



CH2M HILL  
Applied Sciences Laboratory  
2300 NW Walnut Blvd  
Corvallis, OR  
97330-3538  
P.O. Box 428  
Corvallis, OR  
97339-0428  
Tel 541.752.4271  
Fax 541.752.0276

November 17, 2006

NW Pipe

346755.06.03

RE: Laboratory Report for NW Pipe  
Applied Sciences Laboratory Reference No. F2888

Pat Heins/PDX:

On November 08, 2006, CH2M HILL Applied Sciences Laboratory received 14 samples with a request for analysis of selected parameters. All analyses were performed by CH2M HILL unless otherwise indicated below.

The analytical results and associated quality control data are enclosed. Any unusual difficulties encountered during the analysis of your samples are discussed in the case narrative. This data package meets standards requested by client and is not intended or implied to meet any other standard.

CH2M HILL Applied Sciences Laboratory appreciates your business and looks forward to serving your analytical needs again. If you should have any questions concerning the data, or if you need additional information, please call Kathy McKinley at (541) 758-0235, extension 3144.

Sincerely,

A handwritten signature in cursive script that reads "Kathy McKinley".

Kathy McKinley  
Analytical Manager

Enclosures

cc:  
Tina Rice/PDX  
Rob Healy/PDX

## CLIENT SAMPLE CROSS-REFERENCE

CH2M HILL Applied Sciences Laboratory Reference No. F2888

<b>Sample ID</b>	<b>Client Sample ID</b>	<b>Date Collected</b>	<b>Time Collected</b>
F288801	DS05-11072006	11/07/2006	11:55
F288802	DS01-11072006	11/07/2006	12:05
F288803	SB02-11072006	11/07/2006	12:15
F288804	SB24-11072006	11/07/2006	12:30
F288805	DS11-11072006	11/07/2006	12:35
F288806	DS19-11072006	11/07/2006	12:50
F288807	DS20-11072006	11/07/2006	13:00
F288808	SB22-11072006	11/07/2006	13:20
F288809	SD23-11072006	11/07/2006	13:25
F288810	SB18-11072006	11/07/2006	13:30
F288811	SB16-11072006	11/07/2006	13:35
F288812	SB14-11072006	11/07/2006	13:45
F288813	SB4-11072006	11/07/2006	11:20
F288814	SB3-11072006	11/07/2006	11:40

**CASE NARRATIVE**  
**Semivolatile Organic Compounds by SW8270SIM**

**Lab Reference No.: F2888**

**Client/Project: NW Pipe**

- I. Holding Times:  
All acceptance criteria were met.
- II. Analysis:
- A. Calibration:  
All acceptance criteria were met.
- B. Method Blank(s):  
All acceptance criteria were met.
- C. Duplicate Sample(s):  
Analysis performed in accordance with standard operating procedure.
- D. Spike Sample(s):  
Analysis performed in accordance with standard operating procedure.
- E. Lab Control Sample(s):  
All acceptance criteria were met.
- F. Surrogate Recoveries:  
All acceptance criteria were met.
- G. Other:  
Not applicable.
- III. Documentation Exceptions:  
None.
- IV. I certify that this data package is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Prepared by:  Date: 14 Nov 2006

Reviewed by:  Date: 11-15-06

# CH2M HILL Applied Sciences Laboratory

<u>Client Information</u>	<u>Lab Information</u>
Client Sample ID: SB02-11072006	Lab Sample ID: F288803
Project Name: NW Pipe	Date Received: 11/08/06
Sample Date: 11/07/06	Dilution Factor: 1
Sample Time: 12:15	Report Revision No.: 0
Type: Grab	Reported By: JB
Matrix: Water	Reviewed By: <i>JBA</i>

Analyte	CAS#	MRL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
<b>GC/MS</b>							
Naphthalene	91-20-3	0.024	0.024	U	ug/L	SW8270SIM	11/08/06
Acenaphthylene	208-96-8	0.024	0.024	U	ug/L	SW8270SIM	11/08/06
Acenaphthene	83-32-9	0.024	0.024	U	ug/L	SW8270SIM	11/08/06
Fluorene	86-73-7	0.024	0.024	U	ug/L	SW8270SIM	11/08/06
Phenanthrene	85-01-8	0.024	0.25		ug/L	SW8270SIM	11/08/06
Anthracene	120-12-7	0.024	0.064		ug/L	SW8270SIM	11/08/06
Fluoranthene	206-44-0	0.024	0.71		ug/L	SW8270SIM	11/08/06
Pyrene	129-00-0	0.024	0.58		ug/L	SW8270SIM	11/08/06
Benzo(a)anthracene	56-55-3	0.024	0.22		ug/L	SW8270SIM	11/08/06
Chrysene	218-01-9	0.024	0.32		ug/L	SW8270SIM	11/08/06
Benzo(b)fluoranthene	205-99-2	0.024	0.49		ug/L	SW8270SIM	11/08/06
Benzo(k)fluoranthene	207-08-9	0.024	0.16		ug/L	SW8270SIM	11/08/06
Benzo(a)pyrene	50-32-8	0.024	0.22		ug/L	SW8270SIM	11/08/06
Indeno(1,2,3-c,d)pyrene	193-39-5	0.024	0.14		ug/L	SW8270SIM	11/08/06
Dibenzo(a,h)anthracene	53-70-3	0.024	0.028		ug/L	SW8270SIM	11/08/06
Benzo(g,h,i)perylene	191-24-2	0.024	0.17		ug/L	SW8270SIM	11/08/06

<u>Surrogate</u>	<u>% Recovery</u>	<u>Control Limits</u>	<u>Qualifier</u>
Terphenyl-d14	73	33-141	

U=Not detected at specified reporting limit  
 J=Estimated value below reporting limit  
 E=Estimated value above calibration range

# CH2M HILL Applied Sciences Laboratory

<u>Client Information</u>	<u>Lab Information</u>
Client Sample ID: SB22-11072006	Lab Sample ID: F288808
Project Name: NW Pipe	Date Received: 11/08/06
Sample Date: 11/07/06	Dilution Factor: 1
Sample Time: 13:20	Report Revision No.: 0
Type: Grab	Reported By: JB
Matrix: Water	Reviewed By: <i>JBH</i>

Analyte	CAS#	MRL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
<b>GC/MS</b>							
Naphthalene	91-20-3	0.025	0.025	U	ug/L	SW8270SIM	11/08/06
Acenaphthylene	208-96-8	0.025	0.025	U	ug/L	SW8270SIM	11/08/06
Acenaphthene	83-32-9	0.025	0.025	U	ug/L	SW8270SIM	11/08/06
Fluorene	86-73-7	0.025	0.025	U	ug/L	SW8270SIM	11/08/06
Phenanthrene	85-01-8	0.025	0.23		ug/L	SW8270SIM	11/08/06
Anthracene	120-12-7	0.025	0.085		ug/L	SW8270SIM	11/08/06
Fluoranthene	206-44-0	0.025	1.1		ug/L	SW8270SIM	11/08/06
Pyrene	129-00-0	0.025	1.0		ug/L	SW8270SIM	11/08/06
Benzo(a)anthracene	56-55-3	0.025	0.44		ug/L	SW8270SIM	11/08/06
Chrysene	218-01-9	0.025	0.82		ug/L	SW8270SIM	11/08/06
Benzo(b)fluoranthene	205-99-2	0.025	1.1		ug/L	SW8270SIM	11/08/06
Benzo(k)fluoranthene	207-08-9	0.025	0.35		ug/L	SW8270SIM	11/08/06
Benzo(a)pyrene	50-32-8	0.025	0.42		ug/L	SW8270SIM	11/08/06
Indeno(1,2,3-c,d)pyrene	193-39-5	0.025	0.30		ug/L	SW8270SIM	11/08/06
Dibenzo(a,h)anthracene	53-70-3	0.025	0.059		ug/L	SW8270SIM	11/08/06
Benzo(g,h,i)perylene	191-24-2	0.025	0.36		ug/L	SW8270SIM	11/08/06

<u>Surrogate</u>	<u>% Recovery</u>	<u>Control Limits</u>	<u>Qualifier</u>
Terphenyl-d14	77	33-141	

U=Not detected at specified reporting limit  
 J=Estimated value below reporting limit  
 E=Estimated value above calibration range

# CH2M HILL Applied Sciences Laboratory

<u>Client Information</u>	<u>Lab Information</u>
Client Sample ID: SB16-11072006	Lab Sample ID: F288811
Project Name: NW Pipe	Date Received: 11/08/06
Sample Date: 11/07/06	Dilution Factor: 1
Sample Time: 13:35	Report Revision No.: 0
Type: Grab	Reported By: JB
Matrix: Water	Reviewed By: <i>JBH</i>

Analyte	CAS#	MRL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
<b>GC/MS</b>							
Naphthalene	91-20-3	0.024	0.024	U	ug/L	SW8270SIM	11/08/06
Acenaphthylene	208-96-8	0.024	0.024	U	ug/L	SW8270SIM	11/08/06
Acenaphthene	83-32-9	0.024	0.024	U	ug/L	SW8270SIM	11/08/06
Fluorene	86-73-7	0.024	0.024	U	ug/L	SW8270SIM	11/08/06
Phenanthrene	85-01-8	0.024	0.16		ug/L	SW8270SIM	11/08/06
Anthracene	120-12-7	0.024	0.058		ug/L	SW8270SIM	11/08/06
Fluoranthene	206-44-0	0.024	0.44		ug/L	SW8270SIM	11/08/06
Pyrene	129-00-0	0.024	0.39		ug/L	SW8270SIM	11/08/06
Benzo(a)anthracene	56-55-3	0.024	0.19		ug/L	SW8270SIM	11/08/06
Chrysene	218-01-9	0.024	0.31		ug/L	SW8270SIM	11/08/06
Benzo(b)fluoranthene	205-99-2	0.024	0.43		ug/L	SW8270SIM	11/08/06
Benzo(k)fluoranthene	207-08-9	0.024	0.12		ug/L	SW8270SIM	11/08/06
Benzo(a)pyrene	50-32-8	0.024	0.19		ug/L	SW8270SIM	11/08/06
Indeno(1,2,3-c,d)pyrene	193-39-5	0.024	0.13		ug/L	SW8270SIM	11/08/06
Dibenzo(a,h)anthracene	53-70-3	0.024	0.027		ug/L	SW8270SIM	11/08/06
Benzo(g,h,i)perylene	191-24-2	0.024	0.18		ug/L	SW8270SIM	11/08/06

<u>Surrogate</u>	<u>% Recovery</u>	<u>Control Limits</u>	<u>Qualifier</u>
Terphenyl-d14	67	33-141	

U=Not detected at specified reporting limit  
 J=Estimated value below reporting limit  
 E=Estimated value above calibration range

# CH2M HILL Applied Sciences Laboratory

<u>Client Information</u>	<u>Lab Information</u>
Client Sample ID: SB14-11072006	Lab Sample ID: F288812
Project Name: NW Pipe	Date Received: 11/08/06
Sample Date: 11/07/06	Dilution Factor: 1
Sample Time: 13:45	Report Revision No.: 0
Type: Grab	Reported By: JB
Matrix: Water	Reviewed By: <i>JBA</i>

Analyte	CAS#	MRL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
<b>GC/MS</b>							
Naphthalene	91-20-3	0.024	0.025		ug/L	SW8270SIM	11/08/06
Acenaphthylene	208-96-8	0.024	0.024	U	ug/L	SW8270SIM	11/08/06
Acenaphthene	83-32-9	0.024	0.024		ug/L	SW8270SIM	11/08/06
Fluorene	86-73-7	0.024	0.033		ug/L	SW8270SIM	11/08/06
Phenanthrene	85-01-8	0.024	0.38		ug/L	SW8270SIM	11/08/06
Anthracene	120-12-7	0.024	0.099		ug/L	SW8270SIM	11/08/06
Fluoranthene	206-44-0	0.024	0.92		ug/L	SW8270SIM	11/08/06
Pyrene	129-00-0	0.024	0.81		ug/L	SW8270SIM	11/08/06
Benzo(a)anthracene	56-55-3	0.024	0.39		ug/L	SW8270SIM	11/08/06
Chrysene	218-01-9	0.024	0.45		ug/L	SW8270SIM	11/08/06
Benzo(b)fluoranthene	205-99-2	0.024	0.75		ug/L	SW8270SIM	11/08/06
Benzo(k)fluoranthene	207-08-9	0.024	0.24		ug/L	SW8270SIM	11/08/06
Benzo(a)pyrene	50-32-8	0.024	0.39		ug/L	SW8270SIM	11/08/06
Indeno(1,2,3-c,d)pyrene	193-39-5	0.024	0.24		ug/L	SW8270SIM	11/08/06
Dibenzo(a,h)anthracene	53-70-3	0.024	0.067		ug/L	SW8270SIM	11/08/06
Benzo(g,h,i)perylene	191-24-2	0.024	0.31		ug/L	SW8270SIM	11/08/06

<u>Surrogate</u>	<u>% Recovery</u>	<u>Control Limits</u>	<u>Qualifier</u>
Terphenyl-d14	75	33-141	

U=Not detected at specified reporting limit  
 J=Estimated value below reporting limit  
 E=Estimated value above calibration range

# CH2M HILL Applied Sciences Laboratory

## Client Information

Client Sample ID: SB4-11072006

Project Name: NW Pipe

Sample Date: 11/07/06

Sample Time: 11:20

Type: Grab

Matrix: Water

## Lab Information

Lab Sample ID: F288813

Date Received: 11/08/06

Dilution Factor: 1

Report Revision No.: 0

Reported By: JB

Reviewed By: JBT

Analyte	CAS#	MRL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
<b>GC/MS</b>							
Naphthalene	91-20-3	0.024	0.024	U	ug/L	SW8270SIM	11/08/06
Acenaphthylene	208-96-8	0.024	0.024	U	ug/L	SW8270SIM	11/08/06
Acenaphthene	83-32-9	0.024	0.060		ug/L	SW8270SIM	11/08/06
Fluorene	86-73-7	0.024	0.047		ug/L	SW8270SIM	11/08/06
Phenanthrene	85-01-8	0.024	0.17		ug/L	SW8270SIM	11/08/06
Anthracene	120-12-7	0.024	0.054		ug/L	SW8270SIM	11/08/06
Fluoranthene	206-44-0	0.024	0.25		ug/L	SW8270SIM	11/08/06
Pyrene	129-00-0	0.024	0.19		ug/L	SW8270SIM	11/08/06
Benzo(a)anthracene	56-55-3	0.024	0.073		ug/L	SW8270SIM	11/08/06
Chrysene	218-01-9	0.024	0.12		ug/L	SW8270SIM	11/08/06
Benzo(b)fluoranthene	205-99-2	0.024	0.15		ug/L	SW8270SIM	11/08/06
Benzo(k)fluoranthene	207-08-9	0.024	0.047		ug/L	SW8270SIM	11/08/06
Benzo(a)pyrene	50-32-8	0.024	0.068		ug/L	SW8270SIM	11/08/06
Indeno(1,2,3-c,d)pyrene	193-39-5	0.024	0.052		ug/L	SW8270SIM	11/08/06
Dibenzo(a,h)anthracene	53-70-3	0.024	0.024	U	ug/L	SW8270SIM	11/08/06
Benzo(g,h,i)perylene	191-24-2	0.024	0.070		ug/L	SW8270SIM	11/08/06

Surrogate	% Recovery	Control Limits	Qualifier
Terphenyl-d14	65	33-141	

U=Not detected at specified reporting limit  
 J=Estimated value below reporting limit  
 E=Estimated value above calibration range

# CH2M HILL Applied Sciences Laboratory

Client Information		Lab Information	
Client Sample ID: SB3-11072006		Lab Sample ID: F288814	
Project Name: NW Pipe		Date Received: 11/08/06	
Sample Date: 11/07/06		Dilution Factor: 1	
Sample Time: 11:40		Report Revision No.: 0	
Type: Grab		Reported By: JB	
Matrix: Water		Reviewed By: JBL	

Analyte	CAS#	MRL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
<b>GC/MS</b>							
Naphthalene	91-20-3	0.024	0.046		ug/L	SW8270SIM	11/08/06
Acenaphthylene	208-96-8	0.024	0.024	U	ug/L	SW8270SIM	11/08/06
Acenaphthene	83-32-9	0.024	0.092		ug/L	SW8270SIM	11/08/06
Fluorene	86-73-7	0.024	0.16		ug/L	SW8270SIM	11/08/06
Phenanthrene	85-01-8	0.024	1.4		ug/L	SW8270SIM	11/08/06
Anthracene	120-12-7	0.024	0.47		ug/L	SW8270SIM	11/08/06
Fluoranthene	206-44-0	0.024	2.7	E	ug/L	SW8270SIM	11/08/06
Pyrene	129-00-0	0.024	2.2	E	ug/L	SW8270SIM	11/08/06
Benzo(a)anthracene	56-55-3	0.024	1.1		ug/L	SW8270SIM	11/08/06
Chrysene	218-01-9	0.024	1.1		ug/L	SW8270SIM	11/08/06
Benzo(b)fluoranthene	205-99-2	0.024	1.7		ug/L	SW8270SIM	11/08/06
Benzo(k)fluoranthene	207-08-9	0.024	0.53		ug/L	SW8270SIM	11/08/06
Benzo(a)pyrene	50-32-8	0.024	0.89		ug/L	SW8270SIM	11/08/06
Indeno(1,2,3-c,d)pyrene	193-39-5	0.024	0.49		ug/L	SW8270SIM	11/08/06
Dibenzo(a,h)anthracene	53-70-3	0.024	0.12		ug/L	SW8270SIM	11/08/06
Benzo(g,h,i)perylene	191-24-2	0.024	0.61		ug/L	SW8270SIM	11/08/06

Surrogate	% Recovery	Control Limits	Qualifier
Terphenyl-d14	71	33-141	

U=Not detected at specified reporting limit  
 J=Estimated value below reporting limit  
 E=Estimated value above calibration range

# CH2M HILL Applied Sciences Laboratory

<u>Client Information</u>	<u>Lab Information</u>
Client Sample ID: SB3-11072006DL	Lab Sample ID: F288814DL
Project Name: NW Pipe	Date Received: 11/08/06
Sample Date: 11/07/06	Dilution Factor: 10
Sample Time: 11:40	Report Revision No.: 0
Type: Grab	Reported By: JB
Matrix: Water	Reviewed By: <i>JB</i>

Analyte	CAS#	MRL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
<b>GC/MS</b>							
Naphthalene	91-20-3	0.24	0.24	U	ug/L	SW8270SIM	11/09/06
Acenaphthylene	208-96-8	0.24	0.24	U	ug/L	SW8270SIM	11/09/06
Acenaphthene	83-32-9	0.24	0.24	U	ug/L	SW8270SIM	11/09/06
Fluorene	86-73-7	0.24	0.24	U	ug/L	SW8270SIM	11/09/06
Phenanthrene	85-01-8	0.24	1.3		ug/L	SW8270SIM	11/09/06
Anthracene	120-12-7	0.24	0.37		ug/L	SW8270SIM	11/09/06
Fluoranthene	206-44-0	0.24	2.7		ug/L	SW8270SIM	11/09/06
Pyrene	129-00-0	0.24	2.2		ug/L	SW8270SIM	11/09/06
Benzo(a)anthracene	56-55-3	0.24	0.97		ug/L	SW8270SIM	11/09/06
Chrysene	218-01-9	0.24	1.0		ug/L	SW8270SIM	11/09/06
Benzo(b)fluoranthene	205-99-2	0.24	1.5		ug/L	SW8270SIM	11/09/06
Benzo(k)fluoranthene	207-08-9	0.24	0.64		ug/L	SW8270SIM	11/09/06
Benzo(a)pyrene	50-32-8	0.24	0.79		ug/L	SW8270SIM	11/09/06
Indeno(1,2,3-c,d)pyrene	193-39-5	0.24	0.44		ug/L	SW8270SIM	11/09/06
Dibenzo(a,h)anthracene	53-70-3	0.24	0.24	U	ug/L	SW8270SIM	11/09/06
Benzo(g,h,i)perylene	191-24-2	0.24	0.55		ug/L	SW8270SIM	11/09/06

<u>Surrogate</u>	<u>% Recovery</u>	<u>Control Limits</u>	<u>Qualifier</u>
Terphenyl-d14	71	33-141	

U=Not detected at specified reporting limit  
 J=Estimated value below reporting limit  
 E=Estimated value above calibration range

# CH2M HILL Applied Sciences Laboratory

<u>Client Information</u>	<u>Lab Information</u>
Client Sample ID: WB1-1108	Lab Sample ID: WB1-1108
Project Name: NW Pipe	Date Received: N/A
Sample Date: N/A	Dilution Factor: 1
Sample Time: N/A	Report Revision No.: 0
Type: QC	Reported By: JB
Matrix: Water	Reviewed By: <i>JB</i>

Analyte	CAS#	MRL	Sample Result	Qualifier	Units	Analysis Method	Date Analyzed
<b>GC/MS</b>							
Naphthalene	91-20-3	0.025	0.025	U	ug/L	SW8270SIM	11/08/06
Acenaphthylene	208-96-8	0.025	0.025	U	ug/L	SW8270SIM	11/08/06
Acenaphthene	83-32-9	0.025	0.025	U	ug/L	SW8270SIM	11/08/06
Fluorene	86-73-7	0.025	0.025	U	ug/L	SW8270SIM	11/08/06
Phenanthrene	85-01-8	0.025	0.025	U	ug/L	SW8270SIM	11/08/06
Anthracene	120-12-7	0.025	0.025	U	ug/L	SW8270SIM	11/08/06
Fluoranthene	206-44-0	0.025	0.025	U	ug/L	SW8270SIM	11/08/06
Pyrene	129-00-0	0.025	0.025	U	ug/L	SW8270SIM	11/08/06
Benzo(a)anthracene	56-55-3	0.025	0.025	U	ug/L	SW8270SIM	11/08/06
Chrysene	218-01-9	0.025	0.025	U	ug/L	SW8270SIM	11/08/06
Benzo(b)fluoranthene	205-99-2	0.025	0.025	U	ug/L	SW8270SIM	11/08/06
Benzo(k)fluoranthene	207-08-9	0.025	0.025	U	ug/L	SW8270SIM	11/08/06
Benzo(a)pyrene	50-32-8	0.025	0.025	U	ug/L	SW8270SIM	11/08/06
Indeno(1,2,3-c,d)pyrene	193-39-5	0.025	0.025	U	ug/L	SW8270SIM	11/08/06
Dibenzo(a,h)anthracene	53-70-3	0.025	0.025	U	ug/L	SW8270SIM	11/08/06
Benzo(g,h,i)perylene	191-24-2	0.025	0.025	U	ug/L	SW8270SIM	11/08/06

<u>Surrogate</u>	<u>% Recovery</u>	<u>Control Limits</u>	<u>Qualifier</u>
Terphenyl-d14	75	33-141	

U=Not detected at specified reporting limit  
 J=Estimated value below reporting limit  
 E=Estimated value above calibration range

CASE NARRATIVE  
PCBs as AROCLORS

Lab Reference No.: F2888

Client/Project: NW Pipe

- I. Holding Times:  
All acceptance criteria were met.
- II. Analysis:
- A. Calibration:  
All acceptance criteria were met.
- B. Method Blank(s):  
All acceptance criteria were met.
- C. Duplicate Sample(s):  
Analysis performed in accordance with standard operating procedure.
- D. Spike Sample(s):  
Analysis was not performed due to limited sample volume.
- E. Lab Control Sample(s):  
All acceptance criteria were met.
- F. Surrogate Recoveries:  
All acceptance criteria were met.
- G. Other:  
Not applicable.
- III. Documentation Exceptions:  
None.
- IV. I certify that this data package is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Prepared by: Amber Taylor Date: 11/15/06

Reviewed by: [Signature] Date: 11/15/06

## ORGANICS ANALYSIS DATA SHEET

Field Sample ID:

**SB02-11072006**Lab Name: CH2M HILL/LAB/CVOContract #: 346755.06.03Lab Code: CVOCase No.: F2888SAS No.: F2888SDG No.: F2888Matrix: WATERLab Sample ID: F288803Sample Amt.: 1020 mlLab File ID: 004F0401.D% Moisture: 100Decanted: N/ADate Received: 11/08/06Extraction: SepFDate Extracted: 11/08/06Extract Vol.: 1 mlDate Analyzed: 11/10/06Injection Vol.: 3.0 ulDilution Factor: 1GPC Cleanup: NSulfur Cleanup: NConcentration Units: ug/L

CAS #	Analyte	MDL	PQL	Result	Confirm	Q
12674-11-2	PCB-1016	0.0029	0.049	0.049		U
11104-28-2	PCB-1221	0.017	0.049	0.049		U
11141-16-5	PCB-1232	0.012	0.049	0.049		U
53469-21-9	PCB-1242	0.0047	0.049	0.049		U
12672-29-6	PCB-1248	0.0034	0.049	0.049		U
11097-69-1	PCB-1254	0.0035	0.049	0.058	0.060	
11096-82-5	PCB-1260	0.0032	0.049	0.049		U

Surrogate	% Rec.	QC Limits	Qualifier
Tetrachloro-m-xylene	48	39-106	
Decachlorobiphenyl	61	36-101	

Comments:

---



---

## ORGANICS ANALYSIS DATA SHEET

Field Sample ID:

**SB22-11072006**Lab Name: CH2M HILL/LAB/CVOContract #: 346755.06.03Lab Code: CVOCase No.: F2888SAS No.: F2888SDG No.: F2888Matrix: WATERLab Sample ID: F288808Sample Amt.: 1052.6 mlLab File ID: 005F0501.D% Moisture: 100Decanted: N/ADate Received: 11/08/06Extraction: SepFDate Extracted: 11/08/06Extract Vol.: 1 mlDate Analyzed: 11/10/06Injection Vol.: 3.0 ulDilution Factor: 1GPC Cleanup: NSulfur Cleanup: NConcentration Units: ug/L

CAS #	Analyte	MDL	PQL	Result	Confirm	Q
12674-11-2	PCB-1016	0.0029	0.048	0.048		U
11104-28-2	PCB-1221	0.016	0.048	0.048		U
11141-16-5	PCB-1232	0.011	0.048	0.048		U
53469-21-9	PCB-1242	0.0046	0.048	0.048		U
12672-29-6	PCB-1248	0.0033	0.048	0.048		U
11097-69-1	PCB-1254	0.0034	0.048	0.048		U
11096-82-5	PCB-1260	0.0031	0.048	0.048		U

Surrogate	% Rec.	QC Limits	Qualifier
Tetrachloro-m-xylene	67	39-106	
Decachlorobiphenyl	85	36-101	

Comments:

---



---

1A  
ORGANICS ANALYSIS DATA SHEET

Field Sample ID:

**SB16-11072006**

Lab Name: CH2M HILL/LAB/CVO Contract #: 346755.06.03  
 Lab Code: CVO Case No.: F2888 SAS No.: F2888  
 Matrix: WATER  
 Sample Amt.: 1018.2 ml  
 % Moisture: 100 Decanted: N/A  
 Extraction: SepF  
 Extract Vol.: 1 ml  
 Injection Vol.: 3.0 ul  
 GPC Cleanup: N

SDG No.: F2888  
 Lab Sample ID: F288811  
 Lab File ID: 006F0601.D  
 Date Received: 11/08/06  
 Date Extracted: 11/08/06  
 Date Analyzed: 11/10/06  
 Dilution Factor: 1  
 Sulfur Cleanup: N

Concentration Units: ug/L

CAS #	Analyte	MDL	PQL	Result	Confirm	Q
12674-11-2	PCB-1016	0.0029	0.049	0.049		U
11104-28-2	PCB-1221	0.017	0.049	0.049		U
11141-16-5	PCB-1232	0.012	0.049	0.049		U
53469-21-9	PCB-1242	0.0047	0.049	0.049		U
12672-29-6	PCB-1248	0.0034	0.049	0.049		U
11097-69-1	PCB-1254	0.0035	0.049	0.054	0.060	
11096-82-5	PCB-1260	0.0032	0.049	0.049		U

Surrogate	% Rec.	QC Limits	Qualifier
Tetrachloro-m-xylene	54	39-106	
Decachlorobiphenyl	67	36-101	

Comments:

---



---

## ORGANICS ANALYSIS DATA SHEET

Field Sample ID:

**SB14-11072006**Lab Name: CH2M HILL/LAB/CVOContract #: 346755.06.03Lab Code: CVOCase No.: F2888SAS No.: F2888SDG No.: F2888Matrix: WATERLab Sample ID: F288812Sample Amt.: 1032.1 mlLab File ID: 007F0701.D% Moisture: 100Decanted: N/ADate Received: 11/08/06Extraction: SepFDate Extracted: 11/08/06Extract Vol.: 1 mlDate Analyzed: 11/10/06Injection Vol.: 3.0 ulDilution Factor: 1GPC Cleanup: NSulfur Cleanup: NConcentration Units: ug/L

CAS #	Analyte	MDL	PQL	Result	Confirm	Q
12674-11-2	PCB-1016	0.0029	0.048	0.048		U
11104-28-2	PCB-1221	0.016	0.048	0.048		U
11141-16-5	PCB-1232	0.012	0.048	0.048		U
53469-21-9	PCB-1242	0.0047	0.048	0.048		U
12672-29-6	PCB-1248	0.0034	0.048	0.048		U
11097-69-1	PCB-1254	0.0035	0.048	0.085	0.094	
11096-82-5	PCB-1260	0.0032	0.048	0.048		U

Surrogate	% Rec.	QC Limits	Qualifier
Tetrachloro-m-xylene	71	39-106	
Decachlorobiphenyl	88	36-101	

Comments:

---



---

## ORGANICS ANALYSIS DATA SHEET

Field Sample ID:

SB4-11072006

Lab Name: CH2M HILL/LAB/CVOContract #: 346755.06.03Lab Code: CVOCase No.: F2888SAS No.: F2888SDG No.: F2888Matrix: WATERLab Sample ID: F288813Sample Amt.: 1037.3 mlLab File ID: 008F0801.D% Moisture: 100Decanted: N/ADate Received: 11/08/06Extraction: SepFDate Extracted: 11/08/06Extract Vol.: 1 mlDate Analyzed: 11/10/06Injection Vol.: 3.0 ulDilution Factor: 1GPC Cleanup: NSulfur Cleanup: NConcentration Units: ug/L

CAS #	Analyte	MDL	PQL	Result	Confirm	Q
12674-11-2	PCB-1016	0.0029	0.048	0.048		U
11104-28-2	PCB-1221	0.016	0.048	0.048		U
11141-16-5	PCB-1232	0.012	0.048	0.048		U
53469-21-9	PCB-1242	0.0046	0.048	0.048		U
12672-29-6	PCB-1248	0.0034	0.048	0.048		U
11097-69-1	PCB-1254	0.0035	0.048	0.048		U
11096-82-5	PCB-1260	0.0032	0.048	0.048		U

Surrogate	% Rec.	QC Limits	Qualifier
Tetrachloro-m-xylene	62	39-106	
Decachlorobiphenyl	74	36-101	

Comments:

---



---

## ORGANICS ANALYSIS DATA SHEET

Field Sample ID:

SB3-11072006

Lab Name: CH2M HILL/LAB/CVOContract #: 346755.06.03Lab Code: CVOCase No.: F2888SAS No.: F2888SDG No.: F2888Matrix: WATERLab Sample ID: F288814Sample Amt.: 1056.2 mlLab File ID: 009F0901.D% Moisture: 100Decanted: N/ADate Received: 11/08/06Extraction: SepFDate Extracted: 11/08/06Extract Vol.: 1 mlDate Analyzed: 11/10/06Injection Vol.: 3.0 ulDilution Factor: 1GPC Cleanup: NSulfur Cleanup: NConcentration Units: ug/L

CAS #	Analyte	MDL	PQL	Result	Confirm	Q
12674-11-2	PCB-1016	0.0028	0.047	0.047		U
11104-28-2	PCB-1221	0.016	0.047	0.047		U
11141-16-5	PCB-1232	0.011	0.047	0.047		U
53469-21-9	PCB-1242	0.0045	0.047	0.047		U
12672-29-6	PCB-1248	0.0033	0.047	0.047		U
11097-69-1	PCB-1254	0.0034	0.047	0.17	0.16	
11096-82-5	PCB-1260	0.0031	0.047	0.047		U

Surrogate	% Rec.	QC Limits	Qualifier
Tetrachloro-m-xylene	69	39-106	
Decachlorobiphenyl	84	36-101	

Comments:

---



---

## ORGANICS ANALYSIS DATA SHEET

Field Sample ID:

**WB3-1108**Lab Name: CH2M HILL/LAB/CVOContract #: 346755.06.03Lab Code: CVOCase No.: F2888SAS No.: F2888SDG No.: F2888Matrix: WATERLab Sample ID: WB3-1108Sample Amt.: 1000 mlLab File ID: 003F0301.D% Moisture: 100Decanted: N/ADate Received: N/AExtraction: SepFDate Extracted: 11/08/06Extract Vol.: 1 mlDate Analyzed: 11/10/06Injection Vol.: 3.0 ulDilution Factor: 1GPC Cleanup: NSulfur Cleanup: NConcentration Units: ug/L

CAS #	Analyte	MDL	PQL	Result	Confirm	Q
12674-11-2	PCB-1016	0.0030	0.050	0.050		U
11104-28-2	PCB-1221	0.017	0.050	0.050		U
11141-16-5	PCB-1232	0.012	0.050	0.050		U
53469-21-9	PCB-1242	0.0048	0.050	0.050		U
12672-29-6	PCB-1248	0.0035	0.050	0.050		U
11097-69-1	PCB-1254	0.0036	0.050	0.050		U
11096-82-5	PCB-1260	0.0033	0.050	0.050		U

Surrogate	% Rec.	QC Limits	Qualifier
Tetrachloro-m-xylene	61	39-106	
Decachlorobiphenyl	71	36-101	

Comments:

---



---



MDL Replicate Information

Method: SW8082      Extraction Method: SW3510      Matrix: WATER      Units: UG/L      Instrument: GCH      Mass/Vol: 1000      Ext Vol: 1

Comment:

CAS_NO	PARAMETER	MDL Date	MDL	R1	R2	R3	R4	R5	R6	R7	R8	Mean	Std.Dev.	Spike Lev.
12674-11-2	Aroclor-1016	02/07/2006	0.0030	0.00809	0.0089	0.00869	0.01021	0.00947	0.00751	0.00833	0.00715	0.0085	0.001003	0.01
11104-28-2	Aroclor-1221	02/07/2006	0.017	0.01402	0.03168	0.01744	0.0167	0.02075	0.01406	0.02035	0.01802	0.019	0.00565	0.02
11141-16-5	Aroclor-1232	02/07/2006	0.012	0.01727	0.02728	0.01973	0.02171	0.01947	0.02548	0.02827	0.01953	0.022	0.004114	0.02
53469-21-9	Aroclor-1242	02/07/2006	0.0048	0.00724	0.00471	0.00678	0.00914	0.00727	0.00881	0.00845		0.0075	0.001513	0.01
12672-29-6	Aroclor-1248	02/07/2006	0.0035	0.0056	0.00917	0.00757	0.00604	0.00804	0.00635	0.00717	0.00643	0.0070	0.001181	0.01
11097-69-1	Aroclor-1254	02/07/2006	0.0036	0.00852	0.00864	0.01015	0.00861	0.00953	0.00917	0.01163	0.0112	0.0097	0.001206	0.01
11096-82-5	Aroclor-1260	02/07/2006	0.0033	0.007	0.00815	0.00689	0.00923	0.00876	0.00631	0.00796	0.00627	0.0076	0.001116	0.01
37324-23-5	Aroclor-1262	02/07/2006	0.0045	0.00921	0.00956	0.01015	0.00976	0.00616	0.00729	0.00827	0.00683	0.0084	0.001495	0.01
11100-14-4	Aroclor-1268	02/07/2006	0.0098	0.02044	0.02333	0.02021	0.023	0.01875	0.02799	0.02381	0.01795	0.022	0.003262	0.02

CASE NARRATIVE  
METALS

Lab Reference No.: F2888

Client/Project: NW Pipe

- I. Holding Time:  
All acceptance criteria were met.
- II. Digestion Exceptions:  
None.
- III. Analysis:
- A. Calibration:  
All acceptance criteria were met.
- B. Method Blank(s):  
All acceptance criteria were met.
- C. Duplicate Sample(s):  
All acceptance criteria were met.
- D. Spike Sample(s):  
All acceptance criteria were met.
- E. Laboratory Control Sample(s):  
All acceptance criteria were met.
- F. ICP Interference Check Sample(s):  
All acceptance criteria were met.
- G. ICP Serial Dilution(s):  
Not required.
- H. Other:  
All acceptance criteria were met.
- IV. Documentation Exceptions:  
None.
- V. I certify that this data package is in compliance with the terms and conditions agreed to by the client and CH2M HILL, both technically and for completeness, except for the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Prepared by: Judy J Date: 11-9-06

Reviewed by: JPP Date: 9 Nov 2006

# CH2M HILL Applied Sciences Laboratory

<u>Client Information</u>	<u>Lab Information</u>
Project Name: NW Pipe	Lab Batch ID: F2888
Date Received: 11/08/06	Analysis Method: E200.7
Type: See C.O.C.	Units: ug/L
Matrix: Water	Report Revision No.: 0
	Reported By: JG
	Reviewed By: [Signature]

Client Sample ID	Lab Sample ID	Dilution Factor	MRL	Zinc Result	Qualifier	Date Analyzed
<b>Metals</b>						
DS05-11072006	F288801	1	20.0	434		11/08/06
DS01-11072006	F288802	1	20.0	85.7		11/08/06
SB02-11072006	F288803	1	20.0	997		11/08/06
SB24-11072006	F288804	1	20.0	848		11/08/06
DS11-11072006	F288805	1	20.0	2910		11/08/06
DS19-11072006	F288806	1	20.0	3190		11/08/06
DS20-11072006	F288807	1	20.0	3030		11/08/06
SB22-11072006	F288808	1	20.0	536		11/08/06
SD23-11072006	F288809	10	200	592		11/08/06
SB18-11072006	F288810	10	200	3830		11/08/06
SB16-11072006	F288811	1	20.0	72.9		11/08/06
SB14-11072006	F288812	1	20.0	98.9		11/08/06
WB1-1108	WB1-1108	1	20.0	20.0	U	11/08/06

U=Not detected at specified reporting limit  
 J=Estimated value below reporting limit  
 E=Estimated value above calibration range

# CH2M HILL Applied Sciences Laboratory

<u>Client Information</u>	<u>Lab Information</u>
Project Name: NW Pipe	Lab Batch ID: F2888
Date Received: 11/08/06	Analysis Method: E200.7
Type: See C.O.C.	Units: ug/L
Matrix: Water	Report Revision No.: 0
	Reported By: JG
	Reviewed By: JG

Client Sample ID	Lab Sample ID	Dilution Factor	MRL	Copper Result	Qualifier	Date Analyzed
<b>Metals</b>						
DS05-11072006	F288801	1	10.0	10.0	U	11/08/06
DS01-11072006	F288802	1	10.0	10.0	U	11/08/06
SB02-11072006	F288803	1	10.0	11.6		11/08/06
SB24-11072006	F288804	1	10.0	11.3		11/08/06
DS11-11072006	F288805	1	10.0	10.0	U	11/08/06
DS19-11072006	F288806	1	10.0	10.0	U	11/08/06
DS20-11072006	F288807	1	10.0	10.0	U	11/08/06
SB22-11072006	F288808	1	10.0	10.0	U	11/08/06
SD23-11072006	F288809	10	100	100	U	11/08/06
SB18-11072006	F288810	10	100	178		11/08/06
SB16-11072006	F288811	1	10.0	12.6		11/08/06
SB14-11072006	F288812	1	10.0	16.3		11/08/06
WB1-1108	WB1-1108	1	10.0	10.0	U	11/08/06

U=Not detected at specified reporting limit  
 J=Estimated value below reporting limit  
 E=Estimated value above calibration range

**CH2M Hill** Applied Sciences Lab  
 CHAIN OF CUSTODY RECORD  
 AND AGREEMENT TO PERFORM SERVICES

CV0 2300 NW Walnut Boulevard  
 Corvallis, OR 97330-3538  
 (541) 752-4271 FAX (541) 752-0276

COC #

Project #		Purchase Order #		Requested Analytical Method #		THIS AREA FOR LAB USE ONLY	
346755.06.03						Lab #	Page of
Project Name		Phone No:		PCBs SW 5652		F2888	1 2
Company Name		Report to: Ron Healy/PDX P.T Heins/PDX Edna/Tina Rice/PDX		Metals * SW Cd/Cr/B			
Requested Completion Date:		Sample Disposal:		Preservative		EPA Tier QC Level	
Metals - 24 hr TAT		Dispose <input type="checkbox"/> Return <input type="checkbox"/>				1 (Screening) 2 3 4	
all others - standard TAT		CLIENT SAMPLE ID (8 CHARACTERS)		LAB QC		Alternate Description	
Type Matrix		C O M P O S I T I O N		LAB QC		Lab ID	
S A M P L I N G		O T H E R		LAB QC		Lab ID	
Date	Time	Matrix	Other	LAB QC	LAB QC	Lab ID	
X 11/7/06	1155	X		D505-11072006		X	1
X 11/7/06	1205	X		D501-11072006		X	2
X 11/7/06	1215	X		S802-11072006		X	3
X 11/7/06	1230	X		S824-11072006		X	4
X 11/7/06	1235	X		D511-11072006		X	5
X 11/7/06	1250	X		D517-11072006		X	6
X 11/7/06	1300	X		D520-11072006		X	7
X 11/7/06	1320	X		S822-11072006		X	8
X 11/7/06	1325	X		S823-11072006		X	9
X 11/7/06	1330	X		S818-11072006		X	10
X 11/7/06	1335	X		S816-11072006		X	11
Relinquished By		Date/Time		Received By		Date/Time	
Sampled By and Title		Date/Time		Relinquished By		Date/Time	
Received By		Date/Time		Relinquished By		Date/Time	
Received By		Date/Time		Shipped Via		Shipping #	
Special Instructions:		Metals: Zinc, Copper - 24 hr TAT		UPS			





## Sample Receipt Record

Batch Number: F2888

Date received: 11-8-06

Client/Project: NW Pipe

**VERIFICATION OF SAMPLE CONDITIONS** (verify all items) \* HD = Client Hand delivered Samples

Observation	YES	NO
Radiological Screening for AFCEE		+
Were custody seals intact and on the outside of the cooler?	X	
If yes, Where? Front <u>X</u> Rear <u>X</u> Lt Side _____ Rt Side _____		
Type of packing material: <u>Ice</u> Blue Ice <u>Bubble wrap</u>		
Was the Chain of Custody inside the cooler?	X	
Was the Chain of Custody properly filled out?	X	
Were the sample containers in good condition?	X	
Containers supplied by ASL?		+
Any sample with < 1/2 holding time remaining? If so contact LPM		+
Was there ice in the cooler? Enter temp. <u>0.8, 1.2</u> C	+	
All VOCs free of air bubbles?		NA

**VERIFICATION OF SAMPLE PRESERVATION**

Sample No	Nutrients pH <2	Metals pH <2	Volatiles pH <2	Cyanides pH >12	TOC pH <2	TOX pH <2	Other (specify)	N/A (soils/unpres)
1		<2						
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								

LOGIN AND pH VERIFICATIONS PERFORMED BY

Daisy Hubbard 11-8-06 10:15

Date/Time

Date/Time



## Sample Receipt Exception Report

Sample Batch Number: F2888

Client /Project: NW Pipe

The following exceptions were noted:

	Comments (write number of exception description and the impacted sample numbers)
1. No custody seal as required by project	<p>11) COC indicates metals should be analyzed by SW6010B but stormwater should be analyzed by EPA 200.7.</p>
2. No chain-of-custody provided	
3. Analysis, description, date of collection not provided	
4. Samples broken or leaking on receipt.	
5. Temperature of samples inappropriate for analysis requested	
6. Container inappropriate for analysis requested	
7. Inadequate sample volume.	
8. Preservation inappropriate for analysis requested	
9. Samples received out of holding time for analysis requested	
10. Discrepancies between COC form and container labels.	
<p>X 11. Other.</p>	

**ACTION TAKEN:** 11) Per client - analyze by EPA 200.7, Only zinc has 24 hour TAT - Cu is standard TAT.

Originator: Daisy Hubbard

Date: 11-8-06

Client was notified on:

Client Contact:

(Date/Time)

11/8/06 12:00

Pat Heins / PDX