A/M
1/19/07
MO

King County Environmental Laboratory

WORK GROUP REPORT (wk02)

Jan 11 2007, 09:24 am

Work Group: WG89837 (PAH-FUNNEL WIPES) for Department: 7 - Organics, Trace

Created: 11-JAN-07 PrepDate: 11-JAN-07 Due: Operator: MCD

Sample	Project Number	Project Description	PKey	C	Product	Matrix	Stat	UA	Workdate	Duedate
L41257-10	423589-090-1	Lower Duwamish Phthalate Studies	S		PHPAHWIPE	OTHR SOLID	WKGP	U	19-DEC-06	04-JAN-07
L41257-6	423589-090-1	Lower Duwamish Phthalate Studies	S		PHPAHWIPE	OTHR SOLID	WKGP	U	19-DEC-06	04-JAN-07
L41257-7	423589-090-1	Lower Duwamish Phthalate Studies	S		PHPAHWIPE	OTHR SOLID	WKGP	U	19-DEC-06	04-JAN-07
L41257-8	423589-090-1	Lower Duwamish Phthalate Studies	S		PHPAHWIPE	OTHR SOLID	WKGP	U	19-DEC-06	04-JAN-07
L41257-9	423589-090-1	Lower Duwamish Phthalate Studies	S		PHPAHWIPE	OTHR SOLID	WKGP	U	19-DEC-06	04-JAN-07
L41489-2	423589-090-1	Lower Duwamish Phthalate Studies	S		PHPAHWIPE	OTHR SOLID	WKGP	U	23-JAN-07	08-FEB-07
WG89837-1	MB		S		PHPAHWIPE	OTHR SOLID	WKGP	U	11-JAN-07	

Comments:

L41257-10	wipes
L41257-6	wipes
L41257-7	wipes
L41257-8	wipes
L41257-9	wipes
L41489-2	wipe blank
WG89837-1	FILTER PAPER BLANK 11-JAN-07

KCSlip4 57831

SEA424130

SOLID AND TISSUE SAMPLE EXTRACTION RECORD FOR BNA ANALYSIS
TRACE ORGANICS LABORATORY

QC BATCH NO.: BS 1:1 Acetone:MeCl2 WORKGROUP NO.:

EPA SW-846 EXTRACTION METHOD: BNA SURROGATE SPIKE I.D.#: Coprostanol:

SONICATION EPA 3550 SOXHLET EPA 3540 BNA MATRIX SPIKE I.D.#: Caffeine:

Date/ Analyst	Sample Number	Project Number	Sample Description	coc	Init. Amt (g)	Spike Amount (uL)	Vf (mL)	Clean ups (GPC)	Conc. Anal.	Turn Over Date	Comments
11/1/07 MWO	WG895372-1		PAHAH 3 BLANK			50 uL BNA	1mL	AL	MWO	11/12/07	Samples conc
	WG895835-1		PCBC 3 BLANK			25 uL PCB					to 1mL. 0.5mL
	L41489-2		FUNNEL BLANK								for BNA. 0.5mL
	L41257-6		Funnel WIPES								AL cleaned for
	-7										PCB
	-8										
	-9										
	-10										

① Filter paper rinsed with MeCl2

② Funnels wiped x2 with MeCl2 soaked filter paper

③ BNA/PCBT surrogate added, samples extracted x3 with 50mL MeCl2 on same bath. Samples conc to 1.0 mL

④ 0.5 mL BNA analyses / 0.5 mL exchanged to hexane, AL cleaned and conc to 0.5 mL for PCB analyses.

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KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 01/17/07 07:34
Run ID: R118215 Workgroup: WG89837 (PAH-FUNNEL WIPES)

Alm 1/18/07 MD

MB:WG89837-1 Matrix: OTHR SOLID Listtype: ORPHPAHWIPE Method: 8270D-WIPETEST Project: 423589-090-1 Pkey: STD
(Method Blank)

Parameter	Mdl	Rdl	Units	MB Value	Qual
Naphthalene	.02	.04	ug	<MDL	
Acenaphthylene	.01	.02	ug	<MDL	
Dimethyl Phthalate	.05	.1	ug	<MDL	
Acenaphthene	.01	.02	ug	<MDL	
Fluorene	.01	.02	ug	<MDL	
Diethyl Phthalate	.05	.1	ug	.121	B
Phenanthrene	.01	.02	ug	<MDL	
Anthracene	.01	.02	ug	<MDL	
Di-N-Butyl Phthalate	.05	.1	ug	.154	B
Fluoranthene	.01	.02	ug	<MDL	
Pyrene	.01	.02	ug	<MDL	
Benzyl Butyl Phthalate	.05	.1	ug	<MDL	
Benzo(a)anthracene	.01	.02	ug	<MDL	
Chrysene	.01	.02	ug	<MDL	
Bis(2-Ethylhexyl)Phthalate	.05	.1	ug	.439	B
Di-N-Octyl Phthalate	.05	.1	ug	<MDL	
Benzo(b)fluoranthene	.02	.04	ug	<MDL	
Benzo(k)fluoranthene	.02	.04	ug	<MDL	
Benzo(a)pyrene	.02	.04	ug	<MDL	
Indeno(1,2,3-Cd)Pyrene	.02	.04	ug	<MDL	
Dibenzo(a,h)anthracene	.02	.04	ug	<MDL	
Benzo(g,h,i)perylene	.02	.04	ug	<MDL	
2-Methylnaphthalene	.01	.02	ug	<MDL	

X3 = 0.363
X3 = 0.462
X3 = 0.317

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KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 01/17/07 07:34
Run ID: R118215 Workgroup: WG89837 (PAH-FUNNEL WIPES)

Sample #	2-Fluorobiphenyl	d14-Terphenyl
(Lab Limits)	30-115	18-137
L41257-6	74	108
L41257-7	67	113
L41257-8	71	113
L41257-9	65	108
L41257-10	76	106
L41489-2	75	111
WG89837-1	74	106

If the following parameters are reported, values in the RPD column are their Absolute Differences:

pH
pH, Field
Salinity
Salinity, Field
Sample Depth
Sample Temperature, Field

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```
        Comment:
       Operator:
      Data Path: C:\MSDChem\1\data\070116\
Top                    Pre-Seq Cmd:
Instrument Control     Pre-Seq Cmd:
Data Analysis          Pre-Seq Cmd:

Top                   Post-Seq Cmd:
Instrument Control    Post-Seq Cmd:
Data Analysis         Post-Seq Cmd:

   Method Sections To Run      On A Barcode Mismatch
     (X) Full Method             (X) Inject Anyway
     ( ) Reprocessing Only       ( ) Don't Inject

   ---------------------------------------------------------------------------
   Line                      Sample Name/Misc Info
 1)  Tune            3  DFTPP-1  DFTPP     10 NG/UL DFTPP MIX
 2)  Sample          4  CCALI-01 8270B1    SS#1354 D 8.0 PPM BNA STD
 3)  Sample          5  CCEDC-01 8270BEDC  SS#1355 C 5.0 PPM EDC STD
 4)  Blank           2  BLANK-01 8270B1    MECL2 INSTRUMENT BLANK
 5)  Blank           6
     Datafile          WG89837-1
     Method            8270B1
 6)  Blank           7  L41489-2 8270B1    L41489-2 FUNNEL BLANK
 7)  Sample          8  L41257-6 8270B1    L41257-6 FUNNEL WIPE
 8)  Sample          9  L41257-7 8270B1    L41257-7 FUNNEL WIPE
 9)  Sample         10  L41257-8 8270B1    L41257-8 FUNNEL WIPE
10)  Sample         11  L41257-9 8270B1    L41257-9 FUNNEL WIPE
11)  Sample         12
     Datafile          L41257-10
     Method            8270B1
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SEA424134

Batch: \\orgizmo\EE\chem\6890j.i\070116.b

#	Smp. #	Injection Time	Wkgp. #	QC #	Project #	Sample Description	Matrix	Amount	DilFac	IS#2-RT	IS#2-Area	Method	Init Cali	Analyst
1	DFTPP-1	16-JAN-2007 09:12	SDGa0971	SDGa09		10 NG/UL DFTPP MIX	NONE	0.000	1.0	13.252	119608	DFTPP.m		M.Doubrava
2	CCALI-01	16-JAN-2007 10:33	SDGa0282	SDGa02		SS#1354 D 8.0 PPM BNA STD	WATER	0.000	1.0	8.448	369439	8270b1.m	05-JAN-2007	M.Doubrava
3	CCEDC-01	16-JAN-2007 11:08	SDGa0962	SDGa09		SS#1355 C 5.0 PPM EDC STD	WATER	0.000	1.0	8.430	439825	8270BEDC.m	06-JAN-2007	M.Doubrava
4	BLANK-01	16-JAN-2007 11:43	SDGa0282	SDGa02		MECL2 INSTRUMENT BLANK	WATER	0.000	1.0	0.000	0	8270B1.m	05-JAN-2007	M.Doubrava
5	WG89837-1	16-JAN-2007 12:29	WG89837	WIPES		WG89837-1 MB FILTER PAPER	SOIL	1.000	1.0	8.448	372582	8270b1.m	05-JAN-2007	M.Doubrava
6	L41489-2	16-JAN-2007 13:14	WG89837	WIPES		L41489-2 FUNNEL BLANK	SOIL	1.000	1.0	8.457	215407	8270b1.m	05-JAN-2007	M.Doubrava
7	L41257-6	16-JAN-2007 14:00	WG89837	WIPES		L41257-6 FUNNEL WIPE	SOIL	1.000	1.0	8.448	280638	8270b1.m	05-JAN-2007	M.Doubrava
8	L41257-7	16-JAN-2007 14:45	WG89837	WIPES		L41257-7 FUNNEL WIPE	SOIL	1.000	1.0	8.448	317100	8270b1.m	05-JAN-2007	M.Doubrava
9	L41257-8	16-JAN-2007 15:31	WG89837	WIPES		L41257-8 FUNNEL WIPE	SOIL	1.000	1.0	8.448	300768	8270b1.m	05-JAN-2007	M.Doubrava
10	L41257-9	16-JAN-2007 16:16	WG89837	WIPES		L41257-9 FUNNEL WIPE	SOIL	1.000	1.0	8.448	382499	8270b1.m	05-JAN-2007	M.Doubrava
11	L41257-10	16-JAN-2007 17:02	WG89837	WIPES		L41257-10 FUNNEL WIPE	SOIL	1.000	1.0	8.448	344761	8270b1.m	05-JAN-2007	M.Doubrava

Samples: 6 QC Samples + Misc.: 3 ContinuingCals: 1 Tunes: 1 Calibrations: 0

Trace Organics Data Anomaly Form

Date(s) Occurred: *07/01/16*

WG #(s): *WG89837*

☒ **All samples in WKGP(s)** or ☐ **Sample #(s):**

Project #(s): *423589-090-001*

Matrix: ☐ **Liquid** ☐ **Solid** ☐ **Air** ☐ **Tissue** ☐ **Calibration** ☒ **Other:** *WIPES*

I. Analysis/Extraction

☐ BNA ☐ BNALL ☒ EDC ☐ EDC-LVI
☐ CLPESTPCB ☐ PEST ☐ PCB ☐ OPPEST
☐ VOA-GCMS ☐ NWTPH-GX ☐ NWTPH-DX ☐ NWTPH-HCID
☐ BUTYL TIN ☐ AIRTOX ☐ AIR-SULFUR
☒ Other: *PAHWIPE*
☐ Subcontracted:

II. Instrument

GC/ICP/MS: ☐ P
GC/MS: ☐ D ☐ E ☒ J ☐ K ☐ L ☐ M ☐ N
GC: ☐ F ECD ☐ G ECD ☐ H FID ☐ H OI4450PID/FID
☐ I FID
Extraction/Cleanup: ☐ PFE ☐ GPC
☐ Other:

III. Type of Sample/Analytical Anomaly

☒ Values Outside of Control Limits:

1 ☒ Blank Contamination
2 ☐ SB/SBD Spike Recoveries
3 ☐ MS/MSD Spike Recoveries
4 ☐ LCS/SRM Recoveries
5 ☐ Initial Calibration
6 ☐ Performance Checks
7 ☐ ISTD % Differences
8 ☐ Surrogate Spike Recoveries
9 ☐ SB/SBD RPD
10 ☐ MS/MSD RPD
11 ☐ Sample/LD RPD
12 ☐ Continuing Calibration Checks
13 ☐ Tuning Criteria

14 ☐ Holding time exceeded by:
15 ☐ Insufficient sample amount.
16 ☐ Inappropriate storage, container or preservation.
17 ☐ Other

Anomaly Description:
1. WG89837-1 MB had detectable levels of Diethyl Phthalate, Di-N-Butyl Phthalate and Bis (2EH) Phthalate in the extraction filter blank. All samples that were less than X3 the blank levels were flagged "B" as per QA/QC project protocols.

IV. Type of Project Anomaly

- ☐ SAP/Work Plan specified MDLs not met.
- ☐ SAP/Work Plan specified QC frequency or QC type not met.
- ☐ SAP/Work Plan specified methodology not used.
- ☐ Sample exceeds regulatory and/or hazardous waste limits.
- ☐ Sample data results are unusual or inconsistent with expected results.
- ☐ Other

Anomaly Description:

V. Corrective Action Taken

- ☐ Sample(s) re-analyzed
- ☐ Sample(s) re-prepared and re-analyzed
- ☒ Sample(s) reported "AS IS"
- ☒ Data qualified with the following flags: *B*
- ☐ Other

Corrective Action Description:

VI. Potential Effects on Data Quality:

☐ None; corrective action entirely corrected anomaly (explanation optional):

☒ Potential effect explanation (explanation mandatory):
The "B" flagged target parameter values could be affected and bias slightly high.

	Signatures	Signature Dates
Reported By: *M. Doubrava*		1/19/07
Reviewer: *D. Walker*	Dana Walker	1/19/07
Supervisor: *Dana Walker*		
QA Officer: *Colin Elliott* (For QA1 only)		
cc: LPM: Fritz Grothkopp		

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab Review Report - 01/19/07 09:35 - Data Source: ELD

Sample#: WG89837-1	Matrix:	OTHR SOLID	List Type:	ORPHPAHWIPE	
	Project:		Run ID:	R118215	Col. Date:
	Locator:	MB	Work Group:	WG89837	Rec. Date: 11-JAN-07
	Site:	NONE	QC Type:	MB	Due Date:
	Method Code:	8270D-WIPETEST			

Parameter	Value	Units	Valq	Mdl	Rdl	Textvalue
Naphthalene		ug	<MDL	.02	.04	
Acenaphthylene		ug	<MDL	.01	.02	
Dimethyl Phthalate		ug	<MDL	.05	.1	
Acenaphthene		ug	<MDL	.01	.02	
Fluorene		ug	<MDL	.01	.02	
Diethyl Phthalate	.121	ug	B	.05	.1	
Phenanthrene		ug	<MDL	.01	.02	
Anthracene		ug	<MDL	.01	.02	
Di-N-Butyl Phthalate	.154	ug	B	.05	.1	
Fluoranthene		ug	<MDL	.01	.02	
Pyrene		ug	<MDL	.01	.02	
Benzyl Butyl Phthalate		ug	<MDL	.05	.1	
Benzo(a)anthracene		ug	<MDL	.01	.02	
Chrysene		ug	<MDL	.01	.02	
Bis(2-Ethylhexyl)Phthalate	.439	ug	B	.05	.1	
Di-N-Octyl Phthalate		ug	<MDL	.05	.1	
Benzo(b)fluoranthene		ug	<MDL	.02	.04	
Benzo(k)fluoranthene		ug	<MDL	.02	.04	
Benzo(a)pyrene		ug	<MDL	.02	.04	
Indeno(1,2,3-Cd)Pyrene		ug	<MDL	.02	.04	
Dibenzo(a,h)anthracene		ug	<MDL	.02	.04	
Benzo(g,h,i)perylene		ug	<MDL	.02	.04	
2-Methylnaphthalene		ug	<MDL	.01	.02	
2-Fluorobiphenyl	.93	ug		.02	.04	
d14-Terphenyl	1.32	ug		.02	.04	
Amount Analyzed	1	g				
Standard Amount	1	g				
Dilution Factor	1	none				
Date Analyzed						16-JAN-07
Operator ID						M.Doubrava
Porthandler File						/usr/users/seed2/METROS3/file s/gcms/WG89837-1.rp
Instrument ID						6890j.i
Prep Date						11-JAN-07

SURROGATE RECOVERY INFORMATION

Parameter	% Rec	Lab Limits
2-Fluorobiphenyl	74	30-115
d14-Terphenyl	106	18-137

KCSlip4 57839

SEA424138

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab Review Report - 01/19/07 09:35 - Data Source: ELD

Sample#: L41489-2	Matrix: OTHR SOLID	List Type: ORPHPAHWIPE			
	Project: 423589-090-1	Run ID: R118215		Col. Date:	09 JAN-07
	Locator: BWR	Work Group: WG89837		Rec. Date:	09-JAN-07
	Site: METRO	QC Type:		Due Date:	08-FEB-07
	Method Code: 8270D-WIPETEST				

Parameter	Value	Units	Valq	Mdl	Rdl	Textvalue
Naphthalene		ug	<MDL	.02	.04	
Acenaphthylene		ug	<MDL	.01	.02	
Dimethyl Phthalate		ug	<MDL	.05	.1	
Acenaphthene		ug	<MDL	.01	.02	
Fluorene		ug	<MDL	.01	.02	
Diethyl Phthalate	.133	ug	B	.05	.1	
Phenanthrene		ug	<MDL	.01	.02	
Anthracene		ug	<MDL	.01	.02	
Di-N-Butyl Phthalate	.214	ug	B	.05	.1	
Fluoranthene		ug	<MDL	.01	.02	
Pyrene		ug	<MDL	.01	.02	
Benzyl Butyl Phthalate		ug	<MDL	.05	.1	
Benzo(a)anthracene		ug	<MDL	.01	.02	
Chrysene		ug	<MDL	.01	.02	
Bis(2-Ethylhexyl)Phthalate	.513	ug	B	.05	.1	
Di-N-Octyl Phthalate		ug	<MDL	.05	.1	
Benzo(b)fluoranthene		ug	<MDL	.02	.04	
Benzo(k)fluoranthene		ug	<MDL	.02	.04	
Benzo(a)pyrene		ug	<MDL	.02	.04	
Indeno(1,2,3-Cd)Pyrene		ug	<MDL	.02	.04	
Dibenzo(a,h)anthracene		ug	<MDL	.02	.04	
Benzo(g,h,i)perylene		ug	<MDL	.02	.04	
2-Methylnaphthalene		ug	<MDL	.01	.02	
2-Fluorobiphenyl	.939	ug		.02	.04	
d14-Terphenyl	1.39	ug		.02	.04	
Amount Analyzed	1	g				
Standard Amount	1	g				
Dilution Factor	1	none				
Date Analyzed						16-JAN-07
Operator ID						M.Doubrava
Porthandler File						/usr/users/seed2/METROS3/file s/gcms/L41489-2.rp
Instrument ID						5890j i
Prep Date						11-JAN-07

SURROGATE RECOVERY INFORMATION

Parameter	% Rec	Lab Limits
2-Fluorobiphenyl	75	30-115
d14-Terphenyl	111	18-137

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab Review Report - 01/19/07 09:35 - Data Source: ELD

Sample#: L41257-6	Matrix:	OTHR SOLID	List Type:	ORPHPAHWIPE	
	Project:	423589-090-1	Run ID:	R118215	Col. Date: 05-DEC-06
	Locator:	BWR	Work Group:	WG89837	Rec. Date: 05-DEC-06
	Site:	METRO	QC Type:		Due Date: 04-JAN-07
	Method Code:	8270D-WIPETEST			

Parameter	Value	Units	Valq	Mdl	Rdl	Textvalue
Naphthalene		ug	<MDL	.02	.04	
Acenaphthylene		ug	<MDL	.01	.02	
Dimethyl Phthalate		ug	<MDL	.05	.1	
Acenaphthene		ug	<MDL	.01	.02	
Fluorene		ug	<MDL	.01	.02	
Diethyl Phthalate	.161	ug	B	.05	.1	
Phenanthrene	.0264	ug		.01	.02	
Anthracene		ug	<MDL	.01	.02	
Di-N-Butyl Phthalate	.332	ug	B	.05	.1	
Fluoranthene		ug	<MDL	.01	.02	
Pyrene		ug	<MDL	.01	.02	
Benzyl Butyl Phthalate		ug	<MDL	.05	.1	
Benzo(a)anthracene		ug	<MDL	.01	.02	
Chrysene		ug	<MDL	.01	.02	
Bis(2-Ethylhexyl)Phthalate	.637	ug	B	.05	.1	
Di-N-Octyl Phthalate		ug	<MDL	.05	.1	
Benzo(b)fluoranthene		ug	<MDL	.02	.04	
Benzo(k)fluoranthene		ug	<MDL	.02	.04	
Benzo(a)pyrene		ug	<MDL	.02	.04	
Indeno(1,2,3-Cd)Pyrene		ug	<MDL	.02	.04	
Dibenzo(a,h)anthracene		ug	<MDL	.02	.04	
Benzo(g,h,i)perylene		ug	<MDL	.02	.04	
2-Methylnaphthalene		ug	<MDL	.01	.02	
2-Fluorobiphenyl	.931	ug		.02	.04	
d14-Terphenyl	1.35	ug		.02	.04	
Amount Analyzed	1	g				
Standard Amount	1	g				
Dilution Factor	1	none				
Date Analyzed						16-JAN-07
Operator ID						M.Doubrava
Porthandler File						/usr/users/seed2/METROS1/files/gcms/L41257-6.rp
Instrument ID						68901.i
Prep Date						11-JAN-07

SURROGATE RECOVERY INFORMATION

Parameter	% Rec	Lab Limits
2-Fluorobiphenyl	74	30-115
d14-Terphenyl	108	18-137

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SEA424140

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab Review Report - 01/19/07 09:35 - Data Source: ELD

Sample#: L41257-7	Matrix:	OTHR SOLID	List Type:	ORPHPAHWIPE	
	Project:	423589-090 1	Run ID:	R118215	Col. Date: 05-DEC-06
	Locator:	CER	Work Group:	WG89837	Rec. Date: 05-DEC-06
	Site:	METRO	QC Type:		Due Date: 04-JAN-07
	Method Code:	8270D-WIPETEST			

Parameter	Value	Units	Valq	Mdl	Rdl	Textvalue
Naphthalene		ug	<MDL	.02	.04	
Acenaphthylene		ug	<MDL	.01	.02	
Dimethyl Phthalate		ug	<MDL	.05	.1	
Acenaphthene		ug	<MDL	.01	.02	
Fluorene		ug	<MDL	.01	.02	
Diethyl Phthalate	.121	ug	B	.05	.1	
Phenanthrene	.0508	ug		.01	.02	
Anthracene		ug	<MDL	.01	.02	
Di-N-Butyl Phthalate	.48	ug	B	.05	.1	
Fluoranthene	.028	ug		.01	.02	
Pyrene	.0232	ug		.01	.02	
Benzyl Butyl Phthalate		ug	<MDL	.05	.1	
Benzo(a)anthracene		ug	<MDL	.01	.02	
Chrysene		ug	<MDL	.01	.02	
Bis(2-Ethylhexyl)Phthalate	.77	ug	B	.05	.1	
Di-N-Octyl Phthalate		ug	<MDL	.05	.1	
Benzo(b)fluoranthene		ug	<MDL	.02	.04	
Benzo(k)fluoranthene		ug	<MDL	.02	.04	
Benzo(a)pyrene		ug	<MDL	.02	.04	
Indeno(1,2,3-Cd)Pyrene	.024	ug	<RDL	.02	.04	
Dibenzo(a,h)anthracene		ug	<MDL	.02	.04	
Benzo(g,h,i)perylene		ug	<MDL	.02	.04	
2-Methylnaphthalene		ug	<MDL	.01	.02	
2-Fluorobiphenyl	.837	ug		.02	.04	
d14-Terphenyl	1.41	ug		.02	.04	
Amount Analyzed	1	g				
Standard Amount	1	g				
Dilution Factor	1	none				
Date Analyzed						16-JAN-07
Operator ID						M.Doubrava
Porthandler File						/usr/users/seed2/METROS3/files/gcms/L41257-7.rp
Instrument ID						6890j.i
Prep Date						11-JAN-07

SURROGATE RECOVERY INFORMATION

Parameter	% Rec	Lab Limits
2-Fluorobiphenyl	67	30-115
d14-Terphenyl	113	18-137

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab Review Report - 01/19/07 09:35 - Data Source: ELD

Sample#: L41257-8	Matrix:	OTHR SOLID	List Type:	ORPHPAHWIPE	
	Project:	423589-090-1	Run ID:	R118215	Col. Date: 05-DEC-06
	Locator:	DZ	Work Group:	WG89837	Rec. Date: 05-DEC-06
	Site:	METRO	QC Type:		Due Date: 04-JAN-07
	Method Code:	8270D-WIPETEST			

Parameter	Value	Units	Valq	Mdl	Rdl	Textvalue
Naphthalene		ug	<MDL	.02	.04	
Acenaphthylene		ug	<MDL	.01	.02	
Dimethyl Phthalate		ug	<MDL	.05	.1	
Acenaphthene		ug	<MDL	.01	.02	
Fluorene		ug	<MDL	.01	.02	
Diethyl Phthalate	.16	ug	B	.05	.1	
Phenanthrene	.034	ug		.01	.02	
Anthracene		ug	<MDL	.01	.02	
Di-N-Butyl Phthalate	.332	ug	B	.05	.1	
Fluoranthene	.03	ug		.01	.02	
Pyrene	.0208	ug		.01	.02	
Benzyl Butyl Phthalate	.098	ug	<RDL	.05	.1	
Benzo(a)anthracene		ug	<MDL	.01	.02	
Chrysene		ug	<MDL	.01	.02	
Bis(2-Ethylhexyl)Phthalate	.638	ug	B	.05	.1	
Di-N-Octyl Phthalate		ug	<MDL	.05	.1	
Benzo(b)fluoranthene		ug	<MDL	.02	.04	
Benzo(k)fluoranthene		ug	<MDL	.02	.04	
Benzo(a)pyrene		ug	<MDL	.02	.04	
Indeno(1,2,3-Cd)Pyrene		ug	<MDL	.02	.04	
Dibenzo(a,h)anthracene		ug	<MDL	.02	.04	
Benzo(g,h,i)perylene		ug	<MDL	.02	.04	
2-Methylnaphthalene		ug	<MDL	.01	.02	
2-Fluorobiphenyl	.885	ug		.02	.04	
d14-Terphenyl	1.41	ug		.02	.04	
Amount Analyzed	1	g				
Standard Amount	1	g				
Dilution Factor	1	none				
Date Analyzed						16-JAN-07
Operator ID						M.Doubrava
Porthandler File						/usr/users/seed2/METROS3/files/gcms/L41257-8.rp
Instrument ID						6890j.i
Prep Date						11-JAN-07

SURROGATE RECOVERY INFORMATION

Parameter	% Rec	Lab Limits
2-Fluorobiphenyl	71	30-115
d14-Terphenyl	113	18-137

KCSlip4 57843

SEA424142

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab Review Report - 01/19/07 09:35 - Data Source: ELD

Sample#: L41257-9	Matrix:	OTHR SOLID	List Type:	ORPHPAHWIPE	
	Project:	423589-090-1	Run ID:	R118215	Col. Date: 05-DEC-06
	Locator:	KCIA	Work Group:	WG89837	Rec. Date: 05-DEC-06
	Site:	METRO	QC Type:		Due Date: 04-JAN-07
	Method Code:	8270D-WIPETEST			

Parameter	Value	Units	Valq	Mdl	Rdl	Textvalue
Naphthalene		ug	<MDL	.02	.04	
Acenaphthylene		ug	<MDL	.01	.02	
Dimethyl Phthalate		ug	<MDL	.05	.1	
Acenaphthene		ug	<MDL	.01	.02	
Fluorene		ug	<MDL	.01	.02	
Diethyl Phthalate	.142	ug	B	.05	.1	
Phenanthrene	.0926	ug		.01	.02	
Anthracene		ug	<MDL	.01	.02	
Di-N-Butyl Phthalate	.418	ug	B	.05	.1	
Fluoranthene	.262	ug		.01	.02	
Pyrene	.19	ug		.01	.02	
Benzyl Butyl Phthalate	.116	ug		.05	.1	
Benzo(a)anthracene	.074	ug		.01	.02	
Chrysene	.14	ug		.01	.02	
Bis(2-Ethylhexyl)Phthalate	.817	ug	B	.05	.1	
Di-N-Octyl Phthalate		ug	<MDL	.05	.1	
Benzo(b)fluoranthene	.158	ug		.02	.04	
Benzo(k)fluoranthene	.121	ug		.02	.04	
Benzo(a)pyrene	.196	ug		.02	.04	
Indeno(1,2,3-Cd)Pyrene	.103	ug		.02	.04	
Dibenzo(a,h)anthracene	.025	ug	<RDL	.02	.04	
Benzo(g,h,i)perylene	.112	ug		.02	.04	
2-Methylnaphthalene		ug	<MDL	.01	.02	
2-Fluorobiphenyl	.819	ug		.02	.04	
d14-Terphenyl	1.35	ug		.02	.04	
Amount Analyzed	1	g				
Standard Amount	1	g				
Dilution Factor	1	none				
Date Analyzed						16-JAN-07
Operator ID						M.Doubrava
Porthandler File						/usr/users/seed2/METROS3/files/gcms/L41257-9.rp
Instrument ID						6890j.i
Prep Date						11-JAN-07

SURROGATE RECOVERY INFORMATION

Parameter	% Rec	Lab Limits
2-Fluorobiphenyl	65	30-115
d14-Terphenyl	108	18-137

KCSlip4 57844

SEA424143

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab Review Report - 01/19/07 09:35 Data Source: ELD

Sample#: L41257-10	Matrix: OTHR SOLID	List Type: ORPHPAHWIPE			
	Project: 423589-090-1	Run ID: R118215		Col. Date:	05-DEC-06
	Locator: SPCC	Work Group: WG89837		Rec. Date:	05-DEC-06
	Site: METRO	QC Type:		Due Date:	04-JAN-07
	Method Code: 8270D-WIPETEST				

Parameter	Value	Units	Valq	Mdl	Rdl	Textvalue
Naphthalene		ug	<MDL	.02	.04	
Acenaphthylene		ug	<MDL	.01	.02	
Dimethyl Phthalate		ug	<MDL	.05	.1	
Acenaphthene		ug	<MDL	.01	.02	
Fluorene		ug	<MDL	.01	.02	
Diethyl Phthalate	.202	ug	B	.05	.1	
Phenanthrene	.0462	ug		.01	.02	
Anthracene		ug	<MDL	.01	.02	
Di-N-Butyl Phthalate	.657	ug	B	.05	.1	
Fluoranthene	.0399	ug		.01	.02	
Pyrene	.0219	ug		.01	.02	
Benzyl Butyl Phthalate	.166	ug		.05	.1	
Benzo(a)anthracene		ug	<MDL	.01	.02	
Chrysene		ug	<MDL	.01	.02	
Bis(2-Ethylhexyl)Phthalate	.964	ug	B	.05	.1	
Di-N-Octyl Phthalate		ug	<MDL	.05	.1	
Benzo(b)fluoranthene		ug	<MDL	.02	.04	
Benzo(k)fluoranthene		ug	<MDL	.02	.04	
Benzo(a)pyrene		ug	<MDL	.02	.04	
Indeno(1,2,3-Cd)Pyrene		ug	<MDL	.02	.04	
Dibenzo(a,h)anthracene		ug	<MDL	.02	.04	
Benzo(g,h,i)perylene		ug	<MDL	.02	.04	
2-Methylnaphthalene		ug	<MDL	.01	.02	
2-Fluorobiphenyl	.951	ug		.02	.04	
d14-Terphenyl	1.33	ug		.02	.04	
Amount Analyzed	1	g				
Standard Amount	1	g				
Dilution Factor	1	none				
Date Analyzed						16-JAN-07
Operator ID						M.Doubrava
Porthandler File						/usr/users/seed2/METROS3/files/gcms/L41257-10.rp
Instrument ID						6890j.i
Prep Date						11-JAN-07

SURROGATE RECOVERY INFORMATION

Parameter	% Rec	Lab Limits
2-Fluorobiphenyl	76	30-115
d14-Terphenyl	106	18-137

KCSlip4 57845

SEA424144

King County Environmental Laboratory

WORK GROUP REPORT (wk02)

Jan 11 2007, 09:26 am

Work Group: WG89838 (PCB-FUNNEL WIPES) for Department: 7 - Organics, Trace

Created: 11-JAN-07 PrepDate: 11-JAN-07 Due: Operator: MCD

Sample	Project Number	Project Description	IKey	C	Product	Matrix	Stat	UA	Workdate	Duedate
L41257-10	423589-090-1	Lower Duwamish Phthalate Studies	S		PCBWIPE	OTHR SOLID	WKGP	U	19-DEC-06	04-JAN-07
L41257-6	423589-090-1	Lower Duwamish Phthalate Studies	S		PCBWIPE	OTHR SOLID	WKGP	U	19-DEC-06	04-JAN-07
L41257-7	423589-090-1	Lower Duwamish Phthalate Studies	S		PCBWIPE	OTHR SOLID	WKGP	U	19-DEC-06	04-JAN-07
L41257-8	423589-090-1	Lower Duwamish Phthalate Studies	S		PCBWIPE	OTHR SOLID	WKGP	U	19-DEC-06	04-JAN-07
L41257-9	423589-090-1	Lower Duwamish Phthalate Studies	S		PCBWIPE	OTHR SOLID	WKGP	U	19-DEC-06	04-JAN-07
L41489-2	423589-090-1	Lower Duwamish Phthalate Studies	S		PCBWIPE	OTHR SOLID	WKGP	U	21-JAN-07	08-FEB-07
WG89838-1	MB		S		PCBWIPE	OTHR SOLID	WKGP	U	11-JAN-07	

Comments:

L41257-10	wipes
L41257-6	wipes
L41257-7	wipes
L41257-8	wipes
L41257-9	wipes
L41489-2	wipe blank
WG89838-1	FILTER PAPER EXTRACTION BLANK 11-JAN-07

KCSlip4 57846

SEA424145

SOLID AND TISSUE SAMPLE EXTRACTION RECORD FOR BNA ANALYSIS
TRACE ORGANICS LABORATORY

QC BATCH NO.: BS 1:1 Acetone:MeCl2 WORKGROUP NO.:

EPA SW-846 EXTRACTION METHOD: BNA SURROGATE SPIKE I.D.#: Coprostanol:

SONICATION EPA 3550 SOXHLET EPA 3540 BNA MATRIX SPIKE I.D.#: Caffeine:

Date/ Analyst	Sample Number	Project Number	Sample Description	coc	Init. Amt (g)	Spike Amount (uL)	Vf (mL)	Clean ups (GPC)	Conc. Anal.	Turn Over Date	Comments
11/1/07 MMS	WG858837-1		PAHPAH 3 BLANK			50 uL BNA	1 mL	AL	MMS	11/12/07	Samples conc
	WG858838-1		PCBC			25 uL PCB					to 1 mL. 0.5 mL
	L41489-2		FUNNEL BLANK								for BNA. 0.5 mL
	L41257-6		Funnel WIPES								AL cleaned for
	-7										PCB
	-8										
	-9										
	-10										

① Filter paper rinsed with MeCl2

② Funnels wiped x2 with MeCl2 soaked filter paper

③ BNA/PEST surrogate added, samples extracted x3 with 50mL MeCl2 on same bath. Samples conc to 1.0 mL

④ 0.5 mL BNA analyses / 0.5 mL exchanged to hexane, AL cleaned and conc to 0.5 mL for PCB analyses.

KCSlip4 57847

SEA424146

Data File Name	Sample Name	Date Acquired	Vial Numb	Sample Amount	Sample Multiple	Isodrin (RT)	Isodrin (Height)	Leptophos (RT)	Leptophos (Height)	Isodrin #2 (RT)	Isodrin #2 (Height)	Leptoph (RT)	Leptophos #2 (Height)	Misc Info	Data File Path
COND-01.D	conditioner	1/12/2007 10:01	1	0	1										S:\MSDCHEM\2\DATA\070112\
BLANK-01.D	blank	1/12/2007 10:36	2	0	1										S:\MSDCHEM\2\DATA\070112\
PCB-01.D	1218D 1016/1260 500/50	1/12/2007 11:14	3	0	1	14.239	121692668	22.448	236533257	12.938	269297559	19.336	443525673		S:\MSDCHEM\2\DATA\070112\
PCB-02.D	1209.2 1248 500/50	1/12/2007 11:51	4	0	1	14.239	123146525	22.449	241675391	12.937	284623037	19.333	453434515		S:\MSDCHEM\2\DATA\070112\
PCB-03.D	1210.2 1254 500/50	1/12/2007 12:27	5	0	1	14.238	128615687	22.447	246668717	12.938	293115259	19.335	479227654		S:\MSDCHEM\2\DATA\070112\
PCB-04.D	1206.2 1221 500/50	1/12/2007 13:04	6	0	1	14.238	109013617	22.446	203528840	12.936	250406698	19.335	396116393		S:\MSDCHEM\2\DATA\070112\
PCB-05.D	1207.2 1232 500/50	1/12/2007 13:41	7	0	1	14.238	116254977	22.447	225443872	12.939	269826357	19.336	425907066		S:\MSDCHEM\2\DATA\070112\
PCB-06.D	1208.2 1242 500/50	1/12/2007 14:17	8	0	1	14.238	113000083	22.450	216250506	12.938	272094606	19.336	430231030		S:\MSDCHEM\2\DATA\070112\
WG89838-1.D	MB	1/12/2007 14:54	9	0	1	14.238	131015415	22.448	265201437	12.936	274149519	19.335	440170858	PCBWIPE DUWAMISH	S:\MSDCHEM\2\DATA\070112\
L41257-6.D	L41257-6	1/12/2007 15:30	10	0	1	14.238	93234570	22.449	218554457	12.939	208446820	19.335	355899006	PCBWIPE DUWAMISH	S:\MSDCHEM\2\DATA\070112\
L41257-7.D	L41257-7	1/12/2007 16:07	11	0	1	14.238	86844152	22.448	193912964	12.940	189546472	19.336	318000255	PCBWIPE DUWAMISH	S:\MSDCHEM\2\DATA\070112\
L41257-8.D	L41257-8	1/12/2007 16:44	12	0	1	14.239	95677311	22.448	212056090	12.940	205108864	19.336	347376829	PCBWIPE DUWAMISH	S:\MSDCHEM\2\DATA\070112\
L41257-9.D	L41257-9	1/12/2007 17:20	13	0	1	14.240	94699848	22.449	214822921	12.940	202416925	19.335	336781113	PCBWIPE DUWAMISH	S:\MSDCHEM\2\DATA\070112\
L41257-10.D	L41257-10	1/12/2007 17:57	14	0	1	14.239	94030728	22.449	207751997	12.938	200965288	19.333	345276261	PCBWIPE DUWAMISH	S:\MSDCHEM\2\DATA\070112\
L41489-2.D	L41489-2	1/12/2007 18:33	15	0	1	14.240	91187854	22.449	192052093	12.938	199322010	19.334	314492870	PCBWIPE DUWAMISH	S:\MSDCHEM\2\DATA\070112\
PCB-07.D	1218D 1016/1260 500/50	1/12/2007 19:10	3	0	1	14.238	119734741	22.449	235480371	12.939	262825861	19.336	405391609		S:\MSDCHEM\2\DATA\070112\
PCB-08.D	1209.2 1248 500/50	1/12/2007 19:47	4	0	1	14.239	122558971	22.449	251365299	12.938	281881978	19.334	441409807		S:\MSDCHEM\2\DATA\070112\
					Ave.	14.239	109448996	22.448	224233214	12.939	244125877	19.335	395481413		
					Std. Dev.	0.001	15195108	0.001	21495051	0.001	38124809	0.001	54477420		
					%RSD		14%		10%		16%		14%		

KCSlip4 57848
SEA424147

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 01/16/07 11:44
Run ID: R118208 Workgroup: WG89838 (PCB-FUNNEL WIPES)

MB:WG89838-1 Matrix: OTHR SOLID Listtype: ORPCBWIPE Method: 8270D-WIPETEST Project: Pkey: STD
(Method Blank)

Parameter	Mdl	Rdl	Units	MB Value	Qual
Aroclor 1016	50	100	ug	<MDL	
Aroclor 1221	50	100	ug	<MDL	
Aroclor 1232	50	100	ug	<MDL	
Aroclor 1242	50	100	ug	<MDL	
Aroclor 1248	50	100	ug	<MDL	
Aroclor 1254	50	100	ug	<MDL	
Aroclor 1260	50	100	ug	<MDL	

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SEA424148

Sample #	Decachlorobiph-enyl
(Lab Limits)	25-150
L41257-6	93
L41257-7	74
L41257-8	84
L41257-9	91
L41257-10	86
L41489-2	72
WG89838-1	60

If the following parameters are reported, values in the RPD column are their Absolute Differences:

pH
pH, Field
Salinity
Salinity, Field
Sample Depth
Sample Temperature, Field

KCSlip4 57850
SEA424149

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab Review Report - 01/16/07 11:45 - Data Source: ELD

S ple#: WG89838-1	Matrix:	OTHR SOLID	List Type:	ORPCBWIPE	
	Project:		Run ID:	R118208	Col. Date:
	Locator:	MB	Work Group:	WG89838	Rec. Date: 11-JAN-07
	Site:	NONE	QC Type:	MB	Due Date:
	Method Code:	8270D-WIPETEST			

rameter	Value	Units	Valq	Mdl	Rdl	Textvalue
oclor 1016		ug	<MDL	50	100	
oclor 1221		ug	<MDL	50	100	
oclor 1232		ug	<MDL	50	100	
oclor 1242		ug	<MDL	50	100	
oclor 1248		ug	<MDL	50	100	
oclor 1254		ug	<MDL	50	100	
oclor 1260		ug	<MDL	50	100	
cachlorobiphenyl	18.6	ug		5	10	
ount Analyzed	1	g				
andard Amount	1	g				
lution Factor	1	none				
te Analyzed						12-JAN-07
erator ID						JSF
rthandler File						/usr/users/seed2/METROS3/file s/gc/wg89838.txt
strument ID						HP6890ECD-G
ep Date						11-JAN-07

RROGATE RECOVERY INFORMATION

rameter	% Rec	Lab Limits
achlorobiphenyl	60	25-150

KCSlip4 57851

SEA424150

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab Review Report - 01/16/07 11:45 - Data Source: ELD

Sample#: L41257-6	Matrix:	OTHR SOLID	List Type:	ORPCBWIPE			
	Project:	423589-090-1	Run ID:	R118208	Col. Date:	05-DEC-06	
	Locator:	BWR	Work Group:	WG89838	Rec. Date:	05-DEC-06	
	Site:	METRO	QC Type:		Due Date:	04-JAN-07	
	Method Code:	8270D WIPETEST					

Parameter	Value	Units	Valq	Mdl	Rdl	Textvalue
Aroclor 1016		ug	<MDL	50	100	
Aroclor 1221		ug	<MDL	50	100	
Aroclor 1232		ug	<MDL	50	100	
Aroclor 1242		ug	<MDL	50	100	
Aroclor 1248		ug	<MDL	50	100	
Aroclor 1254		ug	<MDL	50	100	
Aroclor 1260		ug	<MDL	50	100	
Decachlorobiphenyl	29.1	ug		5	10	
Amount Analyzed	1	g				
Standard Amount	1	g				
Dilution Factor	1	none				
Date Analyzed						12-JAN-07
Operator ID						JSF
Porthandler File						/usr/users/seed2/METROS3/files/gc/wg89838.txt
Instrument ID						HP6890ECD-G
Prep Date						11-JAN-07

SURROGATE RECOVERY INFORMATION

Parameter	% Rec	Lab Limits
Decachlorobiphenyl	93	25-150

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab Review Report - 01/16/07 11:45 - Data Source: ELD

Sample#	L41257-7	Matrix:	OTHR SOLID	List Type:	ORPCBWIPE		
		Project:	423589-090-1	Run ID:	R118208	Col. Date:	05-DEC-06
		Locator:	CER	Work Group:	WG89838	Rec. Date:	05-DEC-06
		Site:	METRO	QC Type:		Due Date:	04-JAN-07
		Method Code:	8270D-WIPETEST				

Parameter	Value	Units	Valq	Mdl	Rdl	Textvalue
Aroclor 1016		ug	<MDL	50	100	
Aroclor 1221		ug	<MDL	50	100	
Aroclor 1232		ug	<MDL	50	100	
Aroclor 1242		ug	<MDL	50	100	
Aroclor 1248		ug	<MDL	50	100	
Aroclor 1254		ug	<MDL	50	100	
Aroclor 1260		ug	<MDL	50	100	
Decachlorobiphenyl	23.1	ug		5	10	
Amount Analyzed	1	g				
Standard Amount	1	g				
Dilution Factor	1	none				
Date Analyzed						12-JAN-07
Operator ID						JSF
Worthandler File						/usr/users/seed2/METROS3/files/gc/wg89838.txt
Instrument ID						HP6890ECD-G
Prep Date						11-JAN-07

SURROGATE RECOVERY INFORMATION

Parameter	% Rec	Lab Limits
Decachlorobiphenyl	74	25-150

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab Review Report - 01/16/07 11:45 - Data Source: ELD

Sample#: L41257-8	Matrix:	OTHR SOLID	List Type:	ORPCBWIPE	
	Project:	423589-090-1	Run ID:	R118208	Col. Date: 05-DEC-06
	Locator:	DZ	Work Group:	WG89838	Rec. Date: 05-DEC-06
	Site:	METRO	QC Type:		Due Date: 04-JAN-07
	Method Code:	8270D-WIPETEST			

Parameter	Value	Units	Valq	Mdl	Rdl	Textvalue
Aroclor 1016		ug	<MDL	50	100	
Aroclor 1221		ug	<MDL	50	100	
Aroclor 1232		ug	<MDL	50	100	
Aroclor 1242		ug	<MDL	50	100	
Aroclor 1248		ug	<MDL	50	100	
Aroclor 1254		ug	<MDL	50	100	
Aroclor 1260		ug	<MDL	50	100	
Decachlorobiphenyl	26.1	ug		5	10	
Amount Analyzed	1	g				
Standard Amount	1	g				
Dilution Factor	1	none				
Date Analyzed						12-JAN-07
Operator ID						JSF
Sorthandler File						/usr/users/seed2/METROS3/files/gc/wg89838.txt
Instrument ID						HP6890ECD-G
Prep Date						11-JAN-07

SURROGATE RECOVERY INFORMATION

Parameter	% Rec	Lab Limits
Decachlorobiphenyl	84	25-150

KCSlip4 57854

SEA424153

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab Review Report - 01/16/07 11:45 - Data Source: ELD

Sample#: L41257-9	Matrix:	OTHR SOLID	List Type:	ORPCBWIPE	
	Project:	423589-090-1	Run ID:	R118208	Col. Date: 05-DEC-06
	Locator:	KCIA	Work Group:	WG89838	Rec. Date: 05-DEC-06
	Site:	METRO	QC Type:		Due Date: 04 JAN-07
	Method Code:	8270D-WIPETEST			

Parameter	Value	Units	Valq	Mdl	Rdl	Textvalue
Aroclor 1016		ug	<MDL	50	100	
Aroclor 1221		ug	<MDL	50	100	
Aroclor 1232		ug	<MDL	50	100	
Aroclor 1242		ug	<MDL	50	100	
Aroclor 1248		ug	<MDL	50	100	
Aroclor 1254		ug	<MDL	50	100	
Aroclor 1260		ug	<MDL	50	100	
Decachlorobiphenyl	28.5	ug		5	10	
Amount Analyzed	1	g				
Standard Amount	1	g				
Dilution Factor	1	none				
Date Analyzed						12-JAN-07
Operator ID						JSF
Worthandler File						/usr/users/seed2/METROS3/files/gc/wg09838.txt
Instrument ID						HP6890ECD-G
Prep Date						11-JAN-07

SURROGATE RECOVERY INFORMATION

Parameter	% Rec	Lab Limits
Decachlorobiphenyl	91	25-150

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab Review Report - 01/16/07 11:45 - Data Source: ELD

Sample#: L41257-10	Matrix:	OTHR SOLID	List Type:	ORPCBWIPE	
	Project:	423589-090-1	Run ID:	R118208	Col. Date: 05-DEC 06
	Locator:	SPCC	Work Group:	WG89838	Rec. Date: 05-DEC-06
	Site:	METRO	QC Type:		Due Date: 04-JAN-07
	Method Code:	8270D-WIPETEST			

Parameter	Value	Units	Valq	Mdl	Rdl	Textvalue
Aroclor 1016		ug	<MDL	50	100	
Aroclor 1221		ug	<MDL	50	100	
Aroclor 1232		ug	<MDL	50	100	
Aroclor 1242		ug	<MDL	50	100	
Aroclor 1248		ug	<MDL	50	100	
Aroclor 1254		ug	<MDL	50	100	
Aroclor 1260		ug	<MDL	50	100	
Decachlorobiphenyl	27	ug		5	10	
Amount Analyzed	1	g				
Standard Amount	1	g				
Dilution Factor	1	none				
Date Analyzed						12-JAN-07
Operator ID						JSF
Porthandler File						/usr/users/seed2/METROS3/files/qc/wg89838.txt
Instrument ID						HP6890ECD-G
Prep Date						11-JAN-07

SURROGATE RECOVERY INFORMATION

Parameter	% Rec	Lab Limits
Decachlorobiphenyl	86	25-150

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab Review Report - 01/16/07 11:45 - Data Source: ELD

Sample#: L41489-2	Matrix:	OTHR SOLID	List Type:	ORPCBWIPE	
	Project:	423589-090-1	Run ID:	R118208	Col. Date: 09-JAN-07
	Locator:	BWR	Work Group:	WG89838	Rec. Date: 09-JAN-07
	Site:	METRO	QC Type:		Due Date: 08-FEB-07
	Method Code:	8270D-WIPETEST			

Parameter	Value	Units	Valq	Mdl	Rdl	Textvalue
Aroclor 1016		ug	<MDL	50	100	
Aroclor 1221		ug	<MDL	50	100	
Aroclor 1232		ug	<MDL	50	100	
Aroclor 1242		ug	<MDL	50	100	
Aroclor 1248		ug	<MDL	50	100	
Aroclor 1254		ug	<MDL	50	100	
Aroclor 1260		ug	<MDL	50	100	
Decachlorobiphenyl	22.6	ug		5	10	
Amount Analyzed	1	g				
Standard Amount	1	g				
Dilution Factor	1	none				
Date Analyzed						12-JAN-07
Operator ID						JSF
Orthandler File						/usr/users/seed2/METRO93/files/gc/wg89838.txt
Instrument ID						HP6890ECD-G
Prep Date						11-JAN-07

SURROGATE RECOVERY INFORMATION

Parameter	% Rec	Lab Limits
Decachlorobiphenyl	72	25-150

Trace Organics Data Anomaly Form

Date(s) Occurred: *1-12-07*

WG #(s): *WG89838*

☒ **All samples in WKGP(s)** or ☐ **Sample #(s):**

Project #(s): *423589*

Matrix: ☐ **Liquid** ☐ **Solid** ☐ **Air** ☐ **Tissue** ☐ **Calibration** ☒ **Other:** *Wipes*

I. Analysis/Extraction

☐ BNA	☐ BNALL	☐ EDC	☐ EDC-LVI
☐ CLPESTPCB	☐ PEST	☒ PCB	☐ OPPEST
☐ VOA-GCMS	☐ NWTPH-GX	☐ NWTPH-DX	☐ NWTPH-HCID
☐ BUTYL TIN	☐ AIRTOX	☐ AIR-SULFUR	
☐ Other:			
☐ Subcontracted:			

II. Instrument

GC/ICP/MS:	☐ P						
GC/MS:	☐ D	☐ E	☐ J	☐ K	☐ L	☐ M	☐ N
GC:	☐ F ECD	☒ G ECD	☐ H FID	☐ H OI4450PID/FID			
	☐ I FID						
Extraction/Cleanup:	☐ PFE	☐ GPC					
	☐ Other:						

III. Type of Sample/Analytical Anomaly

☒ Values Outside of Control Limits:

1 ☐ Blank Contamination	8 ☐ Surrogate Spike Recoveries
2 ☐ SB/SBD Spike Recoveries	9 ☐ SB/SBD RPD
3 ☐ MS/MSD Spike Recoveries	10 ☐ MS/MSD RPD
4 ☐ LCS/SRM Recoveries	11 ☐ Sample/LD RPD
5 ☐ Initial Calibration	12 ☒ Continuing Calibration Checks
6 ☐ Performance Checks	13 ☐ Tuning Criteria
7 ☐ ISTD % Differences	

14 ☐ Holding time exceeded by:
15 ☐ Insufficient sample amount.
16 ☐ Inappropriate storage, container or preservation.
17 ☐ Other

Anomaly Description: *12a. PCB-04 had a surrogate recoveries for DCB that was <85% on the front column. In addition, PCB-07 had recoveries for DCB on both columns that were <85% as well. 12b. Aroclor 1260 recovery was <85% in PCB-07 on the front column.*

IV. Type of Project Anomaly

☐ SAP/Work Plan specified MDLs not met.
☐ SAP/Work Plan specified QC frequency or QC type not met.
☐ SAP/Work Plan specified methodology not used.
☐ Sample exceeds regulatory and/or hazardous waste limits.
☐ Sample data results are unusual or inconsistent with expected results.
☐ Other

Anomaly Description:

V. Corrective Action Taken

☐ Sample(s) re-analyzed
☐ Sample(s) re-prepared and re-analyzed
☒ Sample(s) reported "AS IS"
☐ Data qualified with the following flags:
☐ Other

Corrective Action Description: *12a. All surrogate recoveries are from the rear column. All sample surrogate recoveries are within range. 12b. All aroclor 1260 recoveries are from the back column. No sample had any aroclors to report, although they are difficult to analyze due to interferences associated with the BNA fraction. It appears that these samples have a detrimental effect on recoveries for late eluting congeners/peaks.*

VI. Potential Effects on Data Quality:

☒ None; corrective action entirely corrected anomaly (explanation optional):

☐ Potential effect explanation (explanation mandatory):

	Signatures	Signature Dates
Reported By: *JSF*		1-16-07
Reviewer: *Gretchen Nerlin*		1/17/07
Supervisor: *Dana Walker*		1/18/07
QA Officer: *Colin Elliott* (For QA1 only)		
cc: LPM:		

King County Environmental Laboratory

WORK GROUP REPORT (wk02)

Feb 12 2007, 02:18 pm

Work Group: WG89886 (BL#687 PHPAHSOURCE) for Department: 7 - Organics, Trace

Created: 16-JAN-07 PrepDate: 16-JAN-07 Due: Operator: JG

Sample	Project Number	Project Description	PKey	C	Product	Matrix	Stat	UA	Workdate	Duedate
L41489-1	423589-090-1	Lower Duwamish Phthalate Studies	S		PHPAHSOURCE	BLANK WTR	PREP	U	23-JAN-07	08-FEB-07
WG89886-1	SB		S		PHPAHSOURCE	BLANK WTR	PREP	U	16-JAN-07	
WG89886-2	MB		S		PHPAHSOURCE	BLANK WTR	PREP	U	16-JAN-07	

Comments:

L41489-1	blank water
WG89886-1	WG89886-2
WG89886-2	MB070116

KCSlip4 57860

SEA424159

A/M
2/27/07

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 02/27/07 10:54
Run ID: R118826 Workgroup: WG89886 (BL#687 PHPAHSOURCE)

SB:WG89886-1 MB:WG89886-2 Matrix: BLANK WTR Listtype: ORPHPAHSOURCE Method: 8270B Project: 423589-090-1 Pkey: STD
(Spike Blank, Method Blank)

Parameter	Mdl	Rdl	Units	MB Value	Truevalue	SB Value	% Rec.	Qual	LabLimit
Acenaphthylene	.01	.02	ug/L	<MDL	0.250	.138	55		10-150
Dimethyl Phthalate	.01	.02	ug/L	<MDL	0.250	.222	89		10-150
Fluorene	.01	.02	ug/L	<MDL	0.250	.162	65		10-150
Diethyl Phthalate	.015	.03	ug/L	<MDL	0.250	.259	103		10-150
Phenanthrene	.01	.02	ug/L	<MDL	0.250	.201	81		10-150
Anthracene	.01	.02	ug/L	<MDL	0.250	.183	73		10-150
Di-N-Butyl Phthalate	.01	.02	ug/L	.0246	0.250	.31	114		10-150
Pyrene	.01	.02	ug/L	<MDL	0.250	.242	97		10-150
Benzyl Butyl Phthalate	.01	.02	ug/L	.012	0.250	.31	115		10-150
Benzo(a)anthracene	.01	.02	ug/L	<MDL	0.250	.232	93		10-150
Chrysene	.01	.02	ug/L	<MDL	0.250	.223	89		10-150
Bis(2-Ethylhexyl)Phthalate	.01	.02	ug/L	.0834	0.250	.226	57		10-150
Benzo(b)fluoranthene	.015	.03	ug/L	<MDL	0.250	.185	74		10-150
Benzo(k)fluoranthene	.015	.03	ug/L	<MDL	0.250	.192	77		10-150
Benzo(a)pyrene	.015	.03	ug/L	<MDL	0.250	.158	63		10-150
Indeno(1,2,3-Cd)Pyrene	.015	.03	ug/L	<MDL	0.250	.0894	36		10-150
Dibenzo(a,h)anthracene	.015	.03	ug/L	<MDL	0.250	.0936	37		10-150
Benzo(g,h,i)perylene	.015	.03	ug/L	<MDL	0.250	.0921	37		10-150

MB:WG89886-2 Matrix: BLANK WTR Listtype: ORPHPAHSOURCE Method: 8270B Project: 423589-090-1 Pkey: STD
(Method Blank)

Parameter	Mdl	Rdl	Units	MB Value	Qual
Naphthalene	.02	.04	ug/L	.025	B
Acenaphthylene	.01	.02	ug/L	<MDL	
Dimethyl Phthalate	.01	.02	ug/L	<MDL	
Acenaphthene	.01	.02	ug/L	<MDL	
Fluorene	.01	.02	ug/L	<MDL	
Diethyl Phthalate	.015	.03	ug/L	<MDL	
Phenanthrene	.01	.02	ug/L	<MDL	
Anthracene	.01	.02	ug/L	<MDL	
Di-N-Butyl Phthalate	.01	.02	ug/L	.0246	B
Fluoranthene	.01	.02	ug/L	<MDL	
Pyrene	.01	.02	ug/L	<MDL	
Benzyl Butyl Phthalate	.01	.02	ug/L	.012	B
Benzo(a)anthracene	.01	.02	ug/L	<MDL	
Chrysene	.01	.02	ug/L	<MDL	
Bis(2-Ethylhexyl)Phthalate	.01	.02	ug/L	.0834	B
Di-N-Octyl Phthalate	.015	.03	ug/L	<MDL	
Benzo(b)fluoranthene	.015	.03	ug/L	<MDL	
Benzo(k)fluoranthene	.015	.03	ug/L	<MDL	
Benzo(a)pyrene	.015	.03	ug/L	<MDL	
Indeno(1,2,3-Cd)Pyrene	.015	.03	ug/L	<MDL	
Dibenzo(a,h)anthracene	.015	.03	ug/L	<MDL	
Benzo(g,h,i)perylene	.015	.03	ug/L	<MDL	
2-Methylnaphthalene	.015	.03	ug/L	<MDL	

KCSlip4 57861
SEA424160

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 02/27/07 10:54
Run ID: R118826 Workgroup: WG89886 (BL#587 PHPAHSOURCE)

Sample #	d14-Terphenyl	D6-Dimethyl Phthalate	D8-Acenaphthylene	D10-Fluorene	D10-Anthracene	D10-Pyrene	D12-Benzo(a)pyrene
(Lab Limits)	33-141	0-150	0-150	0-150	0-150	0-150	0-150
L41489-1	85	73	60	60	61	68	81
WG89886-1	80	79	56	59	57	66	63
WG89886-2	86	81	60	62	61	69	84

==========

If the following parameters are reported, values in the RPD column are their Absolute Differences:

- pH
- pH, Field
- Salinity
- Salinity, Field
- Sample Depth
- Sample Temperature, Field

KCSlip4 57862
SEA424161

Rand 18 - Rinse Blank

LIQUID SAMPLE EXTRACTION RECORD FOR BNA ANALYSIS

TRACE ORGANICS LABORATORY

Acetone Lot# 064335
MeCL2 Lot # CS122
QC BATCH NO.: BL #687 PHPAHSOURCE/PCBLL via SPE
EPA SW-846 EXTRACTION METHOD:
CONT. L-L EPA 3520 SEP. FUNNEL EPA 3510

WORKGROUP NO.: PHPAHSOURCE = WG84886, PCBLL = WG89887
BNA SURROGATE SPIKE: 1315 + 1343 (DMCs)
BNA MATRIX SPIKE: 1246

PCB Field Surr = 1344
PCB Header Surr = 135.
PCB MS LL = 1261

Date/ Analyst	Sample Number	Project Number	Sample Description	coc	pH	Initial Amt. (ml)	Spike Amount (ul)	Vf (ml)	Conc. Anlyst	Turn Over Date	Comments	
JG 01/16/07	WG89886-1 WG89887-1	QC	SB		6	2000	1343 - 25µl 1315 - 100µl 1344 - 100µl 1352 - 100µl 1246 - 50µl 1261 - 100µl	1.0	JG	02/12/07	10 ml MeOH	7.8
	WG89886-2 WG89887-2	QC	MB		6	2000	1343 - 25µl 1315 - 100µl 1344 - 100µl 1352 - 100µl	1.0	JG	02/12/07	10 ml MeOH	9.5
	L41489-1	423589-090-001	Lower Duwamish Phthalates SLR-SK-010907-010907		6	2000	1343 - 25µl 1315 - 100µl 1344 - 100µl 1352 - 100µl	1.0	JG	02/12/07	10 ml MeOH	8.1

*All samples processed using SPE Speedisk Lot # C083404
** Vial volumes for PHPAHSOURCE split = 0.5 ml. Final vol. = 1.0 ml.

KCSlip4 57863
SEA424162

Batch: \\Orgizmo\EE\chem\6890n.i\070214.b

#	Smp. #	Injection Time	Wkgp. #	QC #	Project #	Sample Description	Matrix	Amount	DilFac	IS#2-RT	IS#2-Area	Method	Init Cali	Analyst
1	BLANK-1	14-FEB-2007 07:05	SDGa1658	SDGa16	421152	Solvent Blank + ISTD's	WATER	1000.000	1.0	6.704	128550	PHPAH.m	13-FEB-2007	Dave Fada
2	DFTPP-1	14-FEB-2007 07:46	SDGa2816	SDGa28	421152	SS#1254x50 DFTPP	NONE	0.000	1.0	12.724	87184	LVI_DFTP.m		Dave Fada
3	CCALI-1	14-FEB-2007 08:26	SDGa1658	SDGa16	421152	SS#1345E 250 ppb	WATER	1.000	1.0	6.695	150909	PHPAH.m	13-FEB-2007	Dave Fada
4	WG89886-2	14-FEB-2007 09:19	WG89886	BL#687	423589-09	Method Blank (01-16-2007)	WATER	2000.000	1.0	6.686	119121	PHPAH.m	13-FEB-2007	Dave Fada
5	WG89886-1	14-FEB-2007 10:00	WG89886	BL#687	423589-09	Spike Blank (01-16-2007)	WATER	2000.000	1.0	6.686	121772	PHPAH.m	13-FEB-2007	Dave Fada
6	L41489-1	14-FEB-2007 10:41	WG89886	BL#687	423589-09	Lower Duwamish Phthalate Stu	WATER	2000.000	1.0	6.686	124011	PHPAH.m	13-FEB-2007	Dave Fada

Samples: 1 **QC Samples + Misc.:** 3 **ContinuingCals:** 1 **Tunes:** 1 **Calibrations:** 0

```
Sequence Name: C:\MSDCHEM\1\SEQUENCE\070214.S
      Comment:
     Operator: Dave Fada
    Data Path: C:\MSDCHEM\1\DATA\070214\
Instrument Control  Pre-Seq Cmd:
Data Analysis       Pre-Seq Cmd:

Instrument Control Post-Seq Cmd:
Data Analysis      Post-Seq Cmd:

   Method Sections To Run      On A Barcode Mismatch
    (X) Full Method              (X) Inject Anyway
    ( ) Reprocessing Only        ( ) Don't Inject

   ---------------------------------------------------------------------
   Line                    Sample Name/Misc Info
   ---------------------------------------------------------------------
   1   Type: Blank         Solvent Blank + ISTD's
       Vial: 1             Solvent Blank + ISTD's
       Method  : PHPAH.M
       Datafile: BLANK-1.D
       Bar Code: 421152            Samp Amt: 1000        Multiplr: 1
       Matrix            :Method Default   Sublist          :Method Default
       Spikelist         :Method Default   Re-inject        :No
   ---------------------------------------------------------------------
   2   Type: Tune          SS#1254x50 DFTPP
       Vial: 2             DFTPP 1.0 ug/ml 20 ul injection
       Method  : LVI_DFTP.M
       Datafile: DFTPP-1.D
       Bar Code: 421152            Samp Amt: 1           Multiplr: 1
       Matrix            :Method Default   Sublist          :Method Default
       Spikelist         :Method Default   Re-inject        :No
   ---------------------------------------------------------------------
   3   Type: Cont.Cal      SS#1345E 250 ppb
       Vial: 3             Phthalate/PAH 250 ppb 20 ul injection
       Method  : PHPAH.M
       Datafile: CCALI-1.D
       Bar Code: 421152            Samp Amt: 1           Multiplr: 1
       Matrix            :Method Default   Sublist          :Method Default
       Spikelist         :Method Default   Re-inject        :No
   ---------------------------------------------------------------------
   4   Type: Blank         Method Blank (01-16-2007)
       Vial: 4             WG89886;BL#687;SS#969x200;SS#1315/1343
       Method  : PHPAH.M
       Datafile: WG89886-2.D
       Bar Code: 423589-090-1      Samp Amt: 2000        Multiplr: 1
       Matrix            :Liquid           Sublist          :Method Default
       Spikelist         :Method Default   Re-inject        :No
   ---------------------------------------------------------------------
   5   Type: SB            Spike Blank (01-16-2007)
       Vial: 5             WG89886;BL#687;SS#969x200;SS#1315/1343
       Method  : PHPAH.M
       Datafile: WG89886-1.D
       Bar Code: 423589-090-1      Samp Amt: 2000        Multiplr: 1
       Matrix            :Liquid           Sublist          :Method Default
       Spikelist         :Method Default   Re-inject        :No
   ---------------------------------------------------------------------
   6   Type: Sample        Lower Duwamish Phthalate Studies
       Vial: 6             WG89886;BL#687;SS#969x200;SS#1315/1343
       Method  : PHPAH.M
       Datafile: L41489-1.D
       Bar Code: 423589-090-1      Samp Amt: 2000        Multiplr: 1
       Matrix            :Liquid           Sublist          :Method Default
       Spikelist         :Method Default   Re-inject        :No
   ---------------------------------------------------------------------
```

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab Review Report - 02/27/07 11:03 - Data Source: ELD

Sample#: WG89886-1	Matrix: BLANK WTR	List Type:	ORPHPAHSOURCE		
	Project:	Run ID:	R118826	Col. Date:	
	Locator: SB	Work Group:	WG89886	Rec. Date:	16-JAN-07
	Site: NONE	QC Type:	SB	Due Date:	
	Method Code: 8270B				

Parameter	Value	Units	Valq	Mdl	Rdl	Textvalue
Naphthalene		ug/L	<MDL	.02	.04	
Acenaphthylene	.138	ug/L		.01	.02	
Dimethyl Phthalate	.222	ug/L		.01	.02	
Acenaphthene		ug/L	<MDL	.01	.02	
Fluorene	.162	ug/L		.01	.02	
Diethyl Phthalate	.259	ug/L		.015	.03	
Phenanthrene	.201	ug/L		.01	.02	
Anthracene	.183	ug/L		.01	.02	
Di-N-Butyl Phthalate	.31	ug/L		.01	.02	
Fluoranthene		ug/L	<MDL	.01	.02	
Pyrene	.242	ug/L		.01	.02	
Benzyl Butyl Phthalate	.31	ug/L		.01	.02	
Benzo(a)anthracene	.232	ug/L		.01	.02	
Chrysene	.223	ug/L		.01	.02	
Bis(2-Ethylhexyl)Phthalate	.226	ug/L	B	.01	.02	
Di-N-Octyl Phthalate		ug/L	<MDL	.015	.03	
Benzo(b)fluoranthene	.185	ug/L		.015	.03	
Benzo(k)fluoranthene	.192	ug/L		.015	.03	
Benzo(a)pyrene	.158	ug/L		.015	.03	
Indeno(1,2,3-Cd)Pyrene	.0894	ug/L		.015	.03	
Dibenzo(a,h)anthracene	.0936	ug/L		.015	.03	
Benzo(g,h,i)perylene	.0921	ug/L		.015	.03	
2-Methylnaphthalene		ug/L	<MDL	.015	.03	
d14-Terphenyl	.501	ug/L		.01	.02	
D6-Dimethyl Phthalate	.196	ug/L		.01	.02	
D8-Acenaphthylene	.139	ug/L		.01	.02	
D10-Fluorene	.147	ug/L		.01	.02	
D10-Anthracene	.144	ug/L		.01	.02	
D10-Pyrene	.165	ug/L		.01	.02	
D12-Benzo(a)pyrene	.157	ug/L		.01	.02	
Amount Analyzed	2000	ml				
Standard Amount	1000	ml				
Dilution Factor	1	none				
Date Analyzed						14-FEB-07
Operator ID						Dave Fada
Porthandler File						/usr/users/seed2/METROS3/files/gcms/WG89886-1.rp
Instrument ID						6890n.1
Prep Date						16-JAN-07

SURROGATE RECOVERY INFORMATION

Parameter	% Rec	Lab Limits
d14-Terphenyl	80	33-141
D6-Dimethyl Phthalate	79	0-150
D8-Acenaphthylene	56	0-150
D10-Fluorene	59	0-150
D10-Anthracene	57	0-150
D10-Pyrene	66	0-150
D12-Benzo(a)pyrene	63	0-150

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab Review Report - 02/27/07 11:03 - Data Source: ELD

Sample#: WG89886-2	Matrix: BLANK WTR	List Type: ORPHPAHSOURCE			
	Project:	Run ID: R118826	Col. Date:		
	Locator: MB	Work Group: WG89886	Rec. Date:	16-JAN-07	
	Site: NONE	QC Type: MB	Due Date:		
	Method Code: 8270B				

Parameter	Value	Units	Valq	Mdl	Rdl	Textvalue
Naphthalene	.025	ug/L	<RDL,B	.02	.04	
Acenaphthylene		ug/L	<MDL	.01	.02	
Dimethyl Phthalate		ug/L	<MDL	.01	.02	
Acenaphthene		ug/L	<MDL	.01	.02	
Fluorene		ug/L	<MDL	.01	.02	
Diethyl Phthalate		ug/L	<MDL	.015	.03	
Phenanthrene		ug/L	<MDL	.01	.02	
Anthracene		ug/L	<MDL	.01	.02	
Di-N-Butyl Phthalate	.0246	ug/L	B	.01	.02	
Fluoranthene		ug/L	<MDL	.01	.02	
Pyrene		ug/L	<MDL	.01	.02	
Benzyl Butyl Phthalate	.012	ug/L	<RDL,B	.01	.02	
Benzo(a)anthracene		ug/L	<MDL	.01	.02	
Chrysene		ug/L	<MDL	.01	.02	
Bis(2-Ethylhexyl)Phthalate	.0834	ug/L	B	.01	.02	
Di-N-Octyl Phthalate		ug/L	<MDL	.015	.03	
Benzo(b)fluoranthene		ug/L	<MDL	.015	.03	
Benzo(k)fluoranthene		ug/L	<MDL	.015	.03	
Benzo(a)pyrene		ug/L	<MDL	.015	.03	
Indeno(1,2,3-Cd)Pyrene		ug/L	<MDL	.015	.03	
Dibenzo(a,h)anthracene		ug/L	<MDL	.015	.03	
Benzo(g,h,i)perylene		ug/L	<MDL	.015	.03	
2-Methylnaphthalene		ug/L	<MDL	.015	.03	
d14-Terphenyl	.541	ug/L		.01	.02	
D6-Dimethyl Phthalate	.204	ug/L		.01	.02	
D8-Acenaphthylene	.151	ug/L		.01	.02	
D10-Fluorene	.155	ug/L		.01	.02	
D10-Anthracene	.151	ug/L		.01	.02	
D10-Pyrene	.172	ug/L		.01	.02	
D12-Benzo(a)pyrene	.209	ug/L		.01	.02	
Amount Analyzed	2000	ml				
Standard Amount	1000	ml				
Dilution Factor	1	none				
Date Analyzed						14-FEB-07
Operator ID						Dave Fada
Porthandler File						/usr/users/seed2/METROS3/files/gcms/WG89886-2.rp
Instrument ID						6890n.i
Prep Date						16-JAN-07

SURROGATE RECOVERY INFORMATION

Parameter	% Rec	Lab Limits
d14-Terphenyl	86	33-141
D6-Dimethyl Phthalate	81	0-150
D8-Acenaphthylene	60	0-150
D10-Fluorene	62	0-150
D10-Anthracene	61	0-150
D10-Pyrene	69	0-150
D12-Benzo(a)pyrene	84	0-150

KCSlip4 57867

SEA424166

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab Review Report 02/27/07 11:03 Data Source: ELD

Sample#: L41489-1	Matrix:	BLANK WTR	List Type:	ORPHPAHSOURCE	
	Project:	423589-090-1	Run ID:	R118826	Col. Date: 09-JAN-07
	Locator:	BWR	Work Group:	WG89886	Rec. Date: 09-JAN-07
	Site:	METRO	QC Type:		Due Date: 08-FEB-07
	Method Code:	8270B			

Parameter	Value	Units	Valq	Mdl	Rdl	Textvalue
Naphthalene	.024	ug/L	<RDL,B	.02	.04	
Acenaphthylene		ug/L	<MDL	.01	.02	
Dimethyl Phthalate		ug/L	<MDL	.01	.02	
Acenaphthene		ug/L	<MDL	.01	.02	
Fluorene		ug/L	<MDL	.01	.02	
Diethyl Phthalate		ug/L	<MDL	.015	.03	
Phenanthrene		ug/L	<MDL	.01	.02	
Anthracene		ug/L	<MDL	.01	.02	
Di-N-Butyl Phthalate	.027	ug/L	B	.01	.02	
Fluoranthene		ug/L	<MDL	.01	.02	
Pyrene		ug/L	<MDL	.01	.02	
Benzyl Butyl Phthalate	.011	ug/L	<RDL,B	.01	.02	
Benzo(a)anthracene		ug/L	<MDL	.01	.02	
Chrysene		ug/L	<MDL	.01	.02	
Bis(2-Ethylhexyl)Phthalate	.0714	ug/L	B	.01	.02	
Di-N-Octyl Phthalate		ug/L	<MDL	.015	.03	
Benzo(b)fluoranthene		ug/L	<MDL	.015	.03	
Benzo(k)fluoranthene		ug/L	<MDL	.015	.03	
Benzo(a)pyrene		ug/L	<MDL	.015	.03	
Indeno(1,2,3-Cd)Pyrene		ug/L	<MDL	.015	.03	
Dibenzo(a,h)anthracene		ug/L	<MDL	.015	.03	
Benzo(g,h,i)perylene		ug/L	<MDL	.015	.03	
2-Methylnaphthalene		ug/L	<MDL	.015	.03	
d14-Terphenyl	.53	ug/L		.01	.02	
D6-Dimethyl Phthalate	.182	ug/L		.01	.02	
D8-Acenaphthylene	.15	ug/L		.01	.02	
D10-Fluorene	.151	ug/L		.01	.02	
D10-Anthracene	.151	ug/L		.01	.02	
D10-Pyrene	.17	ug/L		.01	.02	
D12-Benzo(a)pyrene	.202	ug/L		.01	.02	
Amount Analyzed	2000	ml				
Standard Amount	1000	ml				
Dilution Factor	1	none				
Date Analyzed						14-FEB-07
Operator ID						Dave Fada
Porthandler File						/usr/users/seed2/METROS3/files/gcms/L41489-1.rp
Instrument ID						6890n.i
Prep Date						16-JAN-07

SURROGATE RECOVERY INFORMATION

Parameter	% Rec	Lab Limits
d14-Terphenyl	85	33-141
D6-Dimethyl Phthalate	73	0-150
D8-Acenaphthylene	60	0-150
D10-Fluorene	60	0-150
D10-Anthracene	61	0-150
D10-Pyrene	68	0-150
D12-Benzo(a)pyrene	81	0-150

King County Environmental Laboratory

WORK GROUP REPORT (wk02)

Feb 15 2007, 09:40 am

Work Group: WG89887 (BL#687 PCBLL) for Department: 7 - Organics, Trace

Created: 16-JAN-07 PrepDate: 16-JAN-07 Due: Operator: JG

Sample	Project Number	Project Description	PKey	C	Product	Matrix	Stat	UA	Workdate	Duedate
L41489-1	423589-090 1	Lower Duwamish Phthalate Studies	S		PCBLL	BLANK WTR	PREP	U	16-JAN-07	08-FEB-07
WG89887-1	SB		S		PCBLL	BLANK WTR	PREP	U	16-JAN-07	
WG89887-2	MB		S		PCBLL	BLANK WTR	PREP	U	16-JAN-07	

Comments:

L41489-1	blank water
WG89887-1	WG89887-2
WG89887-2	MB070116

KCSlip4 57869

SEA424168

Trace Organics Data Anomaly Form

Date(s) Occurred: *02-20-07*

WG #(s): *WG89887, WG90270*

☒ **All samples in WKGP(s)** **or** ☐ **Sample #(s):**

Project #(s): *423589*

Matrix: ☒ **Liquid** ☐ **Solid** ☐ **Air** ☐ **Tissue** ☐ **Calibration** ☒ **Other:** *Wipes*

I. Analysis/Extraction

☐ BNA ☐ BNALL ☐ EDC ☐ EDC-LVI
☐ CLPESTPCB ☐ PEST ☒ PCB ☐ OPPEST
☐ VOA-GCMS ☐ NWTPH-GX ☐ NWTPH-DX ☐ NWTPH-HCID
☐ BUTYL TIN ☐ AIRTOX ☐ AIR-SULFUR
☐ Other:
☐ Subcontracted:

II. Instrument

GC/ICP/MS: ☐ P
GC/MS: ☐ D ☐ E ☐ J ☐ K ☐ L ☐ M ☐ N
GC: ☐ F ECD ☒ G ECD ☐ H FID ☐ H OI4450PID/FID
☐ I FID
Extraction/Cleanup: ☐ PFE ☐ GPC
☐ Other:

III. Type of Sample/Analytical Anomaly

☐ Values Outside of Control Limits:

1 ☐ Blank Contamination
2 ☒ SB/SBD Spike Recoveries
3 ☐ MS/MSD Spike Recoveries
4 ☐ LCS/SRM Recoveries
5 ☐ Initial Calibration
6 ☐ Performance Checks
7 ☐ ISTD % Differences
8 ☒ Surrogate Spike Recoveries
9 ☐ SB/SBD RPD
10 ☐ MS/MSD RPD
11 ☐ Sample/LD RPD
12 ☐ Continuing Calibration Checks
13 ☐ Tuning Criteria

14 ☐ Holding time exceeded by:
15 ☐ Insufficient sample amount.
16 ☐ Inappropriate storage, container or preservation.
17 ☐ Other

Anomaly Description: *2. The SB (WG89887-1) had a low recovery (46%) for aroclor 1260. 8. The TCX surrogate is low (83%) in PCB-03.*

IV. Type of Project Anomaly

☐ SAP/Work Plan specified MDLs not met.
☐ SAP/Work Plan specified QC frequency or QC type not met.
☐ SAP/Work Plan specified methodology not used.
☐ Sample exceeds regulatory and/or hazardous waste limits.
☐ Sample data results are unusual or inconsistent with expected results.
☐ Other

Anomaly Description:

V. Corrective Action Taken

☐ Sample(s) re-analyzed ☐ Sample(s) re-prepared and re-analyzed
☒ Sample(s) reported "AS IS"
☒ Data qualified with the following flags: *
☐ Other

Corrective Action Description: *2. These samples have many interferents associated with the BNA spikes/surrogates. Several congeners in the 1016 aroclor are deleted on both columns. This method is still in development, any recovery limits are more associated typical samples. SB aroclor 1260 recovery is flagged with an asterisk on the QC sheet. 8. All surrogates are reported from the back column. All are within range.*

VI. Potential Effects on Data Quality:

☒ None; corrective action entirely corrected anomaly (explanation optional):

☐ Potential effect explanation (explanation mandatory):

	Signatures	Signature Dates
Reported By: *JSF*		2-21-07
Reviewer: *Gretchen Nerlin*		2/21/07
Supervisor: *Dana Walker*	Dana Walker	2/22/07
QA Officer: *Colin Elliott* (For QA1 only)		
cc: LPM:		

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 02/21/07 01:29
Run ID: R118743 Workgroup: WG89887 (BL#687 PCBLL)

SB:WG89887-1 MB:WG89887-2 Matrix: BLANK WTR Listtype: ORPCBLL Method: EPA 8081A/8082 (7-3-03-002) Project: Pkey: STD
(Spike Blank, Method Blank)

Parameter	Mdl	Rdl	Units	MB Value	Truevalue	SB Value	% Rec	Qual	LabLimit
Aroclor 1016	.025	.05	ug/L	<MDL	0.150	.11	74		65-129
Aroclor 1260	.025	.05	ug/L	<MDL	0.150	.0683	46	*	72-128

MB:WG89887-2 Matrix: BLANK WTR Listtype: ORPCBLL Method: EPA 8081A/8082 (7-3-03-002) Project: Pkey: STD
(Method Blank)

Parameter	Mdl	Rdl	Units	MB Value	Qual
Aroclor 1016	.025	.05	ug/L	<MDL	
Aroclor 1221	.025	.05	ug/L	<MDL	
Aroclor 1232	.025	.05	ug/L	<MDL	
Aroclor 1242	.025	.05	ug/L	<MDL	
Aroclor 1248	.025	.05	ug/L	<MDL	
Aroclor 1254	.025	.05	ug/L	<MDL	
Aroclor 1260	.025	.05	ug/L	<MDL	

KCSlip4 57872
SEA424171

Sample # (Lab Limits)	Decachlorobiph- 12-158	2,4,5,6-Tetrac-enyl hloro-m-xylene 10-118
L41489-1	69	28
WG89887-1	42	24
WG89887-2	70	27

If the following parameters are reported, values in the RPD column are their Absolute Differences:

- pH
- pH, Field
- Salinity
- Salinity, Field
- Sample Depth
- Sample Temperature, Field

KCSlip4 57873
SEA424172

Rand 18 - Rinse Blank

LIQUID SAMPLE EXTRACTION RECORD FOR BNA ANALYSIS

TRACE ORGANICS LABORATORY

Acetone Lot# 064335
MeCL2 Lot # C5122
QC BATCH NO.: BL #687
EPA SW-846 EXTRACTION METHOD:
CONT. L-L EPA 3520 SEP. FUNNEL EPA 3510

PHPAHSOURCE/PCBLL via SPE
1344 = DCB = 1 ug/ml
1352 = TCX = 1 ug/ml
3 ug/ml

WORKGROUP NO.: PHPAHSOURCE = WG898886, PCBLL = WG898887
BNA SURROGATE SPIKE: 1315 + 1343 (DMCo)
BNA MATRIX SPIKE: 1246

PCB Field Surr = 1344
PCB Lab Surr = 1352
PCB MS LL = 1261

Date/ Analyst	Sample Number	Project Number	Sample Description	coc	pH	Initial Amt. (ml)	Spike Amount (ul)	Vf (ml)	Conc. Anlyst	Turn Over Date	Comments	
JG 01/16/07	WG898886-1 WG898887-1	QC	SB		6	2000	1343-25µl 1315-100µl 1344-100µl 1352-100µl 1246-50µl 1261-100µl	1.0	JG JG	02/12/07 02/15/07	10 ml MeOH PCBLL samples - Alumina + H_2SO_4 (split)	7.8
	WG898886-2 WG898887-2	QC	MB		6	2000	1343-25µl 1315-100µl 1344-100µl 1352-100µl	1.0	JG JG	02/12/07 02/15/07	10 ml MeOH PCBLL split - Alumina + H_2SO_4	9.5
	L41489-1	423589-090-001	Lower Duwamish Phthalates BWR-BK-010907-010907		6	2000	1343-25µl 1315-100µl 1344-100µl 1352-100µl	1.0	JG JG	02/12/07 02/15/07	10 ml MeOH PCBLL split - Alumina + H_2SO_4	8.1
											*All samples processed using SPE Speedisk Lot #C03A04	
											** Vial volumes for PHPAHSOURCE splits = 0.5 ml. Final vol. = 1.0 ml.	
JG 02/09/07	—	421176	Blow Down Test (Split A & Split B)				100µl-1344 100µl-1352 100µl-1261	1.0	JG JG	02/15/07 02/15/07	Method Development. No PHPAHSOURCE analysis. Sample extract split 50:50 and both splits analyzed. Vial volumes for splits = 0.50 ml. Final volume = 1.0 ml, both splits for PCBLL cleaned with alumina + H_2SO_4.	
JG 02/12/07	—	421176	Phthalates Interference Check A (Method Dev)				1343-25µl 1315-100µl 1344-100µl 1352-100µl 1246-50µl 1261-100µl	1.0	JG	02/15/07	Alumina + H_2SO_4 Vial volume = 1.0 ml	
		JG 02/13/07	~~Phthalates Interference Check B~~ ~~Phthalates Interference Check C~~									
	—	421176	Phthalates Interference Check B (Method Dev)				1343-25µl 1315-100µl 1344-100µl 1352-100µl 1246-50µl 1261-100µl	1.0	JG	02/15/07	Alumina + H_2SO_4 Vial volume = 1.0 ml	
	—	421176	Phthalates Interference Check C (Method Dev)				1343-25µl 1315-100µl 1344-100µl 1352-100µl 1261-100µl	1.0	JG	02/15/07	No 1246 added. Alumina + H_2SO_4 Vial volume = 1.0 ml	

KCSlip4 57874
SEA424173

Data File Name	Sample Name	Date Acquired	Vial Numb	Sample Amount	Sample Multiplie	Isodrin (RT)	Isodrin (Height)	Leptophos (RT)	Leptophos (Height)	Isodrin #2 (RT)	Isodrin #2 (Height)	Leptophc (RT)	Leptophos #2 (Height)	Misc Info	Data File Path
COND-01.D	conditioner	2/20/2007 9:43	1	0	1										S:\MSDCHEM\2\DATA\070220\
BLANK-01.D	blank	2/20/2007 10:19	2	0	1										S:\MSDCHEM\2\DATA\070220\
PCB-01.D	1218D 1016/1260 500/50	2/20/2007 10:56	3	0	1	15.296	107651171	23.641	186541101	12.934	305576528	19.331	530776738		S:\MSDCHEM\2\DATA\070220\
PCB-02.D	1209.2 1248 500/50	2/20/2007 11:33	4	0	1	15.296	90630961	23.641	136187769	12.932	253910815	19.328	419241212		S:\MSDCHEM\2\DATA\070220\
PCB-03.D	1210.2 1254 500/50	2/20/2007 12:08	5	0	1	15.292	99996276	23.636	155452521	12.933	285103972	19.330	476915874		S:\MSDCHEM\2\DATA\070220\
PCB-04.D	1206.2 1221 500/50	2/20/2007 12:46	6	0	1	15.295	95297337	23.640	145658677	12.933	278559635	19.328	466961052		S:\MSDCHEM\2\DATA\070220\
PCB-05.D	1207.2 1232 500/50	2/20/2007 13:23	7	0	1	15.295	96314064	23.639	146599186	12.932	277440909	19.327	477267775		S:\MSDCHEM\2\DATA\070220\
PCB-06.D	1208.2 1242 500/50	2/20/2007 13:59	8	0	1	15.294	101113277	23.639	152572665	12.933	302427134	19.330	514057169		S:\MSDCHEM\2\DATA\070220\
WG90270-1.D	MB	2/20/2007 14:36	9	0	1	15.296	71553693	23.640	108966640	12.932	210738709	19.327	361334512	PPBWIPE05 PCB DUWAMISH PHTHALATES	S:\MSDCHEM\2\DATA\070220\
L41561-6.D	L41561-6	2/20/2007 15:12	10	0	1	15.294	90648956	23.639	121937825	12.932	245398582	19.326	431341067	PPBWIPE05 PCB DUWAMISH PHTHALATES	S:\MSDCHEM\2\DATA\070220\
L41561-7.D	L41561-7	2/20/2007 15:49	11	0	1	15.298	87158718	23.639	114559856	12.934	229717928	19.327	411008568	PPBWIPE05 PCB DUWAMISH PHTHALATES	S:\MSDCHEM\2\DATA\070220\
L41561-8.D	L41561-8	2/20/2007 16:26	12	0	1	15.296	83794611	23.640	136966789	12.932	233719583	19.327	418722118	PPBWIPE05 PCB DUWAMISH PHTHALATES	S:\MSDCHEM\2\DATA\070220\
L41561-9.D	L41561-9	2/20/2007 17:02	13	0	1	15.294	73140604	23.638	116002398	12.933	203776705	19.327	359318147	PPBWIPE05 PCB DUWAMISH PHTHALATES	S:\MSDCHEM\2\DATA\070220\
L41561-10.D	L41561-10	2/20/2007 17:39	14	0	1	15.295	77328670	23.638	124701573	12.932	219759663	19.327	394680405	PPBWIPE05 PCB DUWAMISH PHTHALATES	S:\MSDCHEM\2\DATA\070220\
PCB-07.D	1218D 1016/1260 500/50	2/20/2007 18:16	3	0	1	15.293	98782715	23.638	171483708	12.930	295039833	19.325	511732624		S:\MSDCHEM\2\DATA\070220\
PCB-08.D	1209.2 1248 500/50	2/20/2007 18:52	4	0	1	15.291	82949294	23.634	137774918	12.930	239773498	19.324	413731198		S:\MSDCHEM\2\DATA\070220\
WG89887-1.D	SB	2/20/2007 19:29	15	2000	1	15.291	83191185	23.633	139879802	12.930	243416775	19.323	420194072	BL687 PCBLL DUWAMISH PHTHALATES	S:\MSDCHEM\2\DATA\070220\
WG89887-2.D	MB	2/20/2007 20:05	16	2000	1	15.291	84778481	23.633	142472555	12.931	246268478	19.324	426453884	BL687 PCBLL DUWAMISH PHTHALATES	S:\MSDCHEM\2\DATA\070220\
L41489-1.D	L41489-1	2/20/2007 20:42	17	2000	1	15.292	81901580	23.635	136572550	12.930	245044505	19.323	421582548	BL687 PCBLL DUWAMISH PHTHALATES	S:\MSDCHEM\2\DATA\070220\
PCB-09.D	1218D 1016/1260 500/50	2/21/2007 12:22	3	0	1	15.290	109742707	23.632	187519808	12.929	320579949	19.321	559580716		S:\MSDCHEM\2\DATA\070220\
PCB-10.D	1210.2 1254 500/50	2/21/2007 12:58	5	0	1	15.287	99353840	23.628	161681076	12.930	279084547	19.322	479815895		S:\MSDCHEM\2\DATA\070220\
					Ave.	15.293	90284965	23.637	142290180	12.932	258701959	19.326	447089241		
					Std. Dev.	0.003	10997433	0.004	20532136	0.001	33786378	0.003	55492774		
					%RSD		12%		14%		13%		12%		

KCSlip4 57875
SEA424174

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab Review Report - 02/21/07 01:30 - Data Source: ELD

Sample#: WG89887-1	Matrix:	BLANK WTR	List Type:	ORPCBLL	
	Project:		Run ID:	R118743	Col. Date:
	Locator:	SB	Work Group:	WG89887	Rec. Date: 16-JAN-07
	Site:	NONE	QC Type:	SB	Due Date:
	Method Code:	EPA 8081A/8082 (7-3-03-002)			

Parameter	Value	Units	Valq	Mdl	Rdl	Textvalue
Aroclor 1016	.11	ug/L		.025	.05	
Aroclor 1221		ug/L	<MDL	.025	.05	
Aroclor 1232		ug/L	<MDL	.025	.05	
Aroclor 1242		ug/L	<MDL	.025	.05	
Aroclor 1248		ug/L	<MDL	.025	.05	
Aroclor 1254		ug/L	<MDL	.025	.05	
Aroclor 1260	.0683	ug/L		.025	.05	
Decachlorobiphenyl	.0212	ug/L		.0025	.005	
2,4,5,6-Tetrachloro-m-xylene	.012	ug/L		.0025	.005	
Amount Analyzed	2000	ml				
Standard Amount	1	ml				
Dilution Factor	1	none				
Date Analyzed						20-FEB-07
Operator ID						JSF
Porthandler File						/usr/users/seed2/METROS3/files/gc/wg89887.txt
Instrument ID						HP6890ECD-G
Prep Date						16-JAN-07

SURROGATE RECOVERY INFORMATION

Parameter	% Rec	Lab Limits
Decachlorobiphenyl	42	12-158
2,4,5,6-Tetrachloro-m-xylene	24	10-118

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab Review Report - 02/21/07 01:30 - Data Source: ELD

Sample#: WG89887-2	Matrix:	BLANK WTR	List Type:	ORPCBLL	
	Project:		Run ID:	R118743	Col. Date:
	Locator:	MB	Work Group:	WG89887	Rec. Date: 16-JAN-07
	Site:	NONE	QC Type:	MB	Due Date:
	Method Code:	EPA 8081A/8082 (7-3-03-002)			

Parameter	Value	Units	Valq	Mdl	Rdl	Textvalue
Aroclor 1016		ug/L	<MDL	.025	.05	
Aroclor 1221		ug/L	<MDL	.025	.05	
Aroclor 1232		ug/L	<MDL	.025	.05	
Aroclor 1242		ug/L	<MDL	.025	.05	
Aroclor 1248		ug/L	<MDL	.025	.05	
Aroclor 1254		ug/L	<MDL	.025	.05	
Aroclor 1260		ug/L	<MDL	.025	.05	
Decachlorobiphenyl	.0352	ug/L		.0025	.005	
2,4,5,6-Tetrachloro-m-xylene	.0135	ug/L		.0025	.005	
Amount Analyzed	2000	ml				
Standard Amount	1	ml				
Dilution Factor	1	none				
Date Analyzed						20-FEB-07
Operator ID						JSF
Porthandler File						/usr/users/seed2/METROS3/files/gc/wg89887.txt
Instrument ID						HP6890ECD-G
Prep Date						16-JAN-07

SURROGATE RECOVERY INFORMATION

Parameter	% Rec	Lab Limits
Decachlorobiphenyl	70	12-158
2,4,5,6-Tetrachloro-m-xylene	27	10-118

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab Review Report - 02/21/07 01:30 - Data Source: ELD

Sample#: L41489-1	Matrix:	BLANK WTR	List Type:	ORPCBLL	
	Project:	423589-090-1	Run ID:	R118743	Col. Date: 09-JAN-07
	Locator:	BWR	Work Group:	WG89887	Rec. Date: 09-JAN-07
	Site:	METRO	QC Type:		Due Date: 08-FEB-07
	Method Code:	EPA 8081A/8082 (7-3-03-002)			

Parameter	Value	Units	Valq	Mdl	Rdl	Textvalue
Aroclor 1016		ug/L	<MDL	.025	.05	
Aroclor 1221		ug/L	<MDL	.025	.05	
Aroclor 1232		ug/L	<MDL	.025	.05	
Aroclor 1242		ug/L	<MDL	.025	.05	
Aroclor 1248		ug/L	<MDL	.025	.05	
Aroclor 1254		ug/L	<MDL	.025	.05	
Aroclor 1260		ug/L	<MDL	.025	.05	
Decachlorobiphenyl	.0343	ug/L		.0025	.005	
2,4,5,6-Tetrachloro-m-xylene	.0139	ug/L		.0025	.005	
Amount Analyzed	2000	ml				
Standard Amount	1	ml				
Dilution Factor	1	none				
Date Analyzed						20-FEB-07
Operator ID						JSP
Porthandler File						/usr/users/seed2/METROS3/files/gc/wg89887.txt
Instrument ID						HP6890ECD-G
Prep Date						16-JAN-07

SURROGATE RECOVERY INFORMATION

Parameter	% Rec	Lab Limits
Decachlorobiphenyl	69	12-158
2,4,5,6-Tetrachloro-m-xylene	28	10-118

KCSlip4 57878

SEA424177