

**Laboratory Data Consultants, Inc.  
Data Validation Report**

**Project/Site Name:** Aerojet PGOU  
**Collection Date:** June 19, 2006  
**LDC Report Date:** September 22, 2006  
**Matrix:** Soil  
**Parameters:** Semivolatiles  
**Validation Level:** EPA Level III Equivalent  
**Laboratory:** Test America - Irvine  
**Sample Delivery Group (SDG):** S606389

**Sample Identification**

C41-SS07-0  
C41-SS07-0MS3  
C41-SS07-0MSD  
C41-SS08-0  
C41-SS16-0

## Introduction

This data review covers five soil samples listed on the cover sheet including QC samples, dilutions, and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report, if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
All samples in the SDG	All target compounds	Cooler temperature was reported at 10.8°C upon receipt by the laboratory.	Cooler temperature must be $4 \pm 2^\circ\text{C}$	None	A

Although the samples were received outside of the  $4 \pm 2^\circ\text{C}$  criteria, the bottles were received in good condition the same day of sampling and no qualification of the data is warranted.

## II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

## III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 15.0% for each individual compound and less than or equal to 30.0% for calibration check compounds (CCCs).

In the case where %RSD was greater than 15.0%, the laboratory used a calibration curve to evaluate the compound. All coefficients of determination ( $r^2$ ) were greater than or equal to 0.990.

For the purposes of technical evaluation, all compounds were evaluated against the 30.0% (%RSD) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria.

Average relative response factors (RRF) for the system performance check compounds (SPCCs) were within method and validation criteria.

## IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs).

For the purposes of technical evaluation, all compounds were evaluated against the 25.0% (%D) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
6/16/2006	Hexachlorocyclopentadiene	-34.6	All samples in the SDG	J (detects)	A

All of the continuing calibration RRF values for system performance check compounds (SPCCs) were within method and validation criteria.

#### V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

No samples were identified as field blanks. Therefore, this parameter was not reviewed.

#### VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within the QC limits.

#### VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
C41-SS07-0	Benzidine	ND (10-120)	ND (10-120)	(30)	R (non-detects) J (detects)	A

Although pyridine was not detected in C41-SS07-0MS and C41-SS07-0MSD, the compound is not reported for C41-SS07-0. Therefore, no qualification of pyridine is necessary.

#### VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within the QC limits.

## **IX. Regional Quality Assurance and Quality Control**

Not applicable.

## **X. Internal Standards**

All internal standard areas and retention times were within the QC limits.

## **XI. Target Compound Identifications**

Raw data were not reviewed for this SDG.

## **XII. Compound Quantitation and CRQLs**

Raw data were not reviewed for this SDG.

## **XIII. Tentatively Identified Compounds (TICs)**

Raw data were not reviewed for this SDG.

## **XIV. System Performance**

Raw data were not reviewed for this SDG.

## **XV. Overall Assessment**

Data flags have been summarized at the end of the report, if data has been qualified.

## **XVI. Field Duplicates**

No samples were identified as field duplicates. Therefore, this parameter was not reviewed.

**Aerojet PGOU  
Semivolatiles - Data Qualification Summary - SDG S606389**

<b>SDG</b>	<b>Sample</b>	<b>Compound</b>	<b>Flag</b>	<b>A or P</b>	<b>Reason</b>
S606389	C41-SS07-0	Benzidine	R (non-detects) J (detects)	A	No recovery in MS and MSD samples
S606389	All samples in the SDG	Hexachlorocyclopentadiene	J (detects)	A	%D out of criteria in CCV

**Aerojet PGOU  
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG S606389**

No Sample Data Qualified in this SDG

ERM-West - Sacramento  
2525 Natomas Park Dr., Ste. 350  
Sacramento CA, 95833

Project: Aerojet PGOU  
Project Number: 20648.03  
Project Manager: Bruce Lewis

S606389  
Reported:  
07/13/06 11:50

**SEMI-VOLATILE ORGANICS BY GC/MS (EPA 8270C)**  
**TestAmerica - Irvine, CA**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C41-SS07-0 (S606389-02) Soil Sampled: 06/19/06 10:10 Received: 06/19/06 16:57</b>										
1,2,4-Trichlorobenzene	ND	220	660	ug/kg	2	6F29117	06/29/06	06/30/06	EPA 8270C	DU result
1,2-Dichlorobenzene	ND	360	660	"	"	"	"	"	"	
1,2-Diphenylhydrazine/Azobenzene	ND	220	660	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	380	660	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	320	660	"	"	"	"	"	"	
2,4,5-Trichlorophenol	ND	280	660	"	"	"	"	"	"	
2,4,6-Trichlorophenol	ND	260	660	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	220	660	"	"	"	"	"	"	
2,4-Dimethylphenol	ND	170	660	"	"	"	"	"	"	
2,6-Dinitrotoluene	ND	280	660	"	"	"	"	"	"	
2-Chloronaphthalene	ND	200	660	"	"	"	"	"	"	
2-Chlorophenol	ND	320	660	"	"	"	"	"	"	
2-Methylnaphthalene	ND	200	660	"	"	"	"	"	"	
2-Methylphenol	ND	280	660	"	"	"	"	"	"	
2-Nitroaniline	ND	320	660	"	"	"	"	"	"	
2-Nitrophenol	ND	240	660	"	"	"	"	"	"	
3,3-Dichlorobenzidine	ND	190	1700	"	"	"	"	"	"	
3-Nitroaniline	ND	260	660	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	220	840	"	"	"	"	"	"	
4-Bromophenyl phenyl ether	ND	190	660	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND	260	660	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	200	660	"	"	"	"	"	"	
4-Methylphenol	ND	220	660	"	"	"	"	"	"	
4-Nitroaniline	ND	280	1700	"	"	"	"	"	"	
4-Nitrophenol	ND	300	1700	"	"	"	"	"	"	
Acenaphthene	ND	160	660	"	"	"	"	"	"	
Acenaphthylene	ND	220	660	"	"	"	"	"	"	
Aniline	ND	340	840	"	"	"	"	"	"	
Anthracene	ND	200	660	"	"	"	"	"	"	
Benzidine	ND	240	1300	"	"	"	"	"	"	R M2
Benzo(a)anthracene	ND	200	660	"	"	"	"	"	"	
Benzo(a)pyrene	ND	160	660	"	"	"	"	"	"	
Benzo(b)fluoranthene	ND	200	660	"	"	"	"	"	"	
Benzo(g,h,i)perylene	ND	280	660	"	"	"	"	"	"	
Benzo(k)fluoranthene	ND	180	660	"	"	"	"	"	"	
Benzoic acid	ND	620	1700	"	"	"	"	"	"	
Benzyl alcohol	ND	240	660	"	"	"	"	"	"	CJ 9/8/06

TestAmerica - Sacramento, CA

The results in this report apply to the samples analyzed in accordance with the chain of custody document. Unless otherwise stated, results are reported on a wet weight basis. This analytical report must be reproduced in its entirety.

ERM-West - Sacramento  
2525 Natomas Park Dr., Ste. 350  
Sacramento CA, 95833

Project: Aerojet PGOU  
Project Number: 20648.03  
Project Manager: Bruce Lewis

S606389  
Reported:  
07/13/06 11:50

**SEMI-VOLATILE ORGANICS BY GC/MS (EPA 8270C)**  
**TestAmerica - Irvine, CA**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C41-SS07-0 (S606389-02) Soil    Sampled: 06/19/06 10:10    Received: 06/19/06 16:57</b>										
										<b>RL-3</b>
Bis(2-chloroethyl)ether	ND	260	340	ug/kg	2	6F29117	06/29/06	06/30/06	EPA 8270C	
Bis(2-chloroisopropyl)ether	ND	280	660	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	200	660	"	"	"	"	"	"	
Butyl benzyl phthalate	ND	220	660	"	"	"	"	"	"	
Chrysene	ND	220	660	"	"	"	"	"	"	
Dibenz(a,h)anthracene	ND	280	840	"	"	"	"	"	"	
Dibenzofuran	ND	220	660	"	"	"	"	"	"	
Diethyl phthalate	ND	180	660	"	"	"	"	"	"	
Dimethyl phthalate	ND	240	660	"	"	"	"	"	"	
Di-n-butyl phthalate	ND	140	660	"	"	"	"	"	"	
Di-n-octyl phthalate	ND	220	660	"	"	"	"	"	"	
Fluoranthene	ND	200	660	"	"	"	"	"	"	
Fluorene	ND	220	660	"	"	"	"	"	"	
Hexachlorobenzene	ND	140	660	"	"	"	"	"	"	
Hexachlorobutadiene	ND	200	660	"	"	"	"	"	"	
Hexachlorocyclopentadiene	ND	340	1700	"	"	"	"	"	"	C
Hexachloroethane	ND	340	660	"	"	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	240	660	"	"	"	"	"	"	
Isophorone	ND	170	660	"	"	"	"	"	"	
Naphthalene	ND	200	660	"	"	"	"	"	"	
Nitrobenzene	ND	220	660	"	"	"	"	"	"	
N-Nitrosodimethylamine	ND	280	660	"	"	"	"	"	"	
N-Nitroso-di-n-propylamine	ND	220	500	"	"	"	"	"	"	
N-Nitrosodiphenylamine	ND	220	660	"	"	"	"	"	"	
Pentachlorophenol	ND	260	1700	"	"	"	"	"	"	
Phenanthrene	ND	180	660	"	"	"	"	"	"	
Phenol	ND	220	660	"	"	"	"	"	"	
Pyrene	ND	260	660	"	"	"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		67 %	35-125			"	"	"	"	
Surrogate: 2-Fluorobiphenyl		72 %	35-120			"	"	"	"	
Surrogate: 2-Fluorophenol		46 %	25-120			"	"	"	"	
Surrogate: Nitrobenzene-d5		63 %	30-120			"	"	"	"	
Surrogate: Phenol-d6		61 %	35-120			"	"	"	"	
Surrogate: Terphenyl-d14		60 %	40-135			"	"	"	"	

CJ  
9/10/06

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**TestAmerica - Irvine, CA**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C41-SS08-0 (S606389-03) Soil    Sampled: 06/19/06 10:20    Received: 06/19/06 16:57</b>										
1,2,4-Trichlorobenzene	ND	110	330	ug/kg	1	6F29117	06/29/06	06/30/06	EPA 8270C	
1,2-Dichlorobenzene	ND	180	330	"	"	"	"	"	"	
1,2-Diphenylhydrazine/Azobenzene	ND	110	330	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	190	330	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	160	330	"	"	"	"	"	"	
2,4,5-Trichlorophenol	ND	140	330	"	"	"	"	"	"	
2,4,6-Trichlorophenol	ND	130	330	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	110	330	"	"	"	"	"	"	
2,4-Dimethylphenol	ND	87	330	"	"	"	"	"	"	
2,6-Dinitrotoluene	ND	140	330	"	"	"	"	"	"	
2-Chloronaphthalene	ND	98	330	"	"	"	"	"	"	
2-Chlorophenol	ND	160	330	"	"	"	"	"	"	
2-Methylnaphthalene	ND	98	330	"	"	"	"	"	"	
2-Methylphenol	ND	140	330	"	"	"	"	"	"	
2-Nitroaniline	ND	160	330	"	"	"	"	"	"	
2-Nitrophenol	ND	120	330	"	"	"	"	"	"	
3,3-Dichlorobenzidine	ND	97	830	"	"	"	"	"	"	
3-Nitroaniline	ND	130	330	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	110	420	"	"	"	"	"	"	
4-Bromophenyl phenyl ether	ND	96	330	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND	130	330	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	98	330	"	"	"	"	"	"	
4-Methylphenol	ND	110	330	"	"	"	"	"	"	
4-Nitroaniline	ND	140	830	"	"	"	"	"	"	
4-Nitrophenol	ND	150	830	"	"	"	"	"	"	
Acenaphthene	ND	79	330	"	"	"	"	"	"	
Acenaphthylene	ND	110	330	"	"	"	"	"	"	
Aniline	ND	170	420	"	"	"	"	"	"	
Anthracene	ND	100	330	"	"	"	"	"	"	
Benzidine	ND	120	660	"	"	"	"	"	"	
Benzo(a)anthracene	ND	98	330	"	"	"	"	"	"	
Benzo(a)pyrene	ND	81	330	"	"	"	"	"	"	
Benzo(b)fluoranthene	ND	98	330	"	"	"	"	"	"	
Benzo(g,h,i)perylene	ND	140	330	"	"	"	"	"	"	
Benzo(k)fluoranthene	ND	92	330	"	"	"	"	"	"	
Benzoic acid	ND	310	830	"	"	"	"	"	"	
Benzyl alcohol	ND	120	330	"	"	"	"	"	"	

*CS*  
*9/8/06*

TestAmerica - Sacramento, CA

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Sacramento CA, 95833

Project: Aerojet PGOU  
Project Number: 20648.03  
Project Manager: Bruce Lewis

S606389  
Reported:  
07/13/06 11:50

**SEMI-VOLATILE ORGANICS BY GC/MS (EPA 8270C)**  
**TestAmerica - Irvine, CA**

Analyte	Result	MDL	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
			Limit	Units						
<b>C41-SS08-0 (S606389-03) Soil    Sampled: 06/19/06 10:20    Received: 06/19/06 16:57</b>										
Bis(2-chloroethyl)ether	ND	130	170	ug/kg	1	6F29117	06/29/06	06/30/06	EPA 8270C	
Bis(2-chloroisopropyl)ether	ND	140	330	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	98	330	"	"	"	"	"	"	
Butyl benzyl phthalate	ND	110	330	"	"	"	"	"	"	
Chrysene	ND	110	330	"	"	"	"	"	"	
Dibenz(a,h)anthracene	ND	140	420	"	"	"	"	"	"	
Dibenzofuran	ND	110	330	"	"	"	"	"	"	
<b>Diethyl phthalate</b>	<b>190</b>	90	330	"	"	"	"	"	"	J
Dimethyl phthalate	ND	120	330	"	"	"	"	"	"	
Di-n-butyl phthalate	ND	71	330	"	"	"	"	"	"	
Di-n-octyl phthalate	ND	110	330	"	"	"	"	"	"	
Fluoranthene	ND	100	330	"	"	"	"	"	"	
Fluorene	ND	110	330	"	"	"	"	"	"	
Hexachlorobenzene	ND	69	330	"	"	"	"	"	"	
Hexachlorobutadiene	ND	100	330	"	"	"	"	"	"	
Hexachlorocyclopentadiene	ND	170	830	"	"	"	"	"	"	C
Hexachloroethane	ND	170	330	"	"	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	120	330	"	"	"	"	"	"	
Isophorone	ND	87	330	"	"	"	"	"	"	
Naphthalene	ND	100	330	"	"	"	"	"	"	
Nitrobenzene	ND	110	330	"	"	"	"	"	"	
N-Nitrosodimethylamine	ND	140	330	"	"	"	"	"	"	
N-Nitroso-di-n-propylamine	ND	110	250	"	"	"	"	"	"	
N-Nitrosodiphenylamine	ND	110	330	"	"	"	"	"	"	
Pentachlorophenol	ND	130	830	"	"	"	"	"	"	
Phenanthrene	ND	92	330	"	"	"	"	"	"	
Phenol	ND	110	330	"	"	"	"	"	"	
Pyrene	ND	130	330	"	"	"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		70 %	35-125			"	"	"	"	
Surrogate: 2-Fluorobiphenyl		69 %	35-120			"	"	"	"	
Surrogate: 2-Fluorophenol		43 %	25-120			"	"	"	"	
Surrogate: Nitrobenzene-d5		62 %	30-120			"	"	"	"	
Surrogate: Phenol-d6		59 %	35-120			"	"	"	"	
Surrogate: Terphenyl-d14		58 %	40-135			"	"	"	"	

CJ  
9/8/06

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07/13/06 11:50

**SEMI-VOLATILE ORGANICS BY GC/MS (EPA 8270C)**  
**TestAmerica - Irvine, CA**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C41-SS16-0 (S606389-04) Soil Sampled: 06/19/06 10:30 Received: 06/19/06 16:57</b>										
1,2,4-Trichlorobenzene	ND	110	330	ug/kg	1	6F29117	06/29/06	06/30/06	EPA 8270C	
1,2-Dichlorobenzene	ND	180	330	"	"	"	"	"	"	
1,2-Diphenylhydrazine/Azobenzene	ND	110	330	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	190	330	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	160	330	"	"	"	"	"	"	
2,4,5-Trichlorophenol	ND	140	330	"	"	"	"	"	"	
2,4,6-Trichlorophenol	ND	130	330	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	110	330	"	"	"	"	"	"	
2,4-Dimethylphenol	ND	87	330	"	"	"	"	"	"	
2,4-Dinitrophenol	ND	250	660	"	"	"	"	"	"	
2,4-Dinitrotoluene	ND	130	330	"	"	"	"	"	"	
2,6-Dinitrotoluene	ND	140	330	"	"	"	"	"	"	
2-Chloronaphthalene	ND	98	330	"	"	"	"	"	"	
2-Chlorophenol	ND	160	330	"	"	"	"	"	"	
2-Methylnaphthalene	ND	98	330	"	"	"	"	"	"	
2-Methylphenol	ND	140	330	"	"	"	"	"	"	
2-Nitroaniline	ND	160	330	"	"	"	"	"	"	
2-Nitrophenol	ND	120	330	"	"	"	"	"	"	
3,3-Dichlorobenzidine	ND	97	830	"	"	"	"	"	"	
3-Nitroaniline	ND	130	330	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	110	420	"	"	"	"	"	"	
4-Bromophenyl phenyl ether	ND	96	330	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND	130	330	"	"	"	"	"	"	
4-Chloroaniline	ND	140	330	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	98	330	"	"	"	"	"	"	
4-Methylphenol	ND	110	330	"	"	"	"	"	"	
4-Nitroaniline	ND	140	830	"	"	"	"	"	"	
4-Nitrophenol	ND	150	830	"	"	"	"	"	"	
Acenaphthene	ND	79	330	"	"	"	"	"	"	
Acenaphthylene	ND	110	330	"	"	"	"	"	"	
Aniline	ND	170	420	"	"	"	"	"	"	
Anthracene	ND	100	330	"	"	"	"	"	"	
Benzidine	ND	120	660	"	"	"	"	"	"	
Benzo(a)anthracene	ND	98	330	"	"	"	"	"	"	
Benzo(a)pyrene	ND	81	330	"	"	"	"	"	"	
Benzo(b)fluoranthene	ND	98	330	"	"	"	"	"	"	
Benzo(g,h,i)perylene	ND	140	330	"	"	"	"	"	"	

CJ  
9/8/06

TestAmerica - Sacramento, CA

The results in this report apply to the samples analyzed in accordance with the chain of custody document. Unless otherwise stated, results are reported on a wet weight basis. This analytical report must be reproduced in its entirety.

ERM-West - Sacramento  
2525 Natomas Park Dr., Ste. 350  
Sacramento CA, 95833

Project: Aerojet PGOU  
Project Number: 20648.03  
Project Manager: Bruce Lewis

S606389  
Reported:  
07/13/06 11:50

**SEMI-VOLATILE ORGANICS BY GC/MS (EPA 8270C)**  
**TestAmerica - Irvine, CA**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C41-SS16-0 (S606389-04) Soil    Sampled: 06/19/06 10:30    Received: 06/19/06 16:57</b>										
Benzo(k)fluoranthene	ND	92	330	ug/kg	1	6F29117	06/29/06	06/30/06	EPA 8270C	
Benzoic acid	ND	310	830	"	"	"	"	"	"	
Benzyl alcohol	ND	120	330	"	"	"	"	"	"	
Bis(2-chloroethoxy)methane	ND	100	330	"	"	"	"	"	"	
Bis(2-chloroethyl)ether	ND	130	170	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	140	330	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	98	330	"	"	"	"	"	"	
Butyl benzyl phthalate	ND	110	330	"	"	"	"	"	"	
Carbazole	ND	190	330	"	"	"	"	"	"	
Chrysene	ND	110	330	"	"	"	"	"	"	
Dibenz(a,h)anthracene	ND	140	420	"	"	"	"	"	"	
Dibenzofuran	ND	110	330	"	"	"	"	"	"	
Diethyl phthalate	ND	90	330	"	"	"	"	"	"	
Dimethyl phthalate	ND	120	330	"	"	"	"	"	"	
Di-n-butyl phthalate	ND	71	330	"	"	"	"	"	"	
Di-n-octyl phthalate	ND	110	330	"	"	"	"	"	"	
Fluoranthene	ND	100	330	"	"	"	"	"	"	
Fluorene	ND	110	330	"	"	"	"	"	"	
Hexachlorobenzene	ND	69	330	"	"	"	"	"	"	
Hexachlorobutadiene	ND	100	330	"	"	"	"	"	"	
Hexachlorocyclopentadiene	ND	170	830	"	"	"	"	"	"	C
Hexachloroethane	ND	170	330	"	"	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	120	330	"	"	"	"	"	"	
Isophorone	ND	87	330	"	"	"	"	"	"	
Naphthalene	ND	100	330	"	"	"	"	"	"	
Nitrobenzene	ND	110	330	"	"	"	"	"	"	
N-Nitrosodimethylamine	ND	140	330	"	"	"	"	"	"	
N-Nitroso-di-n-propylamine	ND	110	250	"	"	"	"	"	"	
N-Nitrosodiphenylamine	ND	110	330	"	"	"	"	"	"	
Pentachlorophenol	ND	130	830	"	"	"	"	"	"	
Phenanthrene	ND	92	330	"	"	"	"	"	"	
Phenol	ND	110	330	"	"	"	"	"	"	
Pyrene	ND	130	330	"	"	"	"	"	"	
Pyridine	ND	130	200	"	"	"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		56 %	35-125			"	"	"	"	
Surrogate: 2-Fluorobiphenyl		61 %	35-120			"	"	"	"	
Surrogate: 2-Fluorophenol		44 %	25-120			"	"	"	"	
Surrogate: Nitrobenzene-d5		54 %	30-120			"	"	"	"	

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Surrogate: Phenol-d6		53 %	35-120			6F29117	06/29/06	06/30/06	EPA 8270C	
Surrogate: Terphenyl-d14		48 %	40-135			"	"	"	"	

CS  
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LDC #: 0609-01A2  
 SDG #: S606389  
 Laboratory: Level

**VALIDATION COMPLETENESS WORKSHEET**  
X EPA Level III

Date: 9/8/06  
 Page: 1 of 1  
 Reviewer: CT  
 2nd Reviewer: AE

**METHOD:** GC/MS Semivolatiles (EPA SW 846 Method 8270C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 6/19/2006
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	
IV.	Continuing calibration	SW	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	SW	MS/MSD = 2/3
VIII.	Laboratory control samples	A	
IX.	Regional Quality Assurance and Quality Control	N	Not reviewed for Level III validation.
X.	Internal standards	A	
XI.	Target compound identification	N	Not reviewed for Level III validation.
XII.	Compound quantitation/CRQLs	N	Not reviewed for Level III validation.
XIII.	Tentatively identified compounds (TICs)	N	Not reviewed for Level III validation.
XIV.	System performance	N	Not reviewed for Level III validation.
XV.	Overall assessment of data	SW	
XVI.	Field duplicates	N	
XVII.	Field blanks	N	

Note: A = Acceptable                      ND = No compounds detected                      D = Duplicate  
 N = Not provided/applicable                      R = Rinsate                      TB = Trip blank  
 SW = See worksheet                      FB = Field blank                      EB = Equipment blank

1	C41-SS07-0	11		21		31	
2	C41-SS07-OMS	12		22		32	
3	C41-SS07-0MSD	13		23		33	
4	C41-SS08-0	14		24		34	
5	C41-SS16-0	15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

VALIDATION FINDINGS CHECKLIST

Method: Semivolatiles (EPA SW 846 Method 8270C)

Validation Area	Yes	No	NA	Findings/Comments
<b>I. Technical holding times</b>				
All technical holding times were met.	X			
Cooler temperature criteria was met.		X		Samples rec'd good condition same day as sampling
<b>II. GC/MS Instrument performance check</b>				
Were the DFTPP performance results reviewed and found to be within the specified criteria?	X			
Were all samples analyzed within the 12 hour clock criteria?	X			
<b>III. Initial calibration</b>				
Did the laboratory perform a 5 point calibration prior to sample analysis?	X			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	X			
Was a curve fit used for evaluation?	X			
Did the initial calibration meet the curve fit acceptance criteria of > 0.990?	X			
Were all percent relative standard deviations (%RSD) ≤ 30% and relative response factors (RRF) > 0.05?	X			
<b>IV. Continuing calibration</b>				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	X			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	X			
Were all percent differences (%D) ≤ 25% and relative response factors (RRF) ≥ 0.05?		X		Hexachlorocyclopentadiene out of criteria
<b>V. Blanks</b>				
Was a method blank associated with every sample in this SDG?	X			
Was a method blank analyzed for each matrix and concentration?	X			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		X		
<b>VI. Surrogate spikes</b>				
Were all surrogate %R within QC limits?	X			
If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?			X	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			X	
<b>VII. Matrix spike/Matrix spike duplicates</b>				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	X			
Was a MS/MSD analyzed every 20 samples of each matrix?	X			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?		X		Benzidine "ND" in MS and MSD Pyridine "ND" in MS and MSD
<b>VIII. Laboratory control samples</b>				

**VALIDATION FINDINGS CHECKLIST**

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed for this SDG?	X			
Was an LCS analyzed per extraction batch?	X			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	X			
<b>IX. Regional Quality Assurance and Quality Control</b>				
Were performance evaluation (PE) samples performed?			X	
Were the performance evaluation (PE) samples within the acceptance limits?			X	
<b>X. Internal standards</b>				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	X			
Were retention times within + 30 seconds from the associated calibration standard?	X			
<b>XI. Target compound identification</b>				
Were relative retention times (RRT's) within + 0.06 RRT units of the standard?			X	Not evaluated for Level III validation
Did compound spectra meet specified EPA "Functional Guidelines" criteria?			X	Not evaluated for Level III validation
Were chromatogram peaks verified and accounted for?			X	Not evaluated for Level III validation
<b>XII. Compound quantitation/CRQLs</b>				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?			X	Not evaluated for Level III validation
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?			X	Not evaluated for Level III validation
<b>XIII. Tentatively identified compounds (TICs)</b>				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			X	Not evaluated for Level III validation
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?			X	Not evaluated for Level III validation
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?			X	Not evaluated for Level III validation
<b>XIV. System performance</b>				
System performance was found to be acceptable.			X	Not evaluated for Level III validation
<b>XV. Overall assessment of data</b>				
Overall assessment of data was found to be acceptable.		X		
<b>XVI. Field duplicates</b>				
Field duplicate pairs were identified in this SDG.		X		
Target compounds were detected in the field duplicates.			X	
<b>XVII. Field blanks</b>				
Field blanks were identified in this SDG.		X		
Target compounds were detected in the field blanks.			X	





