



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
Science and Ecosystem Support Division
Enforcement and Investigations Branch
980 College Station Road
Athens, Georgia 30605-2720



March 5, 2009

4SESD-EIB

MEMORANDUM

SUBJECT: SESD QA/QC Review of the Lab Data Package
for the City of Statesville – Third Creek Monofill;
EPA ID No. NCR 000 001 602; SESD Project No. 09-0094

FROM: Sharon Matthews, P.G. *SM*
Enforcement Section *3/5/09*

THRU: Trent Rainey, Acting Section Chief *Trent Rainey*
Enforcement Section *for TRENT RAINY*

TO: Nancy McKee
North Enforcement and Compliance Section
RCRA and OPA Enforcement and Compliance Branch
RCRA Division

Larry Stanley
North Carolina Department of Environment and Natural Resources
Division of Waste Management, Hazardous Waste Section
1646 Mail Service Center
Raleigh, NC 27699-1646

L. F. (Joe) Hudson, Jr., Director
Water/Wastewater Treatment Department
The City of Statesville
Post Office Box 1111
Statesville, NC 28687-1111

Phillip L. Rahn, P.G.
President, Waters Edge Environmental
4901 Waters Edge Drive, Suite 201
Raleigh, NC 27606

Attached is the QA/QC review for the subject facility. If you have any questions,
please contact me at email matthews.sharon@epa.gov or at (706) 355-8608.

Attachment



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4

Science and Ecosystem Support Division
980 College Station Road
Athens, Georgia 30605-2720

R4-SESD-MTSB

MEMORANDUM

DATE: March 4, 2009

SUBJECT: Transmittal of Review of Data from the City of Statesville NC Third Creek Monofill site, submitted by Pace Analytical Services Laboratory in Eden NC and reviewed by Integrated Laboratory Systems, Athens GA

FROM: Charlie Appleby, *CA*
Chemist
Quality Assurance Section, SESD/MTSB

THRU: Marilyn Maycock, *MM*
Chief
Quality Assurance Section, SESD/MTSB

TO: Sharon Matthews,
Hydrologist
SESD/EIB, RCRA Compliance Section

Please find the attached review of data for the site referenced above for three to six groundwater samples for semi-volatile organics, TDS, metals, nitrate/nitrite, and TOC. Please note that the results for TOC were rejected by our reviewers because of low matrix spike recovery. In addition, results for benzoic acid was less than 10% in the laboratory control sample, and non-detects should be rejected. I'm not sure whether either of these issues may have been caused by a reporting or calculation error on the part of the laboratory. If you have any questions, please contact me at appleby.charlie@epa.gov, or call 706-355-8555.

to QA/QC 1/21/09

PRP/NON-CLP DATA VALIDATION
REQUEST FORM
07/01/97 Version

JAN 21 2009

Prior to data shipment, this form should be used to notify SESD's Office of Quality Assurance that data validation services are needed for PRP/non-CLP data. The purpose of the data validation is to give the project manager (OSC, RPM, SAM) an indication of the quality of the analytical data collected for a specific site. A separate form should be completed for each sampling event for which data validation is desired. Please provide the following information via cc: or pouch mail:

Site/Project Manager *Sharon Matthews*

Branch/Section *ES, EIB, SESD*

Site Name *City of Statesville, Third Creek Manofill*

Account No. *501E44*

Sampling Date *12/2/08*

Estimated No. of Samples for Review: Org Inorg Other

Analytical Fractions: Pest VOC BNA Metals Other

Lab Name *Pace Analytical*

Estimated Date Data Package Shipped to SESD *Jan 09*

SESD Blanks & Spikes Sent to Lab? Yes No

Date Validation Report Needed *spring 09*

→ SVOC'S
TDS
metals
NO₃/NO₂
TOC

SOURCE OF DATA PACKAGE:

Superfund PRP (Attach Non-CLP Tracking Form)

Federal Facility (Attach Non-CLP Tracking Form if CERCLA)

RCRA Facility

Other Non-CLP (i.e., ARCS, TAT, STATE, etc.)

Specify:

Most contaminated wells are → *MW 4*
→ *MW 3*
→ *MW 2*
→ *MW 8*
→ *MW 9*
→ *MW 7*

February 04, 2009

Mr. Charlie Appleby
Environmental Protection Agency, Region 4
Science and Ecosystem Division
980 College Station Road
Athens, GA 30605-2720

SUBJECT:	Data Review and Validation	Project No. CA-0121
	Case No. N/A	ESAT TDF No. 09T0465
	Sample Nos.	MW-2, MW-7, MW-9
	Sampling date(s):	12/2/08
	Organic Analyses:	Pace Analytical, Eden, NC
	Data for Site:	City of Statesville, Third Creek Monofill, Statesville, NC
	Analysis:	Semivolatiles

Dear Mr. Appleby:

The ESAT Work Team reviewed data for three water samples for semivolatile analysis. The laboratory was not submitted a performance evaluation sample.

The samples were collected on 12/02/08, received by the laboratory on 12/03/08, and the data package was received on 01/21/09 by the USEPA Quality Assurance Section, Region 4 SESD/MTSB. The laboratory analyzed the semivolatile samples using SW846 Method 8270C. All samples were analyzed within technical holding time limits. The data package which included DFTPP tune data, raw data for the method blank, samples, and the laboratory control spike, and extraction and instrument logs generally met the standard for quality required by Region 4 of other contract laboratory data and satisfied SW846 requirements. The initial calibration summary and raw data were included, but some inconsistencies were noted as detailed below.

Pertinent data quality factors are discussed below.

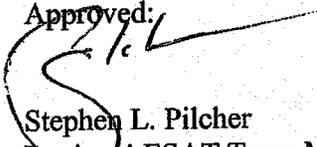
1. A matrix spike and matrix spike duplicate were not analyzed with the sample batch. The laboratory did extract and analyze a LCS. The recovery of benzoic acid was <10% in the LCS. Sample results for benzoic acid were "R" qualified.

Please refer to the attached Data Quality Assessment Record and copies of the laboratory's reporting sheets with recommended Region 4 data qualifiers for further details. If you have any questions, please contact this office.

Very Truly Yours,


Scott Selman
Data Reviewer
Integrated Laboratory Systems

Approved:


Stephen L. Pilcher
Region 4 ESAT Team Manager
Integrated Laboratory Systems

**II. Data Quality Assessment (An explanation for any "no" answer must be provided)
? = see remarks**

1. Summary:

- Were all requested analyses performed?
- Were all required OC checks performed?
- Were all required documents present?
- Were requested detection limits met?

Yes	N/A	No
X	_____	_____
X	_____	_____
X	_____	_____
_____	?	_____

Remark: Required detection limits unknown but were typical of the method.

2. Holding Times:

- VOA/BNA/PEST prepared within 14 days of sampling (7 days for VOA aromatics in non-preserved samples)?
- PCDD/PCDF extracted within 30 days of sampling?
- Extracts analyzed within 40 days of extraction?
- Were all samples/extracts properly preserved?
- For TCLP: Were RCRA TCLP holding times met?

Yes	N/A	No
X	_____	_____
_____	X	_____
X	_____	_____
_____	?	_____
_____	X	_____

Remark: Preservation status of extracts in unknown.

3. GC/MS Tuning:

- Were PFK/DFTPP/BFB criteria met?
- Pesticides: Were standards run in proper sequence?
- Combined DDT/Endrin Breakdown acceptable?
- Retention time windows defined?

Yes	N/A	No
X	_____	_____
_____	X	_____
_____	X	_____
_____	X	_____

Remark:

4.1 Initial Calibration:

	Yes	N/A	No
Were %RSDs acceptable?		?	
Were RRFs acceptable?	X		
Was S/N acceptable?		X	
Were PCDD/PCDF ion ratios acceptable?		X	

Remark: The laboratory reported 1-methylnaphthalene and 3,3'-dichlorobenzidine but these two compounds were listed as not detected on the ICAL raw data that was submitted for review.

4.2 Continuing Calibration:

	Yes	N/A	No
Were %RSDs acceptable?		X	
Were RRFs acceptable?		X	
Were PEST cont. calib. factors met?		X	
Was PCDD/PCDF S/N acceptable?		X	
Were PCDD/PCDF ion ratios acceptable?		X	

Remark: The samples were analyzed after an ICAL. Continuing standards were not analyzed with the samples.

5. Spikes:

	Yes	N/A	No
Was a method spike analysis performed?	X		
Were matrix spike/m.s. duplicate analyses performed?			X
Were acceptable recoveries obtained?			X
Was acceptable precision obtained?		X	

Remark: The laboratory did not analyze a matrix spike and matrix spike duplicate with samples. The laboratory extracted a LCS. The recovery of benzoic acid was <10% in the LCS. Sample results for benzoic acid were "R" qualified.

6. Blanks:

	Yes	N/A	No
Were blank analyses performed?	X		
Were any contaminants noted?			X
If yes, were blank rules applied to the data?			

Remark:

7. Performance Evaluation Sample:

Was a P.E. Sample analyzed with the samples?
If yes, were acceptable results obtained?

Yes	N/A	No
<u> </u>	<u> </u>	<u> X </u>
<u> </u>	<u> X </u>	<u> </u>

Remark:

8. Internal Standard / PCDD/PCDF Recovery Standards:

Were peak areas acceptable?

Yes	N/A	No
<u> X </u>	<u> </u>	<u> </u>

Remark:

9. Surrogates / PCDD/PCDF Internal Standards:

Were peak areas acceptable?

Yes	N/A	No
<u> X </u>	<u> </u>	<u> </u>

Remark:

10. Compound Identification / Quantification:

Were all positive results confirmed?
Was supporting documentation included?
Was a check of the calculations performed?
If yes, were results acceptable?
PCDD/PCDF ion ratios acceptable?

Yes	N/A	No
<u> </u>	<u> X </u>	<u> </u>
<u> </u>	<u> X </u>	<u> </u>
<u> X </u>	<u> </u>	<u> </u>
<u> X </u>	<u> </u>	<u> </u>
<u> </u>	<u> X </u>	<u> </u>

Remark:

11. Tentatively Identified Compounds?

Were TICs requested for these analyses?
If yes, were results provided?

Yes	N/A	No
<u> </u>	<u> X </u>	<u> </u>
<u> </u>	<u> X </u>	<u> </u>

Remark:

III. Data Summary

Based on a review of the quality control information, the following is a table summarizing the data qualifiers used by Region IV for this data review report.

Recommended Data Qualifiers			
Case	NA	Project Number:	CA-0121
Site	City of Statesville	ELEMENT	NA
		Sample ID. Nos	NA
		Date:	02/04/09

Affected Samples	Analytes	Recommended Qualifiers	Reason
MW-2, MW-7, MW-9	Benzoic acid	R	LCS recovery <10%

Calculation Check for LCS file 12110817.D

Response acenaphthene = 320103

Response IS = 150298

Concentration IS = 20

Avg. RF acenaphthene = 1.20943

Initial vol. = 1000ml

Final vol. = 1000 μ L

Vol. Inj. = 1.0 μ L

$$(320103)(20)(1000)/(150298)(1000)(1)(1.20943) = 35\mu\text{g/L vs } 35\mu\text{g/L}$$

Fluoranthene ICAL Check Level 6

Response fluoranthene = 1634173

Response phenanthrene-d10 = 238190

Concentration fluoranthene = 100

Concentration IS = 20

$$(1634173/238190)(20/100) = 1.3722 \text{ vs. } 1.3722$$

ANALYTICAL RESULTS

Project: R4-01 City of Statesville

Pace Project No.: 9233373

Matrix: Water

% Moisture:

Acocode: 8270 MSSV Semivolatile Organic

Prep/Method: EPA 3510 / EPA 8270

Sample: MW-2

Lab ID: 9233373003

Collected: 12/02/08 13:30

Received: 12/03/08 09:06

Analyzed: 12/11/08 20:21

Dilution Factor: 1

Units: mg/L

CAS No.	Parameters	Results	Report Limit	Qual
83-32-9	Acenaphthene	ND	0.012	
208-96-8	Acenaphthylene	ND	0.012	
62-53-3	Aniline	ND	0.012	
120-12-7	Anthracene	ND	0.012	
56-55-3	Benzo(a)anthracene	ND	0.012	
50-32-8	Benzo(a)pyrene	ND	0.012	
205-99-2	Benzo(b)fluoranthene	ND	0.012	
191-24-2	Benzo(g,h,i)perylene	ND	0.012	
207-08-9	Benzo(k)fluoranthene	ND	0.012	
65-85-0	Benzoic acid	ND	0.062	R,QL-1
100-51-6	Benzyl alcohol	ND	0.025	
101-55-3	4-Bromophenylphenyl ether	ND	0.012	
85-68-7	Butylbenzylphthalate	ND	0.012	
59-50-7	4-Chloro-3-methylphenol	ND	0.025	
106-47-8	4-Chloroaniline	ND	0.062	
111-91-1	bis(2-Chloroethoxy)methane	ND	0.012	
111-44-4	bis(2-Chloroethyl) ether	ND	0.012	
108-60-1	bis(2-Chloroisopropyl) ether	ND	0.012	
91-58-7	2-Chloronaphthalene	ND	0.012	
95-57-8	2-Chlorophenol	ND	0.012	
7005-72-3	4-Chlorophenylphenyl ether	ND	0.012	
218-01-9	Chrysene	ND	0.012	
53-70-3	Dibenz(a,h)anthracene	ND	0.012	
132-64-9	Dibenzofuran	ND	0.012	
95-50-1	1,2-Dichlorobenzene	ND	0.012	
541-73-1	1,3-Dichlorobenzene	ND	0.012	
106-46-7	1,4-Dichlorobenzene	ND	0.012	
91-94-1	3,3'-Dichlorobenzidine	ND	0.062	
120-83-2	2,4-Dichlorophenol	ND	0.012	
84-66-2	Diethylphthalate	ND	0.012	
105-67-9	2,4-Dimethylphenol	ND	0.012	
131-11-3	Dimethylphthalate	ND	0.012	
84-74-2	Di-n-butylphthalate	ND	0.012	
534-52-1	4,6-Dinitro-2-methylphenol	ND	0.025	
51-28-5	2,4-Dinitrophenol	ND	0.062	
121-14-2	2,4-Dinitrotoluene	ND	0.012	
606-20-2	2,6-Dinitrotoluene	ND	0.012	
117-84-0	Di-n-octylphthalate	ND	0.012	
122-66-7	1,2-Diphenylhydrazine	ND	0.012	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	0.012	
206-44-0	Fluoranthene	ND	0.012	



ANALYTICAL RESULTS

Project: R4-01 City of Statesville
Pace Project No.: 9233373

Matrix: Water

% Moisture:
Acode: 8270 MSSV Semivolatile Organic
Prep/Method: EPA 3510 / EPA 8270

Sample: MW-2
Lab ID: 9233373003
Collected: 12/02/08 13:30
Received: 12/03/08 09:06
Analyzed: 12/11/08 20:21
Dilution Factor: 1

Units: mg/L

CAS No.	Parameters	Results	Report Limit	Qual
86-73-7	Fluorene	ND	0.012	
87-68-3	Hexachloro-1,3-butadiene	ND	0.012	
118-74-1	Hexachlorobenzene	ND	0.012	
77-47-4	Hexachlorocyclopentadiene	ND	0.012	
67-72-1	Hexachloroethane	ND	0.012	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.012	
78-59-1	Isophorone	ND	0.012	
90-12-0	1-Methylnaphthalene	ND	0.012	
91-57-6	2-Methylnaphthalene	ND	0.012	
95-48-7	2-Methylphenol(o-Cresol)	ND	0.012	
	3&4-Methylphenol(m&p Cresol)	ND	0.012	
91-20-3	Naphthalene	ND	0.012	
88-74-4	2-Nitroaniline	ND	0.062	
99-09-2	3-Nitroaniline	ND	0.062	
100-01-6	4-Nitroaniline	ND	0.062	
98-95-3	Nitrobenzene	ND	0.012	
88-75-5	2-Nitrophenol	ND	0.012	
100-02-7	4-Nitrophenol	ND	0.062	
62-75-9	N-Nitrosodimethylamine	ND	0.012	
621-64-7	N-Nitroso-di-n-propylamine	ND	0.012	
86-30-6	N-Nitrosodiphenylamine	ND	0.012	
87-86-5	Pentachlorophenol	ND	0.062	
85-01-8	Phenanthrene	ND	0.012	
108-95-2	Phenol	ND	0.012	
129-00-0	Pyrene	ND	0.012	
120-82-1	1,2,4-Trichlorobenzene	ND	0.012	
95-95-4	2,4,5-Trichlorophenol	ND	0.012	
88-06-2	2,4,6-Trichlorophenol	ND	0.012	



ANALYTICAL RESULTS

Project: R4-01 City of Statesville

Pace Project No.: 9233373

Matrix: Water

% Moisture:

Acode: 8270 MSSV Semivolatile Organic

Prep/Method: EPA 3510 / EPA 8270

Sample: MW-7

Lab ID: 9233373005

Collected: 12/02/08 14:54

Received: 12/03/08 09:06

Analyzed: 12/11/08 20:42

Dilution Factor: 1

Units: mg/L

CAS No.	Parameters	Results	Report Limit	Qual
83-32-9	Acenaphthene	ND	0.013	
208-96-8	Acenaphthylene	ND	0.013	
62-53-3	Aniline	ND	0.013	
120-12-7	Anthracene	ND	0.013	
56-55-3	Benzo(a)anthracene	ND	0.013	
50-32-8	Benzo(a)pyrene	ND	0.013	
205-99-2	Benzo(b)fluoranthene	ND	0.013	
191-24-2	Benzo(g,h,i)perylene	ND	0.013	
207-08-9	Benzo(k)fluoranthene	ND	0.013	
65-85-0	Benzoic acid	ND	0.065	
100-51-6	Benzyl alcohol	ND	0.026	
101-55-3	4-Bromophenylphenyl ether	ND	0.013	
85-68-7	Butylbenzylphthalate	ND	0.013	
59-50-7	4-Chloro-3-methylphenol	ND	0.026	
106-47-8	4-Chloroaniline	ND	0.065	
111-91-1	bis(2-Chloroethoxy)methane	ND	0.013	
111-44-4	bis(2-Chloroethyl) ether	ND	0.013	
108-60-1	bis(2-Chloroisopropyl) ether	ND	0.013	
91-58-7	2-Chloronaphthalene	ND	0.013	
95-57-8	2-Chlorophenol	ND	0.013	
7005-72-3	4-Chlorophenylphenyl ether	ND	0.013	
218-01-9	Chrysene	ND	0.013	
53-70-3	Dibenz(a,h)anthracene	ND	0.013	
132-64-9	Dibenzofuran	ND	0.013	
95-50-1	1,2-Dichlorobenzene	ND	0.013	
541-73-1	1,3-Dichlorobenzene	ND	0.013	
106-46-7	1,4-Dichlorobenzene	ND	0.013	
91-94-1	3,3'-Dichlorobenzidine	ND	0.065	
120-83-2	2,4-Dichlorophenol	ND	0.013	
84-66-2	Diethylphthalate	ND	0.013	
105-67-9	2,4-Dimethylphenol	ND	0.013	
131-11-3	Dimethylphthalate	ND	0.013	
84-74-2	Di-n-butylphthalate	ND	0.013	
534-52-1	4,8-Dinitro-2-methylphenol	ND	0.026	
51-28-5	2,4-Dinitrophenol	ND	0.065	
121-14-2	2,4-Dinitrotoluene	ND	0.013	
606-20-2	2,6-Dinitrotoluene	ND	0.013	
117-84-0	Di-n-octylphthalate	ND	0.013	
122-66-7	1,2-Diphenylhydrazine	ND	0.013	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	0.013	
206-44-0	Fluoranthene	ND	0.013	

R, Q, L-1

ANALYTICAL RESULTS

Project: R4-01 City of Statesville
Pace Project No.: 9233373

Matrix: Water

Sample: MW-7

Lab ID: 9233373005

% Moisture:

Collected: 12/02/08 14:54

Acode: 8270 MSSV Semivolatile Organic

Received: 12/03/08 09:06

Prep/Method: EPA 3510 / EPA 8270

Analyzed: 12/11/08 20:42

Dilution Factor: 1

Units: mg/L

CAS No.	Parameters	Results	Report Limit	Qual
86-73-7	Fluorene	ND	0.013	
87-68-3	Hexachloro-1,3-butadiene	ND	0.013	
118-74-1	Hexachlorobenzene	ND	0.013	
77-47-4	Hexachlorocyclopentadiene	ND	0.013	
67-72-1	Hexachloroethane	ND	0.013	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.013	
78-59-1	Isophorone	ND	0.013	
90-12-0	1-Methylnaphthalene	ND	0.013	
91-57-6	2-Methylnaphthalene	ND	0.013	
95-48-7	2-Methylphenol(o-Cresol)	ND	0.013	
	3&4-Methylphenol(m&p Cresol)	ND	0.013	
91-20-3	Naphthalene	ND	0.013	
88-74-4	2-Nitroaniline	ND	0.065	
99-09-2	3-Nitroaniline	ND	0.065	
100-01-6	4-Nitroaniline	ND	0.065	
98-95-3	Nitrobenzene	ND	0.013	
88-75-5	2-Nitrophenol	ND	0.013	
100-02-7	4-Nitrophenol	ND	0.065	
62-75-9	N-Nitrosodimethylamine	ND	0.013	
621-64-7	N-Nitroso-di-n-propylamine	ND	0.013	
86-30-6	N-Nitrosodiphenylamine	ND	0.013	
87-86-5	Pentachlorophenol	ND	0.065	
85-01-8	Phenanthrene	ND	0.013	
108-95-2	Phenol	ND	0.013	
129-00-0	Pyrene	ND	0.013	
120-82-1	1,2,4-Trichlorobenzene	ND	0.013	
95-95-4	2,4,5-Trichlorophenol	ND	0.013	
88-06-2	2,4,6-Trichlorophenol	ND	0.013	



ANALYTICAL RESULTS

Project: R4-01 City of Statesville
 Pace Project No.: 9233373

Matrix: Water

% Moisture:
 Acode: 8270 MSSV Semivolatile Organic
 Prep/Method: EPA 3510 / EPA 8270

Sample: MW-9
 Lab ID: 9233373006
 Collected: 12/02/08 14:25
 Received: 12/03/08 09:06
 Analyzed: 12/11/08 21:03
 Dilution Factor: 1

Units: mg/L

CAS No.	Parameters	Results	Report Limit	Qual
83-32-9	Acenaphthene	ND	0.015	
208-96-8	Acenaphthylene	ND	0.015	
62-53-3	Aniline	ND	0.015	
120-12-7	Anthracene	ND	0.015	
56-55-3	Benzo(a)anthracene	ND	0.015	
50-32-8	Benzo(a)pyrene	ND	0.015	
205-99-2	Benzo(b)fluoranthene	ND	0.015	
191-24-2	Benzo(g,h,i)perylene	ND	0.015	
207-08-9	Benzo(k)fluoranthene	ND	0.015	
65-85-0	Benzoic acid	ND	0.076	
100-51-6	Benzyl alcohol	ND	0.030	
101-55-3	4-Bromophenylphenyl ether	ND	0.015	
85-68-7	Butylbenzylphthalate	ND	0.015	
59-50-7	4-Chloro-3-methylphenol	ND	0.030	
106-47-8	4-Chloroaniline	ND	0.076	
111-91-1	bis(2-Chloroethoxy)methane	ND	0.015	
111-44-4	bis(2-Chloroethyl) ether	ND	0.015	
108-60-1	bis(2-Chloroisopropyl) ether	ND	0.015	
91-58-7	2-Chloronaphthalene	ND	0.015	
95-57-8	2-Chlorophenol	ND	0.015	
7005-72-3	4-Chlorophenylphenyl ether	ND	0.015	
218-01-9	Chrysene	ND	0.015	
53-70-3	Dibenz(a,h)anthracene	ND	0.015	
132-64-9	Dibenzofuran	ND	0.015	
95-50-1	1,2-Dichlorobenzene	ND	0.015	
541-73-1	1,3-Dichlorobenzene	ND	0.015	
106-46-7	1,4-Dichlorobenzene	ND	0.015	
91-94-1	3,3'-Dichlorobenzidine	ND	0.076	
120-83-2	2,4-Dichlorophenol	ND	0.015	
84-66-2	Diethylphthalate	ND	0.015	
105-67-9	2,4-Dimethylphenol	ND	0.015	
131-11-3	Dimethylphthalate	ND	0.015	
84-74-2	Di-n-butylphthalate	ND	0.015	
534-52-1	4,6-Dinitro-2-methylphenol	ND	0.030	
51-28-5	2,4-Dinitrophenol	ND	0.076	
121-14-2	2,4-Dinitrotoluene	ND	0.015	
606-20-2	2,6-Dinitrotoluene	ND	0.015	
117-84-0	Di-n-octylphthalate	ND	0.015	
122-66-7	1,2-Diphenylhydrazine	ND	0.015	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	0.015	
206-44-0	Fluoranthene	ND	0.015	

R, QL-1



ANALYTICAL RESULTS

Project: R4-01 City of Statesville
Pace Project No.: 9233373

Matrix: Water

Sample: MW-9

Lab ID: 9233373006

% Moisture:

Collected: 12/02/08 14:25

Acode: 8270 MSSV Semivolatile Organic

Received: 12/03/08 09:06

Prep/Method: EPA 3510 / EPA 8270

Analyzed: 12/11/08 21:03

Dilution Factor: 1

Units: mg/L

CAS No.	Parameters	Results	Report Limit	Qual
86-73-7	Fluorene	ND	0.015	
87-68-3	Hexachloro-1,3-butadiene	ND	0.015	
118-74-1	Hexachlorobenzene	ND	0.015	
77-47-4	Hexachlorocyclopentadiene	ND	0.015	
67-72-1	Hexachloroethane	ND	0.015	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.015	
78-59-1	Isophorone	ND	0.015	
90-12-0	1-Methylnaphthalene	ND	0.015	
91-57-6	2-Methylnaphthalene	ND	0.015	
95-48-7	2-Methylphenol(o-Cresol)	ND	0.015	
	3&4-Methylphenol(m&p Cresol)	ND	0.015	
91-20-3	Naphthalene	ND	0.015	
88-74-4	2-Nitroaniline	ND	0.076	
99-09-2	3-Nitroaniline	ND	0.076	
100-01-6	4-Nitroaniline	ND	0.076	
98-95-3	Nitrobenzene	ND	0.015	
88-75-5	2-Nitrophenol	ND	0.015	
100-02-7	4-Nitrophenol	ND	0.076	
62-75-9	N-Nitrosodimethylamine	ND	0.015	
621-64-7	N-Nitroso-di-n-propylamine	ND	0.015	
86-30-6	N-Nitrosodiphenylamine	ND	0.015	
87-86-5	Pentachlorophenol	ND	0.076	
85-01-8	Phenanthrene	ND	0.015	
108-95-2	Phenol	ND	0.015	
129-00-0	Pyrene	ND	0.015	
120-82-1	1,2,4-Trichlorobenzene	ND	0.015	
95-95-4	2,4,5-Trichlorophenol	ND	0.015	
88-06-2	2,4,6-Trichlorophenol	ND	0.015	

February 9, 2009

Mr. Charlie Appleby
United States Environmental Protection Agency
Science and Ecosystem Division
980 College Station Road
Athens, GA 30605-2720

Subject: Data Review and Validation
Site Name: City of Statesville
Case: NA Project No.: CA-0121
ELEMENT Sample ID. Nos: NA
Inorganic Analysis: Pace Analytical, Eden, NC
Date(s) Sampled: 12/02/08
VTSR Date: 12/03/08
Date Received from Lab: 01/21/09
TDF No. 09T0465

Dear Mr. Appleby:

The ESAT Work Team has reviewed the above-captioned SPR data package consisting of adequate deliverables to document SW846 compliance for six water samples for total metals by ICP, total dissolved solids, nitrate plus nitrite nitrogen, and total organic carbon analysis according to EPA guidelines. This package presents acceptable technical performance and generally met the standard for quality required by Region 4 except as detailed below.

The recoveries of matrix spikes for Total Organic Carbon were -88% and 64% respectively. All sample results for Total Organic Carbon were "R" qualified.

The recovery of the matrix spike for Nitrate plus Nitrite Nitrogen was 39%. All results sample results for Nitrate plus Nitrite Nitrogen were "J" qualified.

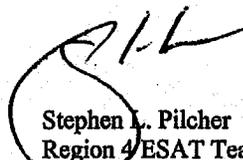
Further details are provided in the attached review summary form. Please feel free to contact this office if we can be of further service.

Very truly yours,



Scott Selman
Data Reviewer
Integrated Laboratory Systems

Approved:



Stephen L. Pilcher
Region 4/ESAT Team Manager
Integrated Laboratory Systems

Inorganic Data Quality Assessment Record (DQAR)

Review Date: 02/05/09 Analyses: Total metals and mercury, TDS, Nitrate/Nitrite, TOC Matrix: Water Project #: CA-0121

SDG /Lab File: NA
 Laboratory: Pace Analytical, Eden, NC
 Site Name: City of Statesville
 Check One: EPA | | ESAT | | CLP | | Other (specify) | Non-CLP

Signatures: **SS**

Reviewer

Review Codes: M- Metals, H- Mercury, C- Cyanide, O- Others

Sample Numbers:

9233373003 (MW-2)
 9233373005 (MW-7)
 9233373006 (MW-9)
 9233373001 (MW-4)
 9233373002 (MW-3)
 8233373004 (MW-8)

I. SUMMARY OF PROBLEMS AND COMMENTS:

A summary of deficiencies noted for the method used to generate data for this project is presented below. Please refer to the Data Quality Assessment Record (DQAR) for each data file and the data flag summary table at the end of this review document. For the purposes of this review, the QC limits specified in the analytical method have been applied to the data. Data qualifiers recommendations are made in accordance with the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic and Organic Data Review (Functional Guidelines), and the Region 4 SOP, Data Validation Standard Operating Procedures for Contract Laboratory Program Routine Analytical Services (R4DVSOP).

Data Review Comments:

1. The recoveries of matrix spikes for Total Organic Carbon were -88% and 64% respectively. All sample results for Total Organic Carbon were "R" qualified.
2. The recovery of the matrix spike for Nitrate plus Nitrite Nitrogen was 39%. All results sample results for Nitrate plus Nitrite Nitrogen were "J" qualified.

II. Data Quality Assessment (An explanation for any "no" answer must be provided)

1. Summary

- Were all requested analyses performed?
- Were all required QC checks performed?
- Were all required documents present?
- Were requested detection limits met?

	Yes	N/A	No
Were all requested analyses performed?	M,H,O		
Were all required QC checks performed?	M,H,O		
Were all required documents present?	M,H,O		
Were requested detection limits met?	?		

Remark: Required detection limits are unknown but are typical of the method.

<p>2. Holding Times:(Holding times are not applicable for non-aqueous samples) Were water samples properly preserved? Were water holding time requirements met? Remark:</p>	<p>Yes M,H,O M,H,O</p>	<p>N/A</p>	<p>No</p>
<p>3. Calibrations: A. Initial Calibration: Were acceptable correlation coefficients obtained? Were acceptable % Recoveries for analytes obtained? B. Continuing Calibration Were acceptable % Recoveries for analytes obtained? Remark:</p>	<p>Yes M,H,O M,H,O M,H,O</p>	<p>N/A</p>	<p>No</p>
<p>4. Blanks: Were any contaminants noted in the blanks? If yes, were blank rules applied to the data? Remark:</p>	<p>Yes</p>	<p>N/A M,H,O</p>	<p>No M,H,O</p>
<p>5. ICP Interference Check Sample: Were results within 20% of the true value? Were False positives Reported? Were False negatives reported? Remark:</p>	<p>Yes M</p>	<p>N/A</p>	<p>No M M</p>
<p>6. Matrix spikes: Was a matrix spike analysis performed? Were samples spiked at appropriate levels? Were matrix spike/matrix spike duplicate analyses performed? Were acceptable recoveries obtained? Was acceptable precision obtained? Remark: The recoveries of matrix spikes for Total Organic Carbon were -88% and 64% respectively. All sample results for Total Organic Carbon were "R" qualified. The recovery of the matrix spike for Nitrate plus Nitrite Nitrogen was 39%. All results sample results for Nitrate plus Nitrite Nitrogen were "J" qualified.</p>	<p>Yes M,H,O M,H,O M,H,O M,H M,H,O</p>	<p>N/A</p>	<p>No O</p>
<p>7. Matrix duplicate analysis Was a matrix duplicate analysis performed? Was duplicate precision in control? Remark:</p>	<p>Yes M,H,O M,H,O</p>	<p>N/A</p>	<p>No</p>
<p>8. Performance Evaluation Sample: Was a P.E. Sample analyzed with the samples? If yes, were acceptable results obtained? Remark:</p>	<p>Yes</p>	<p>N/A M,H,O</p>	<p>No M,H,O</p>

- | | | | |
|---|--|------------|---------------------------------------|
| <p>9. Method Standard / Laboratory Control Sample:
 Were acceptable recoveries obtained?
 Were acceptable precision obtained?
 Remark:</p> | <p>Yes
 M,H,O
 M,H,O</p> | <p>N/A</p> | <p>No</p> |
| <p>10. ICP Serial Dilution Sample:
 Was ICP serial dilution analysis performed?
 Were diluted results within 10% of undiluted sample result?
 Remark:</p> | <p>Yes</p> | <p>N/A</p> | <p>No
 M
 M</p> |
| <p>11. Completeness:
 Were all requested analyses performed?
 Were all required documents present? If yes, were results provided?
 Were results of calculation checks acceptable?
 Remark:</p> | <p>Yes
 M,H,O
 M,H,O
 M,H,O</p> | <p>N/A</p> | <p>No</p> |

Additional Comments:

III. Data Qualifiers Summary

Based on a review of the quality control information, the following is a table summarizing the data qualifiers used by Region IV for this data review report.

		Recommended Data Qualifiers		ELEMENT Sample	
Case	NA	Project Number:	CA-0121	ID. Nos	NA
Site	City of Statesville			Date:	02/06/09
Affected Samples	Analytes	Recommended Qualifiers		Reason	
MW-2, MW-3, MW-4, MW-8	TOC	R		MS recovery <10%	
MW-2, MW-3, MW-4, MW-8	Nitrate/Nitrite	J		MW-2 MS recovery = 39%	

ANALYTICAL RESULTS

Project: R4-01 City of Statesville
Pace Project No.: 9233373

Matrix: Water

% Moisture:
Acode: 200.7 MET ICP
Prep/Method: EPA 200.7 / EPA 200.7

Sample: MW-4
Lab ID: 9233373001
Collected: 12/02/08 12:30
Received: 12/03/08 09:06
Analyzed: 12/09/08 13:43
Dilution Factor: 1

Units: mg/L

CAS No.	Parameters	Results	Report Limit	Qual
7440-38-2	Arsenic	ND	0.0050	
7440-39-3	Barium	0.11	0.0050	
7440-43-9	Cadmium	ND	0.0010	
7440-47-3	Chromium	ND	0.0050	
7439-92-1	Lead	0.0056	0.0050	
7440-02-0	Nickel	ND	0.0050	
7440-22-4	Silver	ND	0.0050	
7782-49-2	Selenium	ND	0.010	



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ANALYTICAL RESULTS

Project: R4-01 City of Statesville
Pace Project No.: 9233373

Matrix: Water

% Moisture:

Acode: 245.1 Mercury

Prep/Method: EPA 245.1 / EPA 245.1

Sample: MW-4

Lab ID: 9233373001

Collected: 12/02/08 12:30

Received: 12/03/08 09:06

Analyzed: 12/09/08 10:29

Dilution Factor: 1

Units: mg/L

CAS No.	Parameters	Results	Report Limit	Qual
7439-97-6	Mercury	ND	0.00020	

ANALYTICAL RESULTS

Project: R4-01 City of Statesville
Pace Project No.: 9233373

Matrix: Water

% Moisture:

Acode: 2540C Total Dissolved Solids

Prep/Method: SM 2540C

Sample: MW-4

Lab ID: 9233373001

Collected: 12/02/08 12:30

Received: 12/03/08 09:06

Analyzed: 12/05/08 16:22

Dilution Factor: 1

Units: mg/L

CAS No.	Parameters	Results	Report Limit	Qual
	Total Dissolved Solids	76.0	20.0	

ANALYTICAL RESULTS

Project: R4-01 City of Statesville
Pace Project No.: 9233373

Matrix: Water

% Moisture:
Acode: 353.2 Nitrogen, NO2/NO3 pres.
Prep/Method: EPA 353.2

Sample: MW-4
Lab ID: 9233373001
Collected: 12/02/08 12:30
Received: 12/03/08 09:06
Analyzed: 12/10/08 14:30
Dilution Factor: 1

Units: mg/L.

CAS No.	Parameters	Results	Report Limit	Qual
	Nitrogen, NO2 plus NO3	ND	0.10	J, QM-1



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ANALYTICAL RESULTS

Project: R4-01 City of Statesville
Pace Project No.: 9233373

Matrix: Water

% Moisture:
Acode: 5310B TOC
Prep/Method: SM 5310B

Sample: MW-4
Lab ID: 9233373001
Collected: 12/02/08 12:30
Received: 12/03/08 09:06
Analyzed: 12/12/08 13:00
Dilution Factor: 1

Units: mg/L

CAS No.	Parameters	Results	Report Limit	Qual
7440-44-0	Total Organic Carbon	5.8	1.0	R, QM-6

ANALYTICAL RESULTS

Project: R4-01 City of Statesville
Pace Project No.: 9233373

Matrix: Water

% Moisture:

Acode: 200.7 MET ICP

Prep/Method: EPA 200.7 / EPA 200.7

Sample: MW-3

Lab ID: 9233373002

Collected: 12/02/08 12:51

Received: 12/03/08 09:06

Analyzed: 12/09/08 13:57

Dilution Factor: 1

Units: mg/L

CAS No.	Parameters	Results	Report Limit	Qual
7440-38-2	Arsenic	ND	0.0050	
7440-39-3	Barium	0.18	0.0050	
7440-43-9	Cadmium	ND	0.0010	
7440-47-3	Chromium	0.011	0.0050	
7439-92-1	Lead	0.011	0.0050	
7440-02-0	Nickel	0.0053	0.0050	
7440-22-4	Silver	ND	0.0050	
7782-49-2	Selenium	ND	0.010	

ANALYTICAL RESULTS

Project: R4-01 City of Statesville
Pace Project No.: 9233373

Matrix: Water

% Moisture:

Acode: 245.1 Mercury

Prep/Method: EPA 245.1 / EPA 245.1

Sample: MW-3

Lab ID: 9233373002

Collected: 12/02/08 12:51

Received: 12/03/08 09:06

Analyzed: 12/09/08 10:36

Dilution Factor: 1

Units: mg/L

CAS No.	Parameters	Results	Report Limit	Qual
7439-97-6	Mercury	ND	0.00020	



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ANALYTICAL RESULTS

Project: R4-01 City of Statesville
Pace Project No.: 9233373

Matrix: Water

% Moisture:
Acode: 2540C Total Dissolved Solids
Prep/Method: SM 2540C

Sample: MW-3
Lab ID: 9233373002
Collected: 12/02/08 12:51
Received: 12/03/08 09:06
Analyzed: 12/05/08 16:23
Dilution Factor: 1

Units: mg/L

CAS No.	Parameters	Results	Report Limit	Qual
	Total Dissolved Solids	100	20.0	

ANALYTICAL RESULTS

Project: R4-01 City of Statesville
Pace Project No.: 9233373

Matrix: Water

% Moisture:
Acode: 353.2 Nitrogen, NO2/NO3 pres.
Prep/Method: EPA 353.2

Sample: MW-3
Lab ID: 9233373002
Collected: 12/02/08 12:51
Received: 12/03/08 09:06
Analyzed: 12/10/08 14:30
Dilution Factor: 1

Units: mg/L

CAS No.	Parameters	Results	Report Limit	Qual
	Nitrogen, NO2 plus NO3	4.2	0.10	J, Q M-1



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ANALYTICAL RESULTS

Project: R4-01 City of Statesville
Pace Project No.: 9233373

Matrix: Water

% Moisture:
Acode: 5310B TOC
Prep/Method: SM 5310B

Sample: MW-3
Lab ID: 9233373002
Collected: 12/02/08 12:51
Received: 12/03/08 09:06
Analyzed: 12/12/08 13:00
Dilution Factor: 1

Units: mg/L

CAS No.	Parameters	Results	Report Limit	Qual
7440-44-0	Total Organic Carbon	5.7	1.0	RQM-6

ANALYTICAL RESULTS

Project: R4-01 City of Statesville
Pace Project No.: 9233373

Matrix: Water

% Moisture:

Acode: 200.7 MET ICP

Prep/Method: EPA 200.7 / EPA 200.7

Sample: MW-2

Lab ID: 9233373003

Collected: 12/02/08 13:30

Received: 12/03/08 09:06

Analyzed: 12/09/08 14:05

Dilution Factor: 1

Units: mg/L

CAS No.	Parameters	Results	Report Limit	Qual
7440-38-2	Arsenic	ND	0.0050	
7440-39-3	Barium	0.91	0.0050	
7440-43-9	Cadmium	ND	0.0010	
7440-47-3	Chromium	0.013	0.0050	
7439-92-1	Lead	0.0090	0.0050	
7440-02-0	Nickel	0.0087	0.0050	
7440-22-4	Silver	ND	0.0050	
7782-49-2	Selenium	ND	0.010	

ANALYTICAL RESULTS

Project: R4-01 City of Statesville
Pace Project No.: 9233373

Matrix: Water

% Moisture:

Acode: 245.1 Mercury

Prep/Method: EPA 245.1 / EPA 245.1

Sample: MW-2

Lab ID: 9233373003

Collected: 12/02/08 13:30

Received: 12/03/08 09:06

Analyzed: 12/09/08 10:41

Dilution Factor: 1

Units: mg/L

CAS No.	Parameters	Results	Report Limit	Qual
7439-97-6	Mercury	ND	0.00020	

ANALYTICAL RESULTS

Project: R4-01 City of Statesville
Pace Project No.: 9233373

Matrix: Water

% Moisture:

Acode: 2540C Total Dissolved Solids

Prep/Method: SM 2540C

Sample: MW-2

Lab ID: 9233373003

Collected: 12/02/08 13:30

Received: 12/03/08 09:06

Analyzed: 12/05/08 16:23

Dilution Factor: 1

Units: mg/L

CAS No.	Parameters	Results	Report Limit	Qual
	Total Dissolved Solids	86.0	20.0	



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ANALYTICAL RESULTS

Project: R4-01 City of Statesville
Pace Project No.: 9233373

Matrix: Water

% Moisture:

Acode: 353.2 Nitrogen, NO2/NO3 pres.

Prep/Method: EPA 353.2

Sample: MW-2

Lab ID: 9233373003

Collected: 12/02/08 13:30

Received: 12/03/08 09:06

Analyzed: 12/10/08 14:30

Dilution Factor: 1

Units: mg/L

CAS No.	Parameters	Results	Report Limit	Qual
	Nitrogen, NO2 plus NO3	6.3	0.10 M0	J, Q M-1



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ANALYTICAL RESULTS

Project: R4-01 City of Statesville
Pace Project No.: 9233373

Matrix: Water

% Moisture:
Acode: 5310B TOC
Prep/Method: SM 5310B

Sample: MW-2
Lab ID: 9233373003
Collected: 12/02/08 13:30
Received: 12/03/08 09:06
Analyzed: 12/12/08 13:00
Dilution Factor: 1
Units: mg/L

CAS No.	Parameters	Results	Report Limit	Qual
7440-44-0	Total Organic Carbon	12.2	1.0	R, QM-6



ANALYTICAL RESULTS

Project: R4-01 City of Statesville
Pace Project No.: 9233373

Matrix: Water

% Moisture:
Acode: 200.7 MET ICP
Prep/Method: EPA 200.7 / EPA 200.7

Sample: MW-8
Lab ID: 9233373004
Collected: 12/02/08 14:10
Received: 12/03/08 09:06
Analyzed: 12/09/08 14:08
Dilution Factor: 1

Units: mg/L

CAS No.	Parameters	Results	Report Limit	Qual
7440-38-2	Arsenic	ND	0.0050	
7440-39-3	Barium	0.24	0.0050	
7440-43-9	Cadmium	ND	0.0010	
7440-47-3	Chromium	0.0062	0.0050	
7439-92-1	Lead	0.0087	0.0050	
7440-02-0	Nickel	0.0065	0.0050	
7440-22-4	Silver	ND	0.0050	
7782-49-2	Selenium	ND	0.010	

ANALYTICAL RESULTS

Project: R4-01 City of Statesville
Pace Project No.: 9233373

Matrix: Water

% Moisture:
Acode: 245.1 Mercury
Prep/Method: EPA 245.1 / EPA 245.1

Sample: MW-8
Lab ID: 9233373004
Collected: 12/02/08 14:10
Received: 12/03/08 09:06
Analyzed: 12/09/08 10:44
Dilution Factor: 1

Units: mg/L

CAS No.	Parameters	Results	Report Limit	Qual
7439-97-6	Mercury	ND	0.00020	



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ANALYTICAL RESULTS

Project: R4-01 City of Statesville
Pace Project No.: 9233373

Matrix: Water

% Moisture:
Acode: 2540C Total Dissolved Solids
Prep/Method: SM 2540C

Sample: MW-8
Lab ID: 9233373004
Collected: 12/02/08 14:10
Received: 12/03/08 09:06
Analyzed: 12/05/08 16:25
Dilution Factor: 1

Units: mg/L

CAS No.	Parameters	Results	Report Limit	Qual
	Total Dissolved Solids	54.0	20.0	



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ANALYTICAL RESULTS

Project: R4-01 City of Statesville

Pace Project No.: 9233373

Matrix: Water

% Moisture:

Acode: 353.2 Nitrogen, NO2/NO3 pres.

Prep/Method: EPA 353.2

Sample: MW-8

Lab ID: 9233373004

Collected: 12/02/08 14:10

Received: 12/03/08 09:06

Analyzed: 12/10/08 14:30

Dilution Factor: 1

Units: mg/L

CAS No.	Parameters	Results	Report Limit	Qual
	Nitrogen, NO2 plus NO3	1.6	0.10	J, QM-1

ANALYTICAL RESULTS

Project: R4-01 City of Statesville
Pace Project No.: 9233373

Matrix: Water

% Moisture:
Acode: 200.7 MET ICP
Prep/Method: EPA 200.7 / EPA 200.7

Sample: MW-9
Lab ID: 9233373006
Collected: 12/02/08 14:25
Received: 12/03/08 09:06
Analyzed: 12/09/08 14:23
Dilution Factor: 1
Units: mg/L

CAS No.	Parameters	Results	Report Limit	Qual
7440-38-2	Arsenic	ND	0.0050	
7440-39-3	Barium	0.34	0.0050	
7440-43-9	Cadmium	ND	0.0010	
7440-47-3	Chromium	0.0056	0.0050	
7439-92-1	Lead	0.0057	0.0050	
7440-02-0	Nickel	ND	0.0050	
7440-22-4	Silver	ND	0.0050	
7782-49-2	Selenium	ND	0.010	