

Data Validation – Ascon Water Samples
October 20, 2004

Level II data packages were received in the Geosyntec-Knoxville, TN office in October, 2004 for data validation. The following documents were referenced with regard to performing this data validation, USEPA National Functional Guidelines for Organic and Inorganic Data Review, EPA SW846 and Standard Methods. The data review process provides information on the analytical limitations of data based on specified quality control (QC) criteria.

The data are discussed by report number and analytical test as follows:

INI0433

<u>Client ID</u>	<u>Laboratory ID</u>
MW17-GW03-09/04	INI0433-01
MW16-GW03-09/04	INI0433-02
TB1-GW03-09/04	INI0433-03

Matrix: Water

No case narrative was included with the data.

All technical holding times were met.

EPA 5030B/8260B Volatile Organic Compounds (VOC) - For sample MW17-GW03-09/04; styrene and 1,2,4-trimethylbenzene are “UJ” qualified as estimated with a low bias due to low recovery in the matrix spike/matrix spike duplicate (MS/MSD). All other results are acceptable for use without qualification.

EPA 3520C/8270C MOD Semi-volatile Organic Compounds (SVOC), 1,4-Dioxane – All results are acceptable for use without qualification.

EPA 7470A Mercury – All results are acceptable for use without qualification.

EPA 6020 Metals – For sample MW17-GW03-09/04, selenium is “J-“ qualified as estimated with a low bias due to low recovery in the MS/MSD. All other results are acceptable for use without qualification.

EPA 3520C/8270C Semi-volatile Organic Compounds (SVOC) – For all samples, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2-dichlorobenzene, diethyl phthalate, dimethyl phthalate, and 1,2,4-trichlorobenzene are “UJ” qualified with a low bias due to low recovery of these compounds in the laboratory control spike (LCS).

For sample MW17-GW03-09/04 all acid extractible compounds are “UJ” qualified as estimated with a low bias due to all three surrogate recoveries for that fraction being below the acceptable limit. This includes all of the phenolic compounds on the analyte list.

For sample MW16-GW03-09/04, all of the base neutral extractible compounds (includes all of the compound list except the phenolic compounds) are qualified as “UJ” due to low recoveries for two of the three base neutral surrogates. Additionally, 2,4-dimethylphenol, 2-methylphenol, 3&4-Methylphenol, pentachlorophenol, 2,4,5-trichlorophenol, and 2,4,6-trichlorophenol are “UJ” qualified as estimated with a low bias due to low recovery in the MS. No MSD was reported.

Duplicate analysis was analyzed for sample MW16-GW03-09/04. All of the base neutral extractible compounds are “UJ” qualified as estimated with a low bias due to low recovery of two out of three base neutral acid surrogates.

INI0557

<u>Client ID</u>	<u>Laboratory ID</u>
MW18-GW03-0904	INI0557-01
MW19-GW03-09/04	INI0557-02
DW90-GW03-09/04	INI0557-03
EB1-GW03-09/04	INI0557-04
FB1-GW03-09/04	INI0557-05
TB2-GW03-09/04	INI0557-06

Matrix: Water

No case narrative was included with the data.

All technical holding times were met.

EPA 5030B/8260B Volatile Organic Compounds (VOC) - All results are acceptable for use without qualification.

EPA 3520C/8270C MOD Semi-volatile Organic Compounds (SVOC), 1,4-Dioxane – All results are acceptable for use without qualification.

EPA 7470A Mercury – All results are acceptable for use without qualification.

EPA 6020 Metals – All results are acceptable for use without qualification.

EPA 3520C/8270C Semi-volatile Organic Compounds (SVOC) – For all of the SVOC samples 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2-dichlorobenzene, diethyl

phthalate, dimethyl phthalate, and 1,2,4-trichlorobenzene are “UJ” qualified with a low bias due to low recovery of these compounds in the LCS.

INI0744

<u>Client ID</u>	<u>Laboratory ID</u>
MW4-GW03-09/04	INI0744-01
AW3-GW03-09/04	INI0744-02
MW13-GW03-09/04	INI0744-03
TB3-GW03-09/04	INI0744-04

Matrix: Water

All technical holding times were met for the samples.

EPA 5030B/8260B Volatile Organic Compounds (VOC) - All results are acceptable for use without qualification.

EPA 3520C/8270C MOD Semi-volatile Organic Compounds (SVOC), 1,4-Dioxane – All results are acceptable for use without qualification.

EPA 7470A Mercury – All results are acceptable for use without qualification.

EPA 6020 Metals – All results are acceptable for use without qualification.

EPA 3520C/8270C Semi-volatile Organic Compounds (SVOC) – For all samples, 4-nitroaniline and azobenzene are “UJ” qualified with a low bias in all of the SVOC samples due to low recovery of these compounds in the LCS. For all samples, all acid extractible compounds are “UJ” qualified as estimated with a low bias due to two of the three surrogate recoveries for that fraction being below the acceptable limit in the method blank Two of the three acid extractible surrogates were also below the acceptable limit in sample MW4-GW03-09/04. For samples AW3-GW03-09/04 and MW13-GW03-09/04 all of the base neutral compounds are “UJ” qualified as estimated due to two of the three surrogate recoveries for that fraction being below the acceptable limit in both samples.

INI0842

<u>Client ID</u>	<u>Laboratory ID</u>
MW15-GW03-09/04	INI0842-01
MW09-GW03-09/04	INI0842-02
AW1A-GW03-09/04	INI0842-03
AW1-GW03-09/04	INI0842-04
TB4-GW03-09/04	INI0842-05

Matrix: Water

According to the Chain-of-Custody (COC) the samples were collected on 9/14/2004 only, not 9/13/01-09/14/04 as reflected on the level II deliverable.

All technical holding times were met for the samples.

EPA 5030B/8260B Volatile Organic Compounds (VOC) - All results are acceptable for use without qualification.

EPA 3520C/8270C MOD Semi-volatile Organic Compounds (SVOC), 1,4-Dioxane – All results are acceptable for use without qualification.

EPA 7470A Mercury – All results are acceptable for use without qualification.

EPA 6020 Metals – For sample MW15-GW03-09/04 barium is “J+” qualified as high biased due to high recoveries in the MS/MSD and zinc was “J” qualified as estimated due to the precision (%RPD value) for the MS/MSD being outside of acceptable limits. All other results are acceptable for use without qualification.

EPA 3520C/8270C Semi-volatile Organic Compounds (SVOC) – For all samples, azobenze is “UJ” qualified as estimated with a low bias due to low recovery in the LCS. For sample MW15-GW03-09/04, all of the data is qualified as “UJ” with a low bias due to low recoveries in four of the six surrogates in the MS as well as recoveries less than the acceptable limit for almost all of the compounds in the MS. No MSD was reported. Additionally, duplicate analysis was performed for sample MW09-GW03-09/04, two of the three surrogate recoveries for the acid extractible fraction were below the acceptable limit and therefore, all of the acid extractible compounds are “UJ” qualified as estimated with a low bias for the results of the duplicate analysis.

INI0925

<u>Client ID</u>	<u>Laboratory ID</u>
NMW2-GW03-09/04	INI0925-01
AW4A-GW03-09/04	INI0925-02
MMW1-GW03-09/04	INI0925-03
B4A-GW03-09/04	INI0925-04
TB5-GW03-09/04	INI0925-05

Matrix: Water

All technical holding times were met for the samples.

No case narrative was included with the data.

EPA 5030B/8260B Volatile Organic Compounds (VOC) - All results are acceptable for use without qualification.

EPA 3520C/8270C MOD Semi-volatile Organic Compounds (SVOC), 1,4-Dioxane – All results are acceptable for use without qualification.

EPA 7470A Mercury – All results are acceptable for use without qualification.

EPA 6020 Metals – All results are acceptable for use without qualification.

EPA 3520C/8270C Semi-volatile Organic Compounds (SVOC) – For all of the SVOC samples azobenzene is “UJ” qualified with a low bias due to low recovery of this compound in the LCS. For sample AW4A-GW03-09/04, all of the surrogate recoveries were outside of the acceptable limits; the acid extractible surrogates had low recoveries and the base neutral extractible surrogates had high recoveries. Only the acid extractible fraction of the sample is “UJ” qualified as estimated with a low bias. The base neutral extractible fraction was not qualified since all of the results for those compounds were non-detect (ND) and the high bias of the surrogate recovery does not affect ND results.

INI1058

<u>Client ID</u>	<u>Laboratory ID</u>
MW20-GW03-09/04	INI1058-01
GP23-GW03-09/04	INI1058-02
TB6-GW03-09/04	INI1058-03

Matrix: Water

All technical holding times were met for the samples.

EPA 5030B/8260B Volatile Organic Compounds (VOC) - All results are acceptable for use without qualification.

EPA 3520C/8270C MOD Semi-volatile Organic Compounds (SVOC), 1,4-Dioxane – All results are acceptable for use without qualification.

EPA 7470A Mercury – All results are acceptable for use without qualification.

EPA 6020 Metals – For sample MW20-GW03-09/04, barium is qualified as “J+” due to high recovery in the MS/MSD. All other results are acceptable for use without qualification.

EPA 3520C/8270C Semi-volatile Organic Compounds (SVOC) – For all of the SVOC samples aniline is “UJ” qualified with a low bias due to low recovery of this compound in the LCS. All other data is acceptable for use without qualification.

INI1155

<u>Client ID</u>	<u>Laboratory ID</u>
AW8-GW03-09/04	INI1155-01
AW5-GW03-09/04	INI1155-02
B7-GW03-09/04	INI1155-03
D70A-GW03-09/04	INI1155-04
EB2-GW03-09/04	INI1155-05
FB2-GW03-09/04	INI1155-06
GP12-GW03-09/04	INI1155-07
GP1-GW03-09/04	INI1155-08
GP24-GW03-09/04	INI1155-09

Matrix: Water

All technical holding times were met for the samples.

The sample chain-of-custody (COC) had a write-over on it for the relinquished and received times instead of the use of acceptable error correction format of a single line striking through the text with the initials of the person making the correction.

EPA 5030B/8260B Volatile Organic Compounds (VOC) - All results are acceptable for use without qualification.

EPA 3520C/8270C MOD Semi-volatile Organic Compounds (SVOC), 1,4-Dioxane – All results are acceptable for use without qualification.

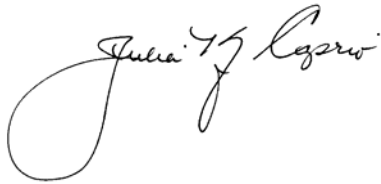
EPA 7470A Mercury – All results are acceptable for use without qualification.

EPA 6020 Metals – All results are acceptable for use without qualification.

EPA 3520C/8270C Semi-volatile Organic Compounds (SVOC) – For all of the SVOC samples aniline is “UJ” qualified with a low bias due to low recovery of this compound in the LCS. For samples AW8-GW03-09/04 and GP1-GW03-09/04, two of the three surrogate recoveries for the acid extractible fraction were below the acceptable limit and therefore, all of the acid extractible compounds are “UJ” qualified as estimated with a low bias. For sample AW5-GW03-09/04, all three of the surrogate recoveries for the acid extractible fraction were below the acceptable limit, with two of the three having recoveries of less than 10%. According to criteria set forth in the National Functional Guidelines for Organic Data Review, the compounds that represent the acid extractible

fraction in this sample must be “R” qualified as rejected. All other data is acceptable for use without qualification.

The data packages were reviewed. The data are acceptable for use as qualified except for the acid extractible fraction of sample AW5-GW03-09/04 that was rejected due to unacceptably low surrogate recoveries. There appears to be a serious problem within the laboratory regarding EPA8270 extraction and analysis. Although recoveries outside of the acceptable criteria for the base neutral extractible surrogates was frequent, there is an overall low bias throughout the data for the acid extractible fraction of the SVOCs. Additionally, per the method, when surrogate recoveries are above or below the acceptable limits, the samples are to be reanalyzed. There is no evidence that reanalysis occurred for any of the samples (including QC samples) that were outside of the QC criteria for surrogate recovery.

A handwritten signature in black ink, reading "Julia K. Caprio". The signature is written in a cursive style with a large, looping initial "J".

Reviewer: Julia K. Caprio
Geosyntec Consultants
October 20, 2004