

APPENDIX F

DATA VALIDATION SUMMARY REPORTS

**Data Validation Summary Report
For Analytical Data Collected by IT Corporation at the
Chemical School Laboratory Sump, Buildings 2281 and 2282,
Parcels 90(7) and 225(7)
Fort McClellan, Calhoun County, Alabama**

1.0 Introduction

Level III data validation was performed on 100 percent of the environmental water samples collected by IT Corporation at Parcel GSBP-90. The analytical data consisted of one sample delivery group (SDG), CK890001, which was analyzed by Quanterra, Incorporated. The chemical parameters for which the samples were analyzed, are identified below:

Parameter (Method)
Volatile organic compounds (VOC) by SW-846 8260B
Semivolatile organic compounds (SVOC) by SW-846 8270C
Metals by SW-846 6010B/7470/7471

2.0 Procedures

The sample data were validated following the logic identified in the U.S. Environmental Protection Agency (EPA) *Contract Laboratory Program (CLP) National Functional Guidelines for Inorganic Data Review* (February 1994) and EPA *Contract Laboratory Program National Functional Guidelines for Organic Review* (October 1999) for all areas except blanks. *Region III Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses* (April 1993) and *Region III National Functional Guidelines for Organic Data Review* (June 1992) were applied to the areas associated with blank contamination. Specific quality control (QC) criteria, as identified in the Quality Assurance Plan (QAP), analytical methods, and laboratory Standard Operating Procedures (SOPs) were applied to all sample results. As the result of the use of Update III SW-846 test methods for the analytical data and the application of the CLP guidelines during the validation process, there were instances where specific QC requirements for all target compounds were not defined. This primarily occurred in the organic, Gas Chromatograph (GC) and Gas Chromatograph/Mass Spectra (GC/MS) calibration areas and is due to the fact that the analytical methods are “performance-based,” and allows the use of average calibration responses, in lieu of, individual responses, which are defined by CLP protocol. In light of applying CLP guidelines to SW-846 methods and evaluating the usability of the data during the validation process, specific QC criteria were determined to address all target compounds and are identified in this report for each parameter, as well as, in the validation checklists, which function as

worksheets. All completed validation checklists are on file in the Knoxville office. For those analytical methods not addressed by the CLP and Region III guidelines, the validation was based on the method requirements (i. e., SW-846, Code of Federal Regulations, SOPs) and technical judgement following the logic of the CLP validation guidelines.

3.0 Summary of Data Validation Findings

The overall quality of the data was determined to be acceptable with minimal qualification. The only rejected data ('R' qualified) was due to "poor performing" volatile compounds (ketones, some halogenated hydrocarbons, e.g.), which exhibited poor calibration responses in the associated calibration data, and samples that were reanalyzed and have more than one result reported. The 'R' qualifier was assigned to the samples with more than one set of results to indicate that a given result should not be used to characterize a particular constituent or an analysis for a given sample.

Individual validation reports have been prepared for each parameter and the overall results of the validation findings are summarized in this report. The validation qualifier data entry verification report (Attachment A) is also provided. This is a complete listing of all of the analytical results and the validation qualifiers assigned for Parcel GSBP-90. It also identifies the "use" column, which indicates which result to use in the event of a reanalysis. A listing of the validation qualifiers and the reason codes, along with their definitions are also found in Attachment A. The following section highlights the key findings of the data validation for each analysis.

4.0 Analysis-Specific Data Validation Summaries

4.1 Volatiles by SW-846 8260B

Overall, the data are of good quality and are usable as reported by the laboratory with the exceptions noted below. Data were reviewed for the following:

Holding Times

Technical holding time criteria were met for all project samples.

Initial and Continuing Calibration

All initial and continuing calibrations associated with the project samples met QC criteria, with the exception of the following:

- The following demonstrated RRFs below 0.1 in the ICAL and/or CCAL: nondetect results were rejected (qualified 'R'); positive results were estimated (qualified 'J'); unless 'B' qualified due to blank contamination.

SDG	Sample Number	Compound(s)	Validation Qualifier
CK890001	BQ3004, BQ3005	Acetone, 2-Butanone, Bromochloromethane, Dibromomethane, 1,2-Dibromo-3-chloropropane	R/B/J

- The following exhibited individual ICAL %RSD>30 and/or CCAL %D>20: nondetect results were estimated (qualified 'UJ'); unless rejected (qualified 'R') due to ICAL/CCAL minimum RRF criteria not met; positive results were estimated (qualified 'J'); unless 'B' qualified due to blank contamination.

SDG	Sample Number	Compound(s)	Validation Qualifier
CK890001	BQ3004, BQ3005	Acetone, Methylene chloride, 2-Butanone, Bromodichloromethane, cis-1,3-dichloropropene, Chlorodibromomethane, 2-Hexanone, o-Xylene, Styrene, Bromoform, Bromobenzene, 4-Chlorotoluene, 1,4-Dichlorobenzene, 1,2-Dichlorobenzene, 1,2-Dibromo-3-chloropropane, Naphthalene, 1,2,3-Trichlorobenzene	R/J/UJ/B

Blanks

The 5X/10X rule for contaminants found in the associated equipment rinses, trip, and method blanks was applied to all sample results. All were found to be acceptable with the exception of the following:

SDG	Sample Number	Compound(s)	Blank Contaminant(s)	Validation Qualifier
CK890001	BQ3005	2-Butanone	Trip Blank	B

Surrogate Recoveries

All surrogate recoveries are within acceptable QC ranges for the surrogates applied.

Matrix Spike/Matrix Spike Duplicate

Matrix spike/matrix spike duplicate (MS/MSD) analysis was performed for the project samples and all QC criteria were met.

Laboratory Control Sample

Laboratory control sample (LCS) was performed for the project samples and all QC criteria were met.

Internal Standards

The associated target compounds' internal standard areas and retention times for all samples were within the control limits.

Field Duplicates

There was no field duplicate associated with this SDG.

Quantitation

Results quantified between the maximum detection limit (MDL) and the reporting limit (RL), which the laboratory qualified as "J," were qualified as estimated 'J' unless blank contamination was present or the results were rejected. Results rejected in favor of a preferred result (e.g., due to dilution or reanalysis) were qualified as rejected 'R'.

4.2 Semivolatile Organic Compounds by SW-846 8270C

Overall, the data are of good quality and are usable as reported by the laboratory with the exceptions noted below. Data were reviewed for the following:

Holding Times

Technical holding time criteria were met for all project samples.

Initial and Continuing Calibration

All initial and continuing calibrations associated with the project samples met QC criteria, with the exception of the following:

The following exhibited individual ICAL %RSD>30 and/or CCAL %D>20:

SDG	Sample Number	Compound(s)	Validation Qualifier
CK890001	BQ3004, BQ3005	Benzo(k)fluoranthene, 2,4-Dinitrophenol	UJ

Blanks

The 5X/10X rule for contaminants found in the associated equipment rinses and method blanks was applied to all sample results. All were found to be acceptable.

Surrogate Recoveries

All surrogate recoveries are within acceptable QC ranges for the surrogates applied.

Matrix Spike/Matrix Spike Duplicate

MS/MSD analysis was performed for the project samples and all QC criteria were met

Laboratory Control Sample

LCS was performed for the project samples and all QC criteria were met. No qualification was necessary.

Internal Standards

The associated target compounds' internal standard areas and retention times for all samples were within the control limits.

Field Duplicates

There was no field duplicate associated with this SDG.

Quantitation

Results quantified between the MDL and the RL, which the lab qualified as "J," were qualified as estimated 'J' unless blank contamination was present or the results were rejected. Results rejected in favor of a preferred result (e.g., due to dilution or reanalysis) were qualified as rejected 'R'.

4.3 Metals by SW-846 6010B/7471/7470A

Overall, the data are of good quality and are usable as reported by the laboratory with the exceptions noted below. Data were reviewed for the following:

Holding Times

Technical holding time criteria were met for all samples.

Initial and Continuing Calibrations

All initial and continuing calibrations associated with the project samples met QC criteria.

Blanks

The 5X rule for contaminants found in the associated equipment rinse, calibration, and method blanks was applied to all sample results. All were found to be acceptable, with the exception of the following:

SDG	Sample Number	Compound	Blank Contaminant	Validation Qualifier
CK890001	BQ3004, BQ3005	Aluminum	Method/Calib/ER	B
CK890001	BQ3004	Beryllium, Chromium, Iron, Manganese, Potassium	Calibration/ER	B

Matrix Spike/Matrix Spike Duplicate

MS/MSD analysis was performed for the project samples and all QC criteria were met.

Laboratory Control Sample

LCS was performed for the project samples and all QC criteria were met.

Interference Check Sample

All interference check sample (ICS) % recoveries were acceptable and all QC criteria were met.

ICP Serial Dilutions

All QC criteria were met for the serial dilutions associated with the project samples with the exception of the following:

SDG	Sample Number	Compound	Validation Qualifier
CK890001	BQ3004, BQ3005	Aluminum	B

- B qualifiers or positive results would have been estimated "J"; however, were "B" qualified due to blank contamination.

Field Duplicates

There was no field duplicate associated with this SDG.

Quantitation

Results quantitated between the IDL and the RL ("B" flagged by the laboratory) were qualified as estimated "J," unless qualified "B," due to blank contamination.