



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

January 31, 2011

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

MEMORANDUM

Subject: Data Validation Report for the Inorganic Analyses of the Water Samples Collected from the Yakima Basin Nitrate Study Phase 2 & Phase 3

From: Donald M. Brown, QA Chemist ^{DMB}
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 fifty-nine (59) water samples collected from the Yakima Basin Nitrate Study Phase 2 has been completed. These samples were analyzed for Nitrate by the US EPA Region 10 Laboratory located in Port Orchard, Washington.

This review was conducted for the following samples from the Phase 2 Study:

10086002	10086007	10086008	10086021	10086024	10086027
10086028	10086029	10086034	10086036	10086039	10086040
10086044	10086045	10086052	10086101	10086106	10086113
10086119	10086120	10086122	10086127	10086129	10086131
10086132	10086135	10086136	10086137	10086138	10086139
10086141	10086143	10086147	10086204	10086205	10086206
10086211	10086213	10086217	10086218	10086219	10086222
10096308	10096309	10096320	10096321	10096404	10096405
10096406	10096407	10096408	10096411	10096501	10096503
10096504	10096505	10096506	10096507	10096508	

In addition, this QA review also includes the analytical data generated from the analysis of forty-nine (49) water samples collected from the Yakima Basin Nitrate Study Phase 3. These samples were analyzed for Total Kjeldahl Nitrogen (TKN), Ammonia, and Nitrate plus Nitrite by the US EPA Region 10 Laboratory located in Port Orchard, 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	10154251	10154252	10154253	10154254
10154255	10154256	10154257	10154258	10154259	10154271
10154272	10154273	10154274	10164209	10164210	10164222
10164230	10164260	10164261	10164262	10164263	10164264
10164265					

All sample analyses were evaluated following EPA's Stage 4 Data Validation Manual Process (S4VM). The data reviews were conducted and appropriate qualifiers were applied according to the Quality Control Specifications outlined in the Quality Assurance Project Plan for the Yakima Basin Nitrate Study Phase 3 (April 2010) and the laboratory's current Quality Assurance Manual and Standard Operating Procedures (SOPs). The following criteria have been evaluated: Sample Transport and Receipt, Sample Holding Times, Sample Preparation, Initial Calibration and Calibration Verification, Laboratory Control Samples, Blank Analysis, Duplicate Analysis, Matrix Spike/Matrix Spike Duplicate Analysis, and Reporting Limits.

The quality control measures which did not meet QAPP/Laboratory criteria are as follows:

Phase 2

- Sample 10086211 did not meet the holding time requirement for nitrate, and the result was considered an estimate and qualified "J".
- Sample 10086101 was reported with a nitrate concentration above the highest level on the calibration curve. While this sample was subsequently analyzed at a dilution, the analysis was not reported as it occurred outside of the holding time requirement. Therefore, the result was considered an estimate and qualified "J".

Phase 3

- Samples 10154251 through 10154259 and 10164260 through 10164265 were not preserved to a pH < 2 when received by the laboratory. Therefore, TKN, ammonia, and nitrate + nitrite results associated with these samples were considered estimates and qualified "J" or "UJ".

Data Qualifiers

Below are the definitions for the codes used qualifying data from these analyses. When more than one quality issue was involved, the most restrictive qualifier has been attached to the data.

- U - The analyte was not detected at or above the reported value.
- J - The identification of the analyte is acceptable; however the reported value is an estimate.
- UJ - The analyte was not detected at or above the reported value. The reported value is an estimate.