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NASJRB WILLOW GROVE
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VALIDATED DATA PACKAGE, PC17007, NAS WILLOW GROVE PA
11/24/2014
RESOLUTION CONSULTANTS

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Data Validation Report

Project:	NAS JRB Willow Grove, PA
Laboratory:	Shealy Environmental, Inc.
Service Request:	PC17007
Analyses/Method:	EPA SW-846 Method 6010C (ICP-AES) / 6010C
Validation Level:	Limited
Resolution Consultants Project Number:	60276503PP.QS
Prepared by:	Lori Herberich/Resolution Consultants Completed on: 04/30/2014
Reviewed by:	Kristin Rutherford/Resolution Consultants File Name: PC17007_6010C

SUMMARY

The samples listed below were collected by Resolution Consultants from the NAS JRB Willow Grove, PA site on March 13, 2014.

Sample ID	Matrix/Sample Type
109-S-01-031314	Soil
109-S-02-031314	Soil
109-S-03-031314	Soil
109-S-04-031314	Soil
110-S-01-031314	Soil
110-S-02-031314	Soil
110-S-03-031314	Soil
110-S-04-031314	Soil

Data validation activities were conducted with reference to

- *DoD Quality Systems Manual (QSM) for Environmental Laboratories, version 4.2* (10/2010) (October 2010);
- *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW846, specifically SW-846 Method 6010C, Inductively Coupled Plasma-Atomic Emission Spectrometry* (USEPA, 1996);
- *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review* (January 2010);
- the project-specific Sampling and Analysis Plan; and
- laboratory quality control (QC) limits, as applicable.

REVIEW ELEMENTS

The data were evaluated based on the following parameters (where applicable to the method):

✓	Data completeness (chain-of-custody (COC)/sample integrity
✓	Holding times and sample preservation
✓	Initial calibration/continuing calibration verification
✓	Laboratory blanks/equipment blanks
✓	ICP interference check standards
✓	Matrix spike (MS) and/or matrix spike duplicate (MSD) results
✓	Laboratory control sample (LCS)/laboratory control sample duplicate (LCSD) results
NA	Field duplicates
✗	ICP serial dilution results
✓	Sample results/reporting issues

The symbol (✓) indicates that no validation qualifiers were applied based on this parameter. NA indicates that the parameter was not included as part of this data set or was not applicable to this validation and therefore not reviewed. The symbol (✗) indicates that a quality control (QC) nonconformance resulted in the qualification of data. Any QC nonconformance that resulted in the qualification of data is discussed below. In addition, nonconformances or other issues that were noted during validation, but did not result in qualification of data, may be discussed for informational purposes only.

The data appear valid as reported and may be used for decision making purposes. Selected data points were estimated due to nonconformances of certain QC criteria (see discussion below). Qualified sample results are presented in Table 1.

RESULTS

Data Completeness

The data package was reviewed and found to meet acceptance criteria for completeness:

- The COCs were reviewed for completeness of information relevant to the samples and requested analyses, and for signatures indicating transfer of sample custody.
- The laboratory sample login sheet(s) were reviewed for issues potentially affecting sample integrity, including the condition of sample containers upon receipt at the laboratory.
- Completeness of analyses was verified by comparing the reported results to the COC requests.

Holding Times/Sample Preservation

Sample preservation and preparation/analysis holding times were reviewed for conformance with the QC acceptance criteria. The QC acceptance criteria were met.

Initial Calibration/Continuing Calibration Verification

Calibration data were reviewed for conformance with the QC acceptance criteria to ensure that:

- all criteria were met for the calibration curves
- the initial calibration verification (ICV) percent recovery (%R) criteria were met;
- the continuing calibration verification standard (CCV) method percent difference (%Ds) were met; and

- the low level check standards (CRI or CRA) %R criteria were met.

The QC acceptance criteria were met.

Laboratory Blanks/Equipment Blanks

Laboratory method blanks and equipment rinsate blanks were evaluated as to whether there were contaminants detected above the detection limit (DL). Data validation qualifications for individual samples are based on the maximum contaminant concentration detected in all associated blanks.

Method and equipment rinsate results were reviewed for conformance with the QC acceptance criteria. Detected results in blanks are not discussed in this data validation report if the associated results were nondetect or if qualification of sample results was not required.

The QC acceptance criteria were met and/or qualification of the sample results was not required.

ICP Interference Check Standards

The ICP interference check standards (ICSA, ICSAB) were reviewed for conformance. All criteria were met for the ICSAB. A negative result in the ICSA analysis slightly exceeded the QC acceptance criteria. Qualification of the sample results was not required due to the elevated concentrations of lead in the samples.

MS Results

The MS and/or MSD %Rs and/or RPDs were reviewed for conformance with the QC acceptance criteria. The MS and/or MSD %Rs and/or RPDs were within the QC acceptance criteria.

LCS/LCSD Results

The LCS/LCSD %Rs and/or RPDs were reviewed for conformance with the QC acceptance criteria. The LCS and LCSD %Rs and RPDs were within the QC acceptance criteria.

Field Duplicate Results

Field duplicate samples were not submitted with this sample set.

ICP Serial Dilution Results

The serial dilution percent differences (%Ds) were reviewed for conformance with the QC acceptance criteria. The %D was 46.7% for the serial dilution analysis performed on sample 109-S-04-031314.

Nonconformances are summarized in Attachment A in Table A-1. Data qualification on the basis of serial dilution %Ds was as follows:

%D	Qualify Results
>10%	Estimate (J) detected results

Apply actions to all samples in the same preparation batch if the sample concentration is >50x LOQ.

Qualified sample results are shown in Table 1.

Sample Results/Reporting Issues

All analytes detected at concentrations less than the limit of quantitation (LOQ) but greater than the detection limit (DL) were qualified by the laboratory as estimated (J). This "J" qualifier was retained during data validation.

All percent solids were >30%.

QUALIFICATION ACTIONS

Sample results qualified as a result of validation actions are summarized in Table 1. All actions are described above.

ATTACHMENTS

Attachment A: Nonconformance Summary Tables

Attachment B: Qualifier Codes and Explanations

Attachment C: Reason Codes and Explanations

Table 1 - Data Validation Summary of Qualified Data

Sample ID	Matrix	Compound	Result	LOD	LOQ	Units	Validation Qualifiers	Validation Reason
109-S-01-031314	SO	LEAD	93	0.33	0.66	MG/KG	J	y
109-S-02-031314	SO	LEAD	91	0.29	0.58	MG/KG	J	y
109-S-03-031314	SO	LEAD	92	0.29	0.58	MG/KG	J	y
109-S-04-031314	SO	LEAD	150	0.33	0.65	MG/KG	J	y
110-S-01-031314	SO	LEAD	180	0.65	1.3	MG/KG	J	y
110-S-02-031314	SO	LEAD	280	0.31	0.62	MG/KG	J	y
110-S-03-031314	SO	LEAD	140	0.32	0.63	MG/KG	J	y
110-S-04-031314	SO	LEAD	51	0.32	0.64	MG/KG	J	y

Attachment A

Nonconformance Summary Tables

Table A-1 Serial Dilution

Sample ID	Compound	Sample Result	Qual	Duplicate Result	Qual	LOQ	Units	%D
109-S-04-031314	LEAD	2.243		3.291		0.010	MG/L	46.7

Attachment B

Qualifier Codes and Explanations

Qualifier	Explanation
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual quantitation limit necessary to accurately and precisely measure the analyte in the sample.
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Attachment C

Reason Codes and Explanations

Reason Code	Explanation
be	Equipment blank contamination
bf	Field blank contamination
bl	Laboratory blank contamination
c	Calibration issue
d	Reporting limit raised due to chromatographic interference
fd	Field duplicate RPDs
h	Holding times
i	Internal standard areas
k	Estimated Maximum Possible Concentration (EMPC)
l	LCS recoveries
lc	Labeled compound recovery
ld	Laboratory duplicate RPDs
lp	Laboratory control sample/laboratory control sample duplicate RPDs
m	Matrix spike recovery
md	Matrix spike/matrix spike duplicate RPDs
nb	Negative laboratory blank contamination
p	Chemical preservation issue
r	Dual column RPD
q	Quantitation issue
s	Surrogate recovery
su	Ion suppression
t	Temperature preservation issue
x	Percent solids
y	Serial dilution results
z	ICS results