



6 Adelaide St. E – Suit 220  
Toronto, ON M5C 1H6  
Canada  
Office: 416-479-8728  
Jericho site: 778-372-2748

September 22<sup>nd</sup>, 2011

**SENT VIA EMAIL**

Phyllis Beaulieu, Manager of Licensing  
Nunavut Water Board  
P.O. Box 119  
Gjoa Haven, Nunavut  
X0B 1J0

**Re: 2AM-JER0410 Monthly Report- August 2011**

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The following is the monthly report for August 2011 as required under the Nunavut Water Board ("NWB or Board") Water License 2AM-JER0410. Results of water monitoring, as proposed in section 5.0 of Appendix C (General Monitoring Plan) of the Care and Maintenance Plan submitted to the Water Board in January 2011, are included below.

On July 29<sup>th</sup> till August 12<sup>th</sup>, Tonia Robb and Keven Lesk-Winflied were on site to complete the lake and stream sampling and completed the bathymetric surveys of Carat Lake (shoal areas) and Lake O1 (shoal areas), and of entire area of Lake O2, Lake O3 and Reference Lake 2 (Lake Athena).

**JER-SWQ-01 (previously JER-SW1)**

The results from JER-SWQ-01, Waste Water Treatment effluent and influent, are noted below. The amount of water treated from the waste water treatment plant (WWTP) in August was 110.61 m<sup>3</sup>.

*JER-SWQ-01 (previously JER-SW1) - Effluent*

| ALS                             |          | Sample ID    | SWQ-1 (Effluent)    | SWQ-1 (Effluent)     | SWQ-01 (Effluent)     | SWQ-1 (Effluent)     | SWQ-1 (Effluent)     |
|---------------------------------|----------|--------------|---------------------|----------------------|-----------------------|----------------------|----------------------|
| 9/21/2011                       |          | ALS ID       | L103877 8-1         | L1043009 -10         | L1046971-1            | L1049554 -1          | L1052600 -2          |
| Multiple Work Orders            |          | Date Sampled | 8/1/2011 9:30:00 AM | 8/10/2011 9:30:00 AM | 8/17/2011 12:00:00 AM | 8/24/2011 8:30:00 AM | 8/31/2011 8:00:00 AM |
| Analyte                         | Units    | LOR          | Water               | Water                | Water                 | Water                | Water                |
| Hardness (as CaCO3)             | mg/L     | 0.5          | -                   | -                    | 51.2                  | -                    | -                    |
| Total Suspended Solids          | mg/L     | 3            | 13                  | <3.0                 | -                     | <3.0                 | 16                   |
| Total Dissolved Solids          | mg/L     | 10           | 370                 | 348                  | 331                   | 355                  | -                    |
| Temperature                     | Degree C | 1            | 25                  | 25                   | 25                    | 25                   | 25                   |
| Turbidity                       | NTU      | 0.1          | 5.4                 | 2.41                 | 3.52                  | 3.13                 | 11.8                 |
| Acidity (as CaCO3)              | mg/L     | 5            | 6.6                 | 9.8                  | 11.5                  | 10.4                 | 18.9                 |
| Alkalinity, Total (as CaCO3)    | mg/L     | 5            | 37.7                | 20.4                 | 14.2                  | 13.8                 | 6.4                  |
| Ammonia (as N)                  | mg/L     | 0.005        | 1.19                | 0.717                | 1.17                  | -                    | 4.33                 |
| Bicarbonate (HCO3)              | mg/L     | 5            | 45.9                | 24.9                 | 17.3                  | 16.8                 | 7.8                  |
| Carbonate (CO3)                 | mg/L     | 5            | <5.0                | <5.0                 | <5.0                  | <5.0                 | <5.0                 |
| Chloride (Cl)                   | mg/L     | 0.5          | 98.4                | 76.8                 | 67.9                  | 83                   | 72.9                 |
| Conductivity (EC)               | uS/cm    | 0.2          | 591                 | 545                  | 501                   | 585                  | 572                  |
| Fluoride (F)                    | mg/L     | 0.05         | 0.059               | 0.06                 | <0.050                | <0.050               | <0.050               |
| Hardness (as CaCO3)             | mg/L     | n/a          | 35.7                | 49.8                 | 49.1                  | 49.8                 | 52.1                 |
| Hydroxide (OH)                  | mg/L     | 5            | <5.0                | <5.0                 | <5.0                  | <5.0                 | <5.0                 |
| Ion Balance                     | %        | n/a          | 91                  | 99                   | 99.8                  | 92.6                 | 101                  |
| Nitrate and Nitrite (as N)      | mg/L     | 0.006        | 14.7                | 19.5                 | 21.5                  | 23.8                 | 27                   |
| Nitrate (as N)                  | mg/L     | 0.006        | 14.4                | 19.5 *               | 21.2                  | 23.7                 | 26.8                 |
| Nitrite (as N)                  | mg/L     | 0.002        | 0.27                | <0.50 *              | 0.315                 | 0.114                | 0.167                |
| Total Kjeldahl Nitrogen         | mg/L     | 0.2          | 3.85                | 3.33                 | 3.68                  | 4.23                 | -                    |
| pH                              | pH       | 0.1          | 7.31                | 7.02                 | 6.79                  | 6.92                 | 6.3                  |
| Orthophosphate-Dissolved (as P) | mg/L     | 0.001        | 4.85                | 6.69 *               | 6.37                  | 6.82                 | 7.66                 |
| Phosphorus (P)-Total Dissolved  | mg/L     | 0.001        | 5.4                 | 7.41                 | 6.2                   | 7.1                  | 8.08                 |

|                        |            |          |      |       |             |      |      |
|------------------------|------------|----------|------|-------|-------------|------|------|
| Phosphorus (P)-Total   | mg/L       | 0.001    | 6.28 | 7.44  | 6.73        | 7.19 | 8.87 |
| TDS (Calculated)       | mg/L       | n/a      | 317  | 299   | 283         | 316  | 316  |
| Sulfate (SO4)          | mg/L       | 0.05     | 23.3 | 20.8  | 16.2        | 16.9 | 18.5 |
| Total Inorganic Carbon | mg/L       | 1        | 10.7 | 5.2   | 5.9         | 2.8  | 3    |
| Total Organic Carbon   | mg/L       | 1        | 20   | 16.7  | 16.9        | 21.8 | 16.1 |
| Fecal Coliforms        | CFU/100 mL | 1        | 30 * | 184 * | 248 *       | -    | 7    |
| Mercury (Hg)-Total     | mg/L       | 0.00005  | -    | -     | <0.000050   | -    | -    |
| Aluminum (Al)-Total    | mg/L       | 0.0002   | -    | -     | 0.0289      | -    | -    |
| Antimony (Sb)-Total    | mg/L       | 0.000005 | -    | -     | 0.00134     | -    | -    |
| Arsenic (As)-Total     | mg/L       | 0.00002  | -    | -     | 0.00066     | -    | -    |
| Barium (Ba)-Total      | mg/L       | 0.00002  | -    | -     | 0.00258     | -    | -    |
| Beryllium (Be)-Total   | mg/L       | 0.000002 | -    | -     | <0.000020 * | -    | -    |
| Bismuth (Bi)-Total     | mg/L       | 0.000001 | -    | -     | 0.000084    | -    | -    |
| Boron (B)-Total        | mg/L       | 0.005    | -    | -     | <0.050 *    | -    | -    |
| Cadmium (Cd)-Total     | mg/L       | 0.000005 | -    | -     | <0.000050 * | -    | -    |
| Calcium (Ca)-Total     | mg/L       | 0.03     | -    | -     | 13.8        | -    | -    |
| Cesium (Cs)-Total      | mg/L       | 0.000005 | -    | -     | 0.000068    | -    | -    |
| Chromium (Cr)-Total    | mg/L       | 0.00005  | -    | -     | <0.00050 *  | -    | -    |
| Cobalt (Co)-Total      | mg/L       | 0.000005 | -    | -     | 0.000695    | -    | -    |
| Copper (Cu)-Total      | mg/L       | 0.00005  | -    | -     | 0.0376      | -    | -    |
| Gallium (Ga)-Total     | mg/L       | 0.00005  | -    | -     | <0.00050 *  | -    | -    |
| Iron (Fe)-Total        | mg/L       | 0.01     | -    | -     | 0.201       | -    | -    |
| Lead (Pb)-Total        | mg/L       | 0.000005 | -    | -     | 0.000278    | -    | -    |
| Lithium (Li)-Total     | mg/L       | 0.0002   | -    | -     | 0.0074      | -    | -    |
| Magnesium (Mg)-Total   | mg/L       | 0.03     | -    | -     | 4.09        | -    | -    |
| Manganese (Mn)-Total   | mg/L       | 0.000005 | -    | -     | 0.103       | -    | -    |
| Molybdenum (Mo)-Total  | mg/L       | 0.00001  | -    | -     | 0.00158     | -    | -    |
| Nickel (Ni)-           | mg/L       | 0.0000   | -    | -     | 0.015       | -    | -    |

|                          |      |              |   |   |                |   |   |
|--------------------------|------|--------------|---|---|----------------|---|---|
| Total                    |      | 5            |   |   |                |   |   |
| Phosphorus (P)-Total     | mg/L | 0.05         | - | - | 6.96           | - | - |
| Potassium (K)-Total      | mg/L | 0.05         | - | - | 22             | - | - |
| Rhenium (Re)-Total       | mg/L | 0.0000<br>05 | - | - | <0.000050<br>* | - | - |
| Rubidium (Rb)-Total      | mg/L | 0.0000<br>05 | - | - | 0.0216         | - | - |
| Selenium (Se)-Total      | mg/L | 0.0000<br>4  | - | - | <0.00040<br>*  | - | - |
| Silicon (Si)-Total       | mg/L | 0.05         | - | - | 0.361          | - | - |
| Silver (Ag)-Total        | mg/L | 0.0000<br>05 | - | - | <0.000050<br>* | - | - |
| Sodium (Na)-Total        | mg/L | 0.2          | - | - | 60             | - | - |
| Strontium (Sr)-Total     | mg/L | 0.0000<br>1  | - | - | 0.0214         | - | - |
| Tellurium (Te)-Total     | mg/L | 0.0000<br>1  | - | - | <0.00010<br>*  | - | - |
| Thallium (Tl)-Total      | mg/L | 0.0000<br>01 | - | - | 0.000011       | - | - |
| Thorium (Th)-Total       | mg/L | 0.0000<br>05 | - | - | <0.000050<br>* | - | - |
| Tin (Sn)-Total           | mg/L | 0.0000<br>1  | - | - | <0.00010<br>*  | - | - |
| Titanium (Ti)-Total      | mg/L | 0.0000<br>5  | - | - | <0.00050<br>*  | - | - |
| Tungsten (W)-Total       | mg/L | 0.0000<br>1  | - | - | <0.00010<br>*  | - | - |
| Uranium (U)-Total        | mg/L | 0.0000<br>01 | - | - | 0.00002        | - | - |
| Vanadium (V)-Total       | mg/L | 0.0000<br>1  | - | - | 0.00053        | - | - |
| Yttrium (Y)-Total        | mg/L | 0.0000<br>05 | - | - | <0.000050<br>* | - | - |
| Zinc (Zn)-Total          | mg/L | 0.0001       | - | - | 1.69           | - | - |
| Zirconium (Zr)-Total     | mg/L | 0.0000<br>1  | - | - | <0.00010<br>*  | - | - |
| Aluminum (Al)-Dissolved  | mg/L | 0.0002       | - | - | 0.0285         | - | - |
| Antimony (Sb)-Dissolved  | mg/L | 0.0000<br>05 | - | - | 0.0013         | - | - |
| Arsenic (As)-Dissolved   | mg/L | 0.0000<br>2  | - | - | 0.00067        | - | - |
| Barium (Ba)-Dissolved    | mg/L | 0.0000<br>2  | - | - | 0.00272        | - | - |
| Beryllium (Be)-Dissolved | mg/L | 0.0000<br>02 | - | - | <0.000020<br>* | - | - |
| Bismuth (Bi)-Dissolved   | mg/L | 0.0000<br>01 | - | - | 0.000078       | - | - |
| Boron (B)-Dissolved      | mg/L | 0.005        | - | - | <0.050 *       | - | - |

|                           |      |          |      |      |            |      |      |
|---------------------------|------|----------|------|------|------------|------|------|
| Cadmium (Cd)-Dissolved    | mg/L | 0.000005 | -    | -    | <0.000050* | -    | -    |
| Calcium (Ca)-Dissolved    | mg/L | 0.03     | 8.99 | 13   | 13.8 *     | 13.3 | 13.9 |
| Cesium (Cs)-Dissolved     | mg/L | 0.000005 | -    | -    | 0.000064   | -    | -    |
| Chromium (Cr)-Dissolved   | mg/L | 0.00005  | -    | -    | <0.00050*  | -    | -    |
| Cobalt (Co)-Dissolved     | mg/L | 0.000005 | -    | -    | 0.000755   | -    | -    |
| Copper (Cu)-Dissolved     | mg/L | 0.00005  | -    | -    | 0.0353     | -    | -    |
| Gallium (Ga)-Dissolved    | mg/L | 0.00005  | -    | -    | <0.00050*  | -    | -    |
| Iron (Fe)-Dissolved       | mg/L | 0.01     | -    | -    | 0.189      | -    | -    |
| Lead (Pb)-Dissolved       | mg/L | 0.000005 | -    | -    | 0.000152   | -    | -    |
| Lithium (Li)-Dissolved    | mg/L | 0.0002   | -    | -    | 0.0074     | -    | -    |
| Magnesium (Mg)-Dissolved  | mg/L | 0.03     | 3.23 | 4.2  | 4.09 *     | 4.03 | 4.23 |
| Manganese (Mn)-Dissolved  | mg/L | 0.000005 | -    | -    | 0.108      | -    | -    |
| Mercury (Hg)-Dissolved    | mg/L | 0.00005  | -    | -    | <0.000050  | -    | -    |
| Molybdenum (Mo)-Dissolved | mg/L | 0.00001  | -    | -    | 0.00157    | -    | -    |
| Nickel (Ni)-Dissolved     | mg/L | 0.00005  | -    | -    | 0.0149     | -    | -    |
| Phosphorus (P)-Dissolved  | mg/L | 0.05     | -    | -    | 6.99       | -    | -    |
| Potassium (K)-Dissolved   | mg/L | 0.05     | 19   | 21.8 | 22.1 *     | 20.4 | 23.4 |
| Rhenium (Re)-Dissolved    | mg/L | 0.000005 | -    | -    | <0.000050* | -    | -    |
| Rubidium (Rb)-Dissolved   | mg/L | 0.000005 | -    | -    | 0.0216     | -    | -    |
| Selenium (Se)-Dissolved   | mg/L | 0.00004  | -    | -    | <0.00040*  | -    | -    |
| Silicon (Si)-Dissolved    | mg/L | 0.05     | -    | -    | 0.372      | -    | -    |
| Silver (Ag)-Dissolved     | mg/L | 0.000005 | -    | -    | <0.000050* | -    | -    |
| Sodium (Na)-Dissolved     | mg/L | 0.2      | 76.4 | 63.3 | 59.1 *     | 64.5 | 60   |
| Strontium (Sr)-Dissolved  | mg/L | 0.00001  | -    | -    | 0.0219     | -    | -    |
| Tellurium (Te)-Dissolved  | mg/L | 0.00001  | -    | -    | <0.00010*  | -    | -    |
| Thallium (Tl)-Dissolved   | mg/L | 0.000001 | -    | -    | 0.000013   | -    | -    |
| Thorium (Th)-Dissolved    | mg/L | 0.000005 | -    | -    | <0.000050* | -    | -    |
| Tin (Sn)-                 | mg/L | 0.0000   | -    | -    | 0.0001     | -    | -    |

|                           |      |          |      |        |             |      |      |
|---------------------------|------|----------|------|--------|-------------|------|------|
| Dissolved                 |      | 1        |      |        |             |      |      |
| Titanium (Ti)-Dissolved   | mg/L | 0.00005  | -    | -      | <0.00050 *  | -    | -    |
| Tungsten (W)-Dissolved    | mg/L | 0.00001  | -    | -      | <0.00010 *  | -    | -    |
| Uranium (U)-Dissolved     | mg/L | 0.000001 | -    | -      | 0.000019    | -    | -    |
| Vanadium (V)-Dissolved    | mg/L | 0.00001  | -    | -      | 0.00068     | -    | -    |
| Yttrium (Y)-Dissolved     | mg/L | 0.000005 | -    | -      | <0.000050 * | -    | -    |
| Zinc (Zn)-Dissolved       | mg/L | 0.0001   | -    | -      | 1.79        | -    | -    |
| Zirconium (Zr)-Dissolved  | mg/L | 0.00001  | -    | -      | <0.00010 *  | -    | -    |
| Biochemical Oxygen Demand | mg/L | 2        | 2.9  | <2.0   | 4.2         | 2.6  | 4.7  |
| Oil and Grease            | mg/L | 1        | <1.0 | <1.0 * | <1.0        | <1.0 | <1.0 |
|                           |      |          |      |        |             |      |      |
| * = Result Qualified      |      |          |      |        |             |      |      |

*JER-SWQ-01 (previously JER-SW1) - Influent*

| ALS                          |          | Sample ID    | WWTP-IN              | SWQ-1 (IN)           |
|------------------------------|----------|--------------|----------------------|----------------------|
| 9/21/2011                    |          | ALS ID       | L1043009-9           | L1049554-2           |
| Multiple Work Orders         |          | Date Sampled | 8/10/2011 9:30:00 AM | 8/24/2011 8:30:00 AM |
| Analyte                      | Units    | LOR          | Water                | Water                |
| Total Suspended Solids       | mg/L     | 3            | 277                  | 127                  |
| Total Dissolved Solids       | mg/L     | 10           | 330                  | 370                  |
| Temperature                  | Degree C | 1            | 25                   | 25                   |
| Turbidity                    | NTU      | 0.1          | 89.6                 | 78.5                 |
| Acidity (as CaCO3)           | mg/L     | 5            | 86.9                 | 46.8                 |
| Alkalinity, Total (as CaCO3) | mg/L     | 5            | 181                  | 190 *                |
| Ammonia (as N)               | mg/L     | 0.005        | 35.8                 | -                    |
| Bicarbonate (HCO3)           | mg/L     | 5            | 221                  | 232 *                |
| Carbonate (CO3)              | mg/L     | 5            | <5.0                 | <5.0 *               |
| Chloride (Cl)                | mg/L     | 0.5          | 65.5                 | 89.3 *               |
| Conductivity (EC)            | uS/cm    | 0.2          | 701 *                | 780 *                |
| Fluoride (F)                 | mg/L     | 0.05         | 0.387                | <0.050               |
| Hardness (as CaCO3)          | mg/L     | n/a          | 31.1                 | 30.1                 |
| Hydroxide (OH)               | mg/L     | 5            | <5.0                 | <5.0 *               |
| Ion Balance                  | %        | n/a          | 108                  | 63.1 *               |
| Nitrate and Nitrite (as N)   | mg/L     | 0.006        | <0.0060              | <0.060 *             |
| Nitrate (as N)               | mg/L     | 0.006        | <0.0060              | <0.060               |

|                                 |            |       |          |          |
|---------------------------------|------------|-------|----------|----------|
| Nitrite (as N)                  | mg/L       | 0.002 | 0.0058   | <0.020 * |
| Total Kjeldahl Nitrogen         | mg/L       | 0.2   | 67.7     | 55.7     |
| pH                              | pH         | 0.1   | 7.07     | 7.60 *   |
| Orthophosphate-Dissolved (as P) | mg/L       | 0.001 | 5.40 *   | 7.29     |
| Phosphorus (P)-Total Dissolved  | mg/L       | 0.001 | 6.96     | 7.6      |
| Phosphorus (P)-Total            | mg/L       | 0.001 | 11.6     | 9.82     |
| TDS (Calculated)                | mg/L       | n/a   | 278      | 299      |
| Sulfate (SO4)                   | mg/L       | 0.05  | 14       | 0.503    |
| Total Inorganic Carbon          | mg/L       | 1     | 32.5     | 53.2     |
| Total Organic Carbon            | mg/L       | 1     | 185      | 183      |
| Fecal Coliforms                 | CFU/100 mL | 1     | 670000 * | -        |
| Calcium (Ca)-Dissolved          | mg/L       | 0.03  | 6.64 *   | 6.54     |
| Magnesium (Mg)-Dissolved        | mg/L       | 0.03  | 3.52 *   | 3.35     |
| Potassium (K)-Dissolved         | mg/L       | 0.05  | 22.1 *   | 18.8     |
| Sodium (Na)-Dissolved           | mg/L       | 0.2   | 57.2 *   | 67       |
| Biochemical Oxygen Demand       | mg/L       | 2     | 315      | 177      |
| Oil and Grease                  | mg/L       | 1     | 33.1     | 24.2     |
|                                 |            |       |          |          |
| * = Result Qualified            |            |       |          |          |

Approximately 5.678 m<sup>3</sup> of sewage sludge was removed from the WWTP in August and deposited in the waste rock pile located at 12W 0478298 7319368.

### **JER-SWQ-12 (previously JER -WQ1)**

Water taken for domestic purposes at this time is taken from Carat Lake by pump and transported by water truck to tanks within the accommodation unit. Volume drawn is calculated manually. Water drawn from Carat Lake in August was 62.5m<sup>3</sup>. The results from sampling at this location are noted below.

| ALS                          |          | Sample ID    | AEM-12 (CARAT)       |
|------------------------------|----------|--------------|----------------------|
| 9/21/2011                    |          | ALS ID       | L1043009-4           |
| Multiple Work Orders         |          | Date Sampled | 8/10/2011 9:30:00 AM |
| Analyte                      | Units    | LOR          | Water                |
|                              |          |              |                      |
| Hardness (as CaCO3)          | mg/L     | 0.5          | 5.59                 |
| Total Suspended Solids       | mg/L     | 3            | <3.0                 |
| Total Dissolved Solids       | mg/L     | 10           | <10                  |
| Temperature                  | Degree C | 1            | 25                   |
| Turbidity                    | NTU      | 0.1          | 0.3                  |
| Acidity (as CaCO3)           | mg/L     | 5            | <5.0                 |
| Alkalinity, Total (as CaCO3) | mg/L     | 5            | <5.0                 |

|                                  |           |          |            |
|----------------------------------|-----------|----------|------------|
| Ammonia (as N)                   | mg/L      | 0.005    | <0.0050    |
| Bicarbonate (HCO <sub>3</sub> )  | mg/L      | 5        | 5.7        |
| Carbonate (CO <sub>3</sub> )     | mg/L      | 5        | <5.0       |
| Chloride (Cl)                    | mg/L      | 0.5      | <0.50      |
| Conductivity (EC)                | uS/cm     | 0.2      | 12.3       |
| Fluoride (F)                     | mg/L      | 0.05     | <0.050     |
| Hardness (as CaCO <sub>3</sub> ) | mg/L      | n/a      | 5.3        |
| Hydroxide (OH)                   | mg/L      | 5        | <5.0       |
| Ion Balance                      | %         | n/a      | Low EC     |
| Nitrate and Nitrite (as N)       | mg/L      | 0.006    | 0.0157     |
| Nitrate (as N)                   | mg/L      | 0.006    | 0.0157     |
| Nitrite (as N)                   | mg/L      | 0.002    | <0.0020    |
| pH                               | pH        | 0.1      | 7.03       |
| Orthophosphate-Dissolved (as P)  | mg/L      | 0.001    | <0.0010    |
| Phosphorus (P)-Total Dissolved   | mg/L      | 0.001    | <0.0010    |
| Phosphorus (P)-Total             | mg/L      | 0.001    | 0.003      |
| TDS (Calculated)                 | mg/L      | n/a      | 3          |
| Sulfate (SO <sub>4</sub> )       | mg/L      | 0.05     | 0.932      |
| Total Inorganic Carbon           | mg/L      | 1        | 2.1        |
| Total Organic Carbon             | mg/L      | 1        | 3.9        |
| Fecal Coliforms                  | CFU/100mL | 1        | <1         |
| Mercury (Hg)-Total               | mg/L      | 0.00005  | <0.000050  |
| Aluminum (Al)-Total              | mg/L      | 0.0002   | 0.0144     |
| Antimony (Sb)-Total              | mg/L      | 0.000005 | 0.0000055  |
| Arsenic (As)-Total               | mg/L      | 0.00002  | 0.00018    |
| Barium (Ba)-Total                | mg/L      | 0.00002  | 0.0017     |
| Beryllium (Be)-Total             | mg/L      | 0.000002 | 0.0000025  |
| Bismuth (Bi)-Total               | mg/L      | 0.000001 | <0.0000010 |
| Boron (B)-Total                  | mg/L      | 0.005    | <0.0050    |
| Cadmium (Cd)-Total               | mg/L      | 0.000005 | <0.0000050 |
| Calcium (Ca)-Total               | mg/L      | 0.03     | 1.21       |
| Cesium (Cs)-Total                | mg/L      | 0.000005 | 0.000006   |
| Chromium (Cr)-Total              | mg/L      | 0.00005  | 0.000066   |
| Cobalt (Co)-Total                | mg/L      | 0.000005 | 0.000015   |
| Copper (Cu)-Total                | mg/L      | 0.00005  | 0.0014     |
| Gallium (Ga)-Total               | mg/L      | 0.00005  | <0.000050  |
| Iron (Fe)-Total                  | mg/L      | 0.01     | 0.013      |
| Lead (Pb)-Total                  | mg/L      | 0.000005 | <0.0000050 |
| Lithium (Li)-Total               | mg/L      | 0.0002   | 0.0005     |
| Magnesium (Mg)-Total             | mg/L      | 0.03     | 0.625      |
| Manganese (Mn)-Total             | mg/L      | 0.000005 | 0.00207    |
| Molybdenum (Mo)-Total            | mg/L      | 0.00001  | 0.000183   |
| Nickel (Ni)-Total                | mg/L      | 0.00005  | 0.000334   |
| Phosphorus (P)-Total             | mg/L      | 0.05     | <0.050     |
| Potassium (K)-Total              | mg/L      | 0.05     | 0.329      |
| Rhenium (Re)-Total               | mg/L      | 0.000005 | <0.0000050 |
| Rubidium (Rb)-Total              | mg/L      | 0.000005 | 0.000822   |
| Selenium (Se)-Total              | mg/L      | 0.00004  | <0.000040  |



|                           |      |          |            |
|---------------------------|------|----------|------------|
| Silicon (Si)-Total        | mg/L | 0.05     | 0.237      |
| Silver (Ag)-Total         | mg/L | 0.000005 | <0.0000050 |
| Sodium (Na)-Total         | mg/L | 0.2      | 0.5        |
| Strontium (Sr)-Total      | mg/L | 0.00001  | 0.00499    |
| Tellurium (Te)-Total      | mg/L | 0.00001  | <0.000010  |
| Thallium (Tl)-Total       | mg/L | 0.000001 | 0.0000012  |
| Thorium (Th)-Total        | mg/L | 0.000005 | 0.0000133  |
| Tin (Sn)-Total            | mg/L | 0.00001  | <0.000010  |
| Titanium (Ti)-Total       | mg/L | 0.00005  | 0.0001     |
| Tungsten (W)-Total        | mg/L | 0.00001  | <0.000010  |
| Uranium (U)-Total         | mg/L | 0.000001 | 0.000283   |
| Vanadium (V)-Total        | mg/L | 0.00001  | 0.000047   |
| Yttrium (Y)-Total         | mg/L | 0.000005 | 0.0000637  |
| Zinc (Zn)-Total           | mg/L | 0.0001   | 0.00034    |
| Zirconium (Zr)-Total      | mg/L | 0.00001  | 0.000043   |
| Aluminum (Al)-Dissolved   | mg/L | 0.0002   | 0.0108     |
| Antimony (Sb)-Dissolved   | mg/L | 0.000005 | 0.0000051  |
| Arsenic (As)-Dissolved    | mg/L | 0.00002  | 0.000168   |
| Barium (Ba)-Dissolved     | mg/L | 0.00002  | 0.00162    |
| Beryllium (Be)-Dissolved  | mg/L | 0.000002 | <0.0000020 |
| Bismuth (Bi)-Dissolved    | mg/L | 0.000001 | <0.0000010 |
| Boron (B)-Dissolved       | mg/L | 0.005    | 0.0069     |
| Cadmium (Cd)-Dissolved    | mg/L | 0.000005 | <0.0000050 |
| Calcium (Ca)-Dissolved    | mg/L | 0.03     | 1.21 *     |
| Cesium (Cs)-Dissolved     | mg/L | 0.000005 | 0.0000061  |
| Chromium (Cr)-Dissolved   | mg/L | 0.00005  | 0.000066   |
| Cobalt (Co)-Dissolved     | mg/L | 0.000005 | 0.0000075  |
| Copper (Cu)-Dissolved     | mg/L | 0.00005  | 0.00131    |
| Gallium (Ga)-Dissolved    | mg/L | 0.00005  | <0.000050  |
| Iron (Fe)-Dissolved       | mg/L | 0.01     | <0.010     |
| Lead (Pb)-Dissolved       | mg/L | 0.000005 | 0.0000054  |
| Lithium (Li)-Dissolved    | mg/L | 0.0002   | 0.00051    |
| Magnesium (Mg)-Dissolved  | mg/L | 0.03     | 0.620 *    |
| Manganese (Mn)-Dissolved  | mg/L | 0.000005 | 0.000293   |
| Mercury (Hg)-Dissolved    | mg/L | 0.00005  | <0.000050  |
| Molybdenum (Mo)-Dissolved | mg/L | 0.00001  | 0.000059   |
| Nickel (Ni)-Dissolved     | mg/L | 0.00005  | 0.000322   |
| Phosphorus (P)-Dissolved  | mg/L | 0.05     | <0.050     |
| Potassium (K)-Dissolved   | mg/L | 0.05     | 0.306 *    |
| Rhenium (Re)-Dissolved    | mg/L | 0.000005 | <0.0000050 |
| Rubidium (Rb)-Dissolved   | mg/L | 0.000005 | 0.000805   |
| Selenium (Se)-Dissolved   | mg/L | 0.00004  | <0.000040  |
| Silicon (Si)-Dissolved    | mg/L | 0.05     | 0.228      |
| Silver (Ag)-Dissolved     | mg/L | 0.000005 | <0.0000050 |
| Sodium (Na)-Dissolved     | mg/L | 0.2      | 0.50 *     |
| Strontium (Sr)-Dissolved  | mg/L | 0.00001  | 0.00496    |
| Tellurium (Te)-Dissolved  | mg/L | 0.00001  | <0.000010  |
| Thallium (Tl)-Dissolved   | mg/L | 0.000001 | 0.000001   |

|                           |      |          |           |
|---------------------------|------|----------|-----------|
| Thorium (Th)-Dissolved    | mg/L | 0.000005 | 0.0000116 |
| Tin (Sn)-Dissolved        | mg/L | 0.00001  | <0.000010 |
| Titanium (Ti)-Dissolved   | mg/L | 0.00005  | <0.000050 |
| Tungsten (W)-Dissolved    | mg/L | 0.00001  | <0.000010 |
| Uranium (U)-Dissolved     | mg/L | 0.000001 | 0.000249  |
| Vanadium (V)-Dissolved    | mg/L | 0.00001  | 0.000043  |
| Yttrium (Y)-Dissolved     | mg/L | 0.000005 | 0.0000563 |
| Zinc (Zn)-Dissolved       | mg/L | 0.0001   | 0.00113   |
| Zirconium (Zr)-Dissolved  | mg/L | 0.00001  | 0.00004   |
| Biochemical Oxygen Demand | mg/L | 2        | <2.0      |
| Oil and Grease            | mg/L | 1        | <1.0      |
| * = Result Qualified      |      |          |           |

### **JER-SWQ-02 (previously JER –WQ2)**

Sampling was conducted from the discharge pipe leaving the pit in August. The analytical results are noted below:

| ALS                                       |          | Sample ID    | SWQ-2 Pipe           | SWQ-2 Pipe           |
|-------------------------------------------|----------|--------------|----------------------|----------------------|
| 9/21/2011                                 |          | ALS ID       | L1038778-5           | L1043009-3           |
| Multiple Work Orders                      |          | Date Sampled | 8/1/2011 12:00:00 PM | 8/10/2011 9:30:00 AM |
| Analyte                                   | Units    | LOR          | Water                | Water                |
| Hardness (as CaCO <sub>3</sub> )          | mg/L     | 0.5          | 104                  | 145                  |
| Total Suspended Solids                    | mg/L     | 3            | <3.0                 | <3.0                 |
| Total Dissolved Solids                    | mg/L     | 10           | 255                  | 279                  |
| Temperature                               | Degree C | 1            | 25                   | 25                   |
| Turbidity                                 | NTU      | 0.1          | 0.82                 | 0.44                 |
| Acidity (as CaCO <sub>3</sub> )           | mg/L     | 5            | <5.0                 | <5.0                 |
| Alkalinity, Total (as CaCO <sub>3</sub> ) | mg/L     | 5            | 41.9                 | 42.8                 |
| Ammonia (as N)                            | mg/L     | 0.005        | 0.203                | 0.243                |
| Bicarbonate (HCO <sub>3</sub> )           | mg/L     | 5            | 51.1                 | 52.3                 |
| Carbonate (CO <sub>3</sub> )              | mg/L     | 5            | <5.0                 | <5.0                 |
| Chloride (Cl)                             | mg/L     | 0.5          | 14.8                 | 19.7                 |
| Conductivity (EC)                         | uS/cm    | 0.2          | 337                  | 415                  |
| Fluoride (F)                              | mg/L     | 0.05         | 0.094                | 0.102                |
| Hardness (as CaCO <sub>3</sub> )          | mg/L     | n/a          | 114                  | 129                  |
| Hydroxide (OH)                            | mg/L     | 5            | <5.0                 | <5.0                 |
| Ion Balance                               | %        | n/a          | 97.9                 | 95.8                 |
| Nitrate and Nitrite (as N)                | mg/L     | 0.006        | 21                   | 25.2                 |
| Nitrate (as N)                            | mg/L     | 0.006        | 20.9                 | 25.2 *               |
| Nitrite (as N)                            | mg/L     | 0.002        | 0.075                | <0.50 *              |
| pH                                        | pH       | 0.1          | 8.07                 | 7.92                 |
| Orthophosphate-Dissolved (as P)           | mg/L     | 0.001        | <0.0010              | <0.0010              |
| Phosphorus (P)-Total                      | mg/L     | 0.001        | <0.0010              | <0.0010              |

|                        |      |          |             |             |
|------------------------|------|----------|-------------|-------------|
| Dissolved              |      |          |             |             |
| Phosphorus (P)-Total   | mg/L | 0.001    | 0.0034      | 0.0023      |
| TDS (Calculated)       | mg/L | n/a      | 208         | 245         |
| Sulfate (SO4)          | mg/L | 0.05     | 17          | 21.1        |
| Total Inorganic Carbon | mg/L | 1        | 9.1         | 9.8         |
| Total Organic Carbon   | mg/L | 1        | 3.4         | 3.1         |
| Mercury (Hg)-Total     | mg/L | 0.00005  | <0.000050   | <0.000050   |
| Aluminum (Al)-Total    | mg/L | 0.0002   | 0.0243      | 0.01        |
| Antimony (Sb)-Total    | mg/L | 0.000005 | 0.000482    | 0.000546    |
| Arsenic (As)-Total     | mg/L | 0.00002  | 0.000537    | 0.000532    |
| Barium (Ba)-Total      | mg/L | 0.00002  | 0.0648      | 0.0763      |
| Beryllium (Be)-Total   | mg/L | 0.000002 | 0.0000035   | 0.0000022   |
| Bismuth (Bi)-Total     | mg/L | 0.000001 | <0.0000010  | <0.0000010  |
| Boron (B)-Total        | mg/L | 0.005    | 0.0672      | 0.0847      |
| Cadmium (Cd)-Total     | mg/L | 0.000005 | <0.000010 * | <0.000010 * |
| Calcium (Ca)-Total     | mg/L | 0.03     | 25.8        | 33.7        |
| Cesium (Cs)-Total      | mg/L | 0.000005 | 0.000107    | 0.00013     |
| Chromium (Cr)-Total    | mg/L | 0.00005  | 0.000166    | 0.000106    |
| Cobalt (Co)-Total      | mg/L | 0.000005 | 0.00014     | 0.000129    |
| Copper (Cu)-Total      | mg/L | 0.00005  | 0.0014      | 0.000928    |
| Gallium (Ga)-Total     | mg/L | 0.00005  | <0.000050   | <0.000050   |
| Iron (Fe)-Total        | mg/L | 0.01     | 0.026       | <0.010      |
| Lead (Pb)-Total        | mg/L | 0.000005 | 0.000439    | 0.0000827   |
| Lithium (Li)-Total     | mg/L | 0.0002   | 0.0043      | 0.00494     |
| Magnesium (Mg)-Total   | mg/L | 0.03     | 12.3        | 14.5        |
| Manganese (Mn)-Total   | mg/L | 0.000005 | 0.00778     | 0.00183     |
| Molybdenum (Mo)-Total  | mg/L | 0.00001  | 0.0127      | 0.0167      |
| Nickel (Ni)-Total      | mg/L | 0.00005  | 0.00436     | 0.00536     |
| Phosphorus (P)-Total   | mg/L | 0.05     | <0.050      | <0.050      |
| Potassium (K)-Total    | mg/L | 0.05     | 6.32        | 7.65        |
| Rhenium (Re)-Total     | mg/L | 0.000005 | 0.0000201   | 0.0000229   |
| Rubidium (Rb)-Total    | mg/L | 0.000005 | 0.017       | 0.0221      |
| Selenium (Se)-Total    | mg/L | 0.00004  | 0.00046     | 0.00051     |
| Silicon (Si)-Total     | mg/L | 0.05     | 2.87        | 3           |
| Silver (Ag)-Total      | mg/L | 0.000005 | <0.0000050  | <0.0000050  |
| Sodium (Na)-Total      | mg/L | 0.2      | 13.3        | 17.6        |
| Strontium (Sr)-Total   | mg/L | 0.00001  | 0.522       | 0.671       |
| Tellurium (Te)-Total   | mg/L | 0.00001  | <0.000010   | <0.000010   |
| Thallium (Tl)-Total    | mg/L | 0.000001 | 0.0000138   | 0.0000159   |
| Thorium (Th)-Total     | mg/L | 0.000005 | 0.0000114   | 0.0000057   |
| Tin (Sn)-Total         | mg/L | 0.00001  | <0.000020   | 0.000054    |
| Titanium (Ti)-Total    | mg/L | 0.00005  | 0.000619    | 0.000252    |
| Tungsten (W)-Total     | mg/L | 0.00001  | 0.000852    | 0.000504    |
| Uranium (U)-Total      | mg/L | 0.000001 | 0.119       | 0.103       |
| Vanadium (V)-Total     | mg/L | 0.00001  | 0.000558    | 0.000398    |
| Yttrium (Y)-Total      | mg/L | 0.000005 | 0.000136    | 0.0000876   |
| Zinc (Zn)-Total        | mg/L | 0.0001   | 0.00023     | 0.00067     |
| Zirconium (Zr)-Total   | mg/L | 0.00001  | 0.000062    | 0.000046    |

|                           |      |          |             |             |
|---------------------------|------|----------|-------------|-------------|
| Aluminum (Al)-Dissolved   | mg/L | 0.0002   | 0.00565     | 0.00197     |
| Antimony (Sb)-Dissolved   | mg/L | 0.000005 | 0.000476    | 0.000547    |
| Arsenic (As)-Dissolved    | mg/L | 0.00002  | 0.000527    | 0.00053     |
| Barium (Ba)-Dissolved     | mg/L | 0.00002  | 0.0647      | 0.0747      |
| Beryllium (Be)-Dissolved  | mg/L | 0.000002 | 0.0000022   | <0.0000020  |
| Bismuth (Bi)-Dissolved    | mg/L | 0.000001 | <0.0000010  | <0.0000010  |
| Boron (B)-Dissolved       | mg/L | 0.005    | 0.0747      | 0.0857      |
| Cadmium (Cd)-Dissolved    | mg/L | 0.000005 | <0.000010 * | <0.000010 * |
| Calcium (Ca)-Dissolved    | mg/L | 0.03     | 25.6 *      | 34.1 *      |
| Cesium (Cs)-Dissolved     | mg/L | 0.000005 | 0.000103    | 0.000128    |
| Chromium (Cr)-Dissolved   | mg/L | 0.00005  | 0.000056    | <0.000050   |
| Cobalt (Co)-Dissolved     | mg/L | 0.000005 | 0.000101    | 0.00012     |
| Copper (Cu)-Dissolved     | mg/L | 0.00005  | 0.00118     | 0.000812    |
| Gallium (Ga)-Dissolved    | mg/L | 0.00005  | <0.000050   | <0.000050   |
| Iron (Fe)-Dissolved       | mg/L | 0.01     | <0.010      | <0.010      |
| Lead (Pb)-Dissolved       | mg/L | 0.000005 | 0.0000314   | 0.0000259   |
| Lithium (Li)-Dissolved    | mg/L | 0.0002   | 0.00447     | 0.00495     |
| Magnesium (Mg)-Dissolved  | mg/L | 0.03     | 12.2 *      | 14.6 *      |
| Manganese (Mn)-Dissolved  | mg/L | 0.000005 | 0.00196     | 0.00035     |
| Mercury (Hg)-Dissolved    | mg/L | 0.00005  | <0.000050   | <0.000050   |
| Molybdenum (Mo)-Dissolved | mg/L | 0.00001  | 0.0132      | 0.0162      |
| Nickel (Ni)-Dissolved     | mg/L | 0.00005  | 0.00371     | 0.00507     |
| Phosphorus (P)-Dissolved  | mg/L | 0.05     | <0.050      | <0.050      |
| Potassium (K)-Dissolved   | mg/L | 0.05     | 6.38 *      | 7.69 *      |
| Rhenium (Re)-Dissolved    | mg/L | 0.000005 | 0.0000192   | 0.0000239   |
| Rubidium (Rb)-Dissolved   | mg/L | 0.000005 | 0.0179      | 0.0225      |
| Selenium (Se)-Dissolved   | mg/L | 0.00004  | 0.000517    | 0.000506    |
| Silicon (Si)-Dissolved    | mg/L | 0.05     | 2.8         | 3.02        |
| Silver (Ag)-Dissolved     | mg/L | 0.000005 | <0.0000050  | <0.0000050  |
| Sodium (Na)-Dissolved     | mg/L | 0.2      | 13.5 *      | 17.7 *      |
| Strontium (Sr)-Dissolved  | mg/L | 0.00001  | 0.534       | 0.676       |
| Tellurium (Te)-Dissolved  | mg/L | 0.00001  | <0.000010   | <0.000010   |
| Thallium (Tl)-Dissolved   | mg/L | 0.000001 | 0.0000133   | 0.0000158   |
| Thorium (Th)-Dissolved    | mg/L | 0.000005 | <0.0000050  | <0.0000050  |
| Tin (Sn)-Dissolved        | mg/L | 0.00001  | <0.000020   | 0.000041    |
| Titanium (Ti)-Dissolved   | mg/L | 0.00005  | <0.000050   | <0.000050   |
| Tungsten (W)-Dissolved    | mg/L | 0.00001  | 0.000882    | 0.000477    |
| Uranium (U)-Dissolved     | mg/L | 0.000001 | 0.113       | 0.108       |
| Vanadium (V)-Dissolved    | mg/L | 0.00001  | 0.000478    | 0.000389    |
| Yttrium (Y)-Dissolved     | mg/L | 0.000005 | 0.0000735   | 0.0000594   |
| Zinc (Zn)-Dissolved       | mg/L | 0.0001   | 0.00070 *   | 0.00086     |
| Zirconium (Zr)-Dissolved  | mg/L | 0.00001  | 0.000036    | 0.000027    |
| * = Result Qualified      |      |          |             |             |

**JER-SWQ-07**

The east sump was sampled in August. The results of the analysis are noted below.

| ALS                             |          | Sample ID    | SWQ-07                | SWQ7                 |
|---------------------------------|----------|--------------|-----------------------|----------------------|
| 9/21/2011                       |          | ALS ID       | L1046971-3            | L1052600-3           |
| Multiple Work Orders            |          | Date Sampled | 8/17/2011 12:00:00 AM | 8/31/2011 8:00:00 AM |
| Analyte                         | Units    | LOR          | Water                 | Water                |
| Hardness (as CaCO3)             | mg/L     | 0.5          | 88.1                  | -                    |
| Total Suspended Solids          | mg/L     | 3            | <3.0                  | -                    |
| Total Dissolved Solids          | mg/L     | 10           | 193                   | -                    |
| Temperature                     | Degree C | 1            | 25                    | -                    |
| Turbidity                       | NTU      | 0.1          | 1.74                  | -                    |
| Acidity (as CaCO3)              | mg/L     | 5            | <5.0                  | -                    |
| Alkalinity, Total (as CaCO3)    | mg/L     | 5            | 69.8                  | -                    |
| Ammonia (as N)                  | mg/L     | 0.005        | 0.0336                | -                    |
| Bicarbonate (HCO3)              | mg/L     | 5            | 85.2                  | -                    |
| Carbonate (CO3)                 | mg/L     | 5            | <5.0                  | -                    |
| Chloride (Cl)                   | mg/L     | 0.5          | 15.8                  | -                    |
| Conductivity (EC)               | uS/cm    | 0.2          | 314                   | -                    |
| Fluoride (F)                    | mg/L     | 0.05         | 0.166                 | -                    |
| Hardness (as CaCO3)             | mg/L     | n/a          | 85.6                  | -                    |
| Hydroxide (OH)                  | mg/L     | 5            | <5.0                  | -                    |
| Ion Balance                     | %        | n/a          | 98.2                  | -                    |
| Nitrate and Nitrite (as N)      | mg/L     | 0.006        | 3.18                  | -                    |
| Nitrate (as N)                  | mg/L     | 0.006        | 3.18                  | -                    |
| Nitrite (as N)                  | mg/L     | 0.002        | <0.050                | -                    |
| pH                              | pH       | 0.1          | 8.06                  | -                    |
| Orthophosphate-Dissolved (as P) | mg/L     | 0.001        | <0.0010               | -                    |
| Phosphorus (P)-Total Dissolved  | mg/L     | 0.001        | -                     | <0.0010              |
| Phosphorus (P)-Total            | mg/L     | 0.001        | 0.012                 | -                    |
| TDS (Calculated)                | mg/L     | n/a          | 173                   | -                    |
| Sulfate (SO4)                   | mg/L     | 0.05         | 41.9                  | -                    |
| Total Inorganic Carbon          | mg/L     | 1            | -                     | 17.2                 |
| Total Organic Carbon            | mg/L     | 1            | 6.5                   | -                    |
| Mercury (Hg)-Total              | mg/L     | 0.00005      | <0.000050             | -                    |
| Aluminum (Al)-Total             | mg/L     | 0.0002       | 0.0393                | -                    |
| Antimony (Sb)-Total             | mg/L     | 0.000005     | 0.000179              | -                    |
| Arsenic (As)-Total              | mg/L     | 0.00002      | 0.000407              | -                    |
| Barium (Ba)-Total               | mg/L     | 0.00002      | 0.0386                | -                    |
| Beryllium (Be)-Total            | mg/L     | 0.000002     | 0.0000028             | -                    |
| Bismuth (Bi)-Total              | mg/L     | 0.000001     | <0.0000010            | -                    |
| Boron (B)-Total                 | mg/L     | 0.005        | 0.0374                | -                    |
| Cadmium (Cd)-Total              | mg/L     | 0.000005     | 0.0000465             | -                    |
| Calcium (Ca)-Total              | mg/L     | 0.03         | 18.6                  | -                    |
| Cesium (Cs)-Total               | mg/L     | 0.000005     | 0.000109              | -                    |

|                          |      |          |            |   |
|--------------------------|------|----------|------------|---|
| Chromium (Cr)-Total      | mg/L | 0.00005  | 0.000562   | - |
| Cobalt (Co)-Total        | mg/L | 0.000005 | 0.000195   | - |
| Copper (Cu)-Total        | mg/L | 0.00005  | 0.00205    | - |
| Gallium (Ga)-Total       | mg/L | 0.00005  | <0.000050  | - |
| Iron (Fe)-Total          | mg/L | 0.01     | 0.143      | - |
| Lead (Pb)-Total          | mg/L | 0.000005 | 0.0000674  | - |
| Lithium (Li)-Total       | mg/L | 0.0002   | 0.00182    | - |
| Magnesium (Mg)-Total     | mg/L | 0.03     | 10.5       | - |
| Manganese (Mn)-Total     | mg/L | 0.000005 | 0.0458     | - |
| Molybdenum (Mo)-Total    | mg/L | 0.00001  | 0.00793    | - |
| Nickel (Ni)-Total        | mg/L | 0.00005  | 0.0052     | - |
| Phosphorus (P)-Total     | mg/L | 0.05     | <0.050     | - |
| Potassium (K)-Total      | mg/L | 0.05     | 10.1       | - |
| Rhenium (Re)-Total       | mg/L | 0.000005 | 0.0000552  | - |
| Rubidium (Rb)-Total      | mg/L | 0.000005 | 0.0251     | - |
| Selenium (Se)-Total      | mg/L | 0.00004  | 0.000205   | - |
| Silicon (Si)-Total       | mg/L | 0.05     | 0.432      | - |
| Silver (Ag)-Total        | mg/L | 0.000005 | <0.0000050 | - |
| Sodium (Na)-Total        | mg/L | 0.2      | 22.2       | - |
| Strontium (Sr)-Total     | mg/L | 0.00001  | 0.382      | - |
| Tellurium (Te)-Total     | mg/L | 0.00001  | <0.000010  | - |
| Thallium (Tl)-Total      | mg/L | 0.000001 | 0.0000168  | - |
| Thorium (Th)-Total       | mg/L | 0.000005 | 0.0000088  | - |
| Tin (Sn)-Total           | mg/L | 0.00001  | <0.000010  | - |
| Titanium (Ti)-Total      | mg/L | 0.00005  | 0.0018     | - |
| Tungsten (W)-Total       | mg/L | 0.00001  | 0.000069   | - |
| Uranium (U)-Total        | mg/L | 0.000001 | 0.00903    | - |
| Vanadium (V)-Total       | mg/L | 0.00001  | 0.000245   | - |
| Yttrium (Y)-Total        | mg/L | 0.000005 | 0.0000528  | - |
| Zinc (Zn)-Total          | mg/L | 0.0001   | 0.00052    | - |
| Zirconium (Zr)-Total     | mg/L | 0.00001  | 0.000052   | - |
| Aluminum (Al)-Dissolved  | mg/L | 0.0002   | 0.00696    | - |
| Antimony (Sb)-Dissolved  | mg/L | 0.000005 | 0.000178   | - |
| Arsenic (As)-Dissolved   | mg/L | 0.00002  | 0.000386   | - |
| Barium (Ba)-Dissolved    | mg/L | 0.00002  | 0.0372     | - |
| Beryllium (Be)-Dissolved | mg/L | 0.000002 | <0.0000020 | - |
| Bismuth (Bi)-Dissolved   | mg/L | 0.000001 | <0.0000010 | - |
| Boron (B)-Dissolved      | mg/L | 0.005    | 0.0415     | - |
| Cadmium (Cd)-Dissolved   | mg/L | 0.000005 | 0.0000508  | - |
| Calcium (Ca)-Dissolved   | mg/L | 0.03     | 18.2 *     | - |
| Cesium (Cs)-Dissolved    | mg/L | 0.000005 | 0.000102   | - |
| Chromium (Cr)-Dissolved  | mg/L | 0.00005  | 0.000151   | - |
| Cobalt (Co)-Dissolved    | mg/L | 0.000005 | 0.0000931  | - |
| Copper (Cu)-Dissolved    | mg/L | 0.00005  | 0.00172    | - |
| Gallium (Ga)-Dissolved   | mg/L | 0.00005  | <0.000050  | - |
| Iron (Fe)-Dissolved      | mg/L | 0.01     | 0.051      | - |
| Lead (Pb)-Dissolved      | mg/L | 0.000005 | 0.0000179  | - |
| Lithium (Li)-Dissolved   | mg/L | 0.0002   | 0.00178    | - |

|                           |      |          |            |   |
|---------------------------|------|----------|------------|---|
| Magnesium (Mg)-Dissolved  | mg/L | 0.03     | 10.3 *     | - |
| Manganese (Mn)-Dissolved  | mg/L | 0.000005 | 0.0253     | - |
| Mercury (Hg)-Dissolved    | mg/L | 0.00005  | <0.000050  | - |
| Molybdenum (Mo)-Dissolved | mg/L | 0.00001  | 0.00842    | - |
| Nickel (Ni)-Dissolved     | mg/L | 0.00005  | 0.00363    | - |
| Phosphorus (P)-Dissolved  | mg/L | 0.05     | <0.050     | - |
| Potassium (K)-Dissolved   | mg/L | 0.05     | 10.1 *     | - |
| Rhenium (Re)-Dissolved    | mg/L | 0.000005 | 0.0000526  | - |
| Rubidium (Rb)-Dissolved   | mg/L | 0.000005 | 0.0251     | - |
| Selenium (Se)-Dissolved   | mg/L | 0.00004  | 0.000138   | - |
| Silicon (Si)-Dissolved    | mg/L | 0.05     | 0.303      | - |
| Silver (Ag)-Dissolved     | mg/L | 0.000005 | <0.0000050 | - |
| Sodium (Na)-Dissolved     | mg/L | 0.2      | 22.2 *     | - |
| Strontium (Sr)-Dissolved  | mg/L | 0.00001  | 0.38       | - |
| Tellurium (Te)-Dissolved  | mg/L | 0.00001  | <0.000010  | - |
| Thallium (Tl)-Dissolved   | mg/L | 0.000001 | 0.0000161  | - |
| Thorium (Th)-Dissolved    | mg/L | 0.000005 | <0.0000050 | - |
| Tin (Sn)-Dissolved        | mg/L | 0.00001  | <0.000010  | - |
| Titanium (Ti)-Dissolved   | mg/L | 0.00005  | 0.000127   | - |
| Tungsten (W)-Dissolved    | mg/L | 0.00001  | 0.000068   | - |
| Uranium (U)-Dissolved     | mg/L | 0.000001 | 0.00927    | - |
| Vanadium (V)-Dissolved    | mg/L | 0.00001  | 0.000133   | - |
| Yttrium (Y)-Dissolved     | mg/L | 0.000005 | 0.0000217  | - |
| Zinc (Zn)-Dissolved       | mg/L | 0.0001   | 0.00074    | - |
| Zirconium (Zr)-Dissolved  | mg/L | 0.00001  | 0.00003    | - |
| * = Result Qualified      |      |          |            |   |

Due to a mistake made at ALS, Phosphorus and Total Inorganic Carbon wasn't tested with the 17<sup>th</sup> of August. To rectify the missing data, samples were resubmitted on the 31<sup>st</sup> of August to test for the 2 missing criteria.

#### **JER-SWQ-04**

Water from cell C of our PKCA, which is water before it is discharged into the environment, has been tested. The results of the analysis are noted below.

| ALS                    |       | Sample ID    | SWQ-4                  | SWQ-4                   | SWQ-04                   |
|------------------------|-------|--------------|------------------------|-------------------------|--------------------------|
| 9/21/2011              |       | ALS ID       | L1038778-2             | L1043009-1              | L1046971-2               |
| Multiple Work Orders   |       | Date Sampled | 8/1/2011<br>9:30:00 AM | 8/10/2011<br>9:30:00 AM | 8/17/2011<br>12:00:00 AM |
| Analyte                | Units | LOR          | Water                  | Water                   | Water                    |
| Hardness (as CaCO3)    | mg/L  | 0.5          | 56.2                   | 63.6                    | 67                       |
| Total Suspended Solids | mg/L  | 3            | <3.0                   | <3.0                    | <3.0                     |



|                                 |           |          |            |            |            |
|---------------------------------|-----------|----------|------------|------------|------------|
| Total Dissolved Solids          | mg/L      | 10       | 100        | 101        | 122        |
| Temperature                     | Degree C  | 1        | 25         | 25         | 25         |
| Turbidity                       | NTU       | 0.1      | 0.48       | 0.66       | 0.7        |
| Acidity (as CaCO3)              | mg/L      | 5        | <5.0       | <5.0       | <5.0       |
| Alkalinity, Total (as CaCO3)    | mg/L      | 5        | 50.4       | 49.8       | 49.6       |
| Ammonia (as N)                  | mg/L      | 0.005    | 0.0179     | 0.0168     | 0.0112     |
| Bicarbonate (HCO3)              | mg/L      | 5        | 61.5       | 60.8       | 60.5       |
| Carbonate (CO3)                 | mg/L      | 5        | <5.0       | <5.0       | <5.0       |
| Chloride (Cl)                   | mg/L      | 0.5      | 5.16       | 5.87       | 6.82       |
| Conductivity (EC)               | uS/cm     | 0.2      | 164        | 181        | 191        |
| Fluoride (F)                    | mg/L      | 0.05     | 0.082      | <0.050     | 0.104      |
| Hardness (as CaCO3)             | mg/L      | n/a      | 58.5       | 63.5       | 64.3       |
| Hydroxide (OH)                  | mg/L      | 5        | <5.0       | <5.0       | <5.0       |
| Ion Balance                     | %         | n/a      | 102        | 103        | 97.3       |
| Nitrate and Nitrite (as N)      | mg/L      | 0.006    | 0.973      | 2.65       | 3.56       |
| Nitrate (as N)                  | mg/L      | 0.006    | 0.968      | 2.64       | 3.56       |
| Nitrite (as N)                  | mg/L      | 0.002    | 0.0053     | 0.015      | <0.050     |
| pH                              | pH        | 0.1      | 8.13       | 7.99       | 8          |
| Orthophosphate-Dissolved (as P) | mg/L      | 0.001    | <0.0010    | <0.0010    | <0.0010    |
| Phosphorus (P)-Total Dissolved  | mg/L      | 0.001    | 0.0013     | 0.002      | 0.0016     |
| Phosphorus (P)-Total            | mg/L      | 0.001    | 0.0074     | 0.007      | 0.0068     |
| TDS (Calculated)                | mg/L      | n/a      | 87.7       | 97.7       | 103        |
| Sulfate (SO4)                   | mg/L      | 0.05     | 17         | 16.7       | 17.3       |
| Total Inorganic Carbon          | mg/L      | 1        | 13         | 11.5       | 13.3       |
| Total Organic Carbon            | mg/L      | 1        | 5          | 4.1        | 4.5        |
| Fecal Coliforms                 | CFU/10 mL | 1        | <1         | <1         | <1         |
| Mercury (Hg)-Total              | mg/L      | 0.00005  | <0.000050  | <0.000050  | <0.000050  |
| Aluminum (Al)-Total             | mg/L      | 0.0002   | 0.0188     | 0.018      | 0.0239     |
| Antimony (Sb)-Total             | mg/L      | 0.000005 | 0.000127   | 0.000156   | 0.000165   |
| Arsenic (As)-Total              | mg/L      | 0.00002  | 0.0005     | 0.000485   | 0.000478   |
| Barium (Ba)-Total               | mg/L      | 0.00002  | 0.0247     | 0.0274     | 0.0286     |
| Beryllium (Be)-Total            | mg/L      | 0.000002 | <0.0000020 | <0.0000020 | <0.0000020 |
| Bismuth (Bi)-Total              | mg/L      | 0.000001 | <0.0000010 | <0.0000010 | <0.0000010 |
| Boron (B)-Total                 | mg/L      | 0.005    | 0.0211     | 0.025      | 0.0297     |
| Cadmium (Cd)-Total              | mg/L      | 0.000005 | <0.0000050 | <0.0000050 | <0.0000050 |
| Calcium (Ca)-Total              | mg/L      | 0.03     | 11.4       | 13         | 13.4       |
| Cesium (Cs)-Total               | mg/L      | 0.000005 | 0.0000398  | 0.0000473  | 0.0000504  |
| Chromium (Cr)-Total             | mg/L      | 0.00005  | 0.000104   | 0.000083   | 0.000105   |
| Cobalt (Co)-Total               | mg/L      | 0.000005 | 0.000122   | 0.000124   | 0.00012    |
| Copper (Cu)-Total               | mg/L      | 0.00005  | 0.00205    | 0.00187    | 0.00185    |
| Gallium (Ga)-Total              | mg/L      | 0.00005  | <0.000050  | <0.000050  | <0.000050  |



|                          |      |          |            |            |            |
|--------------------------|------|----------|------------|------------|------------|
| Iron (Fe)-Total          | mg/L | 0.01     | 0.095      | 0.096      | 0.089      |
| Lead (Pb)-Total          | mg/L | 0.000005 | 0.0000315  | 0.0000259  | 0.0000335  |
| Lithium (Li)-Total       | mg/L | 0.0002   | 0.00088    | 0.00112    | 0.00134    |
| Magnesium (Mg)-Total     | mg/L | 0.03     | 7.22       | 7.65       | 7.76       |
| Manganese (Mn)-Total     | mg/L | 0.000005 | 0.0248     | 0.025      | 0.0203     |
| Molybdenum (Mo)-Total    | mg/L | 0.00001  | 0.00329    | 0.00427    | 0.00474    |
| Nickel (Ni)-Total        | mg/L | 0.00005  | 0.00159    | 0.00173    | 0.0017     |
| Phosphorus (P)-Total     | mg/L | 0.05     | <0.050     | <0.050     | <0.050     |
| Potassium (K)-Total      | mg/L | 0.05     | 5.32       | 5.42       | 5.39       |
| Rhenium (Re)-Total       | mg/L | 0.000005 | 0.0000111  | 0.0000121  | 0.0000126  |
| Rubidium (Rb)-Total      | mg/L | 0.000005 | 0.0107     | 0.0118     | 0.0123     |
| Selenium (Se)-Total      | mg/L | 0.00004  | 0.000073   | 0.00011    | 0.000144   |
| Silicon (Si)-Total       | mg/L | 0.05     | 0.271      | 0.418      | 0.525      |
| Silver (Ag)-Total        | mg/L | 0.000005 | <0.0000050 | <0.0000050 | <0.0000050 |
| Sodium (Na)-Total        | mg/L | 0.2      | 6.86       | 7.71       | 7.99       |
| Strontium (Sr)-Total     | mg/L | 0.00001  | 0.195      | 0.232      | 0.244      |
| Tellurium (Te)-Total     | mg/L | 0.00001  | <0.000010  | <0.000010  | <0.000010  |
| Thallium (Tl)-Total      | mg/L | 0.000001 | 0.0000051  | 0.0000057  | 0.0000073  |
| Thorium (Th)-Total       | mg/L | 0.000005 | 0.0000078  | 0.0000061  | 0.0000075  |
| Tin (Sn)-Total           | mg/L | 0.00001  | <0.000020  | 0.000013   | <0.000010  |
| Titanium (Ti)-Total      | mg/L | 0.00005  | 0.000316   | 0.000286   | 0.000789   |
| Tungsten (W)-Total       | mg/L | 0.00001  | 0.000136   | 0.000154   | 0.000157   |
| Uranium (U)-Total        | mg/L | 0.000001 | 0.00426    | 0.0104     | 0.0126     |
| Vanadium (V)-Total       | mg/L | 0.00001  | 0.000196   | 0.000213   | 0.000212   |
| Yttrium (Y)-Total        | mg/L | 0.000005 | 0.0000448  | 0.0000452  | 0.0000596  |
| Zinc (Zn)-Total          | mg/L | 0.0001   | 0.00309    | 0.00033    | 0.0008     |
| Zirconium (Zr)-Total     | mg/L | 0.00001  | 0.000025   | 0.000025   | 0.000029   |
| Aluminum (Al)-Dissolved  | mg/L | 0.0002   | 0.0135     | 0.012      | 0.0107     |
| Antimony (Sb)-Dissolved  | mg/L | 0.000005 | 0.000124   | 0.000148   | 0.000164   |
| Arsenic (As)-Dissolved   | mg/L | 0.00002  | 0.000412   | 0.000425   | 0.000422   |
| Barium (Ba)-Dissolved    | mg/L | 0.00002  | 0.0241     | 0.0272     | 0.0285     |
| Beryllium (Be)-Dissolved | mg/L | 0.000002 | <0.0000020 | <0.0000020 | <0.0000020 |
| Bismuth (Bi)-Dissolved   | mg/L | 0.000001 | <0.0000010 | <0.0000010 | <0.0000010 |
| Boron (B)-Dissolved      | mg/L | 0.005    | 0.0233     | 0.0259     | 0.0305     |
| Cadmium (Cd)-Dissolved   | mg/L | 0.000005 | <0.0000050 | <0.0000050 | <0.0000050 |
| Calcium (Ca)-Dissolved   | mg/L | 0.03     | 11.5 *     | 12.9 *     | 13.7 *     |
| Cesium (Cs)-Dissolved    | mg/L | 0.000005 | 0.0000387  | 0.0000457  | 0.0000486  |
| Chromium (Cr)-Dissolved  | mg/L | 0.00005  | 0.000085   | 0.000067   | 0.000067   |

|                           |      |          |            |            |            |
|---------------------------|------|----------|------------|------------|------------|
| Cobalt (Co)-Dissolved     | mg/L | 0.000005 | 0.000101   | 0.000097   | 0.0000688  |
| Copper (Cu)-Dissolved     | mg/L | 0.000005 | 0.00176    | 0.00163    | 0.00157    |
| Gallium (Ga)-Dissolved    | mg/L | 0.000005 | <0.000050  | <0.000050  | <0.000050  |
| Iron (Fe)-Dissolved       | mg/L | 0.01     | 0.063      | 0.037      | 0.023      |
| Lead (Pb)-Dissolved       | mg/L | 0.000005 | 0.0000164  | 0.0000098  | 0.0000075  |
| Lithium (Li)-Dissolved    | mg/L | 0.0002   | 0.00084    | 0.00109    | 0.00133    |
| Magnesium (Mg)-Dissolved  | mg/L | 0.03     | 7.24 *     | 7.61 *     | 7.97 *     |
| Manganese (Mn)-Dissolved  | mg/L | 0.000005 | 0.0211     | 0.015      | 0.0071     |
| Mercury (Hg)-Dissolved    | mg/L | 0.000005 | <0.000050  | <0.000050  | <0.000050  |
| Molybdenum (Mo)-Dissolved | mg/L | 0.000001 | 0.00337    | 0.00424    | 0.00477    |
| Nickel (Ni)-Dissolved     | mg/L | 0.000005 | 0.00137    | 0.0016     | 0.0016     |
| Phosphorus (P)-Dissolved  | mg/L | 0.05     | <0.050     | <0.050     | <0.050     |
| Potassium (K)-Dissolved   | mg/L | 0.05     | 5.32 *     | 5.38 *     | 5.48 *     |
| Rhenium (Re)-Dissolved    | mg/L | 0.000005 | 0.0000112  | 0.0000116  | 0.0000118  |
| Rubidium (Rb)-Dissolved   | mg/L | 0.000005 | 0.0107     | 0.0115     | 0.0127     |
| Selenium (Se)-Dissolved   | mg/L | 0.000004 | 0.000076   | 0.000133   | 0.000132   |
| Silicon (Si)-Dissolved    | mg/L | 0.05     | 0.252      | 0.398      | 0.481      |
| Silver (Ag)-Dissolved     | mg/L | 0.000005 | <0.0000050 | <0.0000050 | <0.0000050 |
| Sodium (Na)-Dissolved     | mg/L | 0.2      | 6.86 *     | 7.66 *     | 8.14 *     |
| Strontium (Sr)-Dissolved  | mg/L | 0.000001 | 0.195      | 0.232      | 0.249      |
| Tellurium (Te)-Dissolved  | mg/L | 0.000001 | <0.000010  | <0.000010  | <0.000010  |
| Thallium (Tl)-Dissolved   | mg/L | 0.000001 | 0.000005   | 0.0000057  | 0.0000061  |
| Thorium (Th)-Dissolved    | mg/L | 0.000005 | <0.0000050 | <0.0000050 | <0.0000050 |
| Tin (Sn)-Dissolved        | mg/L | 0.000001 | <0.000020  | 0.000013   | <0.000010  |
| Titanium (Ti)-Dissolved   | mg/L | 0.000005 | 0.000111   | 0.000067   | <0.000050  |
| Tungsten (W)-Dissolved    | mg/L | 0.000001 | 0.000135   | 0.000155   | 0.000153   |
| Uranium (U)-Dissolved     | mg/L | 0.000001 | 0.00419    | 0.0108     | 0.0124     |
| Vanadium (V)-Dissolved    | mg/L | 0.000001 | 0.000149   | 0.000138   | 0.000125   |
| Yttrium (Y)-Dissolved     | mg/L | 0.000005 | 0.0000304  | 0.0000209  | 0.0000191  |
| Zinc (Zn)-Dissolved       | mg/L | 0.0001   | 0.00395 *  | 0.00085    | 0.00075    |
| Zirconium (Zr)-Dissolved  | mg/L | 0.000001 | 0.00002    | 0.000015   | 0.000018   |
| Biochemical Oxygen        | mg/L | 2        | <2.0       | <2.0       | <2.0       |

|                      |      |   |      |        |      |
|----------------------|------|---|------|--------|------|
| Demand               |      |   |      |        |      |
| Oil and Grease       | mg/L | 1 | <1.0 | <1.0 * | <1.0 |
|                      |      |   |      |        |      |
| * = Result Qualified |      |   |      |        |      |

#### **JER-AEM-4**

Water that has been removed from the PKCA into the environment is placed into stream C3 before it reaches Lake C3. AEM-4 is located at the mouth of stream C3, near the PKCA. The results from this testing is below:

| ALS                          |          | Sample ID    | AEM-4                | AEM-04                | AEM-4                 | AEM-4                |
|------------------------------|----------|--------------|----------------------|-----------------------|-----------------------|----------------------|
| 9/21/2011                    |          | ALS ID       | L1043009-2           | L1046971-4            | L1049554-3            | L1052600-1           |
| Multiple Work Orders         |          | Date Sampled | 8/10/2011 9:30:00 AM | 8/17/2011 12:00:00 AM | 8/24/2011 10:00:00 AM | 8/31/2011 8:00:00 AM |
| Analyte                      | Units    | LOR          | Water                | Water                 | Water                 | Water                |
|                              |          |              |                      |                       |                       |                      |
| Hardness (as CaCO3)          | mg/L     | 0.5          | 57.8                 | 62.5                  | 64.4                  | 65.3                 |
| Total Suspended Solids       | mg/L     | 3            | 5                    | <3.0                  | <3.0                  | <3.0                 |
| Total Dissolved Solids       | mg/L     | 10           | 96                   | 111                   | 114                   | -                    |
| Temperature                  | Degree C | 1            | 25                   | 25                    | 25                    | 25                   |
| Turbidity                    | NTU      | 0.1          | 0.95                 | 0.58                  | 0.7                   | 0.68                 |
| Acidity (as CaCO3)           | mg/L     | 5            | <5.0                 | <5.0                  | <5.0                  | <5.0                 |
| Alkalinity, Total (as CaCO3) | mg/L     | 5            | 53                   | 48.9                  | 50.5                  | 51.6                 |
| Ammonia (as N)               | mg/L     | 0.005        | 0.012                | 0.0157                | -                     | 0.0411               |
| Bicarbonate (HCO3)           | mg/L     | 5            | 64.7                 | 59.7                  | 61.7                  | 63                   |
| Carbonate (CO3)              | mg/L     | 5            | <5.0                 | <5.0                  | <5.0                  | <5.0                 |
| Chloride (Cl)                | mg/L     | 0.5          | 4.92                 | 6.35                  | 6.31                  | 6.34                 |
| Conductivity (EC)            | uS/cm    | 0.2          | 161                  | 180                   | 186                   | 187                  |
| Fluoride (F)                 | mg/L     | 0.05         | 0.084                | 0.101                 | 0.083                 | 0.079                |
| Hardness (as CaCO3)          | mg/L     | n/a          | 54.8                 | 60                    | 60.8                  | 67.7                 |
| Hydroxide (OH)               | mg/L     | 5            | <5.0                 | <5.0                  | <5.0                  | <5.0                 |
| Ion Balance                  | %        | n/a          | 99.2                 | 97                    | 98.1                  | 105                  |
| Nitrate and Nitrite (as N)   | mg/L     | 0.006        | 0.367                | 2.79                  | 2.44                  | 2.85                 |
| Nitrate (as N)               | mg/L     | 0.006        | 0.362                | 2.79                  | 2.44                  | 2.84                 |

|                                 |           |          |            |            |            |            |
|---------------------------------|-----------|----------|------------|------------|------------|------------|
| Nitrite (as N)                  | mg/L      | 0.002    | 0.0055     | <0.050     | 0.0085     | 0.0125     |
| pH                              | pH        | 0.1      | 8.04       | 7.92       | 7.97       | 7.99       |
| Orthophosphate-Dissolved (as P) | mg/L      | 0.001    | <0.0010    | <0.0010    | <0.0010    | <0.0010    |
| Phosphorus (P)-Total Dissolved  | mg/L      | 0.001    | 0.0022     | 0.0021     | 0.0015     | 0.0039     |
| Phosphorus (P)-Total            | mg/L      | 0.001    | 0.0057     | 0.0064     | 0.0053     | 0.0071     |
| TDS (Calculated)                | mg/L      | n/a      | 81.6       | 95.8       | 95.3       | 101        |
| Sulfate (SO4)                   | mg/L      | 0.05     | 14.1       | 16.1       | 15.8       | 15.9       |
| Total Inorganic Carbon          | mg/L      | 1        | 12.2       | 13         | 12.6       | 13.2       |
| Total Organic Carbon            | mg/L      | 1        | 5          | 4.7        | 7.2        | 4.5        |
| Fecal Coliforms                 | CFU/100mL | 1        | <1         | <1         | -          | <1 *       |
| Mercury (Hg)-Total              | mg/L      | 0.00005  | <0.000050  | <0.000050  | <0.000050  | -          |
| Aluminum (Al)-Total             | mg/L      | 0.0002   | 0.0136     | 0.017      | 0.0215     | 0.0131     |
| Antimony (Sb)-Total             | mg/L      | 0.000005 | 0.000102   | 0.00014    | 0.000147   | 0.000149   |
| Arsenic (As)-Total              | mg/L      | 0.00002  | 0.000727   | 0.000445   | 0.000383   | 0.000398   |
| Barium (Ba)-Total               | mg/L      | 0.00002  | 0.0176     | 0.0254     | 0.0228     | 0.0242     |
| Beryllium (Be)-Total            | mg/L      | 0.000002 | <0.0000020 | 0.0000021  | <0.0000020 | <0.0000020 |
| Bismuth (Bi)-Total              | mg/L      | 0.000001 | <0.0000010 | <0.0000010 | 0.0000014  | <0.0000010 |
| Boron (B)-Total                 | mg/L      | 0.005    | 0.0203     | 0.0268     | 0.0296     | 0.0268     |
| Cadmium (Cd)-Total              | mg/L      | 0.000005 | <0.0000050 | 0.0000336  | <0.0000050 | <0.0000050 |
| Calcium (Ca)-Total              | mg/L      | 0.03     | 11.7       | 12.8       | 13.2       | 14.1       |
| Cesium (Cs)-Total               | mg/L      | 0.000005 | 0.0000336  | 0.0000394  | 0.0000404  | 0.0000423  |
| Chromium (Cr)-Total             | mg/L      | 0.00005  | 0.000066   | 0.000089   | 0.000066   | 0.000078   |
| Cobalt (Co)-Total               | mg/L      | 0.000005 | 0.000176   | 0.0000966  | 0.0000696  | 0.0000828  |
| Copper (Cu)-Total               | mg/L      | 0.00005  | 0.00146    | 0.00152    | 0.00145    | 0.00168    |
| Gallium (Ga)-Total              | mg/L      | 0.00005  | <0.000050  | <0.000050  | <0.000050  | <0.000050  |
| Iron (Fe)-Total                 | mg/L      | 0.01     | 0.325      | 0.104      | 0.063      | 0.101      |
| Lead (Pb)-Total                 | mg/L      | 0.000005 | 0.000012   | 0.0000237  | 0.0000155  | 0.0000194  |
| Lithium (Li)-Total              | mg/L      | 0.0002   | 0.00077    | 0.00111    | 0.00122    | 0.00107    |
| Magnesium (Mg)-Total            | mg/L      | 0.03     | 7.06       | 7.57       | 7.74       | 8.04       |
| Manganese (Mn)-Total            | mg/L      | 0.000005 | 0.0389     | 0.0112     | 0.00743    | 0.00802    |
| Molybdenum                      | mg/L      | 0.0000   | 0.00265    | 0.0039     | 0.00418    | 0.00383    |

|                          |      |          |            |            |            |            |
|--------------------------|------|----------|------------|------------|------------|------------|
| (Mo)-Total               |      | 1        |            |            |            |            |
| Nickel (Ni)-Total        | mg/L | 0.00005  | 0.00107    | 0.00132    | 0.00119    | 0.00186    |
| Phosphorus (P)-Total     | mg/L | 0.05     | <0.050     | <0.050     | <0.050     | <0.050     |
| Potassium (K)-Total      | mg/L | 0.05     | 4.97       | 5.14       | 5.3        | 5.41       |
| Rhenium (Re)-Total       | mg/L | 0.000005 | 0.0000111  | 0.0000116  | 0.0000115  | 0.000012   |
| Rubidium (Rb)-Total      | mg/L | 0.000005 | 0.00993    | 0.011      | 0.0111     | 0.0115     |
| Selenium (Se)-Total      | mg/L | 0.00004  | 0.000087   | 0.000102   | <0.000040  | 0.000099   |
| Silicon (Si)-Total       | mg/L | 0.05     | 0.31       | 0.51       | 0.428      | 0.411      |
| Silver (Ag)-Total        | mg/L | 0.000005 | <0.0000050 | <0.0000050 | <0.0000050 | <0.0000050 |
| Sodium (Na)-Total        | mg/L | 0.2      | 7.04       | 7.64       | 8.21       | 8.07       |
| Strontium (Sr)-Total     | mg/L | 0.00001  | 0.182      | 0.221      | 0.234      | 0.236      |
| Tellurium (Te)-Total     | mg/L | 0.00001  | <0.000010  | <0.000010  | <0.000010  | <0.000010  |
| Thallium (Tl)-Total      | mg/L | 0.000001 | 0.0000047  | 0.0000055  | 0.000004   | 0.0000043  |
| Thorium (Th)-Total       | mg/L | 0.000005 | 0.0000061  | 0.0000071  | <0.0000050 | 0.0000071  |
| Tin (Sn)-Total           | mg/L | 0.00001  | <0.000010  | <0.000010  | <0.000010  | <0.000010  |
| Titanium (Ti)-Total      | mg/L | 0.00005  | 0.000227   | 0.000434   | 0.000288   | 0.000203   |
| Tungsten (W)-Total       | mg/L | 0.00001  | 0.000056   | 0.000092   | 0.000088   | 0.000087   |
| Uranium (U)-Total        | mg/L | 0.000001 | 0.0019     | 0.00627    | 0.0064     | 0.00776    |
| Vanadium (V)-Total       | mg/L | 0.00001  | 0.000133   | 0.000151   | 0.000111   | 0.000108   |
| Yttrium (Y)-Total        | mg/L | 0.000005 | 0.0000476  | 0.0000545  | 0.0000398  | 0.0000422  |
| Zinc (Zn)-Total          | mg/L | 0.0001   | 0.00029    | 0.00044    | 0.00035    | 0.00097    |
| Zirconium (Zr)-Total     | mg/L | 0.00001  | 0.000032   | 0.000036   | 0.000032   | 0.00003    |
| Aluminum (Al)-Dissolved  | mg/L | 0.0002   | 0.00892    | 0.00741    | 0.0104     | 0.0091     |
| Antimony (Sb)-Dissolved  | mg/L | 0.000005 | 0.000107   | 0.00014    | 0.00014    | 0.000155   |
| Arsenic (As)-Dissolved   | mg/L | 0.00002  | 0.000632   | 0.000396   | 0.000326   | 0.00039    |
| Barium (Ba)-Dissolved    | mg/L | 0.00002  | 0.0176     | 0.024      | 0.0213     | 0.0248     |
| Beryllium (Be)-Dissolved | mg/L | 0.000002 | <0.0000020 | <0.0000020 | <0.0000020 | <0.0000020 |
| Bismuth (Bi)-Dissolved   | mg/L | 0.000001 | <0.0000010 | <0.0000010 | <0.0000010 | <0.0000010 |
| Boron (B)-               | mg/L | 0.005    | 0.0208     | 0.028      | 0.0341     | 0.0287     |

|                           |      |          |            |            |            |            |
|---------------------------|------|----------|------------|------------|------------|------------|
| Dissolved                 |      |          |            |            |            |            |
| Cadmium (Cd)-Dissolved    | mg/L | 0.000005 | <0.0000050 | 0.000105   | <0.0000050 | <0.0000050 |
| Calcium (Ca)-Dissolved    | mg/L | 0.03     | 11.6 *     | 12.6 *     | 13.1 *     | 14.0 *     |
| Cesium (Cs)-Dissolved     | mg/L | 0.000005 | 0.0000338  | 0.0000386  | 0.0000384  | 0.0000426  |
| Chromium (Cr)-Dissolved   | mg/L | 0.00005  | 0.000056   | 0.000089   | 0.000052   | 0.000069   |
| Cobalt (Co)-Dissolved     | mg/L | 0.000005 | 0.00014    | 0.0000737  | 0.0000452  | 0.0000609  |
| Copper (Cu)-Dissolved     | mg/L | 0.00005  | 0.00122    | 0.00129    | 0.00118    | 0.00149    |
| Gallium (Ga)-Dissolved    | mg/L | 0.00005  | <0.000050  | <0.000050  | <0.000050  | <0.000050  |
| Iron (Fe)-Dissolved       | mg/L | 0.01     | 0.143      | 0.036      | 0.025      | 0.062      |
| Lead (Pb)-Dissolved       | mg/L | 0.000005 | 0.0000094  | 0.000008   | 0.0000063  | 0.000008   |
| Lithium (Li)-Dissolved    | mg/L | 0.0002   | 0.00078    | 0.00111    | 0.00139    | 0.00107    |
| Magnesium (Mg)-Dissolved  | mg/L | 0.03     | 6.99 *     | 7.52 *     | 7.70 *     | 7.95 *     |
| Manganese (Mn)-Dissolved  | mg/L | 0.000005 | 0.0281     | 0.00621    | 0.0011     | 0.00222    |
| Mercury (Hg)-Dissolved    | mg/L | 0.00005  | <0.000050  | <0.000050  | <0.000050  | <0.000050  |
| Molybdenum (Mo)-Dissolved | mg/L | 0.00001  | 0.00273    | 0.00392    | 0.0043     | 0.00389    |
| Nickel (Ni)-Dissolved     | mg/L | 0.00005  | 0.000966   | 0.00124    | 0.00114    | 0.00117    |
| Phosphorus (P)-Dissolved  | mg/L | 0.05     | <0.050     | <0.050     | <0.050     | <0.050     |
| Potassium (K)-Dissolved   | mg/L | 0.05     | 4.97 *     | 5.14 *     | 5.28 *     | 5.41 *     |
| Rhenium (Re)-Dissolved    | mg/L | 0.000005 | 0.0000107  | 0.0000114  | 0.0000111  | 0.0000112  |
| Rubidium (Rb)-Dissolved   | mg/L | 0.000005 | 0.01       | 0.0111     | 0.0109     | 0.0117     |
| Selenium (Se)-Dissolved   | mg/L | 0.00004  | 0.000046   | 0.0001     | <0.000040  | 0.00009    |
| Silicon (Si)-Dissolved    | mg/L | 0.05     | 0.281      | 0.481      | 0.396      | 0.41       |
| Silver (Ag)-Dissolved     | mg/L | 0.000005 | <0.0000050 | <0.0000050 | <0.0000050 | <0.0000050 |
| Sodium (Na)-Dissolved     | mg/L | 0.2      | 7.01 *     | 7.66 *     | 8.14 *     | 8.01 *     |
| Strontium (Sr)-Dissolved  | mg/L | 0.00001  | 0.18       | 0.215      | 0.227      | 0.236      |
| Tellurium (Te)-Dissolved  | mg/L | 0.00001  | <0.000010  | <0.000010  | <0.000010  | <0.000010  |
| Thallium (Tl)-Dissolved   | mg/L | 0.000001 | 0.0000046  | 0.0000054  | 0.0000043  | 0.0000044  |
| Thorium (Th)-Dissolved    | mg/L | 0.000005 | <0.0000050 | <0.0000050 | <0.0000050 | 0.0000057  |

|                           |      |          |           |           |           |           |
|---------------------------|------|----------|-----------|-----------|-----------|-----------|
| Tin (Sn)-Dissolved        | mg/L | 0.00001  | <0.000010 | <0.000010 | <0.000010 | <0.000010 |
| Titanium (Ti)-Dissolved   | mg/L | 0.00005  | 0.000062  | 0.000107  | 0.000146  | 0.000084  |
| Tungsten (W)-Dissolved    | mg/L | 0.00001  | 0.000054  | 0.000097  | 0.000092  | 0.00009   |
| Uranium (U)-Dissolved     | mg/L | 0.000001 | 0.00187   | 0.00632   | 0.00633   | 0.0078    |
| Vanadium (V)-Dissolved    | mg/L | 0.00001  | 0.000083  | 0.000089  | 0.000079  | 0.000079  |
| Yttrium (Y)-Dissolved     | mg/L | 0.000005 | 0.000026  | 0.0000315 | 0.0000268 | 0.0000331 |
| Zinc (Zn)-Dissolved       | mg/L | 0.0001   | 0.00146   | 0.00151   | 0.00077   | 0.0011    |
| Zirconium (Zr)-Dissolved  | mg/L | 0.00001  | 0.000024  | 0.00003   | 0.000022  | 0.00003   |
| Biochemical Oxygen Demand | mg/L | 2        | <2.0      | <2.0      | <2.0      | <2.0      |
| Oil and Grease            | mg/L | 1        | <1.0      | <1.0      | <1.0      | <1.0      |
| * = Result Qualified      |      |          |           |           |           |           |

### **Remediation Unit (OZTEC)**

Water was remediated and was sent into the East cell of the PKCA. The results of the analysis are noted below.

| ALS                  |       | Sample ID    | OZTEC AFTER TREATMENT - TANK FARM | OZTEC AFTER TREATMENT - TANK FARM |
|----------------------|-------|--------------|-----------------------------------|-----------------------------------|
| 9/21/2011            |       | ALS ID       | L1039917-1                        | L1049554-4                        |
| Multiple Work Orders |       | Date Sampled | 8/3/2010 7:30:00 AM               | 8/24/2011 9:00:00 AM              |
| Analyte              | Units | LOR          | Water                             | Water                             |
| Benzene              | mg/L  | 0.0005       | <0.00050                          | <0.00050                          |
| Ethylbenzene         | mg/L  | 0.0005       | <0.00050                          | <0.00050                          |
| Toluene              | mg/L  | 0.0005       | <0.00050                          | <0.00050                          |
| o-Xylene             | mg/L  | 0.0005       | <0.00050                          | <0.00050                          |
| m+p-Xylene           | mg/L  | 0.0005       | <0.00050                          | <0.00050                          |
| Xylenes              | mg/L  | 0.00071      | <0.00071                          | <0.00071                          |
| F1(C6-C10)           | mg/L  | 0.1          | <0.10                             | <0.10                             |
| F1-BTEX              | mg    | 0.1          | <0.10                             | <0.10                             |

|                      |       |      |       |       |
|----------------------|-------|------|-------|-------|
|                      | /L    |      |       |       |
| F2 (>C10-C16)        | mg /L | 0.25 | <0.25 | 0.54  |
| F3 (C16-C34)         | mg /L | 0.25 | <0.25 | 2.61  |
| F4 (C34-C50)         | mg /L | 0.25 | <0.25 | <0.25 |
|                      |       |      |       |       |
| * = Result Qualified |       |      |       |       |

Weekly inspections of the dams and dykes were undertaken during the month of August and temperature readings recorded were sent to a geotechnical engineer.

Total waste incinerated in July 2011 was 842.80kg (1858bs).

Between August 11<sup>th</sup> and August 26<sup>th</sup>, 30,494.32 m<sup>3</sup> of water was pumped from the PKCA and discharged into the environment (C3 stream on West side of the West Dam)

During the period of August 2<sup>nd</sup> to August 9<sup>th</sup>, 19,024m<sup>3</sup> of water was pumped from the Pit into the West cell of the PKCA

Should you have any questions regarding the monthly report for August 2011 please contact the undersigned by email at [mcharbonneau@sheardiamonds.com](mailto:mcharbonneau@sheardiamonds.com) or by phone at (778) 372-2750

Sincerely,  
**SHEAR DIAMONDS LTD.**



Mathieu Charbonneau  
Environmental Technician