

## **FED Metal Concentration Reporting Explanation**

Please note that a number of the results quoted for metals are 'less-than' values that are conservative and much higher than the actual concentration of metals in solution. Bounding assessments are produced as part of our analytical method for the measurement of metals in solution using Inductively Coupled Plasma Mass Spectrometry (ICPMS). The effluent produced from the FED dissolution process is a concentrated magnesium solution containing low levels of prescribed metals making it very difficult to measure. It is therefore not possible to develop a method with the precision required to repeatedly allow the measurement of metals at low concentration in a concentrate magnesium nitrate solution.

Consequently, metal concentrations are reported as below;

1. Where the analytical results achieve a relative standard deviation of less than 10% the actual value is reported.
2. In circumstances where the relative standard deviation of the range of results is more than 10%, a value derived from typical average results plus three standard deviations is reported. This provides a conservative bounding limit to compare against our in-house discharge limits that were stated in the environmental risk assessment report (BRAD/EN/REP/122) to support the permit.

The analytical procedure is documented in the Operating Instruction BRAD/22429/OI/00140 attached to this response.