THE pebble PARTNERSHIP

Report Series F – Groundwater & Surface Water Quality

Quality Control Overview

The environmental baseline studies are controlled by a strict quality assurance program in order to maintain a high level of quality for sample collection, sample handling, laboratory analysis, and data analysis and to document the quality of data at each processing level.

The quality assurance program is documented for each year of the environmental baseline sampling program by the annual Quality Assurance Program Plan (QAPP). Further details of the analytical method requirements and detection limit criteria utilized for each year of the environmental baseline sampling program can be found in the QAPP. The QAPP also details the frequency for collection and analysis of field duplicate Quality Control (QC) samples, field blanks, equipment blanks and matrix spike samples that are submitted to the primary laboratory along with the primary samples.

The QAPP also details the frequency for collection and analysis Quality Assurance (QA) samples that are submitted to a separate laboratory for an independent check of the primary laboratory results. After completion of the analysis by the laboratories, the results for each sampling event are submitted to a project chemist for verification and validation which includes a review of QA/QC sample results and a comparison of the dissolved and total results. Laboratory data not meeting QAPP criteria may be assigned qualifier flags as estimated values or rejected from the dataset. The largest source of rejected results has been due to suspected contamination of dissolved metals sampled that can occur during the sample collection and field filtration.

A total of 78,358 individual dissolved metal and cation results were produced from baseline program samples from 2004-2007. Of these, 4310 results or approximately 5.5% of the dissolved metal and cation results were rejected from the dataset due to suspected contamination of the samples that is apparent when the dissolved result is significantly higher than the associated total metals result. Note that this data release contains only the validated primary sample results, the QA/QC sample results and any rejected primary results are not presented or included in the statistical summaries for each location.

Results in the summary tables shown in green text indicate that the value is an estimated result reported by laboratory below the Method Reporting Limit (MRL). The results summary table is populated with a value shown in bold black text that is ½ the Method Detection Limit (MDL) when the laboratory reported the result as undetected. In cases where validation determined that an estimate value reported below the MRL was biased high it is elevated from the MDL to the MRL and the results summary table is populated with ½ of the MRL.