Revision to Section 2.17 from BC Lab Manual,
Section A, LABORATORY QUALITY ASSURANCE/QUALITY CONTROL

2.17 Control Limits

Control charts for QC samples must be established. Control Limits may be statistically derived based on data generated from QC samples within each laboratory, but must not exceed Data Quality Objective values as defined in the individual test methods within this manual. Commonly used statistically derived limits are ±2s (for warning limits) and ±3s (for control limits) around the mean. Statistical limits are recommended for use in trend monitoring if not used directly as Control Limits.

Corrective action must be taken when control limits are exceeded, and records of out-of-control events and actions taken must be maintained. Test results associated with Quality Control data that does not meet minimum BC MOE Data Quality Objectives must be appropriately qualified in laboratory reports.

Multi-Element Scan (MES) Qualifiers: As the number of analytes in a test method increases, so does the chance of a DQO exceedance by random chance as opposed to a legitimate method problem. Thus, in multi-element test methods (also known as Multi-Element Scans), for Laboratory Control Samples, Matrix Spikes, or Reference Materials, it is considered acceptable to exceed quoted DQOs by up to 10% (absolute), for up to 10% of the total number of analytes (rounded down) included within the method. For example, in a PAH scan of seventeen analytes with LCS acceptance limits of 60-130%, 10% of the analytes reported by the method (*i.e.* one analyte) may have a recovery exceeding 60-130% by up to 10% absolute (*i.e.* recovery of 50-140%). Recurring non-random issues with specific parameters must be addressed, and will be highlighted by ongoing re-validation assessments. Where applicable exceedances occur, a suitable qualifier (***e.g. "MES"***) may be applied to test results.