

| Date Sampled | Date Received | Date Analyzed | Date Reported | Location - Approved By - Title  |
|--------------|---------------|---------------|---------------|---------------------------------|
| Nov 15, 2012 | Nov 16, 2012  | Dec 17, 2012  | Dec 17, 2012  | Calgary - Tin Tin Ma - Reporter |

| Other Information |
|-------------------|
| SP: V101 Liquids  |

\* Results relate only to the items tested

Note: Sampling Point, Unique Well Identifier and/or Pool or Zone information was unavailable at time of reporting. This information is integral to AGAT's WebFLUIDS, a comparison, history and trending analysis system.

### Cations

| ION | mg/L   | mmol/L | meq/L |
|-----|--------|--------|-------|
| Na  | 7350.0 | 319.7  | 319.7 |
| K   | 61.9   | 1.6    | 1.6   |
| Ca  | 1170.0 | 29.2   | 58.4  |
| Mg  | 139.0  | 5.7    | 11.4  |
| Fe  | TRACE  | 0.0    | TRACE |

Total Cations

### Anions

| ION  | mg/L    | mmol/L | meq/L |
|------|---------|--------|-------|
| Cl   | 13896.0 | 392.0  | 392.0 |
| HCO3 | 915.0   | 15.0   | 15.0  |
| SO4  | TRACE   | TRACE  | TRACE |
| CO3  | Nil     | Nil    | Nil   |
| OH   | Nil     | Nil    | Nil   |

Total Anions

### Other Measurements

| Measurement                              | Value  |
|--|--------|
| Total Dissolved Solids (Calculated) mg/L | 23066  |
| Observed pH                              | 7.33   |
| H2S (25°C) mg/L                          | N/D    |
| Relative Density (25°C)                  | 1.022  |
| Resistivity/OHM-m (25°C)                 | 0.352  |
| Salinity %                               | 2.46   |
| Total Alkalinity as CaCO3                | 750.00 |

This analysis and calculations are based on:

pH = SM 4500 H+

Alkalinity = SM 2320

Cations = EPA SW-846 7000B

Anions = SM 4110B

H2S = SM 4500 S<sup>-2</sup>

Stiff Diagram (meq/L)

