



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 10  
1200 Sixth Avenue  
Seattle, Washington 98101

March 3, 2011

Reply to: Donald M. Brown  
Attn of: OEA-095

**MEMORANDUM**

Subject: Data Validation Report for the Nitrate Analysis of the Water Samples Collected from the Yakima Basin Nitrate Study Phase 3

From: Donald M. Brown, QA Chemist <sup>DMB</sup>  
USEPA Region 10, Office of Environmental Assessment, Environmental Services Unit

To: Ginna Grepo-Grove, Regional Quality Assurance Manager  
USEPA Region 10, OEA

The quality assurance (QA) review of the analytical data generated from the analysis of thirty (30) water samples collected from the Yakima Basin Nitrate Study Phase 3 has been completed. These samples were analyzed for Nitrate in accordance with EPA Method 300.0 by Cascade Analytical, Inc. located in Wenatchee, Washington.

This review was conducted for the following samples from the Phase 3 Study:

10154201	10154202	10154203	10154204	10154205	10154206
10154207	10154208	10154211	10154212	10154213	10154214
10154215	10154216	10154217	10154218	10154219	10154220
10154221	10154223	10154224	10154225	10154226	10154227
10154228	10154229	10164209	10164210	10164222	10164230

All sample analyses were evaluated following EPA's Stage 4 Data Validation Manual Process (S4VM). The validation was conducted according to the Quality Control Specifications outlined in the Quality Assurance Project Plan for the Yakima Basin Nitrate Study Phase 3 (April 2010). The conclusions presented herein are based on the information provided for the review.

**Holding Time**

Sample holding times were evaluated from the dates of sample collection to the dates of the analysis. All samples were analyzed within the 48 hour holding time for nitrate.

### Quality Control Results Summary

The assessment of instrument specific quality control results included instrument calibration, verification standards and blanks. Sample quality control results were assessed for matrix spike and matrix spike duplicate (MS/MSD) recoveries as well as MS/MSD comparison. The following table is a list of these quality control indicators, the relevant evaluation criteria and an indication of compliance.

Quality Control Test	Outliers?	Evaluation Criteria
Calibration and Laboratory Blanks	N	± MDL or sample <10X Blank Value
Quality Control Samples	N	90 – 110%
Laboratory Fortified Blanks	N	90 – 110%
Low Range Instrument Performance Check	N	90 – 110%
High Range Instrument Performance Check	N	90 – 110%
Matrix Spike / Matrix Spike Duplicate	N	80 – 120 %
MS/MSD Comparison	N	<20% RPD

A comparison of the reported analyte values was conducted against the instrument data and the results were verified. For the purposes of this review no data were qualified.