | 0.050 µg/L | 4.42                                       |  | 82  | 62-126 | < 1 | 22 |  |
| Naphthalene                   | 4.30 | 0.200 µg/L | 4.42                                       |  | 97  | 50-130 | 9   | 18 |  |
| Phenanthrene                  | 4.34 | 0.100 µg/L | 4.42                                       |  | 98  | 67-127 | < 1 | 14 |  |
| Pyrene                        | 5.32 | 0.020 µg/L | 4.42                                       |  | 120 | 68-133 | 3   | 18 |  |
| Quinoline                     | 3.23 | 0.050 µg/L | 4.42                                       |  | 73  | 51-140 | 4   | 12 |  |
| Surrogate: Acridine-d9        | 5.37 | µg/L       | 4.42                                       |  | 122 | 50-140 |     |    |  |
| Surrogate: Naphthalene-d8     | 5.05 | µg/L       | 4.42                                       |  | 114 | 50-140 |     |    |  |
| Surrogate: Perylene-d12       | 5.24 | µg/L       | 4.42                                       |  | 119 | 50-140 |     |    |  |

### Total Metals, Batch B7J0029

|                             |            |               |                                            |  |  |  |  |  |  |
|-----------------------------|------------|---------------|--------------------------------------------|--|--|--|--|--|--|
| <b>Blank (B7J0029-BLK1)</b> |            |               | Prepared: 2017-10-02, Analyzed: 2017-10-03 |  |  |  |  |  |  |
| Mercury, total              | < 0.000010 | 0.000010 mg/L |                                            |  |  |  |  |  |  |
| <b>Blank (B7J0029-BLK2)</b> |            |               | Prepared: 2017-10-02, Analyzed: 2017-10-03 |  |  |  |  |  |  |
| Mercury, total              | < 0.000010 | 0.000010 mg/L |                                            |  |  |  |  |  |  |

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| Analyte                                       | Result     | MRL Units     | Spike Level                                | Source Result | % REC | REC Limit | % RPD | RPD Limit | Notes |
|-----------------------------------------------|------------|---------------|--------------------------------------------|---------------|-------|-----------|-------|-----------|-------|
| <b>Total Metals, Batch B7J0029, Continued</b> |            |               |                                            |               |       |           |       |           |       |
| <b>Reference (B7J0029-SRM1)</b>               |            |               | Prepared: 2017-10-02, Analyzed: 2017-10-03 |               |       |           |       |           |       |
| Mercury, total                                | 0.00458    | 0.000010 mg/L | 0.00489                                    |               | 94    | 80-120    |       |           |       |
| <b>Reference (B7J0029-SRM2)</b>               |            |               | Prepared: 2017-10-02, Analyzed: 2017-10-03 |               |       |           |       |           |       |
| Mercury, total                                | 0.00451    | 0.000010 mg/L | 0.00489                                    |               | 92    | 80-120    |       |           |       |
| <b>Total Metals, Batch B7J0113</b>            |            |               |                                            |               |       |           |       |           |       |
| <b>Blank (B7J0113-BLK1)</b>                   |            |               | Prepared: 2017-10-02, Analyzed: 2017-10-03 |               |       |           |       |           |       |
| Aluminum, total                               | < 0.0050   | 0.0050 mg/L   |                                            |               |       |           |       |           |       |
| Antimony, total                               | < 0.00020  | 0.00020 mg/L  |                                            |               |       |           |       |           |       |
| Arsenic, total                                | < 0.00050  | 0.00050 mg/L  |                                            |               |       |           |       |           |       |
| Barium, total                                 | < 0.0050   | 0.0050 mg/L   |                                            |               |       |           |       |           |       |
| Beryllium, total                              | < 0.00010  | 0.00010 mg/L  |                                            |               |       |           |       |           |       |
| Bismuth, total                                | < 0.00010  | 0.00010 mg/L  |                                            |               |       |           |       |           |       |
| Boron, total                                  | < 0.0050   | 0.0050 mg/L   |                                            |               |       |           |       |           |       |
| Cadmium, total                                | < 0.000010 | 0.000010 mg/L |                                            |               |       |           |       |           |       |
| Calcium, total                                | < 0.20     | 0.20 mg/L     |                                            |               |       |           |       |           |       |
| Chromium, total                               | < 0.00050  | 0.00050 mg/L  |                                            |               |       |           |       |           |       |
| Cobalt, total                                 | < 0.00010  | 0.00010 mg/L  |                                            |               |       |           |       |           |       |
| Copper, total                                 | < 0.00040  | 0.00040 mg/L  |                                            |               |       |           |       |           |       |
| Iron, total                                   | < 0.010    | 0.010 mg/L    |                                            |               |       |           |       |           |       |
| Lead, total                                   | < 0.00020  | 0.00020 mg/L  |                                            |               |       |           |       |           |       |
| Lithium, total                                | < 0.00010  | 0.00010 mg/L  |                                            |               |       |           |       |           |       |
| Magnesium, total                              | < 0.010    | 0.010 mg/L    |                                            |               |       |           |       |           |       |
| Manganese, total                              | < 0.00020  | 0.00020 mg/L  |                                            |               |       |           |       |           |       |
| Molybdenum, total                             | < 0.00010  | 0.00010 mg/L  |                                            |               |       |           |       |           |       |
| Nickel, total                                 | < 0.00040  | 0.00040 mg/L  |                                            |               |       |           |       |           |       |
| Phosphorus, total                             | < 0.050    | 0.050 mg/L    |                                            |               |       |           |       |           |       |
| Potassium, total                              | < 0.10     | 0.10 mg/L     |                                            |               |       |           |       |           |       |
| Selenium, total                               | < 0.00050  | 0.00050 mg/L  |                                            |               |       |           |       |           |       |
| Silicon, total                                | < 1.0      | 1.0 mg/L      |                                            |               |       |           |       |           |       |
| Silver, total                                 | < 0.000050 | 0.000050 mg/L |                                            |               |       |           |       |           |       |
| Sodium, total                                 | < 0.10     | 0.10 mg/L     |                                            |               |       |           |       |           |       |
| Strontium, total                              | < 0.0010   | 0.0010 mg/L   |                                            |               |       |           |       |           |       |
| Sulfur, total                                 | < 3.0      | 3.0 mg/L      |                                            |               |       |           |       |           |       |
| Tellurium, total                              | < 0.00050  | 0.00050 mg/L  |                                            |               |       |           |       |           |       |
| Thallium, total                               | < 0.000020 | 0.000020 mg/L |                                            |               |       |           |       |           |       |
| Thorium, total                                | < 0.00010  | 0.00010 mg/L  |                                            |               |       |           |       |           |       |
| Tin, total                                    | < 0.00020  | 0.00020 mg/L  |                                            |               |       |           |       |           |       |
| Titanium, total                               | < 0.0050   | 0.0050 mg/L   |                                            |               |       |           |       |           |       |
| Uranium, total                                | < 0.000020 | 0.000020 mg/L |                                            |               |       |           |       |           |       |
| Vanadium, total                               | < 0.0010   | 0.0010 mg/L   |                                            |               |       |           |       |           |       |
| Zinc, total                                   | < 0.0040   | 0.0040 mg/L   |                                            |               |       |           |       |           |       |
| Zirconium, total                              | < 0.00010  | 0.00010 mg/L  |                                            |               |       |           |       |           |       |
| <b>LCS (B7J0113-BS1)</b>                      |            |               | Prepared: 2017-10-02, Analyzed: 2017-10-03 |               |       |           |       |           |       |
| Aluminum, total                               | 0.0228     | 0.0050 mg/L   | 0.0200                                     |               | 114   | 80-120    |       |           |       |
| Antimony, total                               | 0.0199     | 0.00020 mg/L  | 0.0200                                     |               | 100   | 80-120    |       |           |       |
| Arsenic, total                                | 0.0191     | 0.00050 mg/L  | 0.0200                                     |               | 95    | 80-120    |       |           |       |
| Barium, total                                 | 0.0190     | 0.0050 mg/L   | 0.0200                                     |               | 95    | 80-120    |       |           |       |
| Beryllium, total                              | 0.0209     | 0.00010 mg/L  | 0.0200                                     |               | 105   | 80-120    |       |           |       |
| Bismuth, total                                | 0.0207     | 0.00010 mg/L  | 0.0200                                     |               | 104   | 80-120    |       |           |       |
| Boron, total                                  | 0.0199     | 0.0050 mg/L   | 0.0200                                     |               | 99    | 80-120    |       |           |       |
| Cadmium, total                                | 0.0203     | 0.000010 mg/L | 0.0200                                     |               | 102   | 80-120    |       |           |       |
| Calcium, total                                | 2.07       | 0.20 mg/L     | 2.00                                       |               | 103   | 80-120    |       |           |       |
| Chromium, total                               | 0.0194     | 0.00050 mg/L  | 0.0200                                     |               | 97    | 80-120    |       |           |       |

## APPENDIX 1: QUALITY CONTROL DATA

**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 7092382  
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| Analyte                                       | Result | MRL Units     | Spike Level | Source Result | % REC                                      | REC Limit | % RPD | RPD Limit | Notes |
|-----------------------------------------------|--------|---------------|-------------|---------------|--------------------------------------------|-----------|-------|-----------|-------|
| <b>Total Metals, Batch B7J0113, Continued</b> |        |               |             |               |                                            |           |       |           |       |
| <b>LCS (B7J0113-BS1), Continued</b>           |        |               |             |               | Prepared: 2017-10-02, Analyzed: 2017-10-03 |           |       |           |       |
| Cobalt, total                                 | 0.0196 | 0.00010 mg/L  | 0.0200      |               | 98                                         | 80-120    |       |           |       |
| Copper, total                                 | 0.0207 | 0.00040 mg/L  | 0.0200      |               | 103                                        | 80-120    |       |           |       |
| Iron, total                                   | 1.98   | 0.010 mg/L    | 2.00        |               | 99                                         | 80-120    |       |           |       |
| Lead, total                                   | 0.0203 | 0.00020 mg/L  | 0.0200      |               | 102                                        | 80-120    |       |           |       |
| Lithium, total                                | 0.0214 | 0.00010 mg/L  | 0.0200      |               | 107                                        | 80-120    |       |           |       |
| Magnesium, total                              | 2.11   | 0.010 mg/L    | 2.00        |               | 106                                        | 80-120    |       |           |       |
| Manganese, total                              | 0.0203 | 0.00020 mg/L  | 0.0200      |               | 101                                        | 80-120    |       |           |       |
| Molybdenum, total                             | 0.0201 | 0.00010 mg/L  | 0.0200      |               | 101                                        | 80-120    |       |           |       |
| Nickel, total                                 | 0.0200 | 0.00040 mg/L  | 0.0200      |               | 100                                        | 80-120    |       |           |       |
| Phosphorus, total                             | 1.89   | 0.050 mg/L    | 2.00        |               | 95                                         | 80-120    |       |           |       |
| Potassium, total                              | 2.00   | 0.10 mg/L     | 2.00        |               | 100                                        | 80-120    |       |           |       |
| Selenium, total                               | 0.0209 | 0.00050 mg/L  | 0.0200      |               | 105                                        | 80-120    |       |           |       |
| Silicon, total                                | 2.1    | 1.0 mg/L      | 2.00        |               | 104                                        | 80-120    |       |           |       |
| Silver, total                                 | 0.0200 | 0.000050 mg/L | 0.0200      |               | 100                                        | 80-120    |       |           |       |
| Sodium, total                                 | 2.10   | 0.10 mg/L     | 2.40        |               | 87                                         | 80-120    |       |           |       |
| Strontium, total                              | 0.0198 | 0.0010 mg/L   | 0.0200      |               | 99                                         | 80-120    |       |           |       |
| Sulfur, total                                 | 5.6    | 3.0 mg/L      | 5.00        |               | 111                                        | 80-120    |       |           |       |
| Tellurium, total                              | 0.0193 | 0.00050 mg/L  | 0.0200      |               | 97                                         | 80-120    |       |           |       |
| Thallium, total                               | 0.0203 | 0.000020 mg/L | 0.0200      |               | 102                                        | 80-120    |       |           |       |
| Thorium, total                                | 0.0194 | 0.00010 mg/L  | 0.0200      |               | 97                                         | 80-120    |       |           |       |
| Tin, total                                    | 0.0204 | 0.00020 mg/L  | 0.0200      |               | 102                                        | 80-120    |       |           |       |
| Titanium, total                               | 0.0196 | 0.0050 mg/L   | 0.0200      |               | 98                                         | 80-120    |       |           |       |
| Uranium, total                                | 0.0204 | 0.000020 mg/L | 0.0200      |               | 102                                        | 80-120    |       |           |       |
| Vanadium, total                               | 0.0191 | 0.0010 mg/L   | 0.0200      |               | 95                                         | 80-120    |       |           |       |
| Zinc, total                                   | 0.0207 | 0.0040 mg/L   | 0.0200      |               | 104                                        | 80-120    |       |           |       |
| Zirconium, total                              | 0.0202 | 0.00010 mg/L  | 0.0200      |               | 101                                        | 80-120    |       |           |       |
| <b>Reference (B7J0113-SRM1)</b>               |        |               |             |               | Prepared: 2017-10-02, Analyzed: 2017-10-03 |           |       |           |       |
| Aluminum, total                               | 0.296  | 0.0050 mg/L   | 0.303       |               | 98                                         | 82-114    |       |           |       |
| Antimony, total                               | 0.0507 | 0.00020 mg/L  | 0.0511      |               | 99                                         | 88-115    |       |           |       |
| Arsenic, total                                | 0.114  | 0.00050 mg/L  | 0.118       |               | 97                                         | 88-111    |       |           |       |
| Barium, total                                 | 0.754  | 0.0050 mg/L   | 0.823       |               | 92                                         | 83-110    |       |           |       |
| Beryllium, total                              | 0.0526 | 0.00010 mg/L  | 0.0496      |               | 106                                        | 80-119    |       |           |       |
| Boron, total                                  | 3.37   | 0.0050 mg/L   | 3.45        |               | 98                                         | 80-118    |       |           |       |
| Cadmium, total                                | 0.0499 | 0.000010 mg/L | 0.0495      |               | 101                                        | 90-110    |       |           |       |
| Calcium, total                                | 11.5   | 0.20 mg/L     | 11.6        |               | 99                                         | 85-113    |       |           |       |
| Chromium, total                               | 0.249  | 0.00050 mg/L  | 0.250       |               | 100                                        | 88-111    |       |           |       |
| Cobalt, total                                 | 0.0379 | 0.00010 mg/L  | 0.0377      |               | 101                                        | 90-114    |       |           |       |
| Copper, total                                 | 0.506  | 0.00040 mg/L  | 0.486       |               | 104                                        | 90-117    |       |           |       |
| Iron, total                                   | 0.492  | 0.010 mg/L    | 0.488       |               | 101                                        | 90-116    |       |           |       |
| Lead, total                                   | 0.206  | 0.00020 mg/L  | 0.204       |               | 101                                        | 90-110    |       |           |       |
| Lithium, total                                | 0.431  | 0.00010 mg/L  | 0.403       |               | 107                                        | 79-118    |       |           |       |
| Magnesium, total                              | 3.98   | 0.010 mg/L    | 3.79        |               | 105                                        | 88-116    |       |           |       |
| Manganese, total                              | 0.108  | 0.00020 mg/L  | 0.109       |               | 99                                         | 88-108    |       |           |       |
| Molybdenum, total                             | 0.201  | 0.00010 mg/L  | 0.198       |               | 101                                        | 88-110    |       |           |       |
| Nickel, total                                 | 0.249  | 0.00040 mg/L  | 0.249       |               | 100                                        | 90-112    |       |           |       |
| Phosphorus, total                             | 0.210  | 0.050 mg/L    | 0.227       |               | 92                                         | 72-118    |       |           |       |
| Potassium, total                              | 7.37   | 0.10 mg/L     | 7.21        |               | 102                                        | 87-116    |       |           |       |
| Selenium, total                               | 0.128  | 0.00050 mg/L  | 0.121       |               | 106                                        | 90-122    |       |           |       |
| Sodium, total                                 | 7.86   | 0.10 mg/L     | 7.54        |               | 104                                        | 86-118    |       |           |       |
| Strontium, total                              | 0.376  | 0.0010 mg/L   | 0.375       |               | 100                                        | 86-110    |       |           |       |
| Thallium, total                               | 0.0825 | 0.000020 mg/L | 0.0805      |               | 103                                        | 90-113    |       |           |       |
| Uranium, total                                | 0.0306 | 0.000020 mg/L | 0.0306      |               | 100                                        | 88-112    |       |           |       |
| Vanadium, total                               | 0.382  | 0.0010 mg/L   | 0.386       |               | 99                                         | 87-110    |       |           |       |
| Zinc, total                                   | 2.53   | 0.0040 mg/L   | 2.49        |               | 102                                        | 90-113    |       |           |       |

## APPENDIX 1: QUALITY CONTROL DATA

**REPORTED TO** Allterra Construction  
**PROJECT** P17-932

**WORK ORDER** 7092382  
**REPORTED** 2017-10-03

**QC Qualifiers:**

HT2 The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is recommended.

## APPENDIX 2: ANALYTICAL SUMMARY

**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 7092382  
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|                       |                                                          | 7092382-01 | 7092382-02 | 7092382-03 | 7092382-04 | 7092382-05 | 7092382-06 |
|-----------------------|----------------------------------------------------------|------------|------------|------------|------------|------------|------------|
|                       |                                                          | Water      | Water      | Water      | Water      | Water      | Water      |
|                       |                                                          | 2017-09-25 | 2017-09-25 | 2017-09-25 | 2017-09-25 | 2017-09-25 | 2017-09-25 |
|                       |                                                          | SHA-SW1    | DUP SW1    | MW6        | MW2        | MW3S       | MW3D       |
| Anions                | Chloride (mg/L)                                          | 49.4       | 47.9       | 39.3       | 4.80       | 6.47       | 2.62       |
|                       | Fluoride (mg/L)                                          | < 0.10     | < 0.10     | < 0.10     | 0.26       | 0.22       | 0.25       |
|                       | Nitrate (as N) (mg/L)                                    | 0.476      | 0.498      | 0.018      | 0.165      | < 0.010    | 0.015      |
|                       | Nitrite (as N) (mg/L)                                    | < 0.010    | < 0.010    | < 0.010    | < 0.010    | < 0.010    | < 0.010    |
|                       | Sulfate (mg/L)                                           | 122        | 124        | 83.3       | < 1.0      | 44.3       | 22.0       |
| General Parameters    | Alkalinity, Total (as CaCO <sub>3</sub> ) (mg/L)         | 206        | 197        | 640        | 111        | 128        | 106        |
|                       | Alkalinity, Phenolphthalein (as CaCO <sub>3</sub> ) (mg/ | < 1.0      | < 1.0      | < 1.0      | < 1.0      | < 1.0      | < 1.0      |
|                       | Alkalinity, Bicarbonate (as CaCO <sub>3</sub> ) (mg/L)   | 206        | 197        | 640        | 111        | 128        | 106        |
|                       | Alkalinity, Carbonate (as CaCO <sub>3</sub> ) (mg/L)     | < 1.0      | < 1.0      | < 1.0      | < 1.0      | < 1.0      | < 1.0      |
|                       | Alkalinity, Hydroxide (as CaCO <sub>3</sub> ) (mg/L)     | < 1.0      | < 1.0      | < 1.0      | < 1.0      | < 1.0      | < 1.0      |
|                       | Chromium, Hexavalent (mg/L)                              | < 0.0010   | < 0.0010   |            |            |            |            |
|                       | Colour, True (CU)                                        | 5.5        | 5.5        | 6.2        | < 5.0      | < 5.0      | 7.0        |
|                       | Conductivity (EC) (uS/cm)                                | 759        | 761        | 1330       | 251        | 342        | 250        |
|                       | pH (pH units)                                            | 7.71       | 7.72       | 7.31       | 7.58       | 7.58       | 7.63       |
|                       | Solids, Total Suspended (mg/L)                           | 5.6        | 4.2        | 14.8       | 29.4       | 6.8        | 77.0       |
|                       | Turbidity (NTU)                                          | 0.95       | 0.90       | 10.6       | 7.79       | 3.96       | 31.6       |
| Calculated Parameters | Chromium, Trivalent (mg/L)                               | < 0.00100  | < 0.00100  |            |            |            |            |
|                       | Hardness, Total (as CaCO <sub>3</sub> ) (mg/L)           | 361        | 357        | 599        | 126        | 138        | 99.9       |
| Dissolved Metals      | Aluminum, dissolved (mg/L)                               | < 0.0050   | < 0.0050   | < 0.0050   | < 0.0050   | < 0.0050   | < 0.0050   |
|                       | Antimony, dissolved (mg/L)                               | < 0.00020  | < 0.00020  | < 0.00020  | < 0.00020  | < 0.00020  | 0.00037    |
|                       | Arsenic, dissolved (mg/L)                                | < 0.00050  | < 0.00050  | 0.00445    | 0.00193    | 0.00073    | 0.00132    |
|                       | Barium, dissolved (mg/L)                                 | 0.0253     | 0.0251     | 0.0960     | 0.0260     | 0.0302     | 0.0161     |
|                       | Beryllium, dissolved (mg/L)                              | < 0.00010  | < 0.00010  | < 0.00010  | < 0.00010  | < 0.00010  | < 0.00010  |
|                       | Bismuth, dissolved (mg/L)                                | < 0.00010  | < 0.00010  | < 0.00010  | < 0.00010  | < 0.00010  | < 0.00010  |
|                       | Boron, dissolved (mg/L)                                  | 0.0313     | 0.0300     | 0.0939     | 0.0303     | 0.0238     | 0.0262     |
|                       | Cadmium, dissolved (mg/L)                                | 0.000010   | < 0.000010 | < 0.000010 | < 0.000010 | 0.000024   | 0.000013   |
|                       | Calcium, dissolved (mg/L)                                | 117        | 115        | 178        | 38.5       | 44.2       | 31.1       |
|                       | Chromium, dissolved (mg/L)                               | < 0.00050  | < 0.00050  | < 0.00050  | < 0.00050  | < 0.00050  | < 0.00050  |
|                       | Cobalt, dissolved (mg/L)                                 | 0.00010    | < 0.00010  | 0.00233    | 0.00039    | 0.00044    | 0.00039    |
|                       | Copper, dissolved (mg/L)                                 | 0.00112    | 0.00114    | < 0.00040  | < 0.00040  | < 0.00040  | < 0.00040  |
|                       | Iron, dissolved (mg/L)                                   | < 0.010    | < 0.010    | 0.988      | 0.207      | 0.025      | 0.119      |
|                       | Lead, dissolved (mg/L)                                   | < 0.00020  | < 0.00020  | < 0.00020  | < 0.00020  | < 0.00020  | < 0.00020  |
|                       | Lithium, dissolved (mg/L)                                | 0.00016    | 0.00015    | 0.0146     | < 0.00010  | < 0.00010  | < 0.00010  |
|                       | Magnesium, dissolved (mg/L)                              | 16.5       | 16.7       | 37.1       | 7.29       | 6.82       | 5.37       |
|                       | Manganese, dissolved (mg/L)                              | 0.0384     | 0.0367     | 2.30       | 0.632      | 0.265      | 0.324      |
|                       | Mercury, dissolved (mg/L)                                | < 0.000010 | < 0.000010 | < 0.000010 | < 0.000010 | < 0.000010 | < 0.000010 |
|                       | Molybdenum, dissolved (mg/L)                             | 0.00229    | 0.00222    | 0.00083    | 0.00444    | 0.00601    | 0.00688    |
|                       | Nickel, dissolved (mg/L)                                 | 0.00076    | 0.00075    | 0.00482    | 0.00127    | 0.00199    | 0.00185    |
|                       | Phosphorus, dissolved (mg/L)                             | < 0.050    | < 0.050    | < 0.050    | 0.131      | 0.057      | 0.093      |
|                       | Potassium, dissolved (mg/L)                              | 1.72       | 1.67       | 4.44       | 0.71       | 0.97       | 0.63       |
|                       | Selenium, dissolved (mg/L)                               | < 0.00050  | < 0.00050  | < 0.00050  | < 0.00050  | < 0.00050  | < 0.00050  |
|                       | Silicon, dissolved (mg/L)                                | 7.8        | 7.8        | 12.2       | 7.0        | 6.1        | 6.1        |
|                       | Silver, dissolved (mg/L)                                 | < 0.000050 | < 0.000050 | < 0.000050 | < 0.000050 | < 0.000050 | < 0.000050 |
|                       | Sodium, dissolved (mg/L)                                 | 18.6       | 18.7       | 91.8       | 9.58       | 15.3       | 11.7       |

## APPENDIX 2: ANALYTICAL SUMMARY

**REPORTED TO PROJECT** Allterra Construction  
P17-932

**WORK ORDER REPORTED** 7092382  
2017-10-03

|                  |                             | 7092382-01 | 7092382-02 | 7092382-03 | 7092382-04 | 7092382-05 | 7092382-06 |
|------------------|-----------------------------|------------|------------|------------|------------|------------|------------|
|                  |                             | Water      | Water      | Water      | Water      | Water      | Water      |
|                  |                             | 2017-09-25 | 2017-09-25 | 2017-09-25 | 2017-09-25 | 2017-09-25 | 2017-09-25 |
|                  |                             | SHA-SW1    | DUP SW1    | MW6        | MW2        | MW3S       | MW3D       |
| Dissolved Metals | Strontium, dissolved (mg/L) | 0.359      | 0.359      | 0.616      | 0.167      | 0.221      | 0.190      |
|                  | Sulfur, dissolved (mg/L)    | 42.5       | 42.6       | 29.6       | 7.7        | 14.4       | 8.6        |
|                  | Tellurium, dissolved (mg/L) | < 0.00050  | < 0.00050  | < 0.00050  | < 0.00050  | < 0.00050  | < 0.00050  |
|                  | Thallium, dissolved (mg/L)  | < 0.000020 | < 0.000020 | 0.000027   | < 0.000020 | 0.000023   | < 0.000020 |
|                  | Thorium, dissolved (mg/L)   | < 0.00010  | < 0.00010  | < 0.00010  | < 0.00010  | < 0.00010  | < 0.00010  |
|                  | Tin, dissolved (mg/L)       | < 0.00020  | < 0.00020  | 0.00027    | < 0.00020  | < 0.00020  | < 0.00020  |
|                  | Titanium, dissolved (mg/L)  | < 0.0050   | < 0.0050   | < 0.0050   | < 0.0050   | < 0.0050   | < 0.0050   |
|                  | Uranium, dissolved (mg/L)   | 0.00289    | 0.00286    | 0.00916    | 0.00102    | 0.00117    | 0.000718   |
|                  | Vanadium, dissolved (mg/L)  | < 0.0010   | < 0.0010   | < 0.0010   | < 0.0010   | < 0.0010   | < 0.0010   |
|                  | Zinc, dissolved (mg/L)      | < 0.0040   | 0.0067     | < 0.0040   | 0.0219     | < 0.0040   | < 0.0040   |
|                  | Zirconium, dissolved (mg/L) | < 0.00010  | < 0.00010  | 0.00023    | < 0.00010  | < 0.00010  | < 0.00010  |
| Total Metals     | Aluminum, total (mg/L)      | 0.0303     | 0.0255     | 0.0272     | 0.849      | 0.0507     | 0.215      |
|                  | Antimony, total (mg/L)      | < 0.00020  | < 0.00020  | 0.00026    | < 0.00020  | < 0.00020  | 0.00021    |
|                  | Arsenic, total (mg/L)       | < 0.00050  | < 0.00050  | 0.00373    | 0.00187    | 0.00073    | 0.00138    |
|                  | Barium, total (mg/L)        | 0.0255     | 0.0259     | 0.0892     | 0.0315     | 0.0360     | 0.0217     |
|                  | Beryllium, total (mg/L)     | < 0.00010  | < 0.00010  | < 0.00010  | < 0.00010  | < 0.00010  | < 0.00010  |
|                  | Bismuth, total (mg/L)       | < 0.00010  | < 0.00010  | < 0.00010  | < 0.00010  | < 0.00010  | < 0.00010  |
|                  | Boron, total (mg/L)         | 0.0548     | 0.0372     | 0.0872     | 0.0318     | 0.0264     | 0.0294     |
|                  | Cadmium, total (mg/L)       | 0.000012   | < 0.000010 | 0.000017   | 0.000071   | 0.000394   | 0.000292   |
|                  | Calcium, total (mg/L)       | 123        | 125        | 186        | 39.5       | 49.6       | 35.9       |
|                  | Chromium, total (mg/L)      | < 0.00050  | < 0.00050  | < 0.00050  | 0.00133    | 0.00059    | < 0.00050  |
|                  | Cobalt, total (mg/L)        | 0.00025    | 0.00023    | 0.00222    | 0.00098    | 0.00045    | 0.00047    |
|                  | Copper, total (mg/L)        | 0.00150    | 0.00144    | 0.00072    | 0.00109    | 0.00126    | 0.00057    |
|                  | Iron, total (mg/L)          | 0.029      | 0.024      | 0.896      | 1.44       | 0.058      | 0.200      |
|                  | Lead, total (mg/L)          | < 0.00020  | < 0.00020  | 0.00029    | 0.00024    | < 0.00020  | < 0.00020  |
|                  | Lithium, total (mg/L)       | 0.00032    | 0.00022    | 0.0132     | 0.00024    | 0.00015    | 0.00020    |
|                  | Magnesium, total (mg/L)     | 17.0       | 17.1       | 37.1       | 7.62       | 7.39       | 6.00       |
|                  | Manganese, total (mg/L)     | 0.120      | 0.108      | 2.12       | 0.508      | 0.289      | 0.323      |
|                  | Mercury, total (mg/L)       | < 0.000010 | < 0.000010 | < 0.000010 | < 0.000010 | < 0.000010 | < 0.000010 |
|                  | Molybdenum, total (mg/L)    | 0.00235    | 0.00237    | 0.00084    | 0.00426    | 0.00656    | 0.00754    |
|                  | Nickel, total (mg/L)        | 0.00090    | 0.00084    | 0.00495    | 0.00202    | 0.00207    | 0.00230    |
|                  | Phosphorus, total (mg/L)    | < 0.050    | < 0.050    | < 0.050    | 0.201      | 0.066      | 0.104      |
|                  | Potassium, total (mg/L)     | 1.72       | 1.73       | 4.16       | 0.75       | 1.06       | 0.71       |
|                  | Selenium, total (mg/L)      | < 0.00050  | < 0.00050  | < 0.00050  | < 0.00050  | < 0.00050  | < 0.00050  |
|                  | Silicon, total (mg/L)       | 7.8        | 8.0        | 12.0       | 8.2        | 6.6        | 7.3        |
|                  | Silver, total (mg/L)        | < 0.000050 | < 0.000050 | < 0.000050 | < 0.000050 | < 0.000050 | < 0.000050 |
|                  | Sodium, total (mg/L)        | 18.6       | 18.6       | 74.0       | 9.28       | 16.3       | 12.7       |
|                  | Strontium, total (mg/L)     | 0.374      | 0.376      | 0.601      | 0.168      | 0.240      | 0.209      |
|                  | Sulfur, total (mg/L)        | 45.6       | 45.5       | 27.8       | 7.4        | 15.6       | 9.5        |
|                  | Tellurium, total (mg/L)     | < 0.00050  | < 0.00050  | < 0.00050  | < 0.00050  | < 0.00050  | < 0.00050  |
|                  | Thallium, total (mg/L)      | < 0.000020 | < 0.000020 | 0.000022   | 0.000021   | 0.000025   | 0.000023   |
|                  | Thorium, total (mg/L)       | < 0.00010  | < 0.00010  | < 0.00010  | 0.00011    | < 0.00010  | 0.00036    |
|                  | Tin, total (mg/L)           | < 0.00020  | < 0.00020  | 0.00067    | 0.00020    | 0.00027    | 0.00030    |
|                  | Titanium, total (mg/L)      | < 0.0050   | < 0.0050   | < 0.0050   | 0.0460     | < 0.0050   | < 0.0050   |
|                  | Uranium, total (mg/L)       | 0.00294    | 0.00302    | 0.00855    | 0.00101    | 0.00131    | 0.000911   |

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|                                        |                                    | 7092382-01 | 7092382-02 | 7092382-03 | 7092382-04 | 7092382-05 | 7092382-06 |
|----------------------------------------|------------------------------------|------------|------------|------------|------------|------------|------------|
|                                        |                                    | Water      | Water      | Water      | Water      | Water      | Water      |
|                                        |                                    | 2017-09-25 | 2017-09-25 | 2017-09-25 | 2017-09-25 | 2017-09-25 | 2017-09-25 |
|                                        |                                    | SHA-SW1    | DUP SW1    | MW6        | MW2        | MW3S       | MW3D       |
| Total Metals                           | Vanadium, total (mg/L)             | < 0.0010   | < 0.0010   | < 0.0010   | 0.0033     | < 0.0010   | < 0.0010   |
|                                        | Zinc, total (mg/L)                 | < 0.0040   | < 0.0040   | 0.0051     | 0.0052     | < 0.0040   | < 0.0040   |
|                                        | Zirconium, total (mg/L)            | < 0.00010  | < 0.00010  | 0.00017    | 0.00020    | < 0.00010  | 0.00022    |
| BCMOE Aggregate Hydrocarbons           | EPHw10-19 (ug/L)                   | < 250      | < 250      | < 250      | < 250      | < 250      | < 250      |
|                                        | EPHw19-32 (ug/L)                   | < 250      | < 250      | < 250      | < 250      | < 250      | < 250      |
|                                        | LEPHw (ug/L)                       | < 250      | < 250      | < 250      | < 250      | < 250      | < 250      |
|                                        | HEPHw (ug/L)                       | < 250      | < 250      | < 250      | < 250      | < 250      | < 250      |
|                                        | Sur: 2-Methylnonane (EPH/F2-4) (%) | 92         | 96         | 93         | 90         | 96         | 93         |
| Polycyclic Aromatic Hydrocarbons (PAH) | Acenaphthene (ug/L)                | < 0.050    | < 0.050    | < 0.050    | < 0.050    | < 0.050    | < 0.050    |
|                                        | Acenaphthylene (ug/L)              | < 0.200    | < 0.200    | < 0.200    | < 0.200    | < 0.200    | < 0.200    |
|                                        | Acridine (ug/L)                    | < 0.050    | < 0.050    | < 0.050    | < 0.050    | < 0.050    | < 0.050    |
|                                        | Anthracene (ug/L)                  | < 0.010    | < 0.010    | < 0.010    | < 0.010    | < 0.010    | < 0.010    |
|                                        | Benz(a)anthracene (ug/L)           | < 0.010    | < 0.010    | < 0.010    | < 0.010    | < 0.010    | < 0.010    |
|                                        | Benzo(a)pyrene (ug/L)              | < 0.010    | < 0.010    | < 0.010    | < 0.010    | < 0.010    | < 0.010    |
|                                        | Benzo(b)fluoranthene (ug/L)        | < 0.050    | < 0.050    | < 0.050    | < 0.050    | < 0.050    | < 0.050    |
|                                        | Benzo(b+j)fluoranthene (ug/L)      | < 0.050    | < 0.050    | < 0.050    | < 0.050    | < 0.050    | < 0.050    |
|                                        | Benzo(g,h,i)perylene (ug/L)        | < 0.050    | < 0.050    | < 0.050    | < 0.050    | < 0.050    | < 0.050    |
|                                        | Benzo(k)fluoranthene (ug/L)        | < 0.050    | < 0.050    | < 0.050    | < 0.050    | < 0.050    | < 0.050    |
|                                        | Chrysene (ug/L)                    | < 0.050    | < 0.050    | < 0.050    | < 0.050    | < 0.050    | < 0.050    |
|                                        | Dibenz(a,h)anthracene (ug/L)       | < 0.010    | < 0.010    | < 0.010    | < 0.010    | < 0.010    | < 0.010    |
|                                        | Fluoranthene (ug/L)                | < 0.030    | < 0.030    | < 0.030    | < 0.030    | < 0.030    | < 0.030    |
|                                        | Fluorene (ug/L)                    | < 0.050    | < 0.050    | < 0.050    | < 0.050    | < 0.050    | < 0.050    |
|                                        | Indeno(1,2,3-cd)pyrene (ug/L)      | < 0.050    | < 0.050    | < 0.050    | < 0.050    | < 0.050    | < 0.050    |
|                                        | Naphthalene (ug/L)                 | < 0.200    | < 0.200    | < 0.200    | < 0.200    | < 0.200    | < 0.200    |
|                                        | Phenanthrene (ug/L)                | < 0.100    | < 0.100    | < 0.100    | < 0.100    | < 0.100    | < 0.100    |
|                                        | Pyrene (ug/L)                      | < 0.020    | < 0.020    | < 0.020    | < 0.020    | < 0.020    | < 0.020    |
|                                        | Quinoline (ug/L)                   | < 0.050    | < 0.050    | < 0.050    | < 0.050    | < 0.050    | < 0.050    |
|                                        | Sur: Acridine-d9 (%)               | 95         | 96         | 117        | 117        | 114        | 112        |
|                                        | Sur: Naphthalene-d8 (%)            | 120        | 117        | 122        | 119        | 117        | 117        |
|                                        | Sur: Perylene-d12 (%)              | 120        | 84         | 79         | 115        | 105        | 114        |

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|                       |                                                          | 7092382-07 |
|-----------------------|----------------------------------------------------------|------------|
|                       |                                                          | Water      |
|                       |                                                          | 2017-09-25 |
|                       |                                                          | FB         |
| Anions                | Chloride (mg/L)                                          | < 0.10     |
|                       | Fluoride (mg/L)                                          | < 0.10     |
|                       | Nitrate (as N) (mg/L)                                    | < 0.010    |
|                       | Nitrite (as N) (mg/L)                                    | < 0.010    |
|                       | Sulfate (mg/L)                                           | < 1.0      |
| General Parameters    | Alkalinity, Total (as CaCO <sub>3</sub> ) (mg/L)         | < 1.0      |
|                       | Alkalinity, Phenolphthalein (as CaCO <sub>3</sub> ) (mg/ | < 1.0      |
|                       | Alkalinity, Bicarbonate (as CaCO <sub>3</sub> ) (mg/L)   | < 1.0      |
|                       | Alkalinity, Carbonate (as CaCO <sub>3</sub> ) (mg/L)     | < 1.0      |
|                       | Alkalinity, Hydroxide (as CaCO <sub>3</sub> ) (mg/L)     | < 1.0      |
|                       | Colour, True (CU)                                        | < 5.0      |
|                       | Conductivity (EC) (uS/cm)                                | < 2.0      |
|                       | pH (pH units)                                            | 6.13       |
|                       | Solids, Total Suspended (mg/L)                           | < 2.0      |
|                       | Turbidity (NTU)                                          | < 0.10     |
| Calculated Parameters | Hardness, Total (as CaCO <sub>3</sub> ) (mg/L)           | < 0.500    |
| Dissolved Metals      | Aluminum, dissolved (mg/L)                               | < 0.0050   |
|                       | Antimony, dissolved (mg/L)                               | < 0.00020  |
|                       | Arsenic, dissolved (mg/L)                                | < 0.00050  |
|                       | Barium, dissolved (mg/L)                                 | < 0.0050   |
|                       | Beryllium, dissolved (mg/L)                              | < 0.00010  |
|                       | Bismuth, dissolved (mg/L)                                | < 0.00010  |
|                       | Boron, dissolved (mg/L)                                  | < 0.0050   |
|                       | Cadmium, dissolved (mg/L)                                | < 0.000010 |
|                       | Calcium, dissolved (mg/L)                                | < 0.20     |
|                       | Chromium, dissolved (mg/L)                               | < 0.00050  |
|                       | Cobalt, dissolved (mg/L)                                 | < 0.00010  |
|                       | Copper, dissolved (mg/L)                                 | < 0.00040  |
|                       | Iron, dissolved (mg/L)                                   | < 0.010    |
|                       | Lead, dissolved (mg/L)                                   | < 0.00020  |
|                       | Lithium, dissolved (mg/L)                                | < 0.00010  |
|                       | Magnesium, dissolved (mg/L)                              | < 0.010    |
|                       | Manganese, dissolved (mg/L)                              | < 0.00020  |
|                       | Mercury, dissolved (mg/L)                                | < 0.000010 |
|                       | Molybdenum, dissolved (mg/L)                             | < 0.00010  |
|                       | Nickel, dissolved (mg/L)                                 | < 0.00040  |
|                       | Phosphorus, dissolved (mg/L)                             | < 0.050    |
|                       | Potassium, dissolved (mg/L)                              | < 0.10     |
|                       | Selenium, dissolved (mg/L)                               | < 0.00050  |
|                       | Silicon, dissolved (mg/L)                                | < 1.0      |
|                       | Silver, dissolved (mg/L)                                 | < 0.000050 |
|                       | Sodium, dissolved (mg/L)                                 | < 0.10     |
|                       | Strontium, dissolved (mg/L)                              | < 0.0010   |
|                       | Sulfur, dissolved (mg/L)                                 | < 3.0      |

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|                  |                             | 7092382-07 |
|------------------|-----------------------------|------------|
|                  |                             | Water      |
|                  |                             | 2017-09-25 |
|                  |                             | FB         |
| Dissolved Metals | Tellurium, dissolved (mg/L) | < 0.00050  |
|                  | Thallium, dissolved (mg/L)  | < 0.000020 |
|                  | Thorium, dissolved (mg/L)   | < 0.00010  |
|                  | Tin, dissolved (mg/L)       | < 0.00020  |
|                  | Titanium, dissolved (mg/L)  | < 0.0050   |
|                  | Uranium, dissolved (mg/L)   | < 0.000020 |
|                  | Vanadium, dissolved (mg/L)  | < 0.0010   |
|                  | Zinc, dissolved (mg/L)      | < 0.0040   |
|                  | Zirconium, dissolved (mg/L) | < 0.00010  |
| Total Metals     | Aluminum, total (mg/L)      | < 0.0050   |
|                  | Antimony, total (mg/L)      | < 0.00020  |
|                  | Arsenic, total (mg/L)       | < 0.00050  |
|                  | Barium, total (mg/L)        | < 0.0050   |
|                  | Beryllium, total (mg/L)     | < 0.00010  |
|                  | Bismuth, total (mg/L)       | < 0.00010  |
|                  | Boron, total (mg/L)         | < 0.0050   |
|                  | Cadmium, total (mg/L)       | < 0.000010 |
|                  | Calcium, total (mg/L)       | < 0.20     |
|                  | Chromium, total (mg/L)      | < 0.00050  |
|                  | Cobalt, total (mg/L)        | < 0.00010  |
|                  | Copper, total (mg/L)        | < 0.00040  |
|                  | Iron, total (mg/L)          | < 0.010    |
|                  | Lead, total (mg/L)          | < 0.00020  |
|                  | Lithium, total (mg/L)       | < 0.00010  |
|                  | Magnesium, total (mg/L)     | < 0.010    |
|                  | Manganese, total (mg/L)     | < 0.00020  |
|                  | Mercury, total (mg/L)       | < 0.000010 |
|                  | Molybdenum, total (mg/L)    | < 0.00010  |
|                  | Nickel, total (mg/L)        | < 0.00040  |
|                  | Phosphorus, total (mg/L)    | < 0.050    |
|                  | Potassium, total (mg/L)     | < 0.10     |
|                  | Selenium, total (mg/L)      | < 0.00050  |
|                  | Silicon, total (mg/L)       | < 1.0      |
|                  | Silver, total (mg/L)        | < 0.000050 |
|                  | Sodium, total (mg/L)        | < 0.10     |
|                  | Strontium, total (mg/L)     | < 0.0010   |
|                  | Sulfur, total (mg/L)        | < 3.0      |
|                  | Tellurium, total (mg/L)     | < 0.00050  |
|                  | Thallium, total (mg/L)      | < 0.000020 |
|                  | Thorium, total (mg/L)       | < 0.00010  |
|                  | Tin, total (mg/L)           | < 0.00020  |
|                  | Titanium, total (mg/L)      | < 0.0050   |
|                  | Uranium, total (mg/L)       | < 0.000020 |
|                  | Vanadium, total (mg/L)      | < 0.0010   |
|                  | Zinc, total (mg/L)          | < 0.0040   |

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|                                        |                                    | 7092382-07 |
|----------------------------------------|------------------------------------|------------|
|                                        |                                    | Water      |
|                                        |                                    | 2017-09-25 |
|                                        |                                    | FB         |
| Total Metals                           | Zirconium, total (mg/L)            | < 0.00010  |
| BCMOE Aggregate Hydrocarbons           | EPHw10-19 (ug/L)                   | < 250      |
|                                        | EPHw19-32 (ug/L)                   | < 250      |
|                                        | LEPHw (ug/L)                       | < 250      |
|                                        | HEPHw (ug/L)                       | < 250      |
|                                        | Sur: 2-Methylnonane (EPH/F2-4) (%) | 92         |
| Polycyclic Aromatic Hydrocarbons (PAH) | Acenaphthene (ug/L)                | < 0.050    |
|                                        | Acenaphthylene (ug/L)              | < 0.200    |
|                                        | Acridine (ug/L)                    | < 0.050    |
|                                        | Anthracene (ug/L)                  | < 0.010    |
|                                        | Benz(a)anthracene (ug/L)           | < 0.010    |
|                                        | Benzo(a)pyrene (ug/L)              | < 0.010    |
|                                        | Benzo(b)fluoranthene (ug/L)        | < 0.050    |
|                                        | Benzo(b+j)fluoranthene (ug/L)      | < 0.050    |
|                                        | Benzo(g,h,i)perylene (ug/L)        | < 0.050    |
|                                        | Benzo(k)fluoranthene (ug/L)        | < 0.050    |
|                                        | Chrysene (ug/L)                    | < 0.050    |
|                                        | Dibenz(a,h)anthracene (ug/L)       | < 0.010    |
|                                        | Fluoranthene (ug/L)                | < 0.030    |
|                                        | Fluorene (ug/L)                    | < 0.050    |
|                                        | Indeno(1,2,3-cd)pyrene (ug/L)      | < 0.050    |
|                                        | Naphthalene (ug/L)                 | < 0.200    |
|                                        | Phenanthrene (ug/L)                | < 0.100    |
|                                        | Pyrene (ug/L)                      | < 0.020    |
|                                        | Quinoline (ug/L)                   | < 0.050    |
|                                        | Sur: Acridine-d9 (%)               | 110        |
|                                        | Sur: Naphthalene-d8 (%)            | 117        |
|                                        | Sur: Perylene-d12 (%)              | 121        |



|                                                            |                                                                                                              |                                                                                                                 |                                                      |                   |                   |           |
|------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|------------------------------------------------------|-------------------|-------------------|-----------|
|                                                            |                                                                                                              |                                                                                                                 | SHA-LE-1                                             | SHA-SW-1          | SHA-SW-1          | RPD       |
| Table 1: Analytical Results for Nutrients in Surface Water |                                                                                                              |                                                                                                                 | 7090659-01                                           | 7092382-01        | 7092382-02        |           |
| Laboratory ID                                              | BC DRINKING WATER QUALITY GUIDELINES                                                                         | BC FRESHWATER AQUATIC LIFE WATER QUALITY GUIDELINES                                                             | SHA-LE-1                                             | SHA-SW1           | DUP SW1           |           |
| Sample ID                                                  |                                                                                                              |                                                                                                                 | 2017-09-07                                           | 2017-09-25        | 2017-09-25        |           |
| Date Sampled/Time                                          |                                                                                                              |                                                                                                                 |                                                      |                   |                   |           |
| Physical Tests                                             |                                                                                                              |                                                                                                                 |                                                      |                   |                   |           |
| Colour, True (Colour Units)                                | 15 TCU                                                                                                       | 15 <sup>(1)</sup> units absolute, or 5 units above background (30-day average)                                  | 10                                                   | 5.5               | 5.5               | *         |
| Total Dissolved Solids (mg/L)                              | -                                                                                                            | -                                                                                                               |                                                      |                   |                   |           |
| Total Suspended Solids (mg/L)                              | -                                                                                                            | 25 mg/L above background (24-hr during                                                                          | 8.6                                                  | 5.6               | 4.2               | *         |
| pH                                                         | 7-10.5                                                                                                       | 6.5-9                                                                                                           | 7.7                                                  | 7.71              | 7.72              | 0.13%     |
| Conductivity (uS/cm)                                       | -                                                                                                            | -                                                                                                               | 16700                                                | 759               | 761               | 0.26%     |
| Hardness (as CaCO3)                                        | -                                                                                                            | -                                                                                                               | 5150                                                 | 361               | 357               | 1.11%     |
| Turbidity (NTU)                                            | 1 NTU                                                                                                        | 8 NTU above background (24-hr during clear flow                                                                 | -                                                    | 0.95              | 0.9               | 5.41%     |
|                                                            | 5 NTU at any time when background is 8 - 50 NTU during high flows or in turbid waters                        | Change from background of 5 NTU at any time when background is 8 - 50 NTU during high flows or in turbid waters | -                                                    |                   |                   |           |
| Anions and Nutrients mg/L                                  |                                                                                                              |                                                                                                                 |                                                      |                   |                   |           |
| Alkalinity Total (as CaCO3)                                | <10 high sensitivity to acid inputs<br>moderate sensitivity to acid inputs<br>low sensitivity to acid inputs | 10-20                                                                                                           | 106                                                  | 206               | 197               | 4.47%     |
| Acid Sensitivity                                           |                                                                                                              | >20                                                                                                             | Low                                                  | Low               | Low               |           |
| Chloride (Cl)                                              |                                                                                                              | 250 mg/L                                                                                                        | 600 mg/L (instant max),<br>150 mg/L (30-day average) | 5080              | 49.4              | 47.9      |
| Fluoride (F)                                               | 1.5 mg/L (instant max)<br>1.0 mg/L (30-day average)                                                          | 0.4 (Hardness <10mg/L)<br><br>Hardness-Dependent AW (Hardness is >10mg/L) <sup>(1)</sup>                        | <0.10<br><br>0.35                                    | <0.10<br><br>0.18 | <0.10<br><br>0.06 | *<br><br> |
| Nitrate (as N)                                             | 45 mg/L                                                                                                      | 32.8 mg/L (instant maximum)<br>3.0 mg/L (30-day average)                                                        | 0.744                                                | 0.476             | 0.498             | 4.52%     |
| Nitrite (as N) <sup>(2)</sup>                              | 3 mg/L                                                                                                       | Cl > 10 mg/L 0.6 mg/L (MAX), 0.2 mg/L (30-day average)                                                          | <0.010                                               | <0.010            | <0.010            | *         |
| Sulfate (SO4) H 0-30 mg/L                                  | 500 mg/L                                                                                                     | 128 mg/L (30-day average)                                                                                       |                                                      |                   |                   |           |
| H 31 - 75 mg/L                                             |                                                                                                              | 218 mg/L (30-day average)                                                                                       |                                                      |                   |                   |           |
| H 76 - 180 mg/L                                            |                                                                                                              | 309 mg/L (30-day average)                                                                                       |                                                      |                   |                   |           |
| H 181 - 250 mg/L                                           |                                                                                                              | 429 mg/L (30-day average)                                                                                       |                                                      |                   |                   |           |
| H > 250 mg/L                                               |                                                                                                              | TBD                                                                                                             | 22000                                                | 122               | 124               | 1.63%     |

Notes: Refer to Table Endnotes (attached)

| Table 2: Analytical Results for Total Metals in Surface Water |                                         |                                                                                                                                                                    | SHA-LE-1         | SHA-SW-1        | SHA-SW-1         | RPD    |
|---------------------------------------------------------------|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------|------------------|--------|
| Laboratory ID                                                 | BC DRINKING WATER<br>QUALITY GUIDELINES | BC FRESHWATER AQUATIC LIFE WATER QUALITY<br>GUIDELINES                                                                                                             | 7090659-01       | 7092382-01      | 7092382-02       |        |
| Sample ID                                                     |                                         |                                                                                                                                                                    | SHA-LE-1         | SHA-SW1         | DUP SW1          |        |
| Date Sampled/Time                                             |                                         |                                                                                                                                                                    | 2017-09-07       | 2017-09-25      | 2017-09-25       |        |
| Physical Tests                                                |                                         |                                                                                                                                                                    |                  |                 |                  |        |
| Hardness (as CaCO3) (mg/L)                                    | -                                       | -                                                                                                                                                                  | 5150             | 361             | 357              | 1.11%  |
| pH                                                            | 7-10.5                                  | 6.5-9                                                                                                                                                              | 7.7              | 7.71            | 7.72             | 0.13%  |
| Total Metals (mg/L)                                           |                                         |                                                                                                                                                                    |                  |                 |                  |        |
| Aluminum (Al)-Total                                           | 0.2                                     | -                                                                                                                                                                  | 0.154            | 0.0303          | 0.0255           | 17.20% |
| Antimony (Sb)-Total                                           | -                                       | -                                                                                                                                                                  | 0.00021          | <0.00020        | <0.00020         | *      |
| Arsenic (As)-Total                                            | 0.01                                    | 0.005                                                                                                                                                              | 0.00062          | <0.00050        | <0.00050         | *      |
| Barium (Ba)-Total                                             | -                                       | -                                                                                                                                                                  | 0.132            | 0.0255          | 0.0259           | 1.56%  |
| Beryllium (Be)-Total                                          | -                                       | -                                                                                                                                                                  | <0.00010         | <0.00010        | <0.00010         | *      |
| Bismuth, total                                                | -                                       | -                                                                                                                                                                  | <0.00010         | <0.00010        | <0.00010         | *      |
| Boron (B)-Total                                               | 5                                       | 1.2                                                                                                                                                                | 0.596            | 0.0548          | 0.0372           | 38.26% |
| Cadmium (Cd)-Total                                            | -                                       | -                                                                                                                                                                  | 0.00184          | 0.000012        | <0.000010        | *      |
| Calcium (Ca)-Total                                            | -                                       | -                                                                                                                                                                  | 1430             | 123             | 125              | 1.61%  |
| Chromium (Cr)-Total Chromium                                  | -                                       | -                                                                                                                                                                  | 0.00074          | <0.00050        | <0.00050         | *      |
| Chromium (Cr(III))                                            | -                                       | -                                                                                                                                                                  | -                | -               | -                |        |
| Chromium (Cr(VI))                                             | -                                       | -                                                                                                                                                                  | -                | -               | -                |        |
| Cobalt (Co)-Total                                             | -                                       | 0.110 (Short Term), 0.004 (Long Term Average)                                                                                                                      | 0.00712          | 0.00025         | 0.00023          | *      |
| Copper (Cu)-Total                                             | 0.5                                     | Hardness-Dependent <sup>(2)</sup>                                                                                                                                  | 0.00455          | 0.0015          | 0.00144          | *      |
|                                                               |                                         | Hardness-Dependent BCAWQG to protect AW <sup>(3)</sup> (instant max)                                                                                               | 0.4861           | 0.0359          | 0.0356           |        |
|                                                               |                                         | Hardness-Dependent BCAWQG to protect AW <sup>(3)</sup> (30-d average)                                                                                              | 0.2060           | 0.0144          | 0.0143           |        |
| Iron (Fe)-Total                                               | -                                       | 1                                                                                                                                                                  | 0.359            | 0.029           | 0.024            | *      |
| Lead (Pb)-Total                                               | 0.01                                    | Hardness-Dependent <sup>(3)</sup>                                                                                                                                  | <0.00020         | <0.00020        | <0.00020         | *      |
|                                                               |                                         | Hardness-Dependent BCAWQG to protect AW <sup>(3)</sup> (instant max)                                                                                               | 12.3328          | 0.4184          | 0.4126           |        |
|                                                               |                                         | Hardness-Dependent BCAWQG to protect AW <sup>(3)</sup> (30-d average)                                                                                              | 0.4844           | 0.0196          | 0.0194           |        |
| Lithium (Li)-Total                                            | -                                       | -                                                                                                                                                                  | 0.00157          | 0.00032         | 0.00022          | *      |
| Magnesium (Mg)-Total                                          | -                                       | -                                                                                                                                                                  | 453              | 17              | 17.1             | 0.59%  |
| Manganese (Mn)-Total                                          | -                                       | Hardness Dependent <sup>(3)</sup>                                                                                                                                  | 36.8             | 0.12            | 0.108            | 10.53% |
|                                                               |                                         | Hardness-Dependent BCAWQG to protect AW <sup>(3)</sup> (instant max)                                                                                               | 57.3             | 4.5             | 4.5              |        |
|                                                               |                                         | Hardness-Dependent BCAWQG to protect AW <sup>(3)</sup> (30-d average)                                                                                              | 23.3             | 2.2             | 2.2              |        |
| Mercury (Hg)-Total                                            | 0.001                                   | 0.00002                                                                                                                                                            | <0.000010        | <0.000010       | <0.000010        | *      |
| Molybdenum (Mo)-Total                                         | 0.25                                    | ≤1 (instant max)<br>2 (30-d average)                                                                                                                               | 0.00179          | 0.00235         | 0.00237          | 0.85%  |
| Nickel (Ni)-Total                                             | -                                       | 0.025 (Hardness-Dependent <sup>(3)</sup> BCAWWQG to protect AW H<60mg/L)<br>Calculated Hardness-Dependent <sup>(3)</sup> BCAWWQG to protect AW 60≤H≤180 mg/L CaCO3 | 0.00977<br>1.910 | 0.0009<br>0.253 | 0.00084<br>0.251 | *      |
| Phosphorus(P)-Total                                           | -                                       | -                                                                                                                                                                  | <0.050           | <0.050          | <0.050           | *      |
| Potassium (K)-Total                                           | -                                       | -                                                                                                                                                                  | 38.4             | 1.72            | 1.73             | 0.58%  |
| Selenium (Se)-Total                                           | 0.01                                    | 0.002                                                                                                                                                              | 0.00062          | <0.00050        | <0.00050         | *      |
| Silicon (Si)-Total                                            | -                                       | -                                                                                                                                                                  | 9.5              | 7.8             | 8                | 2.53%  |
| Silver (Ag)-Total                                             | -                                       | HARDNESS <100mg/L 0.0001 (SHORT TERM),<br>0.00005 (LONG TERM), HARDNESS >100mg/L 0.003 (SHORT TERM), 0.0015 (LONG TERM)                                            | 0.000093         | <0.000050       | <0.000050        | *      |
| Sodium (Na)-Total                                             | -                                       | -                                                                                                                                                                  | 2770             | 18.6            | 18.6             | 0.00%  |
| Strontium (Sr)-Total                                          | -                                       | -                                                                                                                                                                  | 7.98             | 0.374           | 0.376            | 0.53%  |
| Sulfur (S)-Total                                              | -                                       | -                                                                                                                                                                  | 928              | 45.6            | 45.5             | 0.22%  |
| Tellurium (Te)-Total                                          | -                                       | -                                                                                                                                                                  | <0.00050         | <0.00050        | <0.00050         | *      |
| Thallium (Tl)-Total                                           | -                                       | -                                                                                                                                                                  | <0.000020        | <0.000020       | <0.000020        | *      |
| Thorium (Th)-Total                                            | -                                       | -                                                                                                                                                                  | <0.00010         | <0.00010        | <0.00010         | *      |
| Tin (Sn)-Total                                                | -                                       | -                                                                                                                                                                  | <0.00020         | <0.00020        | <0.00020         | *      |
| Titanium (Ti)-Total                                           | -                                       | -                                                                                                                                                                  | 0.0107           | <0.0050         | <0.0050          | *      |
| Uranium (U)-Total                                             | -                                       | -                                                                                                                                                                  | 0.00271          | 0.00294         | 0.00302          | 2.68%  |
| Vanadium (V)-Total                                            | -                                       | -                                                                                                                                                                  | 0.001            | <0.0010         | <0.0010          | *      |
| Zinc (Zn)-Total                                               | 5.0                                     | Hardness >90 mg/L                                                                                                                                                  | 0.0133           | <0.0040         | <0.0040          | *      |
|                                                               |                                         | Hardness-Dependent BCAWQG to protect AW <sup>(3)</sup> (instant max)                                                                                               | 3.828            | 0.236           | 0.233            |        |
|                                                               |                                         | Hardness-Dependent BCAWQG to protect AW <sup>(3)</sup> (30-d average)                                                                                              | 3.803            | 0.211           | 0.208            |        |
| Zirconium (Zr)-Total                                          | -                                       | -                                                                                                                                                                  | <0.00010         | <0.00010        | <0.00010         | *      |

| Table 3: Analytical Results for Dissolved Metals in Surface Water |                                         |                                                                                                                                                            | SHA-LE-1                       | SHA-SW-1                       | SHA-SW-1                       | RPD   |
|-------------------------------------------------------------------|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------------|--------------------------------|-------|
| Laboratory ID                                                     | BC DRINKING WATER<br>QUALITY GUIDELINES | BC FRESHWATER AQUATIC LIFE WATER QUALITY<br>GUIDELINES                                                                                                     | 7090659-01                     | 7092382-01                     | 7092382-02                     |       |
| Sample ID                                                         |                                         |                                                                                                                                                            | SHA-LE-1                       | SHA-SW1                        | DUP SW1                        |       |
| Date Sampled/Time                                                 |                                         |                                                                                                                                                            | 2017-09-07                     | 2017-09-25                     | 2017-09-25                     |       |
| Physical Tests                                                    |                                         |                                                                                                                                                            |                                |                                |                                |       |
| Hardness (as CaCO3) (mg/L)                                        | -                                       | -                                                                                                                                                          | 5150                           | 361                            | 357                            | 1.11% |
| pH                                                                | 7-10.5                                  | 6.5-9                                                                                                                                                      | 7.7                            | 7.71                           | 7.72                           | 0.13% |
| Dissolved Metals (mg/L)                                           |                                         |                                                                                                                                                            |                                |                                |                                |       |
| Aluminum (Al)-Dissolved                                           | -                                       | 0.05 (30-day average where median pH > 6.5)<br>0.1 (maximum where instantaneous pH > 6.5)<br>**** indicates pH-dependent maximum where instant<br>pH ≤ 6.5 | 0.0094                         | <0.0050                        | <0.0050                        | *     |
|                                                                   |                                         | pH/Hardness Dependent BCAWQG to protect AW <sup>(4)</sup><br>(instant max)                                                                                 | -                              | -                              | -                              |       |
|                                                                   |                                         | pH/Hardness Dependent BCAWQG to protect AW <sup>(4)</sup> (30-d<br>Mean)                                                                                   | -                              | -                              | -                              |       |
| Antimony (Sb)-Dissolved                                           | -                                       | -                                                                                                                                                          | 0.00024                        | <0.00020                       | <0.00020                       | *     |
| Arsenic (As)-Dissolved                                            | -                                       | -                                                                                                                                                          | <0.00050                       | <0.00050                       | <0.00050                       | *     |
| Barium (Ba)-Dissolved                                             | -                                       | -                                                                                                                                                          | 0.118                          | 0.0253                         | 0.0251                         | 0.79% |
| Beryllium (Be)-Dissolved                                          | -                                       | -                                                                                                                                                          | <0.00010                       | <0.00010                       | <0.00010                       | *     |
| Bismuth (Bi)-Dissolved                                            | -                                       | -                                                                                                                                                          | <0.00010                       | <0.00010                       | <0.00010                       | *     |
| Boron (B)-Dissolved                                               | -                                       | -                                                                                                                                                          | 0.52                           | 0.0313                         | 0.03                           | 4.24% |
| Cadmium (Cd)-Dissolved                                            | -                                       | Hardness-Dependent <sup>(3)</sup>                                                                                                                          | 0.00172                        | 0.00001                        | <0.000010                      | *     |
|                                                                   | -                                       | Calculated Hardness-Dependent (3) BCAWQG to<br>protect AW (short-term max) $e[1.03 * \ln(Hss) - 5.274]$ ug/L<br>H<455mg/L                                  | Hardness<br>exceeds<br>455mg/L | 0.00221                        | 0.00218                        |       |
|                                                                   | -                                       | Calculated Hardness-Dependent BCAWQG to protect<br>AW <sup>(3)</sup> (long-term max) $e[0.736 * \ln(Hss) - 4.943]$ ug/L<br>H<285mg/L                       | Hardness<br>exceeds<br>285mg/L | Hardness<br>exceeds<br>285mg/L | Hardness<br>exceeds<br>285mg/L |       |
| Calcium (Ca)-Dissolved                                            | -                                       | up to 4, highly sensitive to acid inputs<br>4 to 8, moderately sensitive<br>over 8 low sensitivity                                                         | 1350<br><br>Low                | 117<br><br>Low                 | 115<br><br>Low                 | 1.72% |
| Chromium (Cr)-Dissolved                                           | -                                       | -                                                                                                                                                          | 0.00083                        | <0.00050                       | <0.00050                       | *     |
| Cobalt (Co)-Dissolved                                             | -                                       | -                                                                                                                                                          | 0.00649                        | 0.0001                         | <0.00010                       | *     |
| Copper (Cu)-Dissolved                                             | -                                       | -                                                                                                                                                          | 0.0039                         | 0.00112                        | 0.00114                        | *     |
| Iron (Fe)-Dissolved                                               | -                                       | 0.35                                                                                                                                                       | 0.02                           | <0.010                         | <0.010                         | *     |
| Lead (Pb)-Dissolved                                               | -                                       | -                                                                                                                                                          | <0.00020                       | <0.00020                       | <0.00020                       | *     |
| Lithium, dissolved                                                | -                                       | -                                                                                                                                                          | 0.00134                        | 0.00016                        | 0.00015                        | *     |
| Magnesium (Mg)-Dissolved                                          | -                                       | -                                                                                                                                                          | 430                            | 16.5                           | 16.7                           | 1.20% |
| Manganese (Mn)-Dissolved                                          | -                                       | -                                                                                                                                                          | 34                             | 0.0384                         | 0.0367                         | 4.53% |
| Mercury (Hg)-Dissolved                                            | -                                       | -                                                                                                                                                          | <0.000040                      | <0.000010                      | <0.000010                      | *     |
| Molybdenum (Mo)-Dissolved                                         | -                                       | -                                                                                                                                                          | 0.00179                        | 0.00229                        | 0.00222                        | 3.10% |
| Nickel (Ni)-Dissolved                                             | -                                       | -                                                                                                                                                          | 0.00924                        | 0.00076                        | 0.00075                        | *     |
| Phosphorus (P)-Dissolved                                          | -                                       | -                                                                                                                                                          | <0.050                         | <0.050                         | <0.050                         | *     |
| Potassium (K)-Dissolved                                           | -                                       | -                                                                                                                                                          | 36.2                           | 1.72                           | 1.67                           | 2.95% |
| Selenium (Se)-Dissolved                                           | -                                       | -                                                                                                                                                          | 0.00056                        | <0.00050                       | <0.00050                       | *     |
| Silicon (Si)-Dissolved                                            | -                                       | -                                                                                                                                                          | 9                              | 7.8                            | 7.8                            | 0.00% |
| Silver (Ag)-Dissolved                                             | -                                       | -                                                                                                                                                          | 0.000075                       | <0.000050                      | <0.000050                      | *     |
| Sodium (Na)-Dissolved                                             | -                                       | -                                                                                                                                                          | 2660                           | 18.6                           | 18.7                           | 0.54% |
| Strontium (Sr)-dissolved                                          | -                                       | -                                                                                                                                                          | 7.38                           | 0.359                          | 0.359                          | 0.00% |
| Sulfur (S)-Dissolved                                              | -                                       | -                                                                                                                                                          | 890                            | 42.5                           | 42.6                           | 0.24% |
| Tellurium (Te)-Dissolved                                          | -                                       | -                                                                                                                                                          | <0.00050                       | <0.00050                       | <0.00050                       | *     |
| Thallium (Tl)-Dissolved                                           | -                                       | -                                                                                                                                                          | <0.000020                      | <0.000020                      | <0.000020                      | *     |
| Thorium (Th)-Dissolved                                            | -                                       | -                                                                                                                                                          | <0.00010                       | <0.00010                       | <0.00010                       | *     |
| Tin (Sn)-Dissolved                                                | -                                       | -                                                                                                                                                          | <0.00020                       | <0.00020                       | <0.00020                       | *     |
| Titanium (Ti)-Dissolved                                           | -                                       | -                                                                                                                                                          | <0.0050                        | <0.0050                        | <0.0050                        | *     |
| Uranium (U)-Dissolved                                             | -                                       | -                                                                                                                                                          | 0.00256                        | 0.00289                        | 0.00286                        | 1.04% |
| Vanadium (V)-Dissolved                                            | -                                       | -                                                                                                                                                          | <0.0010                        | <0.0010                        | <0.0010                        | *     |
| Zinc (Zn)-Dissolved                                               | -                                       | -                                                                                                                                                          | 0.0107                         | <0.0040                        | 0.0067                         | *     |
| Zirconium (Zr)-Dissolved                                          | -                                       | -                                                                                                                                                          | <0.00010                       | <0.00010                       | <0.00010                       | *     |

Notes: Refer to Table Endnotes (attached)

| Table 4: Analytical Results for Hydrocarbons and PAHs in Surface Water |                                      |                                                     | SHA-LE-1   | SHA-SW-1   | SHA-SW-1   | RPD |
|------------------------------------------------------------------------|--------------------------------------|-----------------------------------------------------|------------|------------|------------|-----|
| Laboratory ID                                                          | BC DRINKING WATER QUALITY GUIDELINES | BC FRESHWATER AQUATIC LIFE WATER QUALITY GUIDELINES | 7090659-01 | 7092382-01 | 7092382-02 |     |
| Sample ID                                                              |                                      |                                                     | SHA-LE-1   | SHA-SW1    | DUP SW1    |     |
| Date Sampled/ Time                                                     |                                      |                                                     | 2017-09-07 | 2017-09-25 | 2017-09-25 |     |
| Hydrocarbons ug/L                                                      |                                      |                                                     |            |            |            |     |
| LEPH                                                                   | -                                    | -                                                   | <250       | <250       | <250       | *   |
| HEPH                                                                   | -                                    | -                                                   | <250       | <250       | <250       | *   |
| Polycyclic Aromatic                                                    |                                      |                                                     |            |            |            |     |
| Acenaphthene                                                           | -                                    | 6 (LONG TERM)                                       | <0.050     | <0.050     | <0.050     | *   |
| Acenaphthylene                                                         | -                                    | -                                                   | <0.200     | <0.200     | <0.200     | *   |
| Acridine                                                               | -                                    | 3 (LONG TERM), 0.05 (PHOTOTOXIC)                    | <0.050     | <0.050     | <0.050     | *   |
| Anthracene                                                             | -                                    | 4 (LONG TERM), 0.1 (PHOTOTOXIC)                     | <0.010     | <0.010     | <0.010     | *   |
| Benz(a)anthracene                                                      | 0.01                                 | 0.1 (LONG TERM), 0.1 (PHOTOTOXIC)                   | <0.010     | <0.010     | <0.010     | *   |
| Benzo(a)pyrene                                                         | -                                    | 0.01 (LONG TERM)                                    | <0.010     | <0.010     | <0.010     | *   |
| Benzo(b)fluoranthene                                                   | -                                    | -                                                   | <0.050     | <0.050     | <0.050     | *   |
| Benzo(b+j)fluoranthene                                                 | -                                    | -                                                   | <0.050     | <0.050     | <0.050     | *   |
| Benzo(g,h,i)perylene                                                   | -                                    | -                                                   | <0.050     | <0.050     | <0.050     | *   |
| Benzo(k)fluoranthene                                                   | -                                    | -                                                   | <0.050     | <0.050     | <0.050     | *   |
| Chrysene                                                               | -                                    | -                                                   | <0.050     | <0.050     | <0.050     | *   |
| Dibenz(a,h)anthracene                                                  | -                                    | -                                                   | <0.010     | <0.010     | <0.010     | *   |
| Fluoranthene                                                           | -                                    | 4 (LONG TERM), 0.2 (PHOTOTOXIC)                     | <0.030     | <0.030     | <0.030     | *   |
| Fluorene                                                               | -                                    | 12 (LONG TERM)                                      | <0.050     | <0.050     | <0.050     | *   |
| Indeno(1,2,3-c,d)pyrene                                                | -                                    | -                                                   | <0.050     | <0.050     | <0.050     | *   |
| Naphthalene                                                            | -                                    | 1 (LONG TERM)                                       | <0.200     | <0.200     | <0.200     | *   |
| Phenanthrene                                                           | -                                    | 0.3 (LONG TERM)                                     | <0.100     | <0.100     | <0.100     | *   |
| Pyrene                                                                 | -                                    | 0.02 (PHOTOTOXIC)                                   | <0.020     | <0.020     | <0.020     | *   |
| Quinoline                                                              | -                                    | -                                                   | <0.050     | <0.050     | <0.050     | *   |

Notes: Refer to Table Endnotes (attached)

## Analytical Table Footnotes: Analytical Results for Surface Water

- All concentrations in mg/L, except pH or as indicated.
- "<" less than the laboratory detection limit indicated.
- "-" means not analyzed or no standard or guideline applies.
- \* RPDs are not normally calculated where one or more concentrations are less than five times RDL.
- (1) Guideline of 15 mg/L Pt for Drinking Water. Once background levels are established, colour should also not exceed 5 mg/L above background, to protect for Aquatic Life. This is considered a clearwater system (background less than 20 mg/L Pt.)
- (2) Nitrite BCAWWQG Guideline is Chloride dependent
- (3) Standard is calculated based on the hardness dependent BCAWWQG formula, and has been calculated and shown for each individual result
- (4) pH-dependent maximum where instant pH < 6.5

**BOLD, UNDERLINE**

Laboratory Detection Limit exceeds one or more applicable Standard

**BOLD, BLUE SHADING**

Concentration greater than BCAWWQG Guideline

**BOLD, BEIGE SHADING**

Concentration greater than BCAWWQG Chronic Guideline

**BOLD, GREEN SHADING**

Concentration greater than BC Ministry of Environment Drinking Water Sources

**RED FONT**

Concentration less than laboratory detection limit (Formula 0.5MRL utilized for statistical analysis)

PROGRESS REPORT

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CONSTRUCTION PROGRESS REPORT – 2017 Minor Construction Works

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|                      |                                                                                                                         |              |                                 |
|----------------------|-------------------------------------------------------------------------------------------------------------------------|--------------|---------------------------------|
| <b>Project:</b>      | Cobble Hill Landfill – Closure Plan                                                                                     | <b>Date:</b> | October 15 <sup>th</sup> , 2017 |
| <b>Subject:</b>      | Construction Progress Update                                                                                            |              |                                 |
| <b>Location:</b>     | Cobble Hill Landfill                                                                                                    | <b>File:</b> | 17039-2017-03                   |
| <b>Report</b>        |                                                                                                                         |              |                                 |
| <b>Distribution:</b> | CHH: Michael Kelly, Marty Block<br>Allterra Construction: Todd Mizuik, Raymond Lam<br>MoE: Maureen Bilawchuk, AJ Downie |              |                                 |

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The following summary of work includes construction progress from September 30<sup>th</sup> to October 5<sup>th</sup>, 2017 as well as the status of individual work tasks and deviations to the construction work plan. A photo log of construction activities for the above-mentioned dates is provided in Appendix A along with description of the work. Additionally, as-built record drawings have been included in Appendix B and laboratory analysis for pipe bedding materials are included in Appendix C.

1. **Status of Work Tasks**

- A. Secondary Clay Liner Investigation – **Complete** (Sept. 29<sup>th</sup>, 2017)
- B. New Leachate & Leak Detection Storage Facility– **Complete** (Oct. 5<sup>th</sup>, 2017)

-High level alarm has been installed in the leachate storage facility and is operational. Works included installation of a solar panel, control panel, transducer, floats and fully automated high and low-level alarm system for leachate tanks. Smartphone application was downloaded by the Electrical Contractor during install and functionality of the remote system was explained, tested and verified by the QP. With smartphone, levels in the tanks can be monitored and floats and alarms adjusted. The smartphone application has been downloaded by Allterra and will be used to manage leachate levels with the storage facility.

-Interconnecting hose (4” flex hose) between the two leachate storage tanks is installed. Connection were inspected and verified by QP.

-As-builts included in Appendix B

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C. Installation of New Twin Piping from Existing PEA Collection Pipes to New Storage Facility – **Complete** (Sept. 29<sup>th</sup>, 2017)

-As-builts included in Appendix B

-Gradation Reports for Pipe Bedding Materials included in Appendix C

D. Decommissioning of Contract Water Containment Pond – **Complete** (Sept. 29<sup>th</sup>, 2017)

E. Stockpile and Cover Existing Soil in SMA – **Complete** (Sept. 29<sup>th</sup>, 2017)

F. Installation of Seepage Blanket Monitoring Wells – **Complete** (Sept. 29<sup>th</sup>, 2017)

-As-builts included in Appendix B

G. PEA Liner Repairs and Testing – **Complete** (Sept. 29<sup>th</sup>, 2017)

-As-builts included in Appendix B

H. PEA Crest Ditch Ballasting – **Complete** (Sept. 29<sup>th</sup>, 2017)

-As-builts included in Appendix B

I. Run-on Ditch Extension South Side of PEA – **Complete** (Sept. 29<sup>th</sup>, 2017)

-As-builts included in Appendix B

## 2. Deviations to Original Work Plan

A. Pipe Bedding Material for ‘New Twin Piping from PEA to New Leachate Storage Facility’: Pipe bedding material was sourced onsite from two stockpiles:

1) Pipe Bedding-1: 5-15mm Clear Round Gravel, and

2) Pipe Bedding-2: Well Graded Sand.

Sieve analysis were conducted on both materials and although they differ from the gradation specification included in the design, both products used are adequate for pipe bedding materials and were approved in the field prior to use by the QP. Sieve Analysis reports are included in Appendix C.

- B. Clean Outs for ‘New Twin Piping from PEA to New Leachate Storage Facility’:  
Cleanouts on the Leak Detection and Leachate conveyance pipes were not constructed. Access to both Leachate and Leak Detection conveyance pipes is available at connection fittings located at the tie-in to leachate / leak detection storage tanks. Decision to not include the Clean-outs was made during construction and approved by the QP in the field.
- C. Stockpile and Cover Existing Soil in SMA:  
In the original plan, it was outlined that the lock block walls were required to be washed down with water. During SMA clean up activities it was further discussed and QP approved ‘NOT’ washing down the lock block walls to reduce the re-introduction of water into the remediated soils. It is SHA’s opinion that the current condition of the lock blocks do not pose any environmental or human health hazards in their current state.
- D. Seepage Blanket Monitoring Wells at Landfill Toe:  
A change to the backfill material was approved in the field by the QP. Original plan specified a 25-50mm clear drain rock be used. In place of the 25-50mm drain rock, 75mm clear drain rock was used.
- E. PEA Crest Ditch Ballasting:  
A change to the ballast material used in the crest ditch of the PEA was approved in the field by the QP. The design plan specified coarse gravel and sandbags be placed over a layer of 8oz. Non-Woven geotextile. During construction, the ballast material was changed from coarse gravel and sand bags to rubber tires, placed back to back along the entire alignment.

### 3. Schedule

The 2017 Minor Construction Works are complete onsite at the Cobble Hill Landfill. All final construction tasks were completed on October 5<sup>th</sup>, 2017 with the completion of the High-level alarm in the Leachate Storage Facility as well as the interconnecting piping between the 2x Leachate Tanks. Environmental monitoring, including water quality sampling, will continue to be completed by the Named Parties at the site, and reported on accordingly.

Outstanding work items outlined in the September 30<sup>th</sup> Construction Progress Report have been completed and are included in this report. No further work is scheduled regarding the 2017 Minor Construction Works.

Please respond with any question or concerns regarding the above outlined construction activities or deviations to the design plan.

Report prepared by:

Sperling Hansen Associates



Scott Garthwaite, ASCT  
Office Manager

Appendix A – Photo Log – attached  
Appendix B – As-built Record Drawings - attached  
Appendix C – Gradation Reports - attached

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**APPENDIX A**  
**Photo Log of Construction Activities**

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## Cobble Hill Landfill Closure – 2017 Minor Construction Works

Leachate / Leak Detection Storage Facility:



Photo 1 – 2x Leachate Tank Interconnecting Pipe Installed.



Photo 2 – Solar Panel Installed and Operational at Leachate Storage Facility.



Photo 3 – Digital Readout Screen on Inside Door of Control Panel – for High-level Alarm.

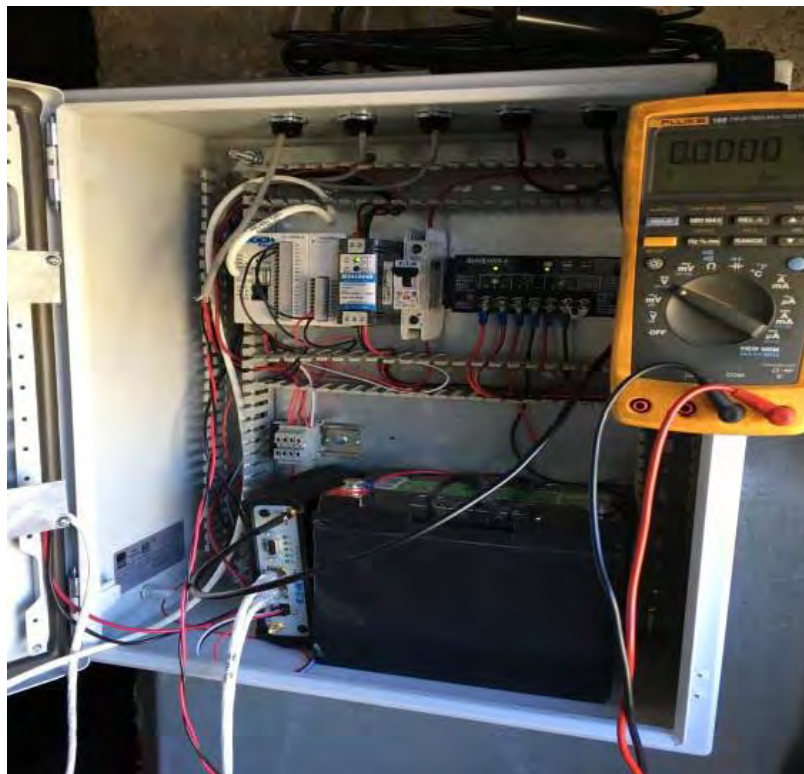


Photo 4 – Control Panel: PLC, 12V Battery, Router and Wiring – High-Level Alarm

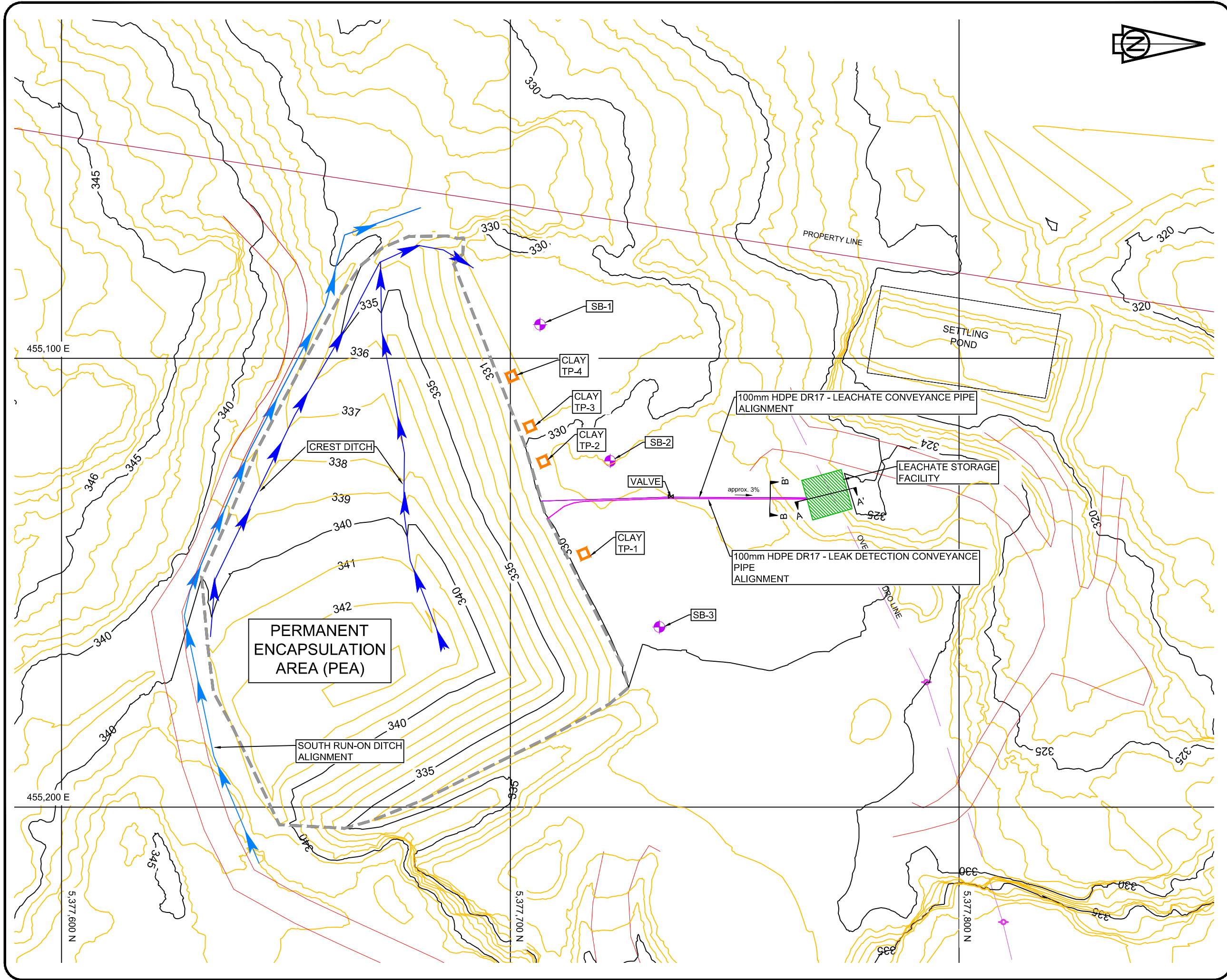
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**APPENDIX B**  
**As-Built Drawings**

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SPERLING  
HANSEN  
ASSOCIATES

Landfill Services Group  
• Landfill Siting  
• Design & Operations Plans  
• Landfill Closure  
• Environmental Monitoring  
#8 - 1225 East Keith Road  
North Vancouver, B.C. V7J 1J3  
Phone: (604) 986-7723  
Fax: (604) 986-7734

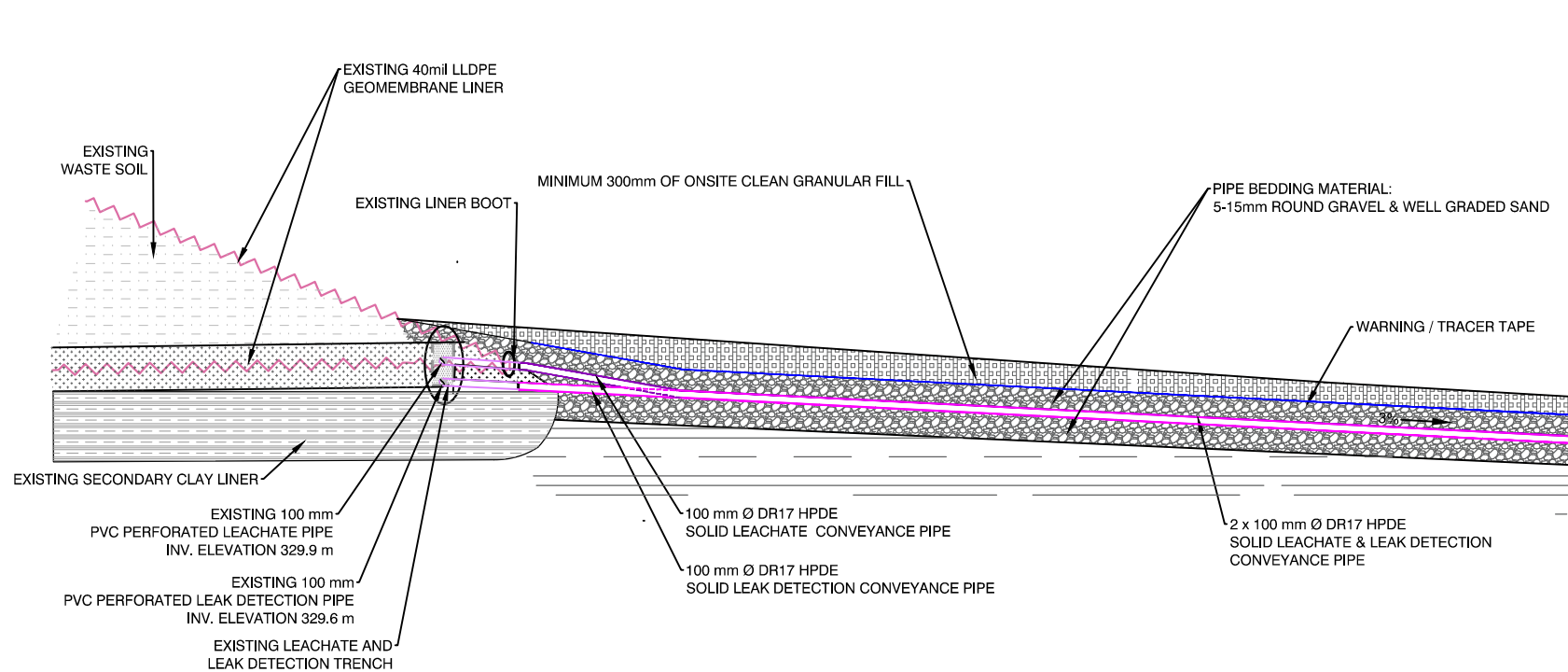
- LEGEND:
- 5m EXISTING CONTOUR
  - 1m EXISTING CONTOUR
  - ROAD
  - SURFACE WATER DITCH
  - RUN-ON DIVERSION DITCH
  - PROPERTY LINES
  - LEACHATE CONVEYANCE PIPE
  - LEAK DETECTION CONVEYANCE PIPE
  - CLAY TEST PIT LOCATIONS
  - SEEPAGE BLANKET MONITORING LOCATION
  - LEACHATE CONVEYANCE VALVE
  - LEACHATE STORAGE FACILITY

CLIENT:  
**COBBLE HILL HOLDINGS LTD.**

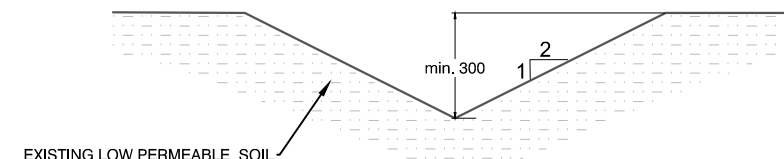
PROJECT:  
**COBBLE HILL LANDFILL  
DETAILED CONSTRUCTION PLAN FOR  
2017 MINOR WORKS**

TITLE:  
**AS-BUILT  
PLAN VIEW**

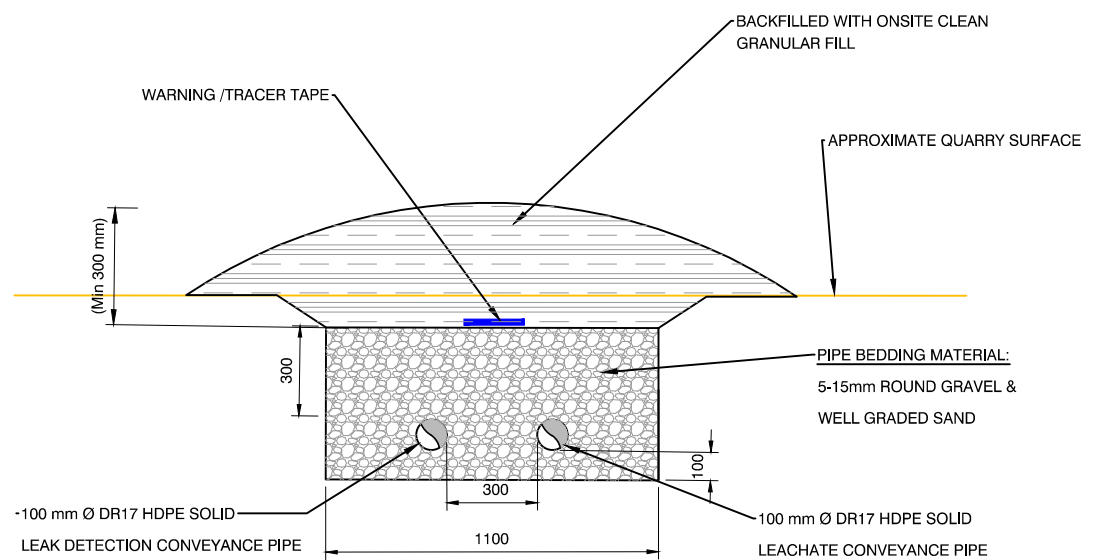
|                   |                                   |                                |
|-------------------|-----------------------------------|--------------------------------|
| SCALE:<br>1:1,250 | DATE:<br>2017/10/12<br>yyyy/mm/dd | PROJECT NO:<br>PRJ 17039       |
| DESIGNED          | DRAWN<br>SG<br>CHECKED            | DRAWING NO:<br><b>FIGURE 1</b> |
|                   |                                   |                                |
|                   |                                   |                                |



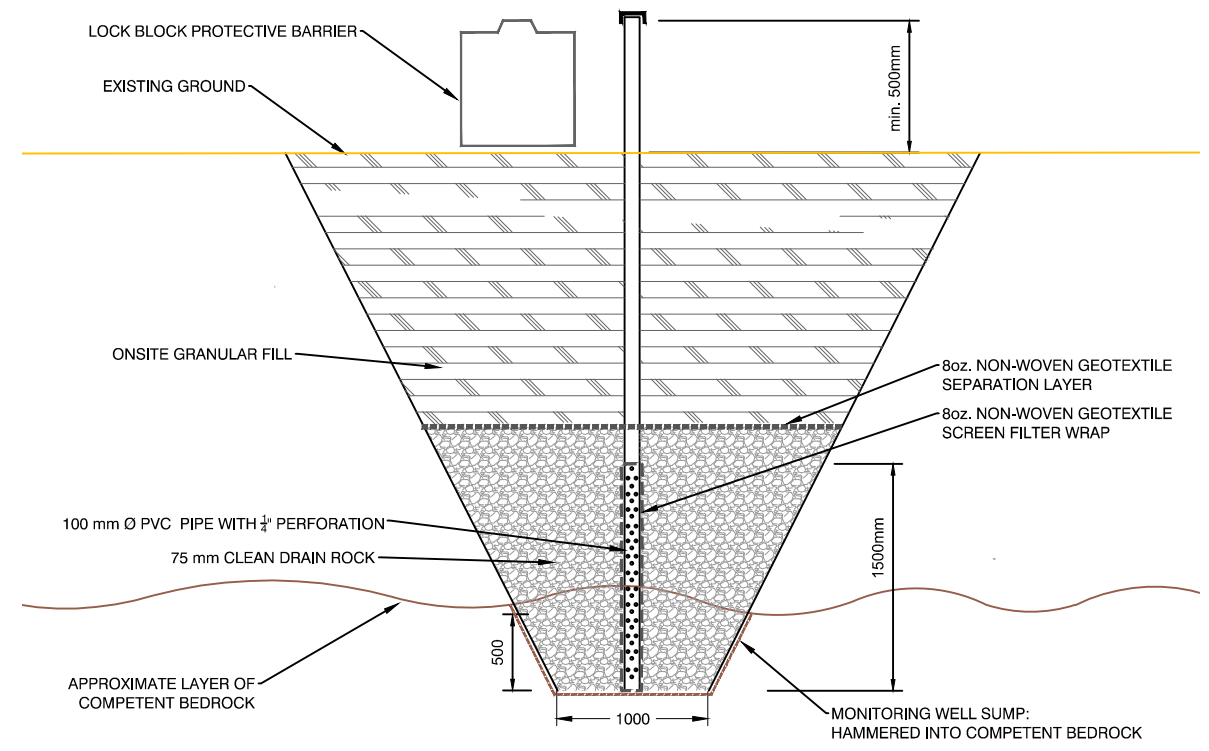
**LEACHATE CONVEYANCE FROM PEA - SECTION**  
SCALE 1:100



**SOUTH RUN-ON DITCH - SECTION**  
SCALE 1:100



**TYPICAL TWIN LEACHATE/LEAK DETECTION  
CONVEYANCE PIPE TRENCH SECTION B - B'**  
SCALE 1:20



**TYPICAL SEEPAGE BLANKET WELL**  
SCALE 1:50

|                                                                                                 |                                   |                                |
|-------------------------------------------------------------------------------------------------|-----------------------------------|--------------------------------|
| CLIENT:<br><b>COBBLE HILL HOLDINGS LTD.</b>                                                     |                                   |                                |
| PROJECT:<br><b>COBBLE HILL LANDFILL<br/>DETAILED CONSTRUCTION PLAN FOR<br/>2017 MINOR WORKS</b> |                                   |                                |
| TITLE:<br><b>AS-BUILT<br/>DETAILS-1</b>                                                         |                                   |                                |
| SCALE:                                                                                          | DATE:<br>2017/10/12<br>yyyy/mm/dd | PROJECT NO:<br>PRJ 17039       |
| DESIGNED                                                                                        | SG                                | DRAWING NO:<br><b>FIGURE 2</b> |
| DRAWN                                                                                           |                                   |                                |
| CHECKED                                                                                         |                                   |                                |

- Landfill Siting
- Design & Operations Plans
- Landfill Closure
- Environmental Monitoring

#8 - 1225 East Keith Road  
North Vancouver, B.C. V7J 1J3  
Phone: (604) 986-7723  
Fax: (604) 986-7734

LEGEND:

NOTES:

- LEACHATE TANKS EQUIPPED WITH HIGH-LEVEL ALARM
- SOLAR PANEL POWER SUPPLY
- CONTROL PANEL INSIDE STORAGE FACILITY
- REMOTELY MONITORED LEVELS IN TANKS WITH SMARTPHONE APP. FOR REAL TIME READOUTS.

CLIENT:

COBBLE HILL HOLDINGS LTD.

PROJECT:

COBBLE HILL LANDFILL  
DETAILED CONSTRUCTION PLAN FOR  
2017 MINOR CONSTRUCTION WORKS

TITLE:

AS-BUILT  
DETAILS - 2

SCALE:

DATE:

PROJECT NO:

2017/10/12  
yyyy/mm/dd

PRJ 17039

DESIGNED

DRAWN

CHECKED

DRAWING NO:

FIGURE 3

EXISTING 40mil LLDPE GEOMEMBRANE LINER

EXISTING SAND CUSHION LAYER

EXISTING WASTE SOIL

8oz NON-WOVEN GEOTEXTILE

RUBBER TIRE - DISTCH BALLAST

TYPICAL CREST DITCH SECTION

SCALE 1:50

LEACHATE CONVEYANCE PIPING IN  
COMMON TRENCH

PIPE BEDDING MATERIAL - typ.

CLEAN GRANULAR FILL

TRACER / WARNING TAPE

3%

8oz. NON-WOVEN GEOTEXTILE  
SEPARATION LAYER

150mm CLEAR CRUSH DRAINAGE GRAVEL

EXISTING QUARRY GRANULAR FILL -

LEACHATE TANK-1

10,000 gal.

LEAK DETECTION TANK

10,000 gal.

LEACHATE TANK-2

10,000 gal.

LEACHATE TANK INLET:

INV. ELEV. 327.39m

LEAK DETECTION TANK INLET:

INV. ELEV. 327.34

100mm FLEX HOSE CONNECTION  
- LEACHATE TANKS

RUBBER TIRE BALLAST - typ.

RUBBER MEMBRANE COVER SYSTEM

STORAGE FACILITY ROOF:

ELEV. 328.9m

16" DEEP T.G.I. JOISTS:

SPACED 16" CENTERS - typ.

2"x4" BOARDS SECURED WITH HILTI BOLTS

GRANULAR BACKFILL

STORAGE FACILITY  
SECONDARY CONTAINMENT SYSTEM:  
- 8oz. NON-WOVEN GEOTEXTILE  
- 40mil LLDPE GEOMEMBRANE  
- 8oz. NON-WOVEN GEOTEXTILE

150mm of 50-75mm CLEAR  
CRUSH COMPACTED SUB-BASE  
100mm of 3/4" CLEAR CRUSH  
COMPACTED GRAVEL BASE

STORAGE FACILITY BASE:  
ELEV. 323.97m

LEACHATE STORAGE FACILITY - SECTION A - A'

SCALE 1:50



SPERLING  
HANSEN  
ASSOCIATES

Landfill Services Group  
• Landfill Siting  
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• Environmental Monitoring

#8 - 1225 East Keith Road  
North Vancouver, B.C. V7J 1J3  
Phone: (604) 986-7723  
Fax: (604) 986-7734

LEGEND:

- 5m EXISTING CONTOUR
- 1m EXISTING CONTOUR
- ROAD
- SURFACE WATER DITCH
- PROPERTY LINES
- CREEK
- LANDFILL LINER EXTENTS
- PEA Liner Repair Location  
X-1 THROUGH X-21

CLIENT:

COBBLE HILL HOLDINGS LTD.

PROJECT:

COBBLE HILL LANDFILL  
CLOSURE PLAN - 2017 MINOR  
CONSTRUCTION WORKS

TITLE:

PEA - AS-BUILTS  
REPAIR WORK

SCALE:

1:750

DATE:

2017/09/29  
yyyy/mm/dd

PROJECT NO:

PRJ 17039

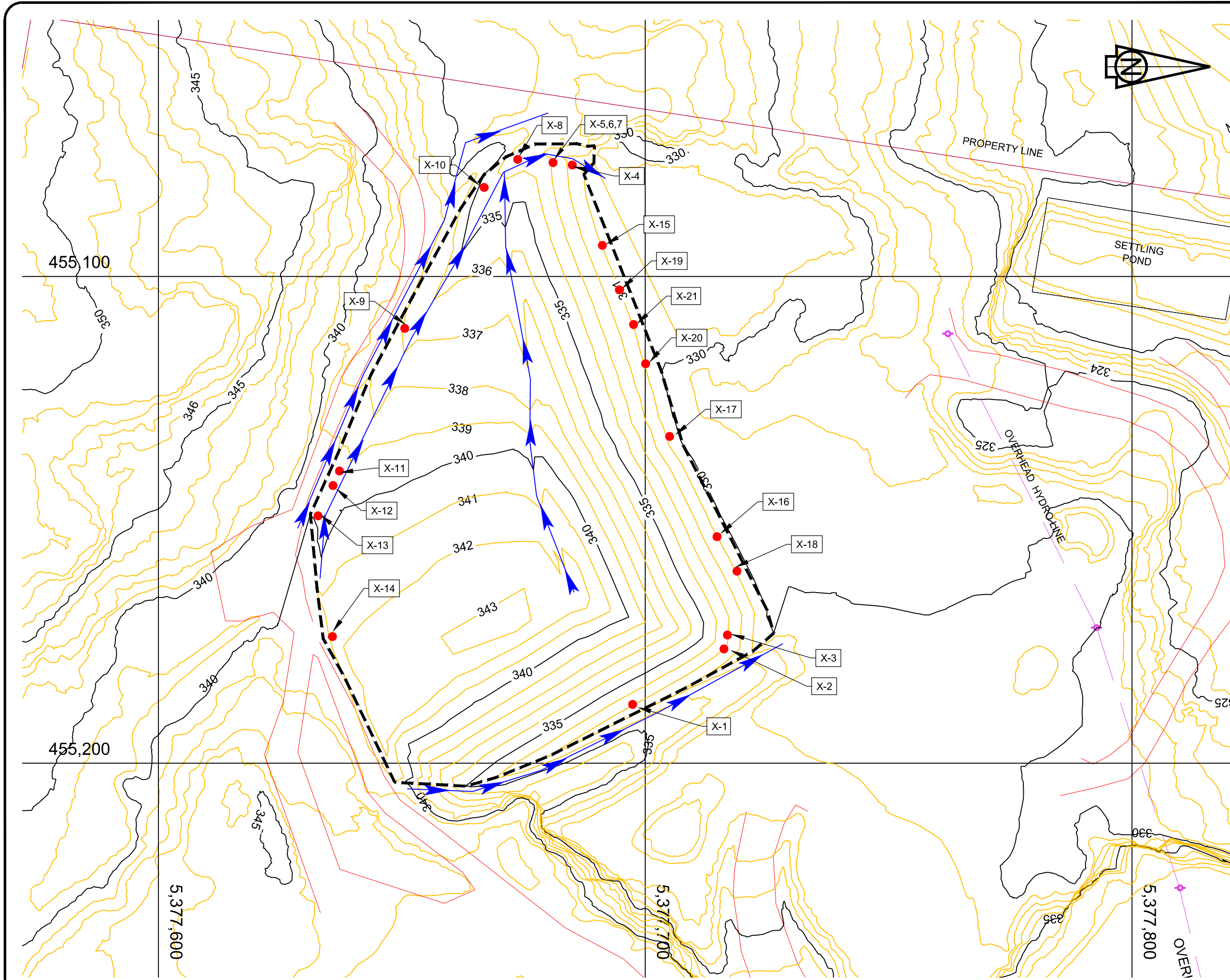
DESIGNED

DRAWN

CHECKED

DRAWING NO:

FIGURE 4



**Table 1 - Seepage Blanket Monitoring Wells**

As-Built Data

| Name | Northing  | Easting | Ground Elev. (m) | Stick Up (m) | Total Well Depth (m) | Sump Elev. (m) | Screen Length (m) |
|------|-----------|---------|------------------|--------------|----------------------|----------------|-------------------|
| SB-1 | 5,377,706 | 455,092 | 329.57           | 0.74         | 4.01                 | 326.3          | 1.5               |
| SB-2 | 5,377,722 | 455,123 | 328.97           | 0.64         | 3.28                 | 326.33         | 1.5               |
| SB-3 | 5,377,733 | 455,160 | 331.16           | 0.56         | 3.53                 | 328.19         | 1.5               |

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**APPENDIX C**  
**Pipe Bedding Sieve Analysis**

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# KamTech

## QUALITY MANAGEMENT

TO: Sperling Hansen Associates

1332 McGill Road  
Kamloops, B.C.  
V2C 6N6

PROJECT #: QM17-41

COPIES TO:

ATTN: Mairi Dalgleish

PROJECT: Materials Testing

### SIEVE ANALYSIS REPORT

SAMPLE ID: Pipe Bedding 1

SAMPLE TYPE: Bulk

SAMPLED BY: Client

DATE SAMPLED: September 28, 2017

DATE RECEIVED: October 2, 2017

DATE TESTED: October 4, 2017

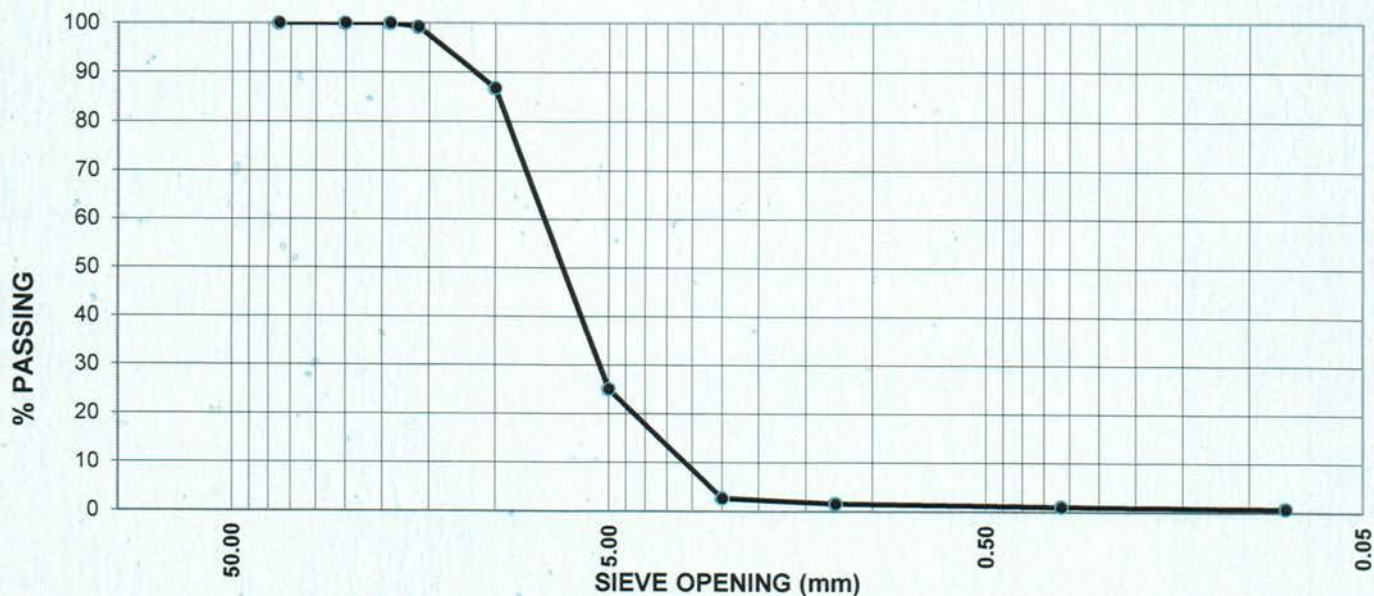
SOURCE: Cobble Hill Landfill

COMMENTS:

In Situ Moisture : 0.63%

Pipe Bedding Material

| Sieve (mm) | Percent Passing | Spec Min % | Spec Max % |
|------------|-----------------|------------|------------|
| 37.5       | 100.0           |            |            |
| 25.0       | 100.0           |            |            |
| 19.0       | 100.0           |            |            |
| 16.0       | 99.2            |            |            |
| 10.0       | 86.8            |            |            |
| 5.0        | 25.1            |            |            |
| 2.50       | 2.7             |            |            |
| 1.25       | 1.6             |            |            |
| 0.315      | 1.0             |            |            |
| 0.08       | 0.7             |            |            |



Per



# KamTech

## QUALITY MANAGEMENT

TO: Sperling Hansen Associates

1332 McGill Road  
Kamloops, B.C.  
V2C 6N6

PROJECT #: QM17-41

COPIES TO:

ATTN: Mairi Dalgleish

PROJECT: Materials Testing

### SIEVE ANALYSIS REPORT

SAMPLE ID: Pipe Bedding 2

SAMPLE TYPE: Bulk

SAMPLED BY: Client

DATE SAMPLED: September 28, 2017

DATE RECEIVED: October 2, 2017

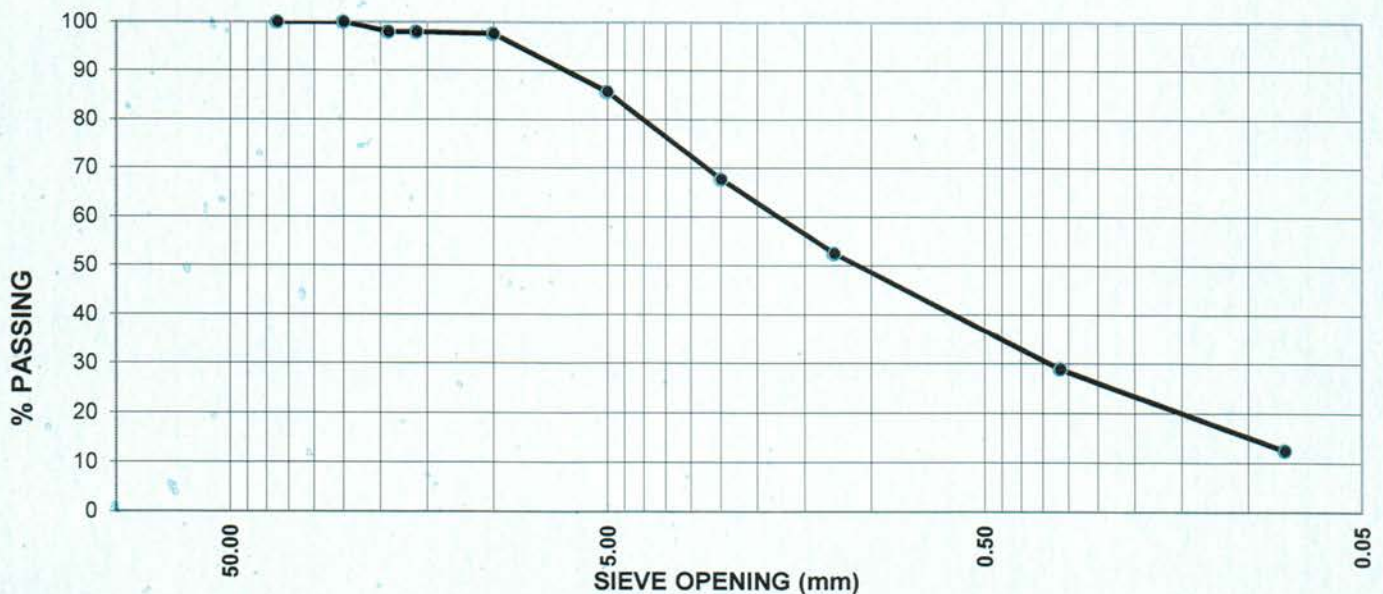
DATE TESTED: October 4, 2017

SOURCE: Cobble Hill Landfill

COMMENTS:

In Situ Moisture : 2.21 %

| Pipe Bedding Material |                 |            |            |
|-----------------------|-----------------|------------|------------|
| Sieve (mm)            | Percent Passing | Spec Min % | Spec Max % |
| 37.5                  | 100.0           |            |            |
| 25.0                  | 100.0           |            |            |
| 19.0                  | 98.0            |            |            |
| 16.0                  | 98.0            |            |            |
| 10.0                  | 97.6            |            |            |
| 5.0                   | 85.7            |            |            |
| 2.50                  | 67.7            |            |            |
| 1.25                  | 52.5            |            |            |
| 0.315                 | 28.9            |            |            |
| 0.08                  | 12.5            |            |            |



Per

CARO Analytical Services  
FINAL Analytical Testing Report  
Work Order: 7092382  
Report Date: 2017-10-03 14:11:40

Client Allterra Construction  
Attention Rahim Gaidhar  
Project P17-932  
Project Info [none]

Note: This is not the original data. Please refer to PDF / Hardcopy report.

| LAB ID                |                                        |          |        | 7092382-01 | 7092382-02 | 7092382-03 | 7092382-04 | 7092382-05 | 7092382-06 | 7092382-07 |
|-----------------------|----------------------------------------|----------|--------|------------|------------|------------|------------|------------|------------|------------|
| CLIENT ID             |                                        |          |        | SHA-SW1    | DUP SW1    | MW6        | MW2        | MW3S       | MW3D       | FB         |
| DATE SAMPLED          |                                        |          |        | 2017-09-25 | 2017-09-25 | 2017-09-25 | 2017-09-25 | 2017-09-25 | 2017-09-25 | 2017-09-25 |
| DATE RECEIVED         |                                        |          |        | 2017-09-26 | 2017-09-26 | 2017-09-26 | 2017-09-26 | 2017-09-26 | 2017-09-26 | 2017-09-26 |
| MATRIX                |                                        |          |        | Water      | Water      | Water      | Water      | Water      | Water      | Water      |
| General Method        | Analyte                                | Units    | RDL    |            |            |            |            |            |            |            |
| Anions                | Chloride                               | mg/L     | 0.1    | 49.4       | 47.9       | 39.3       | 4.8        | 6.47       | 2.62       | <0.10      |
| Anions                | Fluoride                               | mg/L     | 0.1    | <0.10      | <0.10      | <0.10      | 0.26       | 0.22       | 0.25       | <0.10      |
| Anions                | Nitrate (as N)                         | mg/L     | 0.01   | 0.476      | 0.498      | 0.018      | 0.165      | <0.010     | 0.015      | <0.010     |
| Anions                | Nitrite (as N)                         | mg/L     | 0.01   | <0.010     | <0.010     | <0.010     | <0.010     | <0.010     | <0.010     | <0.010     |
| Anions                | Sulfate                                | mg/L     | 1      | 122        | 124        | 83.3       | <1.0       | 44.3       | 22         | <1.0       |
| General Parameters    | Colour, True                           | CU       | 5      | 5.5        | 5.5        | 6.2        | <5.0       | <5.0       | 7          | <5.0       |
| General Parameters    | Alkalinity, Total (as CaCO3)           | mg/L     | 1      | 206        | 197        | 640        | 111        | 128        | 106        | <1.0       |
| General Parameters    | Alkalinity, Phenolphthalein (as CaCO3) | mg/L     | 1      | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       |
| General Parameters    | Alkalinity, Bicarbonate (as CaCO3)     | mg/L     | 1      | 206        | 197        | 640        | 111        | 128        | 106        | <1.0       |
| General Parameters    | Alkalinity, Carbonate (as CaCO3)       | mg/L     | 1      | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       |
| General Parameters    | Alkalinity, Hydroxide (as CaCO3)       | mg/L     | 1      | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       | <1.0       |
| General Parameters    | Chromium, Hexavalent                   | mg/L     | 0.001  | <0.0010    | <0.0010    |            |            |            |            |            |
| General Parameters    | Solids, Total Suspended                | mg/L     | 2      | 5.6        | 4.2        | 14.8       | 29.4       | 6.8        | 77         | <2.0       |
| General Parameters    | Turbidity                              | NTU      | 0.1    | 0.95       | 0.9        | 10.6       | 7.79       | 3.96       | 31.6       | <0.10      |
| General Parameters    | pH                                     | pH units | 0.1    | 7.71       | 7.72       | 7.31       | 7.58       | 7.58       | 7.63       | 6.13       |
| General Parameters    | Conductivity (EC)                      | uS/cm    | 2      | 759        | 761        | 1330       | 251        | 342        | 250        | <2.0       |
| Calculated Parameters | Chromium, Trivalent                    | mg/L     | 0.001  | <0.00100   | <0.00100   |            |            |            |            |            |
| Calculated Parameters | Hardness, Total (as CaCO3)             | mg/L     | 0.5    | 361        | 357        | 599        | 126        | 138        | 99.9       | <0.500     |
| Dissolved Metals      | Aluminum, dissolved                    | mg/L     | 0.005  | <0.0050    | <0.0050    | <0.0050    | <0.0050    | <0.0050    | <0.0050    | <0.0050    |
| Dissolved Metals      | Antimony, dissolved                    | mg/L     | 0.0002 | <0.00020   | <0.00020   | <0.00020   | <0.00020   | <0.00020   | 0.00037    | <0.00020   |
| Dissolved Metals      | Arsenic, dissolved                     | mg/L     | 0.0005 | <0.00050   | <0.00050   | 0.00445    | 0.00193    | 0.00073    | 0.00132    | <0.00050   |
| Dissolved Metals      | Barium, dissolved                      | mg/L     | 0.005  | 0.0253     | 0.0251     | 0.096      | 0.026      | 0.0302     | 0.0161     | <0.0050    |
| Dissolved Metals      | Beryllium, dissolved                   | mg/L     | 0.0001 | <0.00010   | <0.00010   | <0.00010   | <0.00010   | <0.00010   | <0.00010   | <0.00010   |
| Dissolved Metals      | Bismuth, dissolved                     | mg/L     | 0.0001 | <0.00010   | <0.00010   | <0.00010   | <0.00010   | <0.00010   | <0.00010   | <0.00010   |
| Dissolved Metals      | Boron, dissolved                       | mg/L     | 0.005  | 0.0313     | 0.03       | 0.0939     | 0.0303     | 0.0238     | 0.0262     | <0.0050    |
| Dissolved Metals      | Cadmium, dissolved                     | mg/L     | 1E-05  | 0.00001    | <0.000010  | <0.000010  | <0.000010  | 0.000024   | 0.000013   | <0.000010  |
| Dissolved Metals      | Calcium, dissolved                     | mg/L     | 0.2    | 117        | 115        | 178        | 38.5       | 44.2       | 31.1       | <0.20      |
| Dissolved Metals      | Chromium, dissolved                    | mg/L     | 0.0005 | <0.00050   | <0.00050   | <0.00050   | <0.00050   | <0.00050   | <0.00050   | <0.00050   |
| Dissolved Metals      | Cobalt, dissolved                      | mg/L     | 0.0001 | 0.0001     | <0.00010   | 0.00233    | 0.00039    | 0.00044    | 0.00039    | <0.00010   |
| Dissolved Metals      | Copper, dissolved                      | mg/L     | 0.0004 | 0.00112    | 0.00114    | <0.00040   | <0.00040   | <0.00040   | <0.00040   | <0.00040   |
| Dissolved Metals      | Iron, dissolved                        | mg/L     | 0.01   | <0.010     | <0.010     | 0.988      | 0.207      | 0.025      | 0.119      | <0.010     |
| Dissolved Metals      | Lead, dissolved                        | mg/L     | 0.0002 | <0.00020   | <0.00020   | <0.00020   | <0.00020   | <0.00020   | <0.00020   | <0.00020   |
| Dissolved Metals      | Lithium, dissolved                     | mg/L     | 0.0001 | 0.00016    | 0.00015    | 0.0146     | <0.00010   | <0.00010   | <0.00010   | <0.00010   |
| Dissolved Metals      | Magnesium, dissolved                   | mg/L     | 0.01   | 16.5       | 16.7       | 37.1       | 7.29       | 6.82       | 5.37       | <0.010     |
| Dissolved Metals      | Manganese, dissolved                   | mg/L     | 0.0002 | 0.0384     | 0.0367     | 2.3        | 0.632      | 0.265      | 0.324      | <0.00020   |
| Dissolved Metals      | Mercury, dissolved                     | mg/L     | 1E-05  | <0.000010  | <0.000010  | <0.000010  | <0.000010  | <0.000010  | <0.000010  | <0.000010  |
| Dissolved Metals      | Molybdenum, dissolved                  | mg/L     | 0.0001 | 0.00229    | 0.00222    | 0.00083    | 0.00444    | 0.00601    | 0.00688    | <0.00010   |
| Dissolved Metals      | Nickel, dissolved                      | mg/L     | 0.0004 | 0.00076    | 0.00075    | 0.00482    | 0.00127    | 0.00199    | 0.00185    | <0.00040   |
| Dissolved Metals      | Phosphorus, dissolved                  | mg/L     | 0.05   | <0.050     | <0.050     | <0.050     | 0.131      | 0.057      | 0.093      | <0.050     |
| Dissolved Metals      | Potassium, dissolved                   | mg/L     | 0.1    | 1.72       | 1.67       | 4.44       | 0.71       | 0.97       | 0.63       | <0.10      |
| Dissolved Metals      | Selenium, dissolved                    | mg/L     | 0.0005 | <0.00050   | <0.00050   | <0.00050   | <0.00050   | <0.00050   | <0.00050   | <0.00050   |
| Dissolved Metals      | Silicon, dissolved                     | mg/L     | 1      | 7.8        | 7.8        | 12.2       | 7          | 6.1        | 6.1        | <1.0       |
| Dissolved Metals      | Silver, dissolved                      | mg/L     | 5E-05  | <0.000050  | <0.000050  | <0.000050  | <0.000050  | <0.000050  | <0.000050  | <0.000050  |
| Dissolved Metals      | Sodium, dissolved                      | mg/L     | 0.1    | 18.6       | 18.7       | 91.8       | 9.58       | 15.3       | 11.7       | <0.10      |
| Dissolved Metals      | Strontium, dissolved                   | mg/L     | 0.001  | 0.359      | 0.359      | 0.616      | 0.167      | 0.221      | 0.19       | <0.0010    |
| Dissolved Metals      | Sulfur, dissolved                      | mg/L     | 3      | 42.5       | 42.6       | 29.6       | 7.7        | 14.4       | 8.6        | <3.0       |
| Dissolved Metals      | Tellurium, dissolved                   | mg/L     | 0.0005 | <0.00050   | <0.00050   | <0.00050   | <0.00050   | <0.00050   | <0.00050   | <0.00050   |
| Dissolved Metals      | Thallium, dissolved                    | mg/L     | 2E-05  | <0.000020  | <0.000020  | 0.000027   | <0.000020  | 0.000023   | <0.000020  | <0.000020  |
| Dissolved Metals      | Thorium, dissolved                     | mg/L     | 0.0001 | <0.00010   | <0.00010   | <0.00010   | <0.00010   | <0.00010   | <0.00010   | <0.00010   |
| Dissolved Metals      | Tin, dissolved                         | mg/L     | 0.0002 | <0.00020   | <0.00020   | 0.00027    | <0.00020   | <0.00020   | <0.00020   | <0.00020   |
| Dissolved Metals      | Titanium, dissolved                    | mg/L     | 0.005  | <0.0050    | <0.0050    | <0.0050    | <0.0050    | <0.0050    | <0.0050    | <0.0050    |
| Dissolved Metals      | Uranium, dissolved                     | mg/L     | 2E-05  | 0.00289    | 0.00286    | 0.00916    | 0.00102    | 0.00117    | 0.000718   | <0.000020  |
| Dissolved Metals      | Vanadium, dissolved                    | mg/L     | 0.001  | <0.0010    | <0.0010    | <0.0010    | <0.0010    | <0.0010    | <0.0010    | <0.0010    |
| Dissolved Metals      | Zinc, dissolved                        | mg/L     | 0.004  | <0.0040    | 0.0067     | <0.0040    | 0.0219     | <0.0040    | <0.0040    | <0.0040    |
| Dissolved Metals      | Zirconium, dissolved                   | mg/L     | 0.0001 | <0.00010   | <0.00010   | 0.00023    | <0.00010   | <0.00010   | <0.00010   | <0.00010   |
| Total Metals          | Aluminum, total                        | mg/L     | 0.005  | 0.0303     | 0.0255     | 0.0272     | 0.849      | 0.0507     | 0.215      | <0.0050    |
| Total Metals          | Antimony, total                        | mg/L     | 0.0002 | <0.00020   | <0.00020   | 0.00026    | <0.00020   | <0.00020   | 0.00021    | <0.00020   |
| Total Metals          | Arsenic, total                         | mg/L     | 0.0005 | <0.00050   | <0.00050   | 0.00373    | 0.00187    | 0.00073    | 0.00138    | <0.00050   |
| Total Metals          | Barium, total                          | mg/L     | 0.005  | 0.0255     | 0.0259     | 0.0892     | 0.0315     | 0.036      | 0.0217     | <0.0050    |
| Total Metals          | Beryllium, total                       | mg/L     | 0.0001 | <0.00010   | <0.00010   | <0.00010   | <0.00010   | <0.00010   | <0.00010   | <0.00010   |
| Total Metals          | Bismuth, total                         | mg/L     | 0.0001 | <0.00010   | <0.00010   | <0.00010   | <0.00010   | <0.00010   | <0.00010   | <0.00010   |
| Total Metals          | Boron, total                           | mg/L     | 0.005  | 0.0548     | 0.0372     | 0.0872     | 0.0318     | 0.0264     | 0.0294     | <0.0050    |
| Total Metals          | Cadmium, total                         | mg/L     | 1E-05  | 0.000012   | <0.000010  | 0.000017   | 0.000071   | 0.000394   | 0.000292   | <0.000010  |
| Total Metals          | Calcium, total                         | mg/L     | 0.2    | 123        | 125        | 186        | 39.5       | 49.6       | 35.9       | <0.20      |
| Total Metals          | Chromium, total                        | mg/L     | 0.0005 | <0.00050   | <0.00050   | <0.00050   | 0.00133    | 0.00059    | <0.00050   | <0.00050   |
| Total Metals          | Cobalt, total                          | mg/L     | 0.0001 | 0.00025    | 0.00023    | 0.00222    | 0.00098    | 0.00045    | 0.00047    | <0.00010   |
| Total Metals          | Copper, total                          | mg/L     | 0.0004 | 0.0015     | 0.00144    | 0.00072    | 0.00109    | 0.00126    | 0.00057    | <0.00040   |
| Total Metals          | Iron, total                            | mg/L     | 0.01   | 0.029      | 0.024      | 0.896      | 1.44       | 0.058      | 0.2        | <0.010     |

| General Method                         | Analyte                | Units | RDL    |           |           |           |           |           |           |           |
|----------------------------------------|------------------------|-------|--------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Total Metals                           | Lead, total            | mg/L  | 0.0002 | <0.00020  | <0.00020  | 0.00029   | 0.00024   | <0.00020  | <0.00020  | <0.00020  |
| Total Metals                           | Lithium, total         | mg/L  | 0.0001 | 0.00032   | 0.00022   | 0.0132    | 0.00024   | 0.00015   | 0.0002    | <0.00010  |
| Total Metals                           | Magnesium, total       | mg/L  | 0.01   | 17        | 17.1      | 37.1      | 7.62      | 7.39      | 6         | <0.010    |
| Total Metals                           | Manganese, total       | mg/L  | 0.0002 | 0.12      | 0.108     | 2.12      | 0.508     | 0.289     | 0.323     | <0.00020  |
| Total Metals                           | Mercury, total         | mg/L  | 1E-05  | <0.000010 | <0.000010 | <0.000010 | <0.000010 | <0.000010 | <0.000010 | <0.000010 |
| Total Metals                           | Molybdenum, total      | mg/L  | 0.0001 | 0.00235   | 0.00237   | 0.00084   | 0.00426   | 0.00656   | 0.00754   | <0.00010  |
| Total Metals                           | Nickel, total          | mg/L  | 0.0004 | 0.0009    | 0.00084   | 0.00495   | 0.00202   | 0.00207   | 0.0023    | <0.00040  |
| Total Metals                           | Phosphorus, total      | mg/L  | 0.05   | <0.050    | <0.050    | <0.050    | 0.201     | 0.066     | 0.104     | <0.050    |
| Total Metals                           | Potassium, total       | mg/L  | 0.1    | 1.72      | 1.73      | 4.16      | 0.75      | 1.06      | 0.71      | <0.10     |
| Total Metals                           | Selenium, total        | mg/L  | 0.0005 | <0.00050  | <0.00050  | <0.00050  | <0.00050  | <0.00050  | <0.00050  | <0.00050  |
| Total Metals                           | Silicon, total         | mg/L  | 1      | 7.8       | 8         | 12        | 8.2       | 6.6       | 7.3       | <1.0      |
| Total Metals                           | Silver, total          | mg/L  | 5E-05  | <0.000050 | <0.000050 | <0.000050 | <0.000050 | <0.000050 | <0.000050 | <0.000050 |
| Total Metals                           | Sodium, total          | mg/L  | 0.1    | 18.6      | 18.6      | 74        | 9.28      | 16.3      | 12.7      | <0.10     |
| Total Metals                           | Strontium, total       | mg/L  | 0.001  | 0.374     | 0.376     | 0.601     | 0.168     | 0.24      | 0.209     | <0.0010   |
| Total Metals                           | Sulfur, total          | mg/L  | 3      | 45.6      | 45.5      | 27.8      | 7.4       | 15.6      | 9.5       | <3.0      |
| Total Metals                           | Tellurium, total       | mg/L  | 0.0005 | <0.00050  | <0.00050  | <0.00050  | <0.00050  | <0.00050  | <0.00050  | <0.00050  |
| Total Metals                           | Thallium, total        | mg/L  | 2E-05  | <0.000020 | <0.000020 | 0.000022  | 0.000021  | 0.000025  | 0.000023  | <0.000020 |
| Total Metals                           | Thorium, total         | mg/L  | 0.0001 | <0.00010  | <0.00010  | <0.00010  | 0.00011   | <0.00010  | 0.00036   | <0.00010  |
| Total Metals                           | Tin, total             | mg/L  | 0.0002 | <0.00020  | <0.00020  | 0.00067   | 0.0002    | 0.00027   | 0.0003    | <0.00020  |
| Total Metals                           | Titanium, total        | mg/L  | 0.005  | <0.0050   | <0.0050   | <0.0050   | 0.046     | <0.0050   | <0.0050   | <0.0050   |
| Total Metals                           | Uranium, total         | mg/L  | 2E-05  | 0.00294   | 0.00302   | 0.00855   | 0.00101   | 0.00131   | 0.000911  | <0.000020 |
| Total Metals                           | Vanadium, total        | mg/L  | 0.001  | <0.0010   | <0.0010   | <0.0010   | 0.0033    | <0.0010   | <0.0010   | <0.0010   |
| Total Metals                           | Zinc, total            | mg/L  | 0.004  | <0.0040   | <0.0040   | 0.0051    | 0.0052    | <0.0040   | <0.0040   | <0.0040   |
| Total Metals                           | Zirconium, total       | mg/L  | 0.0001 | <0.00010  | <0.00010  | 0.00017   | 0.0002    | <0.00010  | 0.00022   | <0.00010  |
| BCMOE Aggregate Hydrocarbons           | EPHw10-19              | ug/L  | 250    | <250      | <250      | <250      | <250      | <250      | <250      | <250      |
| BCMOE Aggregate Hydrocarbons           | EPHw19-32              | ug/L  | 250    | <250      | <250      | <250      | <250      | <250      | <250      | <250      |
| BCMOE Aggregate Hydrocarbons           | LEPHw                  | ug/L  | 250    | <250      | <250      | <250      | <250      | <250      | <250      | <250      |
| BCMOE Aggregate Hydrocarbons           | LEPHw                  | ug/L  | 250    | <250      | <250      | <250      | <250      | <250      | <250      | <250      |
| Polycyclic Aromatic Hydrocarbons (PAH) | Acenaphthene           | ug/L  | 0.05   | <0.050    | <0.050    | <0.050    | <0.050    | <0.050    | <0.050    | <0.050    |
| Polycyclic Aromatic Hydrocarbons (PAH) | Acenaphthylene         | ug/L  | 0.2    | <0.200    | <0.200    | <0.200    | <0.200    | <0.200    | <0.200    | <0.200    |
| Polycyclic Aromatic Hydrocarbons (PAH) | Acridine               | ug/L  | 0.05   | <0.050    | <0.050    | <0.050    | <0.050    | <0.050    | <0.050    | <0.050    |
| Polycyclic Aromatic Hydrocarbons (PAH) | Anthracene             | ug/L  | 0.01   | <0.010    | <0.010    | <0.010    | <0.010    | <0.010    | <0.010    | <0.010    |
| Polycyclic Aromatic Hydrocarbons (PAH) | Benz(a)anthracene      | ug/L  | 0.01   | <0.010    | <0.010    | <0.010    | <0.010    | <0.010    | <0.010    | <0.010    |
| Polycyclic Aromatic Hydrocarbons (PAH) | Benzo(a)pyrene         | ug/L  | 0.01   | <0.010    | <0.010    | <0.010    | <0.010    | <0.010    | <0.010    | <0.010    |
| Polycyclic Aromatic Hydrocarbons (PAH) | Benzo(b)fluoranthene   | ug/L  | 0.05   | <0.050    | <0.050    | <0.050    | <0.050    | <0.050    | <0.050    | <0.050    |
| Polycyclic Aromatic Hydrocarbons (PAH) | Benzo(b+h)fluoranthene | ug/L  | 0.05   | <0.050    | <0.050    | <0.050    | <0.050    | <0.050    | <0.050    | <0.050    |
| Polycyclic Aromatic Hydrocarbons (PAH) | Benzo(g,h,i)perylene   | ug/L  | 0.05   | <0.050    | <0.050    | <0.050    | <0.050    | <0.050    | <0.050    | <0.050    |
| Polycyclic Aromatic Hydrocarbons (PAH) | Benzo(k)fluoranthene   | ug/L  | 0.05   | <0.050    | <0.050    | <0.050    | <0.050    | <0.050    | <0.050    | <0.050    |
| Polycyclic Aromatic Hydrocarbons (PAH) | Chrysene               | ug/L  | 0.05   | <0.050    | <0.050    | <0.050    | <0.050    | <0.050    | <0.050    | <0.050    |
| Polycyclic Aromatic Hydrocarbons (PAH) | Dibenz(a,h)anthracene  | ug/L  | 0.01   | <0.010    | <0.010    | <0.010    | <0.010    | <0.010    | <0.010    | <0.010    |
| Polycyclic Aromatic Hydrocarbons (PAH) | Fluoranthene           | ug/L  | 0.03   | <0.030    | <0.030    | <0.030    | <0.030    | <0.030    | <0.030    | <0.030    |
| Polycyclic Aromatic Hydrocarbons (PAH) | Fluorene               | ug/L  | 0.05   | <0.050    | <0.050    | <0.050    | <0.050    | <0.050    | <0.050    | <0.050    |
| Polycyclic Aromatic Hydrocarbons (PAH) | Indeno(1,2,3-cd)pyrene | ug/L  | 0.05   | <0.050    | <0.050    | <0.050    | <0.050    | <0.050    | <0.050    | <0.050    |
| Polycyclic Aromatic Hydrocarbons (PAH) | Naphthalene            | ug/L  | 0.2    | <0.200    | <0.200    | <0.200    | <0.200    | <0.200    | <0.200    | <0.200    |
| Polycyclic Aromatic Hydrocarbons (PAH) | Phenanthrene           | ug/L  | 0.1    | <0.100    | <0.100    | <0.100    | <0.100    | <0.100    | <0.100    | <0.100    |
| Polycyclic Aromatic Hydrocarbons (PAH) | Pyrene                 | ug/L  | 0.02   | <0.020    | <0.020    | <0.020    | <0.020    | <0.020    | <0.020    | <0.020    |
| Polycyclic Aromatic Hydrocarbons (PAH) | Quinoline              | ug/L  | 0.05   | <0.050    | <0.050    | <0.050    | <0.050    | <0.050    | <0.050    | <0.050    |