

Matrix Spiking (NC WW/GW LC Policy 05/11/2012)

Unless the referenced method states a greater frequency, spike 5% of samples on a monthly basis. Laboratories analyzing less than 20 samples per month must analyze at least one matrix spike (MS) each month samples are analyzed. If MS results are out of control, the results must be qualified or the laboratory must take corrective action to rectify the effect, use another method, or employ the method of standard additions. When the method of choice specifies MS performance acceptance criteria for accuracy, and the laboratory chooses to develop statistically valid, laboratory-specific limits, the laboratory-generated limits cannot be less stringent than the criteria stated in the approved method.

When spiking with multi-component standards, if the method does not specify the spiking components, the Laboratory Control Spike (LCS) and MS must contain all analytes that are reported.

If the unspiked sample result is in the top 40% of the calibration range, the sample should be diluted and the MS prepared using the diluted sample. The recovery of the MS samples must be bracketed by the calibration range.

The volume of spike solution used in MS preparation must in all cases be $\leq 10\%$ of the total MS volume. It is preferable that the spike solution constitutes $\leq 1\%$ of the total MS volume so that the MS can be considered a whole volume sample with no adjustment (i.e., volume correction) by calculation necessary. If the spike solution volume constitutes $>1\%$ of the total sample volume, the sample concentration or spike concentration must be adjusted by calculation.

Parameters Excluded from MS Requirements

Acidity	Alkalinity
BOD/CBOD	Aquatic Humic Substances
Chlorophyll	All Bacteriological Parameters
Color – ADMI	Color - PtCo
Conductivity	Dissolved Oxygen
Ignitability	All Residues
Paint Filter Test	Turbidity
pH	Temperature
Salinity	Sulfite
Total Residual Chlorine	Vector Attraction Reduction (All Options)

(Field Laboratories and Field Setting analyses are exempt.)