

## **DATA DELIVERABLES PACKAGE**

**CH2M-Hill  
Pat Heins  
2020 SW 4<sup>th</sup>, Suite 300  
Portland, OR 97201**

**Client Project: NW Pipe Project  
Client Project Number: NW Pipe Project  
Laboratory Work Order #: PSJ0657  
Project Manager: Darrell Auvil**

The total number of pages contained in this data package is:

**475**

**November 20, 2009**

Prepared by: Doug McKenzie  
**TestAmerica, Inc.**  
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(503) 906-9210

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PSJ0657

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## CASE NARRATIVE

**Client:** CH2M-Hill **Date Sampled:** 10/19/2009  
**Project:** NW Pipe Project **Date Received:** 10/19/2009  
NW Pipe Project  
**Lab:** PSJ0657

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**SAMPLE RECEIPT:** Samples were received intact, on ice, with chain of custody documentation. The sample temperature was measured at 11.6 °C upon receipt at the laboratory.

The temperature of the sample cooler upon receipt was outside of the 2.0 → 6.0 °C temperature range. Insufficient coolant may have been provided to keep the temperature within the required range.

**HOLDING TIMES:** All samples were analyzed within holding times.

**PROBLEMS ENCOUNTERED:** No problems were encountered.

**QA/QC CRITERIA:** The Calibration Verification recovery for Endrin aldehyde was above the method control limit for EPA 8081A sample PSJ0657-01. The specified analyte was not detected in the sample; therefore, the data was not impacted.

The Calibration Verification recovery for Methoxychlor was above the method control limit for EPA 8081A samples PSJ0657-02, PSJ0657-03, PSJ0657-04, PSJ0657-05, PSJ0657-06, PSJ0657-07, PSJ0657-09, and PSJ0657-12, and PSJ0657-13. The specified analyte was not detected in the sample; therefore, the data was not impacted.

EPA 8081A samples PSJ0657-12 and PSJ0657-13 required a dilution due to the nature of the sample matrix. Because of this dilution, the surrogate (2,4,5,6-Tetrachloro-m-xylene) spike concentration in the samples was reduced to a level where the recovery calculation does not provide useful information.

The 4,4'-DDT Endrin recovery for EPA 8081A samples 9100740-MS1 and 9100740-MSD1 was above the acceptance limits due to sample matrix interference. See Blank Spike (LCS).

Continued...

## CASE NARRATIVE

**Client:** CH2M-Hill **Date Sampled:** 10/19/2009  
**Project:** NW Pipe Project **Date Received:** 10/19/2009  
NW Pipe Project  
**Lab:** PSJ0657

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EPA 8082 samples PSJ0657-03, PSJ0657-07, PSJ0657-10, PSJ0657-12, and PSJ0657-13 required a dilution due to the nature of the sample matrix. Because of this dilution, the surrogate (Decachlorobiphenyl) spike concentration in the samples was reduced to a level where the recovery calculation does not provide useful information.

Due to high levels of Benzo (a) pyrene and Pyrene in the source, EPA 8270m (PAH) sample 9101141-MSD1 does not provide useful spike recovery information. See Blank Spike (LCS).

EPA 8270m (PAH) samples PSJ0657-12RE1 PSJ0657-13RE1 required a dilution due to the nature of the sample matrix. Because of this dilution, the surrogate (Fluorene-d10, Pyrene-d10, and Benzo (a) pyrene-d12) spike concentrations in the samples were reduced to a level where the recovery calculation does not provide useful information.

Due to sample matrix effects, the surrogate (p-Terphenyl-d14) recovery for EPA 8270m (Phthalates) samples PSJ0657-02RE1 and PSJ0657-12RE1 was outside the acceptance limits.

EPA 8270m (Phthalates) samples PSJ0657-03, PSJ0657-05, PSJ0657-10, PSJ0657-11, PSJ0657-12, PSJ0657-13, PSJ0657-13RE1 required a dilution due to the nature of the sample matrix. Because of this dilution, the surrogate (2-Fluorobiphenyl and p-Terphenyl-d14) spike concentrations in the sample were reduced to a level where the recovery calculation does not provide useful information.

The Bis(2-ethylhexyl)phthalate and Di-n-octyl phthalate recovery for EPA 8270m (Phthalates) sample 9100711-MSD1 was above the acceptance limits. See Blank Spike (LCS).

The Bis(2-ethylhexyl)phthalate and Di-n-octyl phthalate RPD calculated between EPA 8270m (Phthalates) samples 9100711-MS1 and 9100711-MSD1 exceeded the acceptance limit.

The Antimony recovery for EPA 6010B sample 9100713-MS1 and 9100713-MSD1 was below the acceptance limits. See Blank Spike (LCS).

Continued...

## CASE NARRATIVE

**Client:** CH2M-Hill **Date Sampled:** 10/19/2009  
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**Lab:** PSJ0657

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Due to high levels of Aluminum and Chromium in the source, EPA 6010B samples 9100713-MS1 and 9100713-MSD1 do not provide useful spike recovery information. See Blank Spike (LCS).

Due to the low levels of Mercury in EPA 7471A sample 9100923-DUP1, the duplicate RPD calculation does not provide useful information.

**OBSERVATIONS:** Results that fall between the Method Detection Limit (MDL) and Method Reporting Limit (MRL) are estimated values and are 'J' flagged. The user should be aware that this data is of limited reliability.

The reporting limit was raised for EPA 8081A samples PSJ0657-01, PSJ0657-02, PSJ0657-03, PSJ0657-04, PSJ0657-05, PSJ0657-06, PSJ0657-07, PSJ0657-08, PSJ0657-09, PSJ0657-10, PSJ0657-11, PSJ0657-12, and PSJ0657-13 due to high concentrations of non-target analytes.

The 4,4'-DDT reporting limit for EPA 8081A sample PSJ0657-01 was raised due to sample matrix effects.

The 4,4'-DDE, 4,4'-DDT, and gamma-Chlordane reporting limit for EPA 8081A sample PSJ0657-02 was raised due to sample matrix effects.

The 4,4'-DDE, 4,4'-DDT, Dieldrin, and Methoxychlor reporting limit for EPA 8081A sample PSJ0657-03 was raised due to sample matrix effects.

The 4,4'-DDE, 4,4'-DDT, and Dieldrin reporting limit for EPA 8081A sample PSJ0657-04 was raised due to sample matrix effects.

The 4,4'-DDE, 4,4'-DDT, Dieldrin, Endrin ketone, and Methoxychlor reporting limit for EPA 8081A sample PSJ0657-05 and PSJ0657-06 was raised due to sample matrix effects.

The 4,4'-DDE, 4,4'-DDT, gamma-Chlordane, and Methoxychlor reporting limit for EPA 8081A sample PSJ0657-07 was raised due to sample matrix effects.

Continued...

## CASE NARRATIVE

**Client:** CH2M-Hill  
**Project:** NW Pipe Project  
NW Pipe Project  
**Lab:** PSJ0657

**Date Sampled:** 10/19/2009  
**Date Received:** 10/19/2009

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EPA 8081A sample PSJ0657-08 was analyzed at a 5x dilution on 10/29/09, designated 'RE1', and reported for 4,4'-DDT only, due to the concentration for all remaining target analytes being below the MRL. The specified sample was re-analyzed at a 2x dilution on 10/30/09 and reported for all remaining target analytes.

The Dieldrin and Methoxychlor reporting limit for EPA 8081A sample PSJ0657-08 was raised due to sample matrix effects.

The 4,4'-DDT reporting limit for EPA 8081A sample PSJ0657-08RE1 was raised due to sample matrix effects.

The 4,4'-DDT reporting limit for EPA 8081A sample PSJ0657-09 was raised due to sample matrix effects.

EPA 8081A sample PSJ0657-10 was analyzed at a 10x dilution on 10/29/09, and reported for all target analytes except 4,4'-DDT and Methoxychlor, due to the concentration for the specified analytes exceeding the calibration range of the instrument. The specified sample was re-analyzed at a 100x dilution on 10/30/09, designated 'RE1', and reported for 4,4'-DDT and Methoxychlor.

The 4,4'-DDE, alpha-Chlordane, Dieldrin, Endosulfan I, Endosulfan II, Endrin, Endrin aldehyde, Endrin ketone, gamma-Chlordane, and Heptachlor epoxide reporting limit for EPA 8081A sample PSJ0657-10 was raised due to sample matrix effects.

The 4,4'-DDT and Methoxychlor reporting limit for EPA 8081A sample PSJ0657-10RE1 was raised due to sample matrix effects.

EPA 8081A sample PSJ0657-11 was analyzed at a 10x dilution on 10/29/09, designated 'RE1', and reported for 4,4'-DDT only, due to the concentration for all remaining target analytes being below the MRL. The specified sample was re-analyzed at a 5x dilution on 10/30/09 and reported for all remaining target analytes.

The Dieldrin reporting limit for EPA 8081A sample PSJ0657-11 was raised due to sample matrix effects.

Continued...

## CASE NARRATIVE

**Client:** CH2M-Hill **Date Sampled:** 10/19/2009  
**Project:** NW Pipe Project **Date Received:** 10/19/2009  
NW Pipe Project  
**Lab:** PSJ0657

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The 4,4'-DDT reporting limit for EPA 8081A sample PSJ0657-11RE1 was raised due to sample matrix effects.

The 4,4'-DDE, 4,4'-DDT, Dieldrin, Endrin ketone, and Methoxychlor reporting limit for EPA 8081A sample PSJ0657-12 was raised due to sample matrix effects.

The 4,4'-DDE, 4,4'-DDT, beta-BHC, Dieldrin, Endrin aldehyde, Endrin ketone, gamma-Chlordane, and Methoxychlor reporting limit for EPA 8081A sample PSJ0657-13 was raised due to sample matrix effects.

EPA 8082 samples PSJ0657-01,, PSJ0657-02, PSJ0657-03, PSJ0657-04, PSJ0657-05, PSJ0657-06, PSJ0657-07, PSJ0657-08, PSJ0657-09, PSJ0657-10, PSJ0657-11, PSJ0657-12, PSJ0657-13 required dilution due to high concentrations of target analyte.

EPA 8270m (PAH) samples PSJ0657-05, PSJ0657-06, and PSJ0657-13 required dilution due to high concentrations of target analyte.

EPA 8270m (PAH) sample PSJ0657-04 was analyzed on 10/22/09 at 00:17 and reported for Acenaphthene, Acenaphthylene, Fluorene, and Naphthalene only due to the concentrations for all remaining target analytes exceeding the calibration range of the instrument. The specified sample was re-analyzed at a 10x dilution on 10/22/09 at 19:19, designated 'RE1', and reported for all remaining target analytes. Surrogate (Fluorene-d10, Pyrene-d10, and Benzo (a) pyrene-d12) recoveries were reported from both analyses.

EPA 8270m (PAH) sample PSJ0657-07 was analyzed on 10/22/09 at 20:18 and reported for Acenaphthene, Acenaphthylene, Anthracene, Fluoranthene, Fluorene, Naphthalene, and Phenanthrene only due to the concentrations for all remaining target analytes exceeding the calibration range of the instrument. The specified sample was re-analyzed at a 3x dilution on 10/26/09 at 12:07, designated 'RE1', and reported for all remaining target analytes. Surrogate (Fluorene-d10, Pyrene-d10, and Benzo (a) pyrene-d12) recoveries were reported from both analyses.

The Anthracene, Benzo (a) pyrene, and Dibenzo (a,h) anthracene reporting limit for EPA 8270m (PAH) sample PSJ0657-07RE1 was raised due to sample matrix effects.

## CASE NARRATIVE

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NW Pipe Project  
**Lab:** PSJ0657

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EPA 8270m (PAH) sample PSJ0657-12 was analyzed at a 10x dilution on 10/22/09 at 21:46 and reported for Acenaphthene, Acenaphthylene, Fluorene, Naphthalene and surrogate (Fluorene-d10) only due to the concentrations for all remaining target analytes exceeding the calibration range of the instrument. The specified sample was re-analyzed at a 250x dilution on 10/26/09 at 11:07, designated 'RE1', and reported for all remaining target analytes and surrogates Fluorene-d10, Pyrene-d10, and Benzo (a) pyrene-d12.

EPA 8270m (PAH) sample PSJ0657-13 was analyzed at a 10x dilution on 10/22/09 at 22:16 and reported for Acenaphthene, Acenaphthylene, Fluorene, Naphthalene and surrogate (Fluorene-d10) only due to the concentrations for all remaining target analytes exceeding the calibration range of the instrument. The specified sample was re-analyzed at a 200x dilution on 10/26/09 at 11:37, designated 'RE1', and reported for all remaining target analytes and surrogates Fluorene-d10, Pyrene-d10, and Benzo (a) pyrene-d12.

EPA 8270m (Phthalates) samples PSJ0657-02, PSJ0657-03, PSJ0657-04, PSJ0657-05, PSJ0657-08, PSJ0657-09, PSJ0657-10, PSJ0657-11, PSJ0657-12, and PSJ0657-13 were analyzed at a dilution on 10/21→22/09 and reported for Di-n-octyl phthalate only due to the concentrations for all remaining target analytes being below the MRL. The specified samples were re-analyzed at a lower dilution on 10/23→24/09, designated 'RE1', and reported for all remaining target analytes. Surrogate (2-Fluorobiphenyl and p-Terphenyl-d14) recoveries were reported for both analyses.

The Di-n-octyl phthalate reporting limit for EPA 8270m (Phthalates) samples PSJ0657-02, PSJ0657-03, PSJ0657-04, PSJ0657-05, PSJ0657-08, PSJ0657-09, PSJ0657-10, PSJ0657-11, PSJ0657-12, and PSJ0657-13 was raised due to sample matrix effects.

The reporting limit was raised for EPA 8270m (Phthalates) samples PSJ0657-02RE1, PSJ0657-04RE1, PSJ0657-05RE1, PSJ0657-06, PSJ0657-07, PSJ0657-10RE1, PSJ0657-12RE1, and PSJ0657-13RE1 due to high concentrations of non-target analytes.

## CASE NARRATIVE

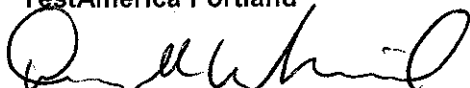
<b>Client:</b>	CH2M-Hill	<b>Date Sampled:</b>	10/19/2009
<b>Project:</b>	NW Pipe Project NW Pipe Project	<b>Date Received:</b>	10/19/2009
<b>Lab:</b>	PSJ0657		

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**SUBCONTRACTED:** EPA 9060 (Total Organic Carbon) analysis was performed at the TestAmerica facility in Tacoma, WA. The data package for the specified analysis is included in this data deliverables package as Appendix A.

*"I certify that this data package is in compliance with the contract both technically and for completeness, for all conditions other than the conditions detailed above. Release of the data contained in this data package has been authorized by the Laboratory Director or his designee, as verified by the following signature."*

**TestAmerica Portland**



Darrell Auvil  
Project Manager

## Sample Receipt Documentation

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

11720 North Creek Pkwy N Suite 400, Bothell, WA 98011-8244  
 11922 E. First Ave. Spokane, WA 99206-5302  
 9405 SW Nimbus Ave, Beaverton, OR 97008-7145  
 2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119

425-420-9200 FAX 420-9210  
 509-924-9200 FAX 924-9290  
 503-906-9200 FAX 906-9210  
 907-563-9200 FAX 563-9210

## CHAIN OF CUSTODY REPORT

Work Order #: **PSJO657**

CLIENT: **CH2M Hill/Nw Pipe**  
 REPORT TO: **Pat Heins**  
 ADDRESS: **2020 SW 4th Ave**  
**Portland OR 97201**  
 PHONE: \_\_\_\_\_ FAX: \_\_\_\_\_  
 PROJECT NAME: **Nw Pipe 55**  
 PROJECT NUMBER: \_\_\_\_\_  
 SAMPLED BY: **Pat Heins**

INVOICE TO: \_\_\_\_\_  
 P.O. NUMBER: \_\_\_\_\_  
 PRESERVATIVE: \_\_\_\_\_  
 REQUESTED ANALYSES:

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	Metals*	PHH	SIM	Phthalates	PCB	Mercury	Post-C19	Total Organic Carbon	OTHER	MATRIX (W, S, O)	# OF CONT.	LOCATION/ COMMENTS	TA WO ID
1 55-410-101909-0	10/19/09 10:15	X		X	X	X	X	X	X		S	2		
2 55-411-101909-0	10/19/09 10:30	X	X		X	X	X	X	X		S	2		
3 55-411-101909-1	10/19/09 10:30	X	X		X	X	X	X	X		S	2		
4														
5														
6														
7														
8														
9														
10														

RELEASED BY: **[Signature]** FIRM: **CH2M Hill** DATE: **10/19/09** TIME: **14:00**  
 PRINT NAME: \_\_\_\_\_  
 RECEIVED BY: **[Signature]** FIRM: **TRP** DATE: **10/19/09** TIME: **17:00**  
 PRINT NAME: \_\_\_\_\_

ADDITIONAL REMARKS: **\* Aluminum, antimony, arsenic, Cadmium, Chromium, Copper, lead, Mercury, Nickel, Selenium, Silver, Zinc**  
 TEMPERATURE: **11.6** PAGE **2** OF **2**  
 FIRM: \_\_\_\_\_ TIME: \_\_\_\_\_

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

11720 North Creek Pkwy N Suite 400, Bothell, WA 98011-8244  
 11922 E. First Ave. Spokane, WA 99206-5302  
 9405 SW Nimbus Ave, Beaverton, OR 97008-7145  
 2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119

425-420-9200 FAX 420-9210  
 509-924-9200 FAX 924-9290  
 503-906-9200 FAX 906-9210  
 907-563-9200 FAX 563-9210

## CHAIN OF CUSTODY REPORT

Work Order #: **PSJ0657**

CLIENT: CH2M Hill / NW Pipe  
 REPORT TO: Pat Heins  
 ADDRESS: 2020 SW 4th Ave  
 Portland, OR 97201  
 PHONE: \_\_\_\_\_ FAX: \_\_\_\_\_  
 PROJECT NAME: NWP, ps55  
 PROJECT NUMBER: \_\_\_\_\_  
 SAMPLED BY: Pat Heins

INVOICE TO: \_\_\_\_\_  
 P.O. NUMBER: \_\_\_\_\_

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	REQUESTED ANALYSES						PRESERVATIVE	MATRIX (W, S, O)	# OF CONT.	LOCATION/ COMMENTS	TA WO ID
		Metals*	PAH	PAH STM	Phthalates	PCBs	Residues					
1 55-401-101909-0	10/19/09 11:30	X	X	X	X	X	X	X	2			
2 55-402-101909-0	10/19/09 11:40	X	X	X	X	X	X	X	2			
3 55-403-101909-0	10/19/09 11:50	X	X	X	X	X	X	X	2			
4 55-404-101909-0	10/19/09 11:20	X	X	X	X	X	X	X	2			
5 55-405-101909-0	10/19/09 11:00	X	X	X	X	X	X	X	2			
6 55-405-101909-2	10/19/09 11:00	X	X	X	X	X	X	X	4	MS/MSD		
7 55-406-101909-0	10/19/09 12:05	X	X	X	X	X	X	X	2			
8 55-407-101909-0	10/19/09 10:55	X	X	X	X	X	X	X	2			
9 55-408-101909-0	10/19/09 10:45	X	X	X	X	X	X	X	2			
10 55-409-101909-0	10/19/09 12:15	X	X	X	X	X	X	X	2			

TURNAROUND REQUEST in Business Days\*  
 Organic & Inorganic Analyses:  7  5  4  3  2  1  <1  
 Petroleum Hydrocarbon Analyses:  5  4  3  2  1  <1  
 OTHER Specify: \_\_\_\_\_

\* Turnaround Request less than standard may incur Rush Charges.

RECEIVED BY: *[Signature]* PRINT NAME: *Christa Hoffman* FIRM: *TAP* DATE: 10/19/09 TIME: 14:00  
 RECEIVED BY: \_\_\_\_\_ PRINT NAME: \_\_\_\_\_ FIRM: \_\_\_\_\_ DATE: \_\_\_\_\_ TIME: \_\_\_\_\_

ADDITIONAL REMARKS: \* Aluminum, antimony, arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, zinc

**WORK ORDER**

**PSJ0657**

**TestAmerica Portland**

Printed: 11/13/2009 5:11:48PM

**CH2M-Hill**

**Project: NW Pipe Project**

**Project Manager: Darrell Auvil**

**Project Number: NW Pipe Project**

**Report To:**

**CH2M-Hill**  
 Pat Heins  
 2020 SW 4th Suite 300  
 Portland, OR 97201  
 Phone: (503) 235-5000  
 Fax: (503) 235-2445

**Invoice To:**

**CH2MHill-Denver A/P**  
 CH2MHill-Denver A/P  
 PO Box 241329  
 Denver, CO 80224  
 Phone: (907) 278-2551  
 Fax: (907) 257-2000

**Sample Receipt**

Work Order Due Date: **11/16/09 18:00 (20 day TAT)**

Samples Received: 10/19/09 17:00  
By: kirstin hoffman

Samples Logged In: 10/19/09 18:59  
By: kirstin hoffman

Number of Coolers: 1	Submitted by: N/A	<b>COMMENTS: No EMF; 10%off CPI or Element pricing; revised bid 10-12-09 cmw; Level III DP required for soil and water.</b>
Receipt Temp: 11.6°C	Shipped Via: TA Courier	
Plugs received on ice?: Yes	SDG: PSJ0657	
Today Seals Present?: Yes		
All Containers Intact?: Yes		
Labels/COC agree?: Yes		
Samples Preserved Prop?: Yes		

Analysis	Due	TAT	Expires	Comments
<b>PSJ0657-01 Soil SS-401-101909-0 (Sampled: 10/19/09 11:30 )</b>				
Data Package - Level III	11/16/09 16:00	10	10/29/09 11:30	
Ag Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:30	level 3 dp.
Al Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:30	level 3 dp.
As Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:30	level 3 dp.
Cd Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:30	level 3 dp.
Cr Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:30	level 3 dp.
Cu Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:30	level 3 dp.
Hg Total 7471A	11/02/09 08:00	10	11/16/09 11:30	level 3 dp.
Ni Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:30	level 3 dp.
Pb Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:30	level 3 dp.
Sb Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:30	level 3 dp.
Se Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:30	level 3 dp.
Zn Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:30	level 3 dp.
Solids, Dry Weight	10/26/09 16:00	5	11/16/09 11:30	
8270 SIM PAH	11/02/09 08:00	10	11/02/09 11:30	level 3 dp.
8270SIM Phthalates	11/02/09 08:00	10	11/02/09 11:30	level 3 dp.
Data Package - Semivolts	11/16/09 16:00	10	11/18/09 11:30	Level 3
JSC 8081A Pest	11/02/09 16:00	10	11/02/09 11:30	level 3 dp.
JSC 8082 PCB	11/02/09 16:00	10	11/02/09 11:30	level 3 dp.

**WORK ORDER**

**PSJ0657**

**TestAmerica Portland**

Printed: 11/13/2009 5:11:48PM

**CH2M-Hill**

**Project: NW Pipe Project**

**Project Manager: Darrell Auvil**

**Project Number: NW Pipe Project**

Analysis	Due	TAT	Expires	Comments
<b>PSJ0657-02 Soil SS-402-101909-0 (Sampled: 10/19/09 11:40 )</b>				
Ag Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:40	level 3 dp.
Al Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:40	level 3 dp.
As Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:40	level 3 dp.
Cd Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:40	level 3 dp.
Cr Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:40	level 3 dp.
Cu Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:40	level 3 dp.
Hg Total 7471A	11/02/09 08:00	10	11/16/09 11:40	level 3 dp.
Ni Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:40	level 3 dp.
Pb Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:40	level 3 dp.
Sb Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:40	level 3 dp.
Se Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:40	level 3 dp.
Zn Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:40	level 3 dp.
Solids, Dry Weight	10/26/09 16:00	5	11/16/09 11:40	
8270SIM Phthalates	11/02/09 08:00	10	11/02/09 11:40	level 3 dp.
JSC 8081A Pest	11/02/09 16:00	10	11/02/09 11:40	level 3 dp.
JSC 8082 PCB	11/02/09 16:00	10	11/02/09 11:40	level 3 dp.
<b>PSJ0657-03 Soil SS-403-101909-0 (Sampled: 10/19/09 11:50 )</b>				
Ag Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:50	level 3 dp.
Al Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:50	level 3 dp.
As Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:50	level 3 dp.
Cd Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:50	level 3 dp.
Cr Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:50	level 3 dp.
Cu Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:50	level 3 dp.
Hg Total 7471A	11/02/09 08:00	10	11/16/09 11:50	level 3 dp.
Ni Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:50	level 3 dp.
Pb Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:50	level 3 dp.
Sb Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:50	level 3 dp.
Se Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:50	level 3 dp.
Zn Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:50	level 3 dp.
Solids, Dry Weight	10/26/09 16:00	5	11/16/09 11:50	
8270 SIM PAH	11/02/09 08:00	10	11/02/09 11:50	level 3 dp.
8270SIM Phthalates	11/02/09 08:00	10	11/02/09 11:50	level 3 dp.
JSC 8081A Pest	11/02/09 16:00	10	11/02/09 11:50	level 3 dp.
JSC 8082 PCB	11/02/09 16:00	10	11/02/09 11:50	level 3 dp.

**WORK ORDER**

**PSJ0657**

**TestAmerica Portland**

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**CH2M-Hill**

**Project: NW Pipe Project**

**Project Manager: Darrell Auvil**

**Project Number: NW Pipe Project**

Analysis	Due	TAT	Expires	Comments
<b>PSJ0657-04 Soil SS-404-101909-0 (Sampled: 10/19/09 11:20 )</b>				
Ag Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:20	level 3 dp.
Al Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:20	level 3 dp.
As Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:20	level 3 dp.
Cd Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:20	level 3 dp.
Cr Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:20	level 3 dp.
Cu Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:20	level 3 dp.
Hg Total 7471A	11/02/09 08:00	10	11/16/09 11:20	level 3 dp.
Ni Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:20	level 3 dp.
Pb Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:20	level 3 dp.
Sb Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:20	level 3 dp.
Se Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:20	level 3 dp.
Zn Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:20	level 3 dp.
Solids, Dry Weight	10/26/09 16:00	5	11/16/09 11:20	
8270 SIM PAH	11/02/09 08:00	10	11/02/09 11:20	level 3 dp.
8270SIM Phthalates	11/02/09 08:00	10	11/02/09 11:20	level 3 dp.
JSC 8081A Pest	11/02/09 16:00	10	11/02/09 11:20	level 3 dp.
JSC 8082 PCB	11/02/09 16:00	10	11/02/09 11:20	level 3 dp.
<b>PSJ0657-05 Soil SS-405-101909-0 (Sampled: 10/19/09 11:00 )</b>				
Ag Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:00	level 3 dp.
Al Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:00	level 3 dp.
As Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:00	level 3 dp.
Cd Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:00	level 3 dp.
Cr Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:00	level 3 dp.
Cu Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:00	level 3 dp.
Hg Total 7471A	11/02/09 08:00	10	11/16/09 11:00	level 3 dp.
Ni Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:00	level 3 dp.
Pb Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:00	level 3 dp.
Sb Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:00	level 3 dp.
Se Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:00	level 3 dp.
Zn Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:00	level 3 dp.
Solids, Dry Weight	10/26/09 16:00	5	11/16/09 11:00	
8270 SIM PAH	11/02/09 08:00	10	11/02/09 11:00	level 3 dp.
8270SIM Phthalates	11/02/09 08:00	10	11/02/09 11:00	level 3 dp.
JSC 8081A Pest	11/02/09 16:00	10	11/02/09 11:00	level 3 dp.
JSC 8082 PCB	11/02/09 16:00	10	11/02/09 11:00	level 3 dp.

**WORK ORDER**

**PSJ0657**

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**CH2M-Hill**

**Project: NW Pipe Project**

**Project Manager: Darrell Auvil**

**Project Number: NW Pipe Project**

Analysis	Due	TAT	Expires	Comments
<b>PSJ0657-06 Soil SS-405-101909-2 (Sampled: 10/19/09 11:00 )</b>				<b>MS/MSD</b>
Ag Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:00 level 3 dp,	MS/ MSD, or appropriate QC
Al Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:00 level 3 dp,	MS/ MSD, or appropriate QC
As Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:00 level 3 dp,	MS/ MSD, or appropriate QC
Cd Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:00 level 3 dp,	MS/ MSD, or appropriate QC
Cr Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:00 level 3 dp,	MS/ MSD, or appropriate QC
Cu Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:00 level 3 dp,	MS/ MSD, or appropriate QC
Hg Total 7471A	11/02/09 08:00	10	11/16/09 11:00 level 3 dp,	MS/ MSD, or appropriate QC
Ni Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:00 level 3 dp,	MS/ MSD, or appropriate QC
Pb Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:00 level 3 dp,	MS/ MSD, or appropriate QC
Sb Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:00 level 3 dp,	MS/ MSD, or appropriate QC
Se Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:00 level 3 dp,	MS/ MSD, or appropriate QC
Zn Total ICP 6010B	11/02/09 08:00	10	04/17/10 11:00 level 3 dp,	MS/ MSD, or appropriate QC
Solids, Dry Weight	10/26/09 16:00	5	11/16/09 11:00 level 3 dp,	MS/ MSD, or appropriate QC
8270 SIM PAH	11/02/09 08:00	10	11/02/09 11:00 level 3 dp,	MS/ MSD, or appropriate QC
8270SIM Phthalates	11/02/09 08:00	10	11/02/09 11:00 level 3 dp,	MS/ MSD, or appropriate QC
JSC 8081A Pest	11/02/09 16:00	10	11/02/09 11:00 level 3 dp,	MS/ MSD, or appropriate QC
JSC 8082 PCB	11/02/09 16:00	10	11/02/09 11:00 level 3 dp,	MS/ MSD, or appropriate QC
<b>PSJ0657-07 Soil SS-406-101909-0 (Sampled: 10/19/09 12:05 )</b>				
Ag Total ICP 6010B	11/02/09 08:00	10	04/17/10 12:05 level 3 dp.	
Al Total ICP 6010B	11/02/09 08:00	10	04/17/10 12:05 level 3 dp.	
As Total ICP 6010B	11/02/09 08:00	10	04/17/10 12:05 level 3 dp.	
Cd Total ICP 6010B	11/02/09 08:00	10	04/17/10 12:05 level 3 dp.	
Cr Total ICP 6010B	11/02/09 08:00	10	04/17/10 12:05 level 3 dp.	
Cu Total ICP 6010B	11/02/09 08:00	10	04/17/10 12:05 level 3 dp.	
Hg Total 7471A	11/02/09 08:00	10	11/16/09 12:05 level 3 dp.	
Ni Total ICP 6010B	11/02/09 08:00	10	04/17/10 12:05 level 3 dp.	
Pb Total ICP 6010B	11/02/09 08:00	10	04/17/10 12:05 level 3 dp.	
Sb Total ICP 6010B	11/02/09 08:00	10	04/17/10 12:05 level 3 dp.	
Se Total ICP 6010B	11/02/09 08:00	10	04/17/10 12:05 level 3 dp.	
Zn Total ICP 6010B	11/02/09 08:00	10	04/17/10 12:05 level 3 dp.	
Solids, Dry Weight	10/26/09 16:00	5	11/16/09 12:05	
8270 SIM PAH	11/02/09 08:00	10	11/02/09 12:05 level 3 dp.	
8270SIM Phthalates	11/02/09 08:00	10	11/02/09 12:05 level 3 dp.	
JSC 8081A Pest	11/02/09 16:00	10	11/02/09 12:05 level 3 dp.	
JSC 8082 PCB	11/02/09 16:00	10	11/02/09 12:05 level 3 dp.	

**WORK ORDER**

**PSJ0657**

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**CH2M-Hill**

**Project: NW Pipe Project**

**Project Manager: Darrell Auvil**

**Project Number: NW Pipe Project**

Analysis	Due	TAT	Expires	Comments
<b>PSJ0657-08 Soil SS-407-101909-0 (Sampled: 10/19/09 10:55 )</b>				
Ag Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:55	level 3 dp.
Al Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:55	level 3 dp.
As Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:55	level 3 dp.
Cd Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:55	level 3 dp.
Cr Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:55	level 3 dp.
Cu Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:55	level 3 dp.
Hg Total 7471A	11/02/09 08:00	10	11/16/09 10:55	level 3 dp.
Ni Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:55	level 3 dp.
Pb Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:55	level 3 dp.
Sb Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:55	level 3 dp.
Se Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:55	level 3 dp.
Zn Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:55	level 3 dp.
Solids, Dry Weight	10/26/09 16:00	5	11/16/09 10:55	
8270 SIM PAH	11/02/09 08:00	10	11/02/09 10:55	level 3 dp.
8270SIM Phthalates	11/02/09 08:00	10	11/02/09 10:55	level 3 dp.
JSC 8081A Pest	11/02/09 16:00	10	11/02/09 10:55	level 3 dp.
JSC 8082 PCB	11/02/09 16:00	10	11/02/09 10:55	level 3 dp.
<b>PSJ0657-09 Soil SS-408-101909-0 (Sampled: 10/19/09 10:45 )</b>				
Ag Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:45	level 3 dp.
Al Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:45	level 3 dp.
As Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:45	level 3 dp.
Cd Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:45	level 3 dp.
Cr Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:45	level 3 dp.
Cu Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:45	level 3 dp.
Hg Total 7471A	11/02/09 08:00	10	11/16/09 10:45	level 3 dp.
Ni Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:45	level 3 dp.
Pb Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:45	level 3 dp.
Sb Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:45	level 3 dp.
Se Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:45	level 3 dp.
Zn Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:45	level 3 dp.
Solids, Dry Weight	10/26/09 16:00	5	11/16/09 10:45	
8270 SIM PAH	11/02/09 08:00	10	11/02/09 10:45	level 3 dp.
8270SIM Phthalates	11/02/09 08:00	10	11/02/09 10:45	level 3 dp.
JSC 8081A Pest	11/02/09 16:00	10	11/02/09 10:45	level 3 dp.
JSC 8082 PCB	11/02/09 16:00	10	11/02/09 10:45	level 3 dp.

**WORK ORDER**

**PSJ0657**

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**Project: NW Pipe Project**

**Project Manager: Darrell Auvil**

**Project Number: NW Pipe Project**

Analysis	Due	TAT	Expires	Comments
<b>PSJ0657-10 Soil SS-409-101909-0 (Sampled: 10/19/09 12:15 )</b>				
Ag Total ICP 6010B	11/02/09 08:00	10	04/17/10 12:15	level 3 dp.
Al Total ICP 6010B	11/02/09 08:00	10	04/17/10 12:15	level 3 dp.
As Total ICP 6010B	11/02/09 08:00	10	04/17/10 12:15	level 3 dp.
Cd Total ICP 6010B	11/02/09 08:00	10	04/17/10 12:15	level 3 dp.
Cr Total ICP 6010B	11/02/09 08:00	10	04/17/10 12:15	level 3 dp.
Cu Total ICP 6010B	11/02/09 08:00	10	04/17/10 12:15	level 3 dp.
Hg Total 7471A	11/02/09 08:00	10	11/16/09 12:15	level 3 dp.
Ni Total ICP 6010B	11/02/09 08:00	10	04/17/10 12:15	level 3 dp.
Pb Total ICP 6010B	11/02/09 08:00	10	04/17/10 12:15	level 3 dp.
Sb Total ICP 6010B	11/02/09 08:00	10	04/17/10 12:15	level 3 dp.
Se Total ICP 6010B	11/02/09 08:00	10	04/17/10 12:15	level 3 dp.
Zn Total ICP 6010B	11/02/09 08:00	10	04/17/10 12:15	level 3 dp.
Solids, Dry Weight	10/26/09 16:00	5	11/16/09 12:15	
8270SIM Phthalates	11/02/09 08:00	10	11/02/09 12:15	level 3 dp.
JSC 8081A Pest	11/02/09 16:00	10	11/02/09 12:15	level 3 dp.
JSC 8082 PCB	11/02/09 16:00	10	11/02/09 12:15	level 3 dp.
<b>PSJ0657-11 Soil SS-410-101909-0 (Sampled: 10/19/09 10:15 )</b>				
Ag Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:15	level 3 dp.
Al Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:15	level 3 dp.
As Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:15	level 3 dp.
Cd Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:15	level 3 dp.
Cr Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:15	level 3 dp.
Cu Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:15	level 3 dp.
Hg Total 7471A	11/02/09 08:00	10	11/16/09 10:15	level 3 dp.
Ni Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:15	level 3 dp.
Pb Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:15	level 3 dp.
Sb Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:15	level 3 dp.
Se Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:15	level 3 dp.
Zn Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:15	level 3 dp.
Solids, Dry Weight	10/26/09 16:00	5	11/16/09 10:15	
8270SIM Phthalates	11/02/09 08:00	10	11/02/09 10:15	level 3 dp.
JSC 8081A Pest	11/02/09 16:00	10	11/02/09 10:15	level 3 dp.
JSC 8082 PCB	11/02/09 16:00	10	11/02/09 10:15	level 3 dp.

**WORK ORDER**

**PSJ0657**

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**CH2M-Hill**

**Project: NW Pipe Project**

**Project Manager: Darrell Auvil**

**Project Number: NW Pipe Project**

Analysis	Due	TAT	Expires	Comments
<b>PSJ0657-12 Soil SS-411-101909-0 (Sampled: 10/19/09 10:30 )</b>				
Ag Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:30	level 3 dp.
Al Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:30	level 3 dp.
As Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:30	level 3 dp.
Cd Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:30	level 3 dp.
Cr Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:30	level 3 dp.
Cu Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:30	level 3 dp.
Hg Total 7471A	11/02/09 08:00	10	11/16/09 10:30	level 3 dp.
Ni Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:30	level 3 dp.
Pb Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:30	level 3 dp.
Sb Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:30	level 3 dp.
Se Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:30	level 3 dp.
Zn Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:30	level 3 dp.
Solids, Dry Weight	10/26/09 16:00	5	11/16/09 10:30	
8270 SIM PAH	11/02/09 08:00	10	11/02/09 10:30	level 3 dp.
8270SIM Phthalates	11/02/09 08:00	10	11/02/09 10:30	level 3 dp.
JSC 8081A Pest	11/02/09 16:00	10	11/02/09 10:30	level 3 dp.
JSC 8082 PCB	11/02/09 16:00	10	11/02/09 10:30	level 3 dp.
<b>PSJ0657-13 Soil SS-411-101909-1 (Sampled: 10/19/09 10:30 )</b>				
Ag Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:30	level 3 dp.
Al Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:30	level 3 dp.
As Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:30	level 3 dp.
Cd Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:30	level 3 dp.
Cr Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:30	level 3 dp.
Cu Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:30	level 3 dp.
Hg Total 7471A	11/02/09 08:00	10	11/16/09 10:30	level 3 dp.
Ni Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:30	level 3 dp.
Pb Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:30	level 3 dp.
Sb Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:30	level 3 dp.
Se Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:30	level 3 dp.
Zn Total ICP 6010B	11/02/09 08:00	10	04/17/10 10:30	level 3 dp.
Solids, Dry Weight	10/26/09 16:00	5	11/16/09 10:30	
8270 SIM PAH	11/02/09 08:00	10	11/02/09 10:30	level 3 dp.
8270SIM Phthalates	11/02/09 08:00	10	11/02/09 10:30	level 3 dp.
JSC 8081A Pest	11/02/09 16:00	10	11/02/09 10:30	level 3 dp.
JSC 8082 PCB	11/02/09 16:00	10	11/02/09 10:30	level 3 dp.
<b>TestAmerica Tacoma</b>				
<b>PSJ0657-01 Soil SS-401-101909-0 (Sampled: 10/19/09 11:30 )</b>				
TOC-9060-SUB	11/02/09 08:00	10	11/16/09 11:30	Sub to Tacoma, level 3 data package
<b>PSJ0657-02 Soil SS-402-101909-0 (Sampled: 10/19/09 11:40 )</b>				
TOC-9060-SUB	11/02/09 08:00	10	11/16/09 11:40	Sub to Tacoma, level 3 data package

**WORK ORDER**

**PSJ0657**

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**CH2M-Hill**

**Project: NW Pipe Project**

**Project Manager: Darrell Auvil**

**Project Number: NW Pipe Project**

Analysis	Due	TAT	Expires	Comments
<b>TestAmerica Tacoma</b>				
<b>PSJ0657-03</b> Soil SS-403-101909-0 (Sampled: 10/19/09 11:50 )				
TOC-9060-SUB	11/02/09 08:00	10	11/16/09 11:50	Sub to Tacoma, level 3 data package
<b>PSJ0657-04</b> Soil SS-404-101909-0 (Sampled: 10/19/09 11:20 )				
TOC-9060-SUB	11/02/09 08:00	10	11/16/09 11:20	Sub to Tacoma, level 3 data package
<b>PSJ0657-05</b> Soil SS-405-101909-0 (Sampled: 10/19/09 11:00 )				
TOC-9060-SUB	11/02/09 08:00	10	11/16/09 11:00	Sub to Tacoma, level 3 data package
<b>PSJ0657-06</b> Soil SS-405-101909-2 (Sampled: 10/19/09 11:00 )				<b>MS/MSD</b>
TOC-9060-SUB	11/02/09 08:00	10	11/16/09 11:00	Sub to Tacoma, level 3 data package
<b>PSJ0657-07</b> Soil SS-406-101909-0 (Sampled: 10/19/09 12:05 )				
TOC-9060-SUB	11/02/09 08:00	10	11/16/09 12:05	Sub to Tacoma, level 3 data package
<b>PSJ0657-08</b> Soil SS-407-101909-0 (Sampled: 10/19/09 10:55 )				
TOC-9060-SUB	11/02/09 08:00	10	11/16/09 10:55	Sub to Tacoma, level 3 data package
<b>PSJ0657-09</b> Soil SS-408-101909-0 (Sampled: 10/19/09 10:45 )				
TOC-9060-SUB	11/02/09 08:00	10	11/16/09 10:45	Sub to Tacoma, level 3 data package
<b>PSJ0657-10</b> Soil SS-409-101909-0 (Sampled: 10/19/09 12:15 )				
TOC-9060-SUB	11/02/09 08:00	10	11/16/09 12:15	Sub to Tacoma, level 3 data package
<b>PSJ0657-11</b> Soil SS-410-101909-0 (Sampled: 10/19/09 10:15 )				
TOC-9060-SUB	11/02/09 08:00	10	11/16/09 10:15	Sub to Tacoma, level 3 data package
<b>PSJ0657-12</b> Soil SS-411-101909-0 (Sampled: 10/19/09 10:30 )				
TOC-9060-SUB	11/02/09 08:00	10	11/16/09 10:30	Sub to Tacoma, level 3 data package
<b>PSJ0657-13</b> Soil SS-411-101909-1 (Sampled: 10/19/09 10:30 )				
TOC-9060-SUB	11/02/09 08:00	10	11/16/09 10:30	Sub to Tacoma, level 3 data package

**Analysis groups included in this work order**

Data Package - Level III

Data Package - Subcontract    Data Package - Metals    Data Package - Mercury    Data Package - Dry Weight  
Data Package

Reviewed By \_\_\_\_\_

Date \_\_\_\_\_

TestAmerica Portland  
**Sample Receiving Checklist**

Work Order #: PSJ0657 Date/Time Received: 10/19/09 17:00  
 Client Name and Project: CH<sub>2</sub>M Hill/NW Pipe

Time Zone:  
 EDT/EST     CDT/CST     MDT/MST     PDT/PST     AK     OTHER

**Unpacking Checks:**

Cooler #(s): 1  
 Temperatures: 11.6 \_\_\_\_\_  
 Digi #1  Digi #2  IR Gun  ( Plastic  Glass)

**Temperature out of Range:**

Not enough or No Ice  
 Ice Melted  
 W/in 4 Hrs of collection  
 Other: \_\_\_\_\_

Initials: [Signature]

- | N/A                                 | Yes                                 | No                       |                                                                                                                                               |
|-------------------------------------|-------------------------------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | 1. If ESI client, were temp blanks received? If no, document on NOD.                                                                          |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | 2. Cooler Seals intact? (N/A if hand delivered) if no, document on NOD.                                                                       |
| <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 3. Chain of Custody present? If no, document on NOD.                                                                                          |
| <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 4. Bottles received intact? If no, document on NOD.                                                                                           |
| <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 5. Sample is not multiphasic? If no, document on NOD.                                                                                         |
| <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 6. Proper Container and preservatives used? If no, document on NOD.                                                                           |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | 7. pH of all samples checked and meet requirements? If no, document on NOD.                                                                   |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | 8. Cyanide samples checked for sulfides and meet requirements? If no, notify PM.                                                              |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | 9. HF Dilution required?                                                                                                                      |
| <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 10. Sufficient volume provided for all analysis? If no, document on NOD and consult PM before proceeding.                                     |
| <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 11. Did chain of custody agree with samples received? If no, document on NOD.                                                                 |
| <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 12. Is the "Sampled by" section of the COC completed?                                                                                         |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | 13. Were VOA/Oil Syringe samples without headspace?                                                                                           |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | 14. Were VOA vials preserved? <input type="checkbox"/> HCl <input type="checkbox"/> Sodium Thiosulfate <input type="checkbox"/> Ascorbic Acid |
| <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 15. Did samples require preservation with sodium thiosulfate?                                                                                 |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | 16. If yes to #14, was the residual chlorine test negative? If no, document on NOD.                                                           |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | 17. Are dissolved/field filtered metals bottles sediment-free? If no, document on NOD.                                                        |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 18. Is sufficient volume provided for client requested MS/MSD or matrix duplicates? If no, document on NOD and contact PM before proceeding.  |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | 19. Are analyses with short holding times received in hold?                                                                                   |
| <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 20. Was Standard Turn Around (TAT) requested?                                                                                                 |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | 21. Receipt date(s) < 48 hours past the collection date(s)? If no, notify PM.                                                                 |

TestAmerica Portland  
Sample Receiving Checklist

Work Order #: PSJ0657

**Login Checks:**

Initials: KA

- | N/A                                 | Yes                                 | No                       |                                                                                                                         |
|-------------------------------------|-------------------------------------|--------------------------|-------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 22. Sufficient volume provided for all analysis? If no, document on NOD & contact PM.                                   |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | 23. Sufficient volume provided for client requested MS/MSD or matrix duplicates? If no, document on NOD and contact PM. |
|                                     | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 24. Did the chain of custody include "received by" and "relinquished by" signatures, dates and times?                   |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | 25. Were special log in instructions read and followed?                                                                 |
|                                     | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 26. Were tests logged checked against the COC?                                                                          |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | 27. Were rush notices printed and delivered?                                                                            |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | 28. Were short hold notices printed and delivered?                                                                      |
| <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 29. Were subcontract COCs printed?                                                                                      |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | 30. Was HF dilution logged?                                                                                             |

**Labeling and Storage Checks:**

Initials: KA

- | N/A                                 | Yes                                 | No                       |                                                                                                     |
|-------------------------------------|-------------------------------------|--------------------------|-----------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 31. Were the subcontracted samples/containers put in Sx fridge?                                     |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | 32. Were sample bottles and COC double checked for dissolved/filtered metals?                       |
|                                     | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 33. Did the sample ID, Date, and Time from label match what was logged?                             |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | 34. Were Foreign sample stickers affixed to each container and containers stored in foreign fridge? |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | 35. Were HF stickers affixed to each container, and containers stored in Sx fridge?                 |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | 36. Was an NOD for created for noted discrepancies and placed in folder?                            |

Document any problems or discrepancies and the actions taken to resolve them on a Notice of Discrepancy form (NOD).

**TestAmerica**  
THE LEADER IN ENVIRONMENTAL TESTING  
532808

**Custody Seal** 10/19/09

DATE



SIGNATURE

**TestAmerica**  
THE LEADER IN ENVIRONMENTAL TESTING  
532808

## Analytical Report

Amended Report

November 17, 2009

Pat Heins  
CH2M-Hill  
2020 SW 4th Suite 300  
Portland, OR 97201

RE: NW Pipe Project

Enclosed are the results of analyses for samples received by the laboratory on 10/19/09 17:00.  
The following list is a summary of the Work Orders contained in this report, generated on 11/17/09 15:44.

If you have any questions concerning this report, please feel free to contact me.

---

<u>Work Order</u>	<u>Project</u>	<u>ProjectNumber</u>
PSJ0657	NW Pipe Project	NW Pipe Project

---

TestAmerica Portland



Darrell Auvil, Project Manager

Amended Report

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report shall not be reproduced except in full, without the written approval of the laboratory.*

**Amended Report**

**CH2M-Hill**

2020 SW 4th Suite 300  
 Portland, OR 97201


Project Name: **NW Pipe Project**  
 Project Number: NW Pipe Project  
 Project Manager: Pat Heins

Report Created:  
 11/17/09 15:44

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS-401-101909-0	PSJ0657-01	Soil	10/19/09 11:30	10/19/09 17:00
SS-402-101909-0	PSJ0657-02	Soil	10/19/09 11:40	10/19/09 17:00
SS-403-101909-0	PSJ0657-03	Soil	10/19/09 11:50	10/19/09 17:00
SS-404-101909-0	PSJ0657-04	Soil	10/19/09 11:20	10/19/09 17:00
SS-405-101909-0	PSJ0657-05	Soil	10/19/09 11:00	10/19/09 17:00
SS-405-101909-2	PSJ0657-06	Soil	10/19/09 11:00	10/19/09 17:00
SS-406-101909-0	PSJ0657-07	Soil	10/19/09 12:05	10/19/09 17:00
SS-407-101909-0	PSJ0657-08	Soil	10/19/09 10:55	10/19/09 17:00
SS-408-101909-0	PSJ0657-09	Soil	10/19/09 10:45	10/19/09 17:00
SS-409-101909-0	PSJ0657-10	Soil	10/19/09 12:15	10/19/09 17:00
SS-410-101909-0	PSJ0657-11	Soil	10/19/09 10:15	10/19/09 17:00
SS-411-101909-0	PSJ0657-12	Soil	10/19/09 10:30	10/19/09 17:00
SS-411-101909-1	PSJ0657-13	Soil	10/19/09 10:30	10/19/09 17:00

TestAmerica Portland



Darrell Auvil, Project Manager

**Amended Report**

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**Amended Report**

**CH2M-Hill**

2020 SW 4th Suite 300  
Portland, OR 97201

Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

Report Created:  
11/17/09 15:44

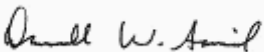
**Analytical Case Narrative**

TestAmerica - Portland, OR

**PSJ0657**

Amended report issued on November 17th 2009 to reflect reporting of all data to the method detection limits (MDLs)

TestAmerica Portland



Darrell Auvil, Project Manager

**Amended Report**

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**Amended Report**

**CH2M-Hill**

2020 SW 4th Suite 300  
Portland, OR 97201

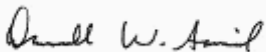
Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

Report Created:  
11/17/09 15:44

**Total Metals per EPA 6000/7000 Series Methods**  
TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
<b>PSJ0657-01 (SS-401-101909-0)</b>		<b>Soil</b>		<b>Sampled: 10/19/09 11:30</b>						
Aluminum	EPA 6010B	<b>7040</b>	4.96	54.5	mg/kg dry	10x	9100713	10/20/09 11:18	10/22/09 21:17	
Antimony	"	ND	0.611	2.18	"	1x	"	"	10/22/09 01:12	
Arsenic	"	<b>2.65</b>	0.142	27.3	"	"	"	"	"	J
Cadmium	"	<b>1.00</b>	0.00654	3.27	"	"	"	"	"	J
Chromium	"	<b>35.6</b>	0.0382	1.64	"	"	"	"	"	
Copper	"	<b>46.9</b>	0.0927	1.64	"	"	"	"	"	
Lead	"	<b>6.48</b>	0.164	10.9	"	"	"	"	"	J
Nickel	"	<b>22.0</b>	0.0654	1.36	"	"	"	"	"	
Selenium	"	ND	0.491	27.3	"	"	"	"	"	
Silver	"	<b>0.132</b>	0.0382	3.27	"	"	"	"	"	J
Zinc	"	<b>91.9</b>	0.0545	2.73	"	"	"	"	"	
<b>PSJ0657-02 (SS-402-101909-0)</b>		<b>Soil</b>		<b>Sampled: 10/19/09 11:40</b>						
Aluminum	EPA 6010B	<b>4720</b>	0.462	5.08	mg/kg dry	1x	9100713	10/20/09 11:18	10/22/09 01:18	
Antimony	"	ND	0.569	2.03	"	"	"	"	"	
Arsenic	"	<b>2.28</b>	0.132	25.4	"	"	"	"	"	J
Cadmium	"	<b>1.08</b>	0.00610	3.05	"	"	"	"	"	J
Chromium	"	<b>33.6</b>	0.0356	1.52	"	"	"	"	"	
Copper	"	<b>40.5</b>	0.0864	1.52	"	"	"	"	"	
Lead	"	<b>16.7</b>	0.152	10.2	"	"	"	"	"	
Nickel	"	<b>17.1</b>	0.0610	1.27	"	"	"	"	"	
Selenium	"	ND	0.457	25.4	"	"	"	"	"	
Silver	"	<b>0.182</b>	0.0356	3.05	"	"	"	"	"	J
Zinc	"	<b>152</b>	0.0508	2.54	"	"	"	"	"	
<b>PSJ0657-03 (SS-403-101909-0)</b>		<b>Soil</b>		<b>Sampled: 10/19/09 11:50</b>						
Aluminum	EPA 6010B	<b>5450</b>	4.81	52.8	mg/kg dry	10x	9100713	10/20/09 11:18	10/22/09 21:24	
Antimony	"	ND	0.592	2.11	"	1x	"	"	10/22/09 01:24	
Arsenic	"	<b>2.92</b>	0.137	26.4	"	"	"	"	"	J
Cadmium	"	<b>1.11</b>	0.00634	3.17	"	"	"	"	"	J
Chromium	"	<b>30.0</b>	0.0370	1.58	"	"	"	"	"	
Copper	"	<b>27.6</b>	0.0898	1.58	"	"	"	"	"	
Lead	"	<b>9.99</b>	0.158	10.6	"	"	"	"	"	J
Nickel	"	<b>14.5</b>	0.0634	1.32	"	"	"	"	"	
Selenium	"	ND	0.475	26.4	"	"	"	"	"	

TestAmerica Portland



Darrell Auvil, Project Manager

**Amended Report**

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**Amended Report**

**CH2M-Hill**

2020 SW 4th Suite 300  
Portland, OR 97201

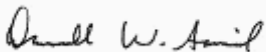
Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

Report Created:  
11/17/09 15:44

**Total Metals per EPA 6000/7000 Series Methods**  
TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
<b>PSJ0657-03 (SS-403-101909-0)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 11:50</b>					
Silver	EPA 6010B	<b>0.185</b>	0.0370	3.17	mg/kg dry	1x	9100713	10/20/09 11:18	10/22/09 01:24	J
Zinc	"	<b>98.8</b>	0.0528	2.64	"	"	"	"	"	
<b>PSJ0657-04 (SS-404-101909-0)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 11:20</b>					
Aluminum	EPA 6010B	<b>3730</b>	0.510	5.60	mg/kg dry	1x	9100713	10/20/09 11:18	10/22/09 01:31	
Antimony	"	ND	0.627	2.24	"	"	"	"	"	
Arsenic	"	<b>1.88</b>	0.146	28.0	"	"	"	"	"	J
Cadmium	"	<b>0.916</b>	0.00672	3.36	"	"	"	"	"	J
Chromium	"	<b>50.5</b>	0.0392	1.68	"	"	"	"	"	
Copper	"	<b>31.5</b>	0.0952	1.68	"	"	"	"	"	
Lead	"	<b>53.1</b>	0.168	11.2	"	"	"	"	"	
Nickel	"	<b>16.7</b>	0.0672	1.40	"	"	"	"	"	
Selenium	"	ND	0.504	28.0	"	"	"	"	"	
Silver	"	<b>0.117</b>	0.0392	3.36	"	"	"	"	"	J
Zinc	"	<b>87.0</b>	0.0560	2.80	"	"	"	"	"	
<b>PSJ0657-05 (SS-405-101909-0)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 11:00</b>					
Aluminum	EPA 6010B	<b>15800</b>	4.96	54.5	mg/kg dry	10x	9100713	10/20/09 11:18	10/22/09 21:30	
Antimony	"	<b>3.96</b>	0.611	2.18	"	1x	"	"	10/22/09 01:49	
Arsenic	"	<b>3.57</b>	0.142	27.3	"	"	"	"	"	J
Cadmium	"	<b>5.73</b>	0.00655	3.27	"	"	"	"	"	
Chromium	"	<b>2360</b>	0.382	16.4	"	10x	"	"	10/22/09 21:30	
Copper	"	<b>114</b>	0.0927	1.64	"	1x	"	"	10/22/09 01:49	
Lead	"	<b>22.1</b>	0.164	10.9	"	"	"	"	"	
Nickel	"	<b>35.4</b>	0.0655	1.36	"	"	"	"	"	
Selenium	"	ND	0.491	27.3	"	"	"	"	"	
Silver	"	<b>2.54</b>	0.0382	3.27	"	"	"	"	"	J
Zinc	"	<b>126</b>	0.0545	2.73	"	"	"	"	"	
<b>PSJ0657-06 (SS-405-101909-2)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 11:00</b>					
Aluminum	EPA 6010B	<b>14200</b>	4.99	54.9	mg/kg dry	10x	9100713	10/20/09 11:18	10/22/09 20:59	
Antimony	"	<b>4.08</b>	0.615	2.20	"	1x	"	"	10/22/09 01:56	
Arsenic	"	<b>3.68</b>	0.143	27.4	"	"	"	"	"	J
Cadmium	"	<b>4.92</b>	0.00659	3.29	"	"	"	"	"	
Chromium	"	<b>1920</b>	0.384	16.5	"	10x	"	"	10/22/09 20:59	
Copper	"	<b>92.7</b>	0.0933	1.65	"	1x	"	"	10/22/09 01:56	

TestAmerica Portland



Darrell Auvil, Project Manager

**Amended Report**

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Amended Report

**CH2M-Hill**

2020 SW 4th Suite 300  
Portland, OR 97201

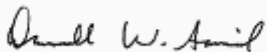
Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

Report Created:  
11/17/09 15:44

**Total Metals per EPA 6000/7000 Series Methods**  
TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
<b>PSJ0657-06 (SS-405-101909-2)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 11:00</b>					
Lead	"	24.1	0.165	11.0	"	"	"	"	"	
Nickel	"	38.5	0.0659	1.37	"	"	"	"	"	
Selenium	"	ND	0.494	27.4	"	"	"	"	"	
Silver	"	2.58	0.0384	3.29	"	"	"	"	"	J
Zinc	"	116	0.0549	2.74	"	"	"	"	"	
<b>PSJ0657-07 (SS-406-101909-0)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 12:05</b>					
Aluminum	EPA 6010B	3160	0.492	5.41	mg/kg dry	1x	9100713	10/20/09 11:18	10/22/09 02:15	
Antimony	"	ND	0.606	2.16	"	"	"	"	"	
Arsenic	"	7.80	0.141	27.1	"	"	"	"	"	J
Cadmium	"	7.31	0.00649	3.25	"	"	"	"	"	
Chromium	"	970	0.379	16.2	"	10x	"	"	10/23/09 13:44	
Copper	"	240	0.0920	1.62	"	1x	"	"	10/22/09 02:15	
Lead	"	14.1	0.162	10.8	"	"	"	"	"	
Nickel	"	519	0.0649	1.35	"	"	"	"	"	
Selenium	"	ND	0.487	27.1	"	"	"	"	"	
Silver	"	0.665	0.0379	3.25	"	"	"	"	"	J
Zinc	"	144	0.0541	2.71	"	"	"	"	"	
<b>PSJ0657-08 (SS-407-101909-0)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 10:55</b>					
Aluminum	EPA 6010B	24200	4.95	54.4	mg/kg dry	10x	9100713	10/20/09 11:18	10/23/09 13:53	
Antimony	"	2.46	0.610	2.18	"	1x	"	"	10/22/09 02:21	
Arsenic	"	4.59	0.141	27.2	"	"	"	"	"	J
Cadmium	"	6.26	0.00653	3.27	"	"	"	"	"	
Chromium	"	3620	0.381	16.3	"	10x	"	"	10/23/09 13:53	
Copper	"	137	0.0925	1.63	"	1x	"	"	10/22/09 02:21	
Lead	"	20.9	0.163	10.9	"	"	"	"	"	
Nickel	"	36.7	0.0653	1.36	"	"	"	"	"	
Selenium	"	1.94	0.490	27.2	"	"	"	"	"	J
Silver	"	3.55	0.0381	3.27	"	"	"	"	"	
Zinc	"	97.8	0.0544	2.72	"	"	"	"	"	

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Darrell Auvil, Project Manager

Amended Report

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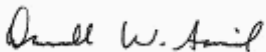
Project Name: **NW Pipe Project**  
 Project Number: NW Pipe Project  
 Project Manager: Pat Heins

Report Created:  
 11/17/09 15:44

**Total Metals per EPA 6000/7000 Series Methods**  
 TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes	
<b>PSJ0657-09 (SS-408-101909-0)</b>		<b>Soil</b>				<b>Sampled: 10/19/09 10:45</b>					
Aluminum	EPA 6010B	<b>13000</b>	4.66	51.3	mg/kg dry	10x	9100713	10/20/09 11:18	10/23/09 13:59		
Antimony	"	<b>2.48</b>	0.574	2.05	"	1x	"	"	10/22/09 02:27		
Arsenic	"	<b>1.57</b>	0.133	25.6	"	"	"	"	"	J	
Cadmium	"	<b>4.53</b>	0.00615	3.08	"	"	"	"	"		
Chromium	"	<b>2020</b>	0.359	15.4	"	10x	"	"	10/23/09 13:59		
Copper	"	<b>75.4</b>	0.0871	1.54	"	1x	"	"	10/22/09 02:27		
Lead	"	<b>10.6</b>	0.154	10.3	"	"	"	"	"		
Nickel	"	<b>12.4</b>	0.0615	1.28	"	"	"	"	"		
Selenium	"	<b>0.696</b>	0.461	25.6	"	"	"	"	"	J	
Silver	"	<b>2.05</b>	0.0359	3.08	"	"	"	"	"	J	
Zinc	"	<b>74.6</b>	0.0513	2.56	"	"	"	"	"		
<b>PSJ0657-10 (SS-409-101909-0)</b>		<b>Soil</b>				<b>Sampled: 10/19/09 12:15</b>					
Aluminum	EPA 6010B	<b>10600</b>	5.31	58.4	mg/kg dry	10x	9100713	10/20/09 11:18	10/23/09 14:06		
Antimony	"	ND	0.654	2.33	"	1x	"	"	10/22/09 02:34		
Arsenic	"	<b>7.21</b>	0.152	29.2	"	"	"	"	"	J	
Cadmium	"	<b>8.97</b>	0.00700	3.50	"	"	"	"	"		
Chromium	"	<b>121</b>	0.0408	1.75	"	"	"	"	"		
Copper	"	<b>152</b>	0.0992	1.75	"	"	"	"	"		
Lead	"	<b>160</b>	0.175	11.7	"	"	"	"	"		
Nickel	"	<b>52.5</b>	0.0700	1.46	"	"	"	"	"		
Selenium	"	ND	0.525	29.2	"	"	"	"	"		
Silver	"	<b>0.922</b>	0.0408	3.50	"	"	"	"	"	J	
Zinc	"	<b>753</b>	0.584	29.2	"	10x	"	"	10/23/09 14:06		
<b>PSJ0657-11 (SS-410-101909-0)</b>		<b>Soil</b>				<b>Sampled: 10/19/09 10:15</b>					
Aluminum	EPA 6010B	<b>27000</b>	5.08	55.9	mg/kg dry	10x	9100713	10/20/09 11:18	10/23/09 14:12		
Antimony	"	ND	0.626	2.23	"	1x	"	"	10/22/09 02:40		
Arsenic	"	<b>31.5</b>	0.145	27.9	"	"	"	"	"		
Cadmium	"	<b>1.73</b>	0.00670	3.35	"	"	"	"	"	J	
Chromium	"	<b>45.6</b>	0.0391	1.68	"	"	"	"	"		
Copper	"	<b>34.7</b>	0.0950	1.68	"	"	"	"	"		
Lead	"	<b>35.3</b>	0.168	11.2	"	"	"	"	"		
Nickel	"	<b>29.2</b>	0.0670	1.40	"	"	"	"	"		
Selenium	"	<b>12.1</b>	0.503	27.9	"	"	"	"	"	J	

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**Amended Report**

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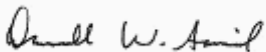
Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

Report Created:  
11/17/09 15:44

**Total Metals per EPA 6000/7000 Series Methods**  
TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
<b>PSJ0657-11 (SS-410-101909-0)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 10:15</b>					
Silver	EPA 6010B	<b>4.01</b>	0.0391	3.35	mg/kg dry	1x	9100713	10/20/09 11:18	10/22/09 02:40	
Zinc	"	<b>163</b>	0.0559	2.79	"	"	"	"	"	
<b>PSJ0657-12 (SS-411-101909-0)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 10:30</b>					
Aluminum	EPA 6010B	<b>5430</b>	0.522	5.74	mg/kg dry	1x	9100713	10/20/09 11:18	10/22/09 02:46	
Antimony	"	<b>1.49</b>	0.643	2.30	"	"	"	"	"	J
Arsenic	"	<b>10.6</b>	0.149	28.7	"	"	"	"	"	J
Cadmium	"	<b>9.01</b>	0.00689	3.44	"	"	"	"	"	
Chromium	"	<b>261</b>	0.0402	1.72	"	"	"	"	"	
Copper	"	<b>255</b>	0.0976	1.72	"	"	"	"	"	
Lead	"	<b>195</b>	0.172	11.5	"	"	"	"	"	
Nickel	"	<b>61.6</b>	0.0689	1.44	"	"	"	"	"	
Selenium	"	ND	0.517	28.7	"	"	"	"	"	
Silver	"	<b>1.50</b>	0.0402	3.44	"	"	"	"	"	J
Zinc	"	<b>737</b>	0.574	28.7	"	10x	"	"	10/23/09 14:18	
<b>PSJ0657-13 (SS-411-101909-1)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 10:30</b>					
Aluminum	EPA 6010B	<b>6310</b>	4.99	54.8	mg/kg dry	10x	9100713	10/20/09 11:18	10/23/09 14:52	
Antimony	"	<b>1.03</b>	0.614	2.19	"	1x	"	"	10/22/09 03:05	J
Arsenic	"	<b>10.1</b>	0.143	27.4	"	"	"	"	"	J
Cadmium	"	<b>8.05</b>	0.00658	3.29	"	"	"	"	"	
Chromium	"	<b>268</b>	0.0384	1.64	"	"	"	"	"	
Copper	"	<b>139</b>	0.0932	1.64	"	"	"	"	"	
Lead	"	<b>167</b>	0.164	11.0	"	"	"	"	"	
Nickel	"	<b>54.6</b>	0.0658	1.37	"	"	"	"	"	
Selenium	"	ND	0.493	27.4	"	"	"	"	"	
Silver	"	<b>1.35</b>	0.0384	3.29	"	"	"	"	"	J
Zinc	"	<b>756</b>	0.548	27.4	"	10x	"	"	10/23/09 14:52	

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Darrell Auvil, Project Manager

**Amended Report**

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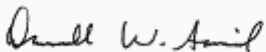
Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

Report Created:  
11/17/09 15:44

**Total Mercury per EPA Method 7471A**  
TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
<b>PSJ0657-01 (SS-401-101909-0)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 11:30</b>					
Mercury	EPA 7471A	<b>0.0140</b>	0.00560	0.0800	mg/kg	1x	9100923	10/26/09 11:36	10/28/09 12:43	J
<b>PSJ0657-02 (SS-402-101909-0)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 11:40</b>					
Mercury	EPA 7471A	<b>0.0104</b>	0.00546	0.0780	mg/kg	1x	9100923	10/26/09 11:36	10/28/09 12:56	J
<b>PSJ0657-03 (SS-403-101909-0)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 11:50</b>					
Mercury	EPA 7471A	<b>0.00633</b>	0.00560	0.0800	mg/kg	1x	9100923	10/26/09 11:36	10/28/09 12:58	J
<b>PSJ0657-04 (SS-404-101909-0)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 11:20</b>					
Mercury	EPA 7471A	ND	0.00605	0.0864	mg/kg	1x	9100923	10/26/09 11:36	10/28/09 13:01	
<b>PSJ0657-05 (SS-405-101909-0)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 11:00</b>					
Mercury	EPA 7471A	<b>0.00647</b>	0.00536	0.0766	mg/kg	1x	9100923	10/26/09 11:36	10/28/09 13:03	J
<b>PSJ0657-06 (SS-405-101909-2)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 11:00</b>					
Mercury	EPA 7471A	<b>0.00846</b>	0.00566	0.0808	mg/kg	1x	9100923	10/26/09 11:36	10/28/09 13:32	J
<b>PSJ0657-07 (SS-406-101909-0)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 12:05</b>					
Mercury	EPA 7471A	ND	0.00614	0.0877	mg/kg	1x	9100923	10/26/09 11:36	10/28/09 13:42	
<b>PSJ0657-08 (SS-407-101909-0)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 10:55</b>					
Mercury	EPA 7471A	<b>0.0105</b>	0.00493	0.0704	mg/kg	1x	9100923	10/26/09 11:36	10/28/09 13:44	J
<b>PSJ0657-09 (SS-408-101909-0)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 10:45</b>					
Mercury	EPA 7471A	ND	0.00488	0.0697	mg/kg	1x	9100923	10/26/09 11:36	10/28/09 13:55	
<b>PSJ0657-10 (SS-409-101909-0)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 12:15</b>					
Mercury	EPA 7471A	<b>0.0897</b>	0.00556	0.0794	mg/kg	1x	9100923	10/26/09 11:36	10/28/09 13:57	
<b>PSJ0657-11 (SS-410-101909-0)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 10:15</b>					
Mercury	EPA 7471A	<b>0.0218</b>	0.00544	0.0777	mg/kg	1x	9100923	10/26/09 11:36	10/28/09 14:00	J

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Darrell Auvil, Project Manager

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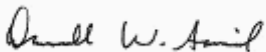
Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

Report Created:  
11/17/09 15:44

**Total Mercury per EPA Method 7471A**  
TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
<b>PSJ0657-12 (SS-411-101909-0)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 10:30</b>					
Mercury	EPA 7471A	<b>0.0944</b>	0.00607	0.0868	mg/kg	1x	9100923	10/26/09 11:36	10/28/09 14:03	
<b>PSJ0657-13 (SS-411-101909-1)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 10:30</b>					
Mercury	EPA 7471A	<b>0.203</b>	0.00477	0.0681	mg/kg	1x	9100923	10/26/09 11:36	10/28/09 14:06	

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Darrell Auvil, Project Manager

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<b>CH2M-Hill</b>	<b>Project Name: NW Pipe Project</b>	<b>Report Created:</b>
2020 SW 4th Suite 300	<b>Project Number: NW Pipe Project</b>	11/17/09 15:44
Portland, OR 97201	<b>Project Manager: Pat Heins</b>	

**Organochlorine Pesticides per EPA Method 8081A**  
TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes	
<b>PSJ0657-01 (SS-401-101909-0)</b>	<b>Soil</b>			<b>Sampled: 10/19/09 11:30</b>							<b>RL3</b>
Aldrin	EPA 8081A	ND	0.726	1.47	ug/kg dry	2x	9100740	10/21/09 11:30	10/30/09 15:20		
alpha-BHC	"	ND	0.726	1.47	"	"	"	"	"		
beta-BHC	"	ND	0.726	1.47	"	"	"	"	"		
delta-BHC	"	ND	0.726	1.47	"	"	"	"	"		
gamma-BHC (Lindane)	"	ND	0.726	1.47	"	"	"	"	"		
gamma-Chlordane	"	ND	0.726	1.47	"	"	"	"	"		
alpha-Chlordane	"	ND	0.726	1.47	"	"	"	"	"		
Chlordane (tech)	"	ND	16.5	33.0	"	"	"	"	"		
4,4'-DDD	"	ND	0.726	1.47	"	"	"	"	"		
4,4'-DDE	"	ND	1.47	1.47	"	"	"	"	"		
4,4'-DDT	"	ND	3.69	3.69	"	"	"	"	"	RL1	
Dieldrin	"	ND	1.47	1.47	"	"	"	"	"		
Endosulfan I	"	ND	0.726	1.47	"	"	"	"	"		
Endosulfan II	"	ND	0.726	1.47	"	"	"	"	"		
Endosulfan sulfate	"	ND	0.726	1.47	"	"	"	"	"		
Endrin	"	ND	0.726	1.47	"	"	"	"	"		
Endrin aldehyde	"	ND	0.726	1.47	"	"	"	"	"	C	
Endrin ketone	"	ND	0.726	1.47	"	"	"	"	"		
Heptachlor	"	ND	0.726	1.47	"	"	"	"	"		
Heptachlor epoxide	"	ND	0.726	1.47	"	"	"	"	"		
Methoxychlor	"	ND	1.47	1.47	"	"	"	"	"		
Toxaphene	"	ND	22.0	44.0	"	"	"	"	"		

Surrogate(s): 2,4,5,6-Tetrachloro-m-xylene 62.8% 36 - 140 % "

<b>PSJ0657-02 (SS-402-101909-0)</b>	<b>Soil</b>			<b>Sampled: 10/19/09 11:40</b>							<b>RL3</b>
Aldrin	EPA 8081A	ND	1.76	3.57	ug/kg dry	5x	9100740	10/21/09 11:30	10/29/09 06:28		
alpha-BHC	"	ND	1.76	3.57	"	"	"	"	"		
beta-BHC	"	ND	1.76	3.57	"	"	"	"	"		
delta-BHC	"	ND	1.76	3.57	"	"	"	"	"		
gamma-BHC (Lindane)	"	ND	1.76	3.57	"	"	"	"	"		
gamma-Chlordane	"	ND	5.32	5.32	"	"	"	"	"	RL1	
alpha-Chlordane	"	ND	1.76	3.57	"	"	"	"	"		
Chlordane (tech)	"	ND	39.9	79.9	"	"	"	"	"		
4,4'-DDD	"	ND	1.76	3.57	"	"	"	"	"		
4,4'-DDE	"	ND	5.32	5.32	"	"	"	"	"	RL1	
4,4'-DDT	"	ND	21.4	21.4	"	"	"	"	"	RL1	

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Darrell Auvil, Project Manager

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Portland, OR 97201

Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

Report Created:  
11/17/09 15:44

**Organochlorine Pesticides per EPA Method 8081A**  
TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
<b>PSJ0657-02 (SS-402-101909-0)</b>										<b>RL3</b>
			<b>Soil</b>				<b>Sampled: 10/19/09 11:40</b>			
Dieldrin	EPA 8081A	ND	3.57	3.57	ug/kg dry	5x	9100740	10/21/09 11:30	10/29/09 06:28	
Endosulfan I	"	ND	1.76	3.57	"	"	"	"	"	
Endosulfan II	"	ND	1.76	3.57	"	"	"	"	"	
Endosulfan sulfate	"	ND	1.76	3.57	"	"	"	"	"	
Endrin	"	ND	1.76	3.57	"	"	"	"	"	
Endrin aldehyde	"	ND	1.76	3.57	"	"	"	"	"	
Endrin ketone	"	ND	1.76	3.57	"	"	"	"	"	
Heptachlor	"	ND	1.76	3.57	"	"	"	"	"	
Heptachlor epoxide	"	ND	3.57	3.57	"	"	"	"	"	
Methoxychlor	"	ND	1.76	3.57	"	"	"	"	"	C
Toxaphene	"	ND	53.2	106	"	"	"	"	"	

Surrogate(s): 2,4,5,6-Tetrachloro-m-xylene 73.6% 36 - 140 % "

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
<b>PSJ0657-03 (SS-403-101909-0)</b>										<b>RL3</b>
			<b>Soil</b>				<b>Sampled: 10/19/09 11:50</b>			
Aldrin	EPA 8081A	ND	1.78	3.61	ug/kg dry	5x	9100740	10/21/09 11:30	10/29/09 07:20	
alpha-BHC	"	ND	1.78	3.61	"	"	"	"	"	
beta-BHC	"	ND	1.78	3.61	"	"	"	"	"	
delta-BHC	"	ND	1.78	3.61	"	"	"	"	"	
gamma-BHC (Lindane)	"	ND	1.78	3.61	"	"	"	"	"	
gamma-Chlordane	"	ND	1.78	3.61	"	"	"	"	"	
alpha-Chlordane	"	ND	1.78	3.61	"	"	"	"	"	
Chlordane (tech)	"	ND	40.4	80.8	"	"	"	"	"	
4,4'-DDD	"	ND	1.78	3.61	"	"	"	"	"	
4,4'-DDE	"	ND	7.22	7.22	"	"	"	"	"	RL1
4,4'-DDT	"	ND	28.9	28.9	"	"	"	"	"	RL1
Dieldrin	"	ND	7.22	7.22	"	"	"	"	"	RL1
Endosulfan I	"	ND	1.78	3.61	"	"	"	"	"	
Endosulfan II	"	ND	3.61	3.61	"	"	"	"	"	
Endosulfan sulfate	"	ND	1.78	3.61	"	"	"	"	"	
Endrin	"	ND	3.61	3.61	"	"	"	"	"	
Endrin aldehyde	"	ND	3.61	3.61	"	"	"	"	"	
Endrin ketone	"	ND	1.78	3.61	"	"	"	"	"	
Heptachlor	"	ND	1.78	3.61	"	"	"	"	"	
Heptachlor epoxide	"	ND	3.61	3.61	"	"	"	"	"	
Methoxychlor	"	ND	14.4	14.4	"	"	"	"	"	RL1, C
Toxaphene	"	ND	53.8	108	"	"	"	"	"	

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Darrell Auvil, Project Manager

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Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

Report Created:  
11/17/09 15:44

**Organochlorine Pesticides per EPA Method 8081A**  
TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
<b>PSJ0657-03 (SS-403-101909-0)</b>				<b>Soil</b>				<b>Sampled: 10/19/09 11:50</b>		<b>RL3</b>

Surrogate(s): 2,4,5,6-Tetrachloro-m-xylene 62.0% 36 - 140 % 10/29/09 07:20

<b>PSJ0657-04 (SS-404-101909-0)</b>				<b>Soil</b>				<b>Sampled: 10/19/09 11:20</b>		<b>RL3</b>
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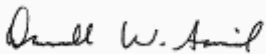
Aldrin	EPA 8081A	ND	1.94	3.93	ug/kg dry	5x	9100740	10/21/09 11:30	10/29/09 10:23	
alpha-BHC	"	ND	1.94	3.93	"	"	"	"	"	
beta-BHC	"	ND	1.94	3.93	"	"	"	"	"	
delta-BHC	"	ND	1.94	3.93	"	"	"	"	"	
gamma-BHC (Lindane)	"	ND	1.94	3.93	"	"	"	"	"	
gamma-Chlordane	"	ND	1.94	3.93	"	"	"	"	"	
alpha-Chlordane	"	ND	1.94	3.93	"	"	"	"	"	
Chlordane (tech)	"	ND	44.0	88.0	"	"	"	"	"	
4,4'-DDD	"	ND	1.94	3.93	"	"	"	"	"	
4,4'-DDE	"	ND	5.87	5.87	"	"	"	"	"	<b>RL1</b>
4,4'-DDT	"	ND	19.7	19.7	"	"	"	"	"	<b>RL1</b>
Dieldrin	"	ND	5.87	5.87	"	"	"	"	"	<b>RL1</b>
Endosulfan I	"	ND	1.94	3.93	"	"	"	"	"	
Endosulfan II	"	ND	1.94	3.93	"	"	"	"	"	
Endosulfan sulfate	"	ND	1.94	3.93	"	"	"	"	"	
Endrin	"	ND	1.94	3.93	"	"	"	"	"	
Endrin aldehyde	"	ND	3.93	3.93	"	"	"	"	"	
Endrin ketone	"	ND	3.93	3.93	"	"	"	"	"	
Heptachlor	"	ND	1.94	3.93	"	"	"	"	"	
Heptachlor epoxide	"	ND	3.93	3.93	"	"	"	"	"	
Methoxychlor	"	ND	3.93	3.93	"	"	"	"	"	<b>C</b>
Toxaphene	"	ND	58.7	117	"	"	"	"	"	

Surrogate(s): 2,4,5,6-Tetrachloro-m-xylene 60.3% 36 - 140 % "

<b>PSJ0657-05 (SS-405-101909-0)</b>				<b>Soil</b>				<b>Sampled: 10/19/09 11:00</b>		<b>RL3</b>
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Aldrin	EPA 8081A	ND	1.88	3.82	ug/kg dry	5x	9100740	10/21/09 11:30	10/29/09 10:49	
alpha-BHC	"	ND	1.88	3.82	"	"	"	"	"	
beta-BHC	"	ND	1.88	3.82	"	"	"	"	"	
delta-BHC	"	ND	1.88	3.82	"	"	"	"	"	
gamma-BHC (Lindane)	"	ND	1.88	3.82	"	"	"	"	"	
gamma-Chlordane	"	ND	1.88	3.82	"	"	"	"	"	
alpha-Chlordane	"	ND	1.88	3.82	"	"	"	"	"	
Chlordane (tech)	"	ND	42.8	85.6	"	"	"	"	"	

TestAmerica Portland



Darrell Auvil, Project Manager

**Amended Report**

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**Amended Report**

**CH2M-Hill**

2020 SW 4th Suite 300  
Portland, OR 97201

Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

Report Created:  
11/17/09 15:44

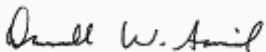
**Organochlorine Pesticides per EPA Method 8081A**  
TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
<b>PSJ0657-05 (SS-405-101909-0)</b>		<b>Soil</b>				<b>Sampled: 10/19/09 11:00</b>				<b>RL3</b>
4,4'-DDD	EPA 8081A	ND	1.88	3.82	ug/kg dry	5x	9100740	10/21/09 11:30	10/29/09 10:49	
4,4'-DDE	"	ND	7.64	7.64	"	"	"	"	"	RL1
4,4'-DDT	"	ND	22.9	22.9	"	"	"	"	"	RL1
Dieldrin	"	ND	9.58	9.58	"	"	"	"	"	RL1
Endosulfan I	"	ND	1.88	3.82	"	"	"	"	"	
Endosulfan II	"	ND	3.82	3.82	"	"	"	"	"	
Endosulfan sulfate	"	ND	1.88	3.82	"	"	"	"	"	
Endrin	"	ND	3.82	3.82	"	"	"	"	"	
Endrin aldehyde	"	ND	3.82	3.82	"	"	"	"	"	
Endrin ketone	"	ND	13.4	13.4	"	"	"	"	"	RL1
Heptachlor	"	ND	1.88	3.82	"	"	"	"	"	
Heptachlor epoxide	"	ND	3.82	3.82	"	"	"	"	"	
Methoxychlor	"	ND	11.5	11.5	"	"	"	"	"	RL1, C
Toxaphene	"	ND	57.0	114	"	"	"	"	"	

Surrogate(s): 2,4,5,6-Tetrachloro-m-xylene 66.6% 36 - 140 % "

<b>PSJ0657-06 (SS-405-101909-2)</b>		<b>Soil</b>				<b>Sampled: 10/19/09 11:00</b>				<b>RL3</b>
Aldrin	EPA 8081A	ND	1.82	3.69	ug/kg dry	5x	9100740	10/21/09 11:30	10/29/09 11:15	
alpha-BHC	"	ND	1.82	3.69	"	"	"	"	"	
beta-BHC	"	ND	1.82	3.69	"	"	"	"	"	
delta-BHC	"	ND	1.82	3.69	"	"	"	"	"	
gamma-BHC (Lindane)	"	ND	1.82	3.69	"	"	"	"	"	
gamma-Chlordane	"	ND	1.82	3.69	"	"	"	"	"	
alpha-Chlordane	"	ND	1.82	3.69	"	"	"	"	"	
Chlordane (tech)	"	ND	41.3	82.7	"	"	"	"	"	
4,4'-DDD	"	ND	1.82	3.69	"	"	"	"	"	
4,4'-DDE	"	ND	5.51	5.51	"	"	"	"	"	RL1
4,4'-DDT	"	ND	18.5	18.5	"	"	"	"	"	RL1
Dieldrin	"	ND	5.51	5.51	"	"	"	"	"	RL1
Endosulfan I	"	ND	1.82	3.69	"	"	"	"	"	
Endosulfan II	"	ND	1.82	3.69	"	"	"	"	"	
Endosulfan sulfate	"	ND	1.82	3.69	"	"	"	"	"	
Endrin	"	ND	3.69	3.69	"	"	"	"	"	
Endrin aldehyde	"	ND	3.69	3.69	"	"	"	"	"	
Endrin ketone	"	ND	11.1	11.1	"	"	"	"	"	RL1
Heptachlor	"	ND	1.82	3.69	"	"	"	"	"	

TestAmerica Portland



Darrell Auvil, Project Manager

**Amended Report**

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**Amended Report**

**CH2M-Hill**

2020 SW 4th Suite 300  
Portland, OR 97201

Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

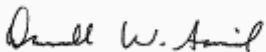
Report Created:  
11/17/09 15:44

**Organochlorine Pesticides per EPA Method 8081A**  
TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes	
<b>PSJ0657-06 (SS-405-101909-2)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 11:00</b>						<b>RL3</b>
Heptachlor epoxide	EPA 8081A	ND	3.69	3.69	ug/kg dry	5x	9100740	10/21/09 11:30	10/29/09 11:15		
Methoxychlor	"	ND	14.8	14.8	"	"	"	"	"	RL1, C	
Toxaphene	"	ND	55.1	110	"	"	"	"	"		
<i>Surrogate(s): 2,4,5,6-Tetrachloro-m-xylene</i>				57.1%		36 - 140 %				"	

<b>PSJ0657-07 (SS-406-101909-0)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 12:05</b>						<b>RL3</b>
Aldrin	EPA 8081A	ND	1.84	3.73	ug/kg dry	5x	9100740	10/21/09 11:30	10/29/09 07:46		
alpha-BHC	"	ND	1.84	3.73	"	"	"	"	"		
beta-BHC	"	ND	1.84	3.73	"	"	"	"	"		
delta-BHC	"	ND	1.84	3.73	"	"	"	"	"		
gamma-BHC (Lindane)	"	ND	1.84	3.73	"	"	"	"	"		
gamma-Chlordane	"	ND	5.57	5.57	"	"	"	"	"	RL1	
alpha-Chlordane	"	ND	1.84	3.73	"	"	"	"	"		
Chlordane (tech)	"	ND	41.8	83.5	"	"	"	"	"		
4,4'-DDD	"	ND	1.84	3.73	"	"	"	"	"		
4,4'-DDE	"	ND	5.57	5.57	"	"	"	"	"	RL1	
4,4'-DDT	"	ND	22.4	22.4	"	"	"	"	"	RL1	
Dieldrin	"	ND	3.73	3.73	"	"	"	"	"		
Endosulfan I	"	ND	1.84	3.73	"	"	"	"	"		
Endosulfan II	"	ND	1.84	3.73	"	"	"	"	"		
Endosulfan sulfate	"	ND	1.84	3.73	"	"	"	"	"		
Endrin	"	ND	1.84	3.73	"	"	"	"	"		
Endrin aldehyde	"	ND	1.84	3.73	"	"	"	"	"		
Endrin ketone	"	ND	1.84	3.73	"	"	"	"	"		
Heptachlor	"	ND	1.84	3.73	"	"	"	"	"		
Heptachlor epoxide	"	ND	3.73	3.73	"	"	"	"	"		
Methoxychlor	"	ND	9.35	9.35	"	"	"	"	"	RL1, C	
Toxaphene	"	ND	55.7	111	"	"	"	"	"		
<i>Surrogate(s): 2,4,5,6-Tetrachloro-m-xylene</i>				59.8%		36 - 140 %				"	

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Darrell Auvil, Project Manager

**Amended Report**

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**Amended Report**

**CH2M-Hill**

2020 SW 4th Suite 300  
Portland, OR 97201

Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

Report Created:  
11/17/09 15:44

**Organochlorine Pesticides per EPA Method 8081A**  
TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
<b>PSJ0657-08 (SS-407-101909-0)</b>				<b>Soil</b>			<b>Sampled: 10/19/09 10:55</b>			<b>RL3</b>
Aldrin	EPA 8081A	ND	0.751	1.52	ug/kg dry	2x	9100740	10/21/09 11:30	10/30/09 16:17	
alpha-BHC	"	ND	0.751	1.52	"	"	"	"	"	
beta-BHC	"	ND	0.751	1.52	"	"	"	"	"	
delta-BHC	"	ND	0.751	1.52	"	"	"	"	"	
gamma-BHC (Lindane)	"	ND	0.751	1.52	"	"	"	"	"	
gamma-Chlordane	"	ND	0.751	1.52	"	"	"	"	"	
alpha-Chlordane	"	ND	0.751	1.52	"	"	"	"	"	
Chlordane (tech)	"	ND	17.1	34.1	"	"	"	"	"	
4,4'-DDD	"	ND	0.751	1.52	"	"	"	"	"	
4,4'-DDE	"	ND	1.52	1.52	"	"	"	"	"	
Dieldrin	"	ND	2.28	2.28	"	"	"	"	"	<b>RL1</b>
Endosulfan I	"	ND	0.751	1.52	"	"	"	"	"	
Endosulfan II	"	ND	0.751	1.52	"	"	"	"	"	
Endosulfan sulfate	"	ND	0.751	1.52	"	"	"	"	"	
Endrin	"	ND	0.751	1.52	"	"	"	"	"	
Endrin aldehyde	"	ND	0.751	1.52	"	"	"	"	"	
Endrin ketone	"	ND	0.751	1.52	"	"	"	"	"	
Heptachlor	"	ND	0.751	1.52	"	"	"	"	"	
Heptachlor epoxide	"	ND	1.52	1.52	"	"	"	"	"	
Methoxychlor	"	ND	4.57	4.57	"	"	"	"	"	<b>RL1</b>
Toxaphene	"	ND	22.8	45.5	"	"	"	"	"	

Surrogate(s): 2,4,5,6-Tetrachloro-m-xylene 70.5% 36 - 140 % "

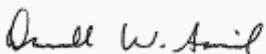
**PSJ0657-08RE1 (SS-407-101909-0)** **Soil** **Sampled: 10/19/09 10:55** **RL3**

4,4'-DDT	EPA 8081A	ND	9.56	9.56	ug/kg dry	5x	9100740	10/21/09 11:30	10/29/09 08:38	<b>RL1</b>
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**PSJ0657-09 (SS-408-101909-0)** **Soil** **Sampled: 10/19/09 10:45** **RL3**

Aldrin	EPA 8081A	ND	0.708	1.44	ug/kg dry	2x	9100740	10/21/09 11:30	10/30/09 14:54	
alpha-BHC	"	ND	0.708	1.44	"	"	"	"	"	
beta-BHC	"	ND	0.708	1.44	"	"	"	"	"	
delta-BHC	"	ND	0.708	1.44	"	"	"	"	"	
gamma-BHC (Lindane)	"	ND	0.708	1.44	"	"	"	"	"	
gamma-Chlordane	"	ND	0.708	1.44	"	"	"	"	"	
alpha-Chlordane	"	ND	0.708	1.44	"	"	"	"	"	
Chlordane (tech)	"	ND	16.1	32.2	"	"	"	"	"	
4,4'-DDD	"	ND	0.708	1.44	"	"	"	"	"	

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Darrell Auvil, Project Manager

**Amended Report**

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Amended Report

**CH2M-Hill**

2020 SW 4th Suite 300  
Portland, OR 97201

Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

Report Created:  
11/17/09 15:44

**Organochlorine Pesticides per EPA Method 8081A**  
TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
<b>PSJ0657-09 (SS-408-101909-0)</b>		<b>Soil</b>				<b>Sampled: 10/19/09 10:45</b>				<b>RL3</b>
4,4'-DDE	EPA 8081A	ND	0.708	1.44	ug/kg dry	2x	9100740	10/21/09 11:30	10/30/09 14:54	
4,4'-DDT	"	ND	2.14	2.14	"	"	"	"	"	RL1
Dieldrin	"	ND	0.708	1.44	"	"	"	"	"	
Endosulfan I	"	ND	0.708	1.44	"	"	"	"	"	
Endosulfan II	"	ND	0.708	1.44	"	"	"	"	"	
Endosulfan sulfate	"	ND	0.708	1.44	"	"	"	"	"	
Endrin	"	ND	0.708	1.44	"	"	"	"	"	
Endrin aldehyde	"	ND	0.708	1.44	"	"	"	"	"	C
Endrin ketone	"	ND	0.708	1.44	"	"	"	"	"	
Heptachlor	"	ND	0.708	1.44	"	"	"	"	"	
Heptachlor epoxide	"	ND	0.708	1.44	"	"	"	"	"	
Methoxychlor	"	ND	0.708	1.44	"	"	"	"	"	
Toxaphene	"	ND	21.4	42.9	"	"	"	"	"	

Surrogate(s): 2,4,5,6-Tetrachloro-m-xylene

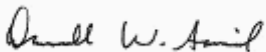
61.3%

36 - 140 %

"

<b>PSJ0657-10 (SS-409-101909-0)</b>		<b>Soil</b>				<b>Sampled: 10/19/09 12:15</b>				<b>RL3</b>
Aldrin	EPA 8081A	ND	4.03	8.19	ug/kg dry	10x	9100740	10/21/09 11:30	10/29/09 12:07	
<b>alpha-BHC</b>	"	<b>6.78</b>	4.03	8.19	"	"	"	"	"	J
beta-BHC	"	ND	4.03	8.19	"	"	"	"	"	
delta-BHC	"	ND	4.03	8.19	"	"	"	"	"	
gamma-BHC (Lindane)	"	ND	4.03	8.19	"	"	"	"	"	
gamma-Chlordane	"	ND	81.9	81.9	"	"	"	"	"	RL1
alpha-Chlordane	"	ND	12.2	12.2	"	"	"	"	"	RL1
Chlordane (tech)	"	ND	91.7	183	"	"	"	"	"	
4,4'-DDD	"	ND	4.03	8.19	"	"	"	"	"	
4,4'-DDE	"	ND	81.9	81.9	"	"	"	"	"	RL1
Dieldrin	"	ND	57.3	57.3	"	"	"	"	"	RL1
Endosulfan I	"	ND	20.5	20.5	"	"	"	"	"	RL1
Endosulfan II	"	ND	40.9	40.9	"	"	"	"	"	RL1
Endosulfan sulfate	"	ND	4.03	8.19	"	"	"	"	"	
Endrin	"	ND	40.9	40.9	"	"	"	"	"	RL1
Endrin aldehyde	"	ND	32.8	32.8	"	"	"	"	"	RL1
Endrin ketone	"	ND	32.8	32.8	"	"	"	"	"	RL1
Heptachlor	"	ND	4.03	8.19	"	"	"	"	"	
Heptachlor epoxide	"	ND	49.1	49.1	"	"	"	"	"	RL1
Toxaphene	"	ND	122	244	"	"	"	"	"	

TestAmerica Portland



Darrell Auvil, Project Manager

Amended Report

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**Amended Report**

**CH2M-Hill**

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Portland, OR 97201

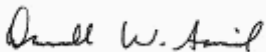
Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

Report Created:  
11/17/09 15:44

**Organochlorine Pesticides per EPA Method 8081A**  
TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes	
<b>PSJ0657-10 (SS-409-101909-0)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 12:15</b>						<b>RL3</b>
<i>Surrogate(s): 2,4,5,6-Tetrachloro-m-xylene</i>				52.2%		36 - 140 %			10/29/09 12:07		
<b>PSJ0657-10RE1 (SS-409-101909-0)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 12:15</b>						
4,4'-DDT	EPA 8081A	ND	491	491	ug/kg dry	100x	9100740	10/21/09 11:30	10/30/09 12:24	<b>RL1</b>	
Methoxychlor	"	ND	205	205	"	"	"	"	"	<b>RL1</b>	
<b>PSJ0657-11 (SS-410-101909-0)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 10:15</b>						<b>RL3</b>
Aldrin	EPA 8081A	ND	1.90	3.85	ug/kg dry	5x	9100740	10/21/09 11:30	10/30/09 19:10		
alpha-BHC	"	ND	1.90	3.85	"	"	"	"	"		
beta-BHC	"	ND	1.90	3.85	"	"	"	"	"		
delta-BHC	"	ND	1.90	3.85	"	"	"	"	"		
gamma-BHC (Lindane)	"	ND	1.90	3.85	"	"	"	"	"		
gamma-Chlordane	"	ND	1.90	3.85	"	"	"	"	"		
alpha-Chlordane	"	ND	1.90	3.85	"	"	"	"	"		
Chlordane (tech)	"	ND	43.1	86.3	"	"	"	"	"		
4,4'-DDD	"	ND	1.90	3.85	"	"	"	"	"		
4,4'-DDE	"	ND	3.85	3.85	"	"	"	"	"		
Dieldrin	"	ND	5.75	5.75	"	"	"	"	"	<b>RL1</b>	
Endosulfan I	"	ND	1.90	3.85	"	"	"	"	"		
Endosulfan II	"	ND	1.90	3.85	"	"	"	"	"		
Endosulfan sulfate	"	ND	1.90	3.85	"	"	"	"	"		
Endrin	"	ND	1.90	3.85	"	"	"	"	"		
Endrin aldehyde	"	ND	1.90	3.85	"	"	"	"	"		
Endrin ketone	"	ND	1.90	3.85	"	"	"	"	"		
Heptachlor	"	ND	1.90	3.85	"	"	"	"	"		
Heptachlor epoxide	"	ND	1.90	3.85	"	"	"	"	"		
Methoxychlor	"	ND	3.85	3.85	"	"	"	"	"		
Toxaphene	"	ND	57.5	115	"	"	"	"	"		
<i>Surrogate(s): 2,4,5,6-Tetrachloro-m-xylene</i>				55.0%		36 - 140 %			"		

TestAmerica Portland



Darrell Auvil, Project Manager

**Amended Report**

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**Amended Report**

**CH2M-Hill**

2020 SW 4th Suite 300  
Portland, OR 97201

Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

Report Created:  
11/17/09 15:44

**Organochlorine Pesticides per EPA Method 8081A**  
TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
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**PSJ0657-11RE1 (SS-410-101909-0)**

Soil

Sampled: 10/19/09 10:15

4,4'-DDT	EPA 8081A	ND	15.4	15.4	ug/kg dry	10x	9100740	10/21/09 11:30	10/29/09 02:33	RL1
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**PSJ0657-12 (SS-411-101909-0)**

Soil

Sampled: 10/19/09 10:30

RL3

Aldrin	EPA 8081A	ND	3.85	7.82	ug/kg dry	10x	9100740	10/21/09 11:30	10/29/09 12:33	
alpha-BHC	"	ND	3.85	7.82	"	"	"	"	"	
beta-BHC	"	ND	3.85	7.82	"	"	"	"	"	
delta-BHC	"	ND	3.85	7.82	"	"	"	"	"	
gamma-BHC (Lindane)	"	ND	3.85	7.82	"	"	"	"	"	
gamma-Chlordane	"	ND	7.82	7.82	"	"	"	"	"	
alpha-Chlordane	"	ND	3.85	7.82	"	"	"	"	"	
Chlordane (tech)	"	ND	87.6	175	"	"	"	"	"	
4,4'-DDD	"	ND	3.85	7.82	"	"	"	"	"	
4,4'-DDE	"	ND	11.7	11.7	"	"	"	"	"	RL1
4,4'-DDT	"	ND	46.9	46.9	"	"	"	"	"	RL1
Dieldrin	"	ND	19.6	19.6	"	"	"	"	"	RL1
Endosulfan I	"	ND	3.85	7.82	"	"	"	"	"	
Endosulfan II	"	ND	7.82	7.82	"	"	"	"	"	
Endosulfan sulfate	"	ND	3.85	7.82	"	"	"	"	"	
Endrin	"	ND	3.85	7.82	"	"	"	"	"	
Endrin aldehyde	"	ND	7.82	7.82	"	"	"	"	"	
Endrin ketone	"	ND	27.4	27.4	"	"	"	"	"	RL1
Heptachlor	"	ND	3.85	7.82	"	"	"	"	"	
Heptachlor epoxide	"	ND	7.82	7.82	"	"	"	"	"	
Methoxychlor	"	ND	31.3	31.3	"	"	"	"	"	C, RL1
Toxaphene	"	ND	117	233	"	"	"	"	"	

Surrogate(s): 2,4,5,6-Tetrachloro-m-xylene 43.9% 36 - 140 % " Z3

**PSJ0657-13 (SS-411-101909-1)**

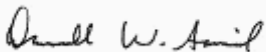
Soil

Sampled: 10/19/09 10:30

RL3

Aldrin	EPA 8081A	ND	3.76	7.63	ug/kg dry	10x	9100740	10/21/09 11:30	10/29/09 13:26	
alpha-BHC	"	ND	3.76	7.63	"	"	"	"	"	
beta-BHC	"	ND	15.3	15.3	"	"	"	"	"	RL1
delta-BHC	"	ND	3.76	7.63	"	"	"	"	"	
gamma-BHC (Lindane)	"	ND	3.76	7.63	"	"	"	"	"	
gamma-Chlordane	"	ND	11.4	11.4	"	"	"	"	"	RL1
alpha-Chlordane	"	ND	3.76	7.63	"	"	"	"	"	
Chlordane (tech)	"	ND	85.4	171	"	"	"	"	"	

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Darrell Auvil, Project Manager

**Amended Report**

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**Amended Report**

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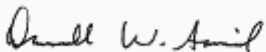
Project Name: **NW Pipe Project**  
 Project Number: NW Pipe Project  
 Project Manager: Pat Heins

Report Created:  
 11/17/09 15:44

**Organochlorine Pesticides per EPA Method 8081A**  
 TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
<b>PSJ0657-13 (SS-411-101909-1)</b>		<b>Soil</b>				<b>Sampled: 10/19/09 10:30</b>				<b>RL3</b>
4,4'-DDD	EPA 8081A	ND	7.63	7.63	ug/kg dry	10x	9100740	10/21/09 11:30	10/29/09 13:26	
4,4'-DDE	"	ND	11.4	11.4	"	"	"	"	"	RL1
4,4'-DDT	"	ND	45.8	45.8	"	"	"	"	"	RL1
Dieldrin	"	ND	15.3	15.3	"	"	"	"	"	RL1
Endosulfan I	"	ND	3.76	7.63	"	"	"	"	"	
Endosulfan II	"	ND	7.63	7.63	"	"	"	"	"	
Endosulfan sulfate	"	ND	3.76	7.63	"	"	"	"	"	
Endrin	"	ND	3.76	7.63	"	"	"	"	"	
Endrin aldehyde	"	ND	22.9	22.9	"	"	"	"	"	RL1
Endrin ketone	"	ND	42.0	42.0	"	"	"	"	"	RL1
Heptachlor	"	ND	3.76	7.63	"	"	"	"	"	
Heptachlor epoxide	"	ND	7.63	7.63	"	"	"	"	"	
Methoxychlor	"	ND	22.9	22.9	"	"	"	"	"	RL1, C
Toxaphene	"	ND	114	228	"	"	"	"	"	
<i>Surrogate(s): 2,4,5,6-Tetrachloro-m-xylene</i>				46.2%			36 - 140 %			" Z3

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Darrell Auvil, Project Manager

**Amended Report**

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Portland, OR 97201

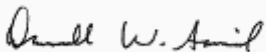
Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

Report Created:  
11/17/09 15:44

**Polychlorinated Biphenyls per EPA Method 8082**  
TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes	
<b>PSJ0657-01 (SS-401-101909-0)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 11:30</b>						<b>RL7</b>
Aroclor 1016	EPA 8082	ND	3.67	7.32	ug/kg dry	2x	9100740	10/21/09 11:30	10/27/09 18:38		
Aroclor 1221	"	ND	7.32	14.7	"	"	"	"	"		
Aroclor 1232	"	ND	3.67	7.32	"	"	"	"	"		
Aroclor 1242	"	ND	3.67	7.32	"	"	"	"	"		
Aroclor 1248	"	ND	3.67	7.32	"	"	"	"	"		
<b>Aroclor 1254</b>	"	<b>65.8</b>	3.67	7.32	"	"	"	"	"		
Aroclor 1260	"	ND	3.67	7.32	"	"	"	"	"		
Aroclor 1262	"	ND	3.67	7.32	"	"	"	"	"		
Aroclor 1268	"	ND	3.67	7.32	"	"	"	"	"		
<i>Surrogate(s): Decachlorobiphenyl</i>			66.1%			16 - 149 %				"	
<b>PSJ0657-02 (SS-402-101909-0)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 11:40</b>						<b>RL7</b>
Aroclor 1016	EPA 8082	ND	17.8	35.5	ug/kg dry	10x	9100740	10/21/09 11:30	10/27/09 19:00		
Aroclor 1221	"	ND	35.5	71.3	"	"	"	"	"		
Aroclor 1232	"	ND	17.8	35.5	"	"	"	"	"		
Aroclor 1242	"	ND	17.8	35.5	"	"	"	"	"		
Aroclor 1248	"	ND	17.8	35.5	"	"	"	"	"		
<b>Aroclor 1254</b>	"	<b>368</b>	17.8	35.5	"	"	"	"	"		
Aroclor 1260	"	ND	17.8	35.5	"	"	"	"	"		
Aroclor 1262	"	ND	17.8	35.5	"	"	"	"	"		
Aroclor 1268	"	ND	17.8	35.5	"	"	"	"	"		
<i>Surrogate(s): Decachlorobiphenyl</i>			57.6%			16 - 149 %				"	
<b>PSJ0657-03 (SS-403-101909-0)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 11:50</b>						<b>RL7</b>
Aroclor 1016	EPA 8082	ND	36.0	71.7	ug/kg dry	20x	9100740	10/21/09 11:30	10/30/09 14:22		
Aroclor 1221	"	ND	71.7	144	"	"	"	"	"		
Aroclor 1232	"	ND	36.0	71.7	"	"	"	"	"		
Aroclor 1242	"	ND	36.0	71.7	"	"	"	"	"		
Aroclor 1248	"	ND	36.0	71.7	"	"	"	"	"		
<b>Aroclor 1254</b>	"	<b>540</b>	36.0	71.7	"	"	"	"	"		
Aroclor 1260	"	ND	36.0	71.7	"	"	"	"	"		
Aroclor 1262	"	ND	36.0	71.7	"	"	"	"	"		
Aroclor 1268	"	ND	36.0	71.7	"	"	"	"	"		
<i>Surrogate(s): Decachlorobiphenyl</i>			58.3%			16 - 149 %				" <b>Z3</b>	

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Darrell Auvil, Project Manager

Amended Report

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**Amended Report**

**CH2M-Hill**

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Portland, OR 97201

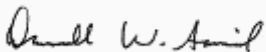
Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

Report Created:  
11/17/09 15:44

**Polychlorinated Biphenyls per EPA Method 8082**  
TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
<b>PSJ0657-04 (SS-404-101909-0)</b>										<b>Soil</b> <b>Sampled: 10/19/09 11:20</b> <b>RL7</b>
Aroclor 1016	EPA 8082	ND	19.6	39.1	ug/kg dry	10x	9100740	10/21/09 11:30	10/27/09 19:44	
Aroclor 1221	"	ND	39.1	78.7	"	"	"	"	"	
Aroclor 1232	"	ND	19.6	39.1	"	"	"	"	"	
Aroclor 1242	"	ND	19.6	39.1	"	"	"	"	"	
Aroclor 1248	"	ND	19.6	39.1	"	"	"	"	"	
<b>Aroclor 1254</b>	"	<b>302</b>	19.6	39.1	"	"	"	"	"	
Aroclor 1260	"	ND	19.6	39.1	"	"	"	"	"	
Aroclor 1262	"	ND	19.6	39.1	"	"	"	"	"	
Aroclor 1268	"	ND	19.6	39.1	"	"	"	"	"	
<i>Surrogate(s): Decachlorobiphenyl</i>			59.5%			16 - 149 %				"
<b>PSJ0657-05 (SS-405-101909-0)</b>										<b>Soil</b> <b>Sampled: 10/19/09 11:00</b> <b>RL7</b>
Aroclor 1016	EPA 8082	ND	19.1	38.0	ug/kg dry	10x	9100740	10/21/09 11:30	10/27/09 20:06	
Aroclor 1221	"	ND	38.0	76.4	"	"	"	"	"	
Aroclor 1232	"	ND	19.1	38.0	"	"	"	"	"	
Aroclor 1242	"	ND	19.1	38.0	"	"	"	"	"	
Aroclor 1248	"	ND	19.1	38.0	"	"	"	"	"	
<b>Aroclor 1254</b>	"	<b>399</b>	19.1	38.0	"	"	"	"	"	
Aroclor 1260	"	ND	19.1	38.0	"	"	"	"	"	
Aroclor 1262	"	ND	19.1	38.0	"	"	"	"	"	
Aroclor 1268	"	ND	19.1	38.0	"	"	"	"	"	
<i>Surrogate(s): Decachlorobiphenyl</i>			59.8%			16 - 149 %				"
<b>PSJ0657-06 (SS-405-101909-2)</b>										<b>Soil</b> <b>Sampled: 10/19/09 11:00</b> <b>RL7</b>
Aroclor 1016	EPA 8082	ND	18.4	36.7	ug/kg dry	10x	9100740	10/21/09 11:30	10/27/09 20:28	
Aroclor 1221	"	ND	36.7	73.9	"	"	"	"	"	
Aroclor 1232	"	ND	18.4	36.7	"	"	"	"	"	
Aroclor 1242	"	ND	18.4	36.7	"	"	"	"	"	
Aroclor 1248	"	ND	18.4	36.7	"	"	"	"	"	
<b>Aroclor 1254</b>	"	<b>342</b>	18.4	36.7	"	"	"	"	"	
Aroclor 1260	"	ND	18.4	36.7	"	"	"	"	"	
Aroclor 1262	"	ND	18.4	36.7	"	"	"	"	"	
Aroclor 1268	"	ND	18.4	36.7	"	"	"	"	"	
<i>Surrogate(s): Decachlorobiphenyl</i>			61.6%			16 - 149 %				"

TestAmerica Portland



Darrell Auvil, Project Manager

**Amended Report**

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**Amended Report**

**CH2M-Hill**

2020 SW 4th Suite 300  
Portland, OR 97201

Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

Report Created:  
11/17/09 15:44

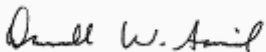
**Polychlorinated Biphenyls per EPA Method 8082**  
TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
<b>PSJ0657-07 (SS-406-101909-0)</b>										<b>Soil</b> <b>Sampled: 10/19/09 12:05</b> <b>RL7</b>
Aroclor 1016	EPA 8082	ND	37.2	74.2	ug/kg dry	20x	9100740	10/21/09 11:30	10/27/09 20:50	
Aroclor 1221	"	ND	74.2	149	"	"	"	"	"	
Aroclor 1232	"	ND	37.2	74.2	"	"	"	"	"	
Aroclor 1242	"	ND	37.2	74.2	"	"	"	"	"	
Aroclor 1248	"	ND	37.2	74.2	"	"	"	"	"	
<b>Aroclor 1254</b>	"	<b>460</b>	37.2	74.2	"	"	"	"	"	
Aroclor 1260	"	ND	37.2	74.2	"	"	"	"	"	
Aroclor 1262	"	ND	37.2	74.2	"	"	"	"	"	
Aroclor 1268	"	ND	37.2	74.2	"	"	"	"	"	
<i>Surrogate(s): Decachlorobiphenyl</i>			38.3%			16 - 149 %				" <b>Z3</b>

<b>PSJ0657-08 (SS-407-101909-0)</b>										<b>Soil</b> <b>Sampled: 10/19/09 10:55</b> <b>RL7</b>
Aroclor 1016	EPA 8082	ND	7.60	15.2	ug/kg dry	4x	9100740	10/21/09 11:30	10/27/09 21:12	
Aroclor 1221	"	ND	15.2	30.5	"	"	"	"	"	
Aroclor 1232	"	ND	7.60	15.2	"	"	"	"	"	
Aroclor 1242	"	ND	7.60	15.2	"	"	"	"	"	
Aroclor 1248	"	ND	7.60	15.2	"	"	"	"	"	
<b>Aroclor 1254</b>	"	<b>120</b>	7.60	15.2	"	"	"	"	"	
Aroclor 1260	"	ND	7.60	15.2	"	"	"	"	"	
Aroclor 1262	"	ND	7.60	15.2	"	"	"	"	"	
Aroclor 1268	"	ND	7.60	15.2	"	"	"	"	"	
<i>Surrogate(s): Decachlorobiphenyl</i>			62.9%			16 - 149 %				"

<b>PSJ0657-09 (SS-408-101909-0)</b>										<b>Soil</b> <b>Sampled: 10/19/09 10:45</b> <b>RL7</b>
Aroclor 1016	EPA 8082	ND	1.79	3.57	ug/kg dry	1x	9100740	10/21/09 11:30	10/27/09 22:40	
Aroclor 1221	"	ND	3.57	7.18	"	"	"	"	"	
Aroclor 1232	"	ND	1.79	3.57	"	"	"	"	"	
Aroclor 1242	"	ND	1.79	3.57	"	"	"	"	"	
Aroclor 1248	"	ND	1.79	3.57	"	"	"	"	"	
<b>Aroclor 1254</b>	"	<b>25.0</b>	1.79	3.57	"	"	"	"	"	
Aroclor 1260	"	ND	1.79	3.57	"	"	"	"	"	
Aroclor 1262	"	ND	1.79	3.57	"	"	"	"	"	
Aroclor 1268	"	ND	1.79	3.57	"	"	"	"	"	
<i>Surrogate(s): Decachlorobiphenyl</i>			66.4%			16 - 149 %				"

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Darrell Auvil, Project Manager

**Amended Report**

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**Amended Report**

**CH2M-Hill**

2020 SW 4th Suite 300  
Portland, OR 97201

Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

Report Created:  
11/17/09 15:44

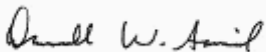
**Polychlorinated Biphenyls per EPA Method 8082**  
TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
<b>PSJ0657-10 (SS-409-101909-0)</b>										<b>Soil</b> <b>Sampled: 10/19/09 12:15</b> <b>RL7</b>
Aroclor 1016	EPA 8082	ND	408	814	ug/kg dry	200x	9100740	10/21/09 11:30	10/27/09 23:02	
Aroclor 1221	"	ND	814	1640	"	"	"	"	"	
Aroclor 1232	"	ND	408	814	"	"	"	"	"	
Aroclor 1242	"	ND	408	814	"	"	"	"	"	
Aroclor 1248	"	ND	408	814	"	"	"	"	"	
<b>Aroclor 1254</b>	"	<b>8740</b>	408	814	"	"	"	"	"	
Aroclor 1260	"	ND	408	814	"	"	"	"	"	
Aroclor 1262	"	ND	408	814	"	"	"	"	"	
Aroclor 1268	"	ND	408	814	"	"	"	"	"	
<i>Surrogate(s): Decachlorobiphenyl</i>				NR		16 - 149 %				Z3

<b>PSJ0657-11 (SS-410-101909-0)</b>										<b>Soil</b> <b>Sampled: 10/19/09 10:15</b> <b>RL7</b>
Aroclor 1016	EPA 8082	ND	7.68	15.3	ug/kg dry	4x	9100740	10/21/09 11:30	10/27/09 23:23	
Aroclor 1221	"	ND	15.3	30.8	"	"	"	"	"	
Aroclor 1232	"	ND	7.68	15.3	"	"	"	"	"	
Aroclor 1242	"	ND	7.68	15.3	"	"	"	"	"	
Aroclor 1248	"	ND	7.68	15.3	"	"	"	"	"	
<b>Aroclor 1254</b>	"	<b>181</b>	7.68	15.3	"	"	"	"	"	
Aroclor 1260	"	ND	7.68	15.3	"	"	"	"	"	
Aroclor 1262	"	ND	7.68	15.3	"	"	"	"	"	
Aroclor 1268	"	ND	7.68	15.3	"	"	"	"	"	
<i>Surrogate(s): Decachlorobiphenyl</i>				60.2%		16 - 149 %				"

<b>PSJ0657-12 (SS-411-101909-0)</b>										<b>Soil</b> <b>Sampled: 10/19/09 10:30</b> <b>RL7</b>
Aroclor 1016	EPA 8082	ND	97.5	194	ug/kg dry	50x	9100740	10/21/09 11:30	10/27/09 23:45	
Aroclor 1221	"	ND	194	391	"	"	"	"	"	
Aroclor 1232	"	ND	97.5	194	"	"	"	"	"	
Aroclor 1242	"	ND	97.5	194	"	"	"	"	"	
Aroclor 1248	"	ND	97.5	194	"	"	"	"	"	
<b>Aroclor 1254</b>	"	<b>1140</b>	97.5	194	"	"	"	"	"	
Aroclor 1260	"	ND	97.5	194	"	"	"	"	"	
Aroclor 1262	"	ND	97.5	194	"	"	"	"	"	
Aroclor 1268	"	ND	97.5	194	"	"	"	"	"	
<i>Surrogate(s): Decachlorobiphenyl</i>				NR		16 - 149 %				Z3

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**Amended Report**

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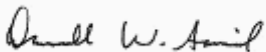
Project Name: **NW Pipe Project**  
 Project Number: NW Pipe Project  
 Project Manager: Pat Heins

Report Created:  
 11/17/09 15:44

**Polychlorinated Biphenyls per EPA Method 8082**  
 TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes	
<b>PSJ0657-13 (SS-411-101909-1)</b>		<b>Soil</b>		<b>Sampled: 10/19/09 10:30</b>							<b>RL7</b>
Aroclor 1016	EPA 8082	ND	76.1	152	ug/kg dry	40x	9100740	10/21/09 11:30	10/28/09 00:07		
Aroclor 1221	"	ND	152	305	"	"	"	"	"		
Aroclor 1232	"	ND	76.1	152	"	"	"	"	"		
Aroclor 1242	"	ND	76.1	152	"	"	"	"	"		
Aroclor 1248	"	ND	76.1	152	"	"	"	"	"		
<b>Aroclor 1254</b>	"	<b>948</b>	76.1	152	"	"	"	"	"		
Aroclor 1260	"	ND	76.1	152	"	"	"	"	"		
Aroclor 1262	"	ND	76.1	152	"	"	"	"	"		
Aroclor 1268	"	ND	76.1	152	"	"	"	"	"		
<i>Surrogate(s): Decachlorobiphenyl</i>				NR	16 - 149 %				"	<b>Z3</b>	

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Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

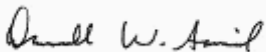
Report Created:  
11/17/09 15:44

**Polynuclear Aromatic Compounds per EPA 8270M-SIM**  
TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
<b>PSJ0657-01 (SS-401-101909-0)</b>				<b>Soil</b>		<b>Sampled: 10/19/09 11:30</b>				
Acenaphthene	EPA 8270m	5.45	3.62	14.7	ug/kg dry	1x	9101141	10/20/09 16:00	10/21/09 23:18	J
Acenaphthylene	"	ND	3.62	14.7	"	"	"	"	"	
Anthracene	"	10.4	3.62	14.7	"	"	"	"	"	J
Benzo (a) anthracene	"	73.6	3.62	14.7	"	"	"	"	"	
Benzo (a) pyrene	"	78.6	3.62	14.7	"	"	"	"	"	
Benzo (b) fluoranthene	"	91.0	3.62	14.7	"	"	"	"	"	
Benzo (ghi) perylene	"	72.6	3.62	14.7	"	"	"	"	"	
Benzo (k) fluoranthene	"	71.8	3.62	14.7	"	"	"	"	"	
Chrysene	"	94.1	3.62	14.7	"	"	"	"	"	
Dibenzo (a,h) anthracene	"	18.1	3.62	14.7	"	"	"	"	"	
Fluoranthene	"	168	3.62	14.7	"	"	"	"	"	
Fluorene	"	6.23	3.62	14.7	"	"	"	"	"	J
Indeno (1,2,3-cd) pyrene	"	61.4	3.62	14.7	"	"	"	"	"	
Naphthalene	"	12.3	3.62	14.7	"	"	"	"	"	J
Phenanthrene	"	77.3	3.62	14.7	"	"	"	"	"	
Pyrene	"	150	3.62	14.7	"	"	"	"	"	
Surrogate(s): Fluorene-d10				76.4%			24 - 125 %			"
Pyrene-d10				87.1%			41 - 141 %			"
Benzo (a) pyrene-d12				90.8%			38 - 143 %			"

<b>PSJ0657-03 (SS-403-101909-0)</b>				<b>Soil</b>		<b>Sampled: 10/19/09 11:50</b>				
Acenaphthene	EPA 8270m	5.67	3.55	14.4	ug/kg dry	1x	9101141	10/20/09 16:00	10/22/09 18:49	J
Acenaphthylene	"	3.66	3.55	14.4	"	"	"	"	"	J
Anthracene	"	25.0	3.55	14.4	"	"	"	"	"	
Benzo (a) anthracene	"	376	3.55	14.4	"	"	"	"	"	
Benzo (a) pyrene	"	430	3.55	14.4	"	"	"	"	"	
Benzo (b) fluoranthene	"	506	3.55	14.4	"	"	"	"	"	
Benzo (ghi) perylene	"	371	3.55	14.4	"	"	"	"	"	
Benzo (k) fluoranthene	"	479	3.55	14.4	"	"	"	"	"	
Chrysene	"	510	3.55	14.4	"	"	"	"	"	
Dibenzo (a,h) anthracene	"	105	3.55	14.4	"	"	"	"	"	
Fluoranthene	"	421	3.55	14.4	"	"	"	"	"	
Fluorene	"	4.60	3.55	14.4	"	"	"	"	"	J
Indeno (1,2,3-cd) pyrene	"	326	3.55	14.4	"	"	"	"	"	
Naphthalene	"	4.46	3.55	14.4	"	"	"	"	"	J
Phenanthrene	"	77.1	3.55	14.4	"	"	"	"	"	

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Portland, OR 97201

Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

Report Created:  
11/17/09 15:44

**Polynuclear Aromatic Compounds per EPA 8270M-SIM**  
TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
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**PSJ0657-03 (SS-403-101909-0)** **Soil** **Sampled: 10/19/09 11:50**

<b>Pyrene</b>	EPA 8270m	<b>439</b>	3.55	14.4	ug/kg dry	1x	9101141	10/20/09 16:00	10/22/09 18:49			
<i>Surrogate(s): Fluorene-d10</i>										86.5%	24 - 125 %	"
<i>Pyrene-d10</i>										81.8%	41 - 141 %	"
<i>Benzo (a) pyrene-d12</i>										92.4%	38 - 143 %	"

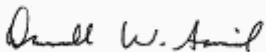
**PSJ0657-04 (SS-404-101909-0)** **Soil** **Sampled: 10/19/09 11:20**

<b>Acenaphthene</b>	EPA 8270m	<b>58.9</b>	3.86	15.7	ug/kg dry	1x	9101141	10/20/09 16:00	10/22/09 00:17			
<b>Acenaphthylene</b>	"	<b>11.6</b>	3.86	15.7	"	"	"	"	"	J		
<b>Fluorene</b>	"	<b>63.1</b>	3.86	15.7	"	"	"	"	"			
<b>Naphthalene</b>	"	<b>17.1</b>	3.86	15.7	"	"	"	"	"			
<i>Surrogate(s): Fluorene-d10</i>										77.7%	24 - 125 %	"
<i>Pyrene-d10</i>										75.0%	41 - 141 %	"
<i>Benzo (a) pyrene-d12</i>										83.4%	38 - 143 %	"

**PSJ0657-04RE1 (SS-404-101909-0)** **Soil** **Sampled: 10/19/09 11:20**

<b>Anthracene</b>	EPA 8270m	<b>272</b>	38.6	157	ug/kg dry	10x	9101141	10/20/09 16:00	10/22/09 19:19			
<b>Benzo (a) anthracene</b>	"	<b>1780</b>	38.6	157	"	"	"	"	"			
<b>Benzo (a) pyrene</b>	"	<b>1490</b>	38.6	157	"	"	"	"	"			
<b>Benzo (b) fluoranthene</b>	"	<b>1670</b>	38.6	157	"	"	"	"	"			
<b>Benzo (ghi) perylene</b>	"	<b>1050</b>	38.6	157	"	"	"	"	"			
<b>Benzo (k) fluoranthene</b>	"	<b>1310</b>	38.6	157	"	"	"	"	"			
<b>Chrysene</b>	"	<b>1980</b>	38.6	157	"	"	"	"	"			
<b>Dibenzo (a,h) anthracene</b>	"	<b>367</b>	38.6	157	"	"	"	"	"			
<b>Fluoranthene</b>	"	<b>3450</b>	38.6	157	"	"	"	"	"			
<b>Indeno (1,2,3-cd) pyrene</b>	"	<b>959</b>	38.6	157	"	"	"	"	"			
<b>Phenanthrene</b>	"	<b>1380</b>	38.6	157	"	"	"	"	"			
<b>Pyrene</b>	"	<b>3070</b>	38.6	157	"	"	"	"	"			
<i>Surrogate(s): Fluorene-d10</i>										81.4%	24 - 125 %	"
<i>Pyrene-d10</i>										89.7%	41 - 141 %	"
<i>Benzo (a) pyrene-d12</i>										92.4%	38 - 143 %	"

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Darrell Auvil, Project Manager

**Amended Report**

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Portland, OR 97201

Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

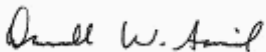
Report Created:  
11/17/09 15:44

**Polynuclear Aromatic Compounds per EPA 8270M-SIM**  
TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes	
<b>PSJ0657-05 (SS-405-101909-0)</b>		<b>Soil</b>				<b>Sampled: 10/19/09 11:00</b>					<b>RL7</b>
Acenaphthene	EPA 8270m	33.9	15.1	61.2	ug/kg dry	4x	9101141	10/20/09 16:00	10/22/09 19:48	J	
Acenaphthylene	"	276	15.1	61.2	"	"	"	"	"		
Anthracene	"	413	15.1	61.2	"	"	"	"	"		
Benzo (a) anthracene	"	1670	15.1	61.2	"	"	"	"	"		
Benzo (a) pyrene	"	1550	15.1	61.2	"	"	"	"	"		
Benzo (b) fluoranthene	"	2180	15.1	61.2	"	"	"	"	"		
Benzo (ghi) perylene	"	1180	15.1	61.2	"	"	"	"	"		
Benzo (k) fluoranthene	"	1710	15.1	61.2	"	"	"	"	"		
Chrysene	"	2090	15.1	61.2	"	"	"	"	"		
Dibenzo (a,h) anthracene	"	451	15.1	61.2	"	"	"	"	"		
Fluoranthene	"	1680	15.1	61.2	"	"	"	"	"		
Fluorene	"	38.7	15.1	61.2	"	"	"	"	"	J	
Indeno (1,2,3-cd) pyrene	"	1160	15.1	61.2	"	"	"	"	"		
Naphthalene	"	17.8	15.1	61.2	"	"	"	"	"	J	
Phenanthrene	"	462	15.1	61.2	"	"	"	"	"		
Pyrene	"	1700	15.1	61.2	"	"	"	"	"		
Surrogate(s): Fluorene-d10				86.7%		24 - 125 %				"	
Pyrene-d10				89.9%		41 - 141 %				"	
Benzo (a) pyrene-d12				87.2%		38 - 143 %				"	

<b>PSJ0657-06 (SS-405-101909-2)</b>		<b>Soil</b>				<b>Sampled: 10/19/09 11:00</b>					<b>RL7</b>
Acenaphthene	EPA 8270m	31.1	14.6	59.3	ug/kg dry	4x	9101141	10/20/09 16:00	10/21/09 17:23	J	
Acenaphthylene	"	310	14.6	59.3	"	"	"	"	"		
Anthracene	"	426	14.6	59.3	"	"	"	"	"		
Benzo (a) anthracene	"	956	14.6	59.3	"	"	"	"	"		
Benzo (a) pyrene	"	1010	14.6	59.3	"	"	"	"	"		
Benzo (b) fluoranthene	"	1490	14.6	59.3	"	"	"	"	"		
Benzo (ghi) perylene	"	1180	14.6	59.3	"	"	"	"	"		
Benzo (k) fluoranthene	"	1110	14.6	59.3	"	"	"	"	"		
Chrysene	"	1220	14.6	59.3	"	"	"	"	"		
Dibenzo (a,h) anthracene	"	384	14.6	59.3	"	"	"	"	"		
Fluoranthene	"	1250	14.6	59.3	"	"	"	"	"		
Fluorene	"	32.6	14.6	59.3	"	"	"	"	"	J	
Indeno (1,2,3-cd) pyrene	"	1060	14.6	59.3	"	"	"	"	"		
Naphthalene	"	ND	14.6	59.3	"	"	"	"	"		
Phenanthrene	"	368	14.6	59.3	"	"	"	"	"		

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Darrell Auvil, Project Manager

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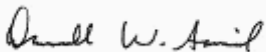
Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

Report Created:  
11/17/09 15:44

**Polynuclear Aromatic Compounds per EPA 8270M-SIM**  
TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes	
<b>PSJ0657-06 (SS-405-101909-2)</b>		<b>Soil</b>				<b>Sampled: 10/19/09 11:00</b>					<b>RL7</b>
Pyrene	EPA 8270m	<b>1080</b>	14.6	59.3	ug/kg dry	4x	9101141	10/20/09 16:00	10/21/09 17:23		
Surrogate(s): Fluorene-d10				91.4%		24 - 125 %				"	
Pyrene-d10				91.2%		41 - 141 %				"	
Benzo (a) pyrene-d12				89.8%		38 - 143 %				"	
<b>PSJ0657-07 (SS-406-101909-0)</b>		<b>Soil</b>				<b>Sampled: 10/19/09 12:05</b>					
Acenaphthene	EPA 8270m	<b>49.8</b>	33.8	137	ug/kg dry	1x	9101141	10/20/09 16:00	10/22/09 20:18	J	
Acenaphthylene	"	<b>84.6</b>	33.8	137	"	"	"	"	"	J	
Anthracene	"	<b>156</b>	33.8	137	"	"	"	"	"		
Fluoranthene	"	<b>1780</b>	33.8	137	"	"	"	"	"		
Fluorene	"	<b>58.2</b>	33.8	137	"	"	"	"	"	J	
Naphthalene	"	<b>139</b>	33.8	137	"	"	"	"	"		
Phenanthrene	"	<b>443</b>	33.8	137	"	"	"	"	"		
Surrogate(s): Fluorene-d10				89.3%		24 - 125 %				"	
Pyrene-d10				86.7%		41 - 141 %				"	
Benzo (a) pyrene-d12				87.7%		38 - 143 %				"	
<b>PSJ0657-07RE1 (SS-406-101909-0)</b>		<b>Soil</b>				<b>Sampled: 10/19/09 12:05</b>					
Anthracene	EPA 8270m	<b>125</b>	101	411	ug/kg dry	3x	9101141	10/20/09 16:00	10/26/09 12:07	RL1, J	
Benzo (a) anthracene	"	<b>545</b>	101	411	"	"	"	"	"		
Benzo (a) pyrene	"	<b>274</b>	101	411	"	"	"	"	"	RL1, J	
Benzo (b) fluoranthene	"	<b>2160</b>	101	411	"	"	"	"	"		
Benzo (ghi) perylene	"	<b>1800</b>	101	411	"	"	"	"	"		
Benzo (k) fluoranthene	"	<b>1790</b>	101	411	"	"	"	"	"		
Chrysene	"	<b>1640</b>	101	411	"	"	"	"	"		
Dibenzo (a,h) anthracene	"	<b>290</b>	101	411	"	"	"	"	"	RL1, J	
Fluoranthene	"	<b>1370</b>	101	411	"	"	"	"	"		
Indeno (1,2,3-cd) pyrene	"	<b>1140</b>	101	411	"	"	"	"	"		
Phenanthrene	"	<b>450</b>	101	411	"	"	"	"	"		
Pyrene	"	<b>1900</b>	101	411	"	"	"	"	"		
Surrogate(s): Fluorene-d10				86.6%		24 - 125 %				"	
Pyrene-d10				74.0%		41 - 141 %				"	
Benzo (a) pyrene-d12				102%		38 - 143 %				"	

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Darrell Auvil, Project Manager

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Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

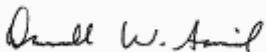
Report Created:  
11/17/09 15:44

**Polynuclear Aromatic Compounds per EPA 8270M-SIM**  
TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
<b>PSJ0657-08 (SS-407-101909-0)</b>		<b>Soil</b>		<b>Sampled: 10/19/09 10:55</b>						
Acenaphthene	EPA 8270m	15.6	3.73	15.1	ug/kg dry	1x	9101141	10/20/09 16:00	10/22/09 20:47	
Acenaphthylene	"	16.3	3.73	15.1	"	"	"	"	"	
Anthracene	"	41.1	3.73	15.1	"	"	"	"	"	
Benzo (a) anthracene	"	252	3.73	15.1	"	"	"	"	"	
Benzo (a) pyrene	"	257	3.73	15.1	"	"	"	"	"	
Benzo (b) fluoranthene	"	375	3.73	15.1	"	"	"	"	"	
Benzo (ghi) perylene	"	218	3.73	15.1	"	"	"	"	"	
Benzo (k) fluoranthene	"	223	3.73	15.1	"	"	"	"	"	
Chrysene	"	339	3.73	15.1	"	"	"	"	"	
Dibenzo (a,h) anthracene	"	63.0	3.73	15.1	"	"	"	"	"	
Fluoranthene	"	457	3.73	15.1	"	"	"	"	"	
Fluorene	"	9.44	3.73	15.1	"	"	"	"	"	J
Indeno (1,2,3-cd) pyrene	"	199	3.73	15.1	"	"	"	"	"	
Naphthalene	"	7.50	3.73	15.1	"	"	"	"	"	J
Phenanthrene	"	143	3.73	15.1	"	"	"	"	"	
Pyrene	"	283	3.73	15.1	"	"	"	"	"	
Surrogate(s): Fluorene-d10				90.0%		24 - 125 %				"
Pyrene-d10				68.0%		41 - 141 %				"
Benzo (a) pyrene-d12				70.8%		38 - 143 %				"

<b>PSJ0657-09 (SS-408-101909-0)</b>		<b>Soil</b>		<b>Sampled: 10/19/09 10:45</b>						
Acenaphthene	EPA 8270m	ND	3.54	14.4	ug/kg dry	1x	9101141	10/20/09 16:00	10/22/09 21:17	
Acenaphthylene	"	5.45	3.54	14.4	"	"	"	"	"	J
Anthracene	"	11.2	3.54	14.4	"	"	"	"	"	J
Benzo (a) anthracene	"	41.1	3.54	14.4	"	"	"	"	"	
Benzo (a) pyrene	"	51.5	3.54	14.4	"	"	"	"	"	
Benzo (b) fluoranthene	"	96.5	3.54	14.4	"	"	"	"	"	
Benzo (ghi) perylene	"	62.8	3.54	14.4	"	"	"	"	"	
Benzo (k) fluoranthene	"	68.7	3.54	14.4	"	"	"	"	"	
Chrysene	"	68.5	3.54	14.4	"	"	"	"	"	
Dibenzo (a,h) anthracene	"	16.3	3.54	14.4	"	"	"	"	"	
Fluoranthene	"	70.1	3.54	14.4	"	"	"	"	"	
Fluorene	"	ND	3.54	14.4	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	"	51.8	3.54	14.4	"	"	"	"	"	
Naphthalene	"	ND	3.54	14.4	"	"	"	"	"	
Phenanthrene	"	18.4	3.54	14.4	"	"	"	"	"	

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**Amended Report**

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**Amended Report**

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2020 SW 4th Suite 300  
Portland, OR 97201

Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

Report Created:  
11/17/09 15:44

**Polynuclear Aromatic Compounds per EPA 8270M-SIM**  
TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
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**PSJ0657-09 (SS-408-101909-0) Soil Sampled: 10/19/09 10:45**

Pyrene	EPA 8270m	63.3	3.54	14.4	ug/kg dry	1x	9101141	10/20/09 16:00	10/22/09 21:17	
Surrogate(s): Fluorene-d10										82.3% 24 - 125 % "
Pyrene-d10										84.9% 41 - 141 % "
Benzo (a) pyrene-d12										94.1% 38 - 143 % "

**PSJ0657-12 (SS-411-101909-0) Soil Sampled: 10/19/09 10:30**

Acenaphthene	EPA 8270m	2020	38.6	157	ug/kg dry	10x	9101141	10/20/09 16:00	10/22/09 21:46	
Acenaphthylene	"	197	38.6	157	"	"	"	"	"	
Fluorene	"	2130	38.6	157	"	"	"	"	"	
Naphthalene	"	631	38.6	157	"	"	"	"	"	
Surrogate(s): Fluorene-d10										94.2% 24 - 125 % "

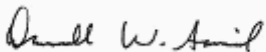
**PSJ0657-12RE1 (SS-411-101909-0) Soil Sampled: 10/19/09 10:30**

Anthracene	EPA 8270m	10100	964	3910	ug/kg dry	250x	9101141	10/20/09 16:00	10/26/09 11:07	
Benzo (a) anthracene	"	54200	964	3910	"	"	"	"	"	
Benzo (a) pyrene	"	35300	964	3910	"	"	"	"	"	
Benzo (b) fluoranthene	"	38600	964	3910	"	"	"	"	"	
Benzo (ghi) perylene	"	19100	964	3910	"	"	"	"	"	
Benzo (k) fluoranthene	"	36700	964	3910	"	"	"	"	"	
Chrysene	"	56200	964	3910	"	"	"	"	"	
Dibenzo (a,h) anthracene	"	6350	964	3910	"	"	"	"	"	
Fluoranthene	"	115000	964	3910	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	"	19200	964	3910	"	"	"	"	"	
Phenanthrene	"	46800	964	3910	"	"	"	"	"	
Pyrene	"	127000	964	3910	"	"	"	"	"	
Surrogate(s): Fluorene-d10										NR 24 - 125 % " Z3
Pyrene-d10										NR 41 - 141 % " Z3
Benzo (a) pyrene-d12										NR 38 - 143 % " Z3

**PSJ0657-13 (SS-411-101909-1) Soil Sampled: 10/19/09 10:30** RL7

Acenaphthene	EPA 8270m	2270	37.4	152	ug/kg dry	10x	9101141	10/20/09 16:00	10/22/09 22:16	
Acenaphthylene	"	155	37.4	152	"	"	"	"	"	
Fluorene	"	2010	37.4	152	"	"	"	"	"	
Naphthalene	"	135	37.4	152	"	"	"	"	"	J
Surrogate(s): Fluorene-d10										77.7% 24 - 125 % "

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**Amended Report**

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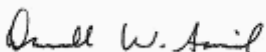
Project Name: **NW Pipe Project**  
 Project Number: NW Pipe Project  
 Project Manager: Pat Heins

Report Created:  
 11/17/09 15:44

**Polynuclear Aromatic Compounds per EPA 8270M-SIM**  
 TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
<b>PSJ0657-13RE1 (SS-411-101909-1)</b>				<b>Soil</b>				<b>Sampled: 10/19/09 10:30</b>		
Anthracene	EPA 8270m	<b>8410</b>	749	3040	ug/kg dry	200x	9101141	10/20/09 16:00	10/26/09 11:37	
Benzo (a) anthracene	"	<b>37200</b>	749	3040	"	"	"	"	"	
Benzo (a) pyrene	"	<b>24200</b>	749	3040	"	"	"	"	"	
Benzo (b) fluoranthene	"	<b>27600</b>	749	3040	"	"	"	"	"	
Benzo (ghi) perylene	"	<b>13200</b>	749	3040	"	"	"	"	"	
Benzo (k) fluoranthene	"	<b>24300</b>	749	3040	"	"	"	"	"	
Chrysene	"	<b>38200</b>	749	3040	"	"	"	"	"	
Dibenzo (a,h) anthracene	"	<b>4340</b>	749	3040	"	"	"	"	"	
Fluoranthene	"	<b>83100</b>	749	3040	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	"	<b>13100</b>	749	3040	"	"	"	"	"	
Phenanthrene	"	<b>35400</b>	749	3040	"	"	"	"	"	
Pyrene	"	<b>86500</b>	749	3040	"	"	"	"	"	
<i>Surrogate(s): Fluorene-d10</i>				NR		24 - 125 %				" Z3
<i>Pyrene-d10</i>				NR		41 - 141 %				" Z3
<i>Benzo (a) pyrene-d12</i>				NR		38 - 143 %				" Z3

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Portland, OR 97201

Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

Report Created:  
11/17/09 15:44

**Phthalates per EPA 8270-SIM**  
TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes	
<b>PSJ0657-01 (SS-401-101909-0)</b>				<b>Soil</b>		<b>Sampled: 10/19/09 11:30</b>					
Dimethyl phthalate	EPA 8270m	ND	14.7	29.4	ug/kg dry	1x	9100711	10/20/09 16:00	10/23/09 00:09		
Diethyl phthalate	"	ND	14.7	29.4	"	"	"	"	"		
Di-n-butyl phthalate	"	ND	14.7	29.4	"	"	"	"	"		
<b>Butyl benzyl phthalate</b>	"	<b>382</b>	14.7	29.4	"	"	"	"	"		
<b>Bis(2-ethylhexyl)phthalate</b>	"	<b>66.8</b>	14.7	29.4	"	"	"	"	"		
Di-n-octyl phthalate	"	ND	14.7	29.4	"	"	"	"	"		
<i>Surrogate(s): 2-Fluorobiphenyl</i>			93.5%		10 - 150 %						
<i>p-Terphenyl-d14</i>			112%		10 - 150 %						
<b>PSJ0657-02 (SS-402-101909-0)</b>				<b>Soil</b>		<b>Sampled: 10/19/09 11:40</b>					
Di-n-octyl phthalate	EPA 8270m	ND	141	283	ug/kg dry	10x	9100711	10/20/09 16:00	10/21/09 23:11	<b>RL1</b>	
<i>Surrogate(s): 2-Fluorobiphenyl</i>			120%		10 - 150 %						
<i>p-Terphenyl-d14</i>			120%		10 - 150 %						
<b>PSJ0657-02RE1 (SS-402-101909-0)</b>				<b>Soil</b>		<b>Sampled: 10/19/09 11:40</b>					<b>RL3</b>
Dimethyl phthalate	EPA 8270m	ND	70.7	141	ug/kg dry	5x	9100711	10/20/09 16:00	10/24/09 00:31		
Diethyl phthalate	"	ND	70.7	141	"	"	"	"	"		
Di-n-butyl phthalate	"	ND	70.7	141	"	"	"	"	"		
<b>Butyl benzyl phthalate</b>	"	<b>84.6</b>	70.7	141	"	"	"	"	"	<b>J</b>	
<b>Bis(2-ethylhexyl)phthalate</b>	"	<b>389</b>	70.7	141	"	"	"	"	"		
<i>Surrogate(s): 2-Fluorobiphenyl</i>			116%		10 - 150 %						
<i>p-Terphenyl-d14</i>			177%		10 - 150 %						
<b>PSJ0657-03 (SS-403-101909-0)</b>				<b>Soil</b>		<b>Sampled: 10/19/09 11:50</b>					
Di-n-octyl phthalate	EPA 8270m	ND	289	577	ug/kg dry	20x	9100711	10/20/09 16:00	10/21/09 23:48	<b>RL1</b>	
<i>Surrogate(s): 2-Fluorobiphenyl</i>			107%		10 - 150 %						
<i>p-Terphenyl-d14</i>			103%		10 - 150 %						
<b>PSJ0657-03RE1 (SS-403-101909-0)</b>				<b>Soil</b>		<b>Sampled: 10/19/09 11:50</b>					
Dimethyl phthalate	EPA 8270m	ND	14.4	28.9	ug/kg dry	1x	9100711	10/20/09 16:00	10/23/09 00:45		
Diethyl phthalate	"	ND	14.4	28.9	"	"	"	"	"		
Di-n-butyl phthalate	"	ND	14.4	28.9	"	"	"	"	"		
<b>Butyl benzyl phthalate</b>	"	<b>28.3</b>	14.4	28.9	"	"	"	"	"	<b>J</b>	
<b>Bis(2-ethylhexyl)phthalate</b>	"	<b>191</b>	14.4	28.9	"	"	"	"	"		
<i>Surrogate(s): 2-Fluorobiphenyl</i>			90.2%		10 - 150 %						

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**Amended Report**

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**Amended Report**

**CH2M-Hill**

2020 SW 4th Suite 300  
Portland, OR 97201

Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

Report Created:  
11/17/09 15:44

**Phthalates per EPA 8270-SIM**  
TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
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**PSJ0657-03RE1 (SS-403-101909-0) Soil Sampled: 10/19/09 11:50**

*p*-Terphenyl-d14 140% 10 - 150 % 10/23/09 00:45

**PSJ0657-04 (SS-404-101909-0) Soil Sampled: 10/19/09 11:20**

Di-n-octyl phthalate	EPA 8270m	ND	157	314	ug/kg dry	10x	9100711	10/20/09 16:00	10/22/09 06:23	RL1
Surrogate(s): 2-Fluorobiphenyl				94.8%		10 - 150 %				"
<i>p</i> -Terphenyl-d14				98.1%		10 - 150 %				"

**PSJ0657-04RE1 (SS-404-101909-0) Soil Sampled: 10/19/09 11:20 RL3**

Dimethyl phthalate	EPA 8270m	ND	31.4	62.8	ug/kg dry	2x	9100711	10/20/09 16:00	10/23/09 03:09	
Diethyl phthalate	"	ND	31.4	62.8	"	"	"	"	"	
Di-n-butyl phthalate	"	ND	31.4	62.8	"	"	"	"	"	
<b>Butyl benzyl phthalate</b>	"	<b>75.0</b>	31.4	62.8	"	"	"	"	"	
<b>Bis(2-ethylhexyl)phthalate</b>	"	<b>325</b>	31.4	62.8	"	"	"	"	"	
Surrogate(s): 2-Fluorobiphenyl				91.8%		10 - 150 %				"
<i>p</i> -Terphenyl-d14				148%		10 - 150 %				"

**PSJ0657-05 (SS-405-101909-0) Soil Sampled: 10/19/09 11:00**

Di-n-octyl phthalate	EPA 8270m	ND	383	765	ug/kg dry	25x	9100711	10/20/09 16:00	10/22/09 00:24	RL1
Surrogate(s): 2-Fluorobiphenyl				104%		10 - 150 %				" Z3
<i>p</i> -Terphenyl-d14				106%		10 - 150 %				" Z3

**PSJ0657-05RE1 (SS-405-101909-0) Soil Sampled: 10/19/09 11:00 RL3**

Dimethyl phthalate	EPA 8270m	ND	30.6	61.2	ug/kg dry	2x	9100711	10/20/09 16:00	10/23/09 23:55	
Diethyl phthalate	"	ND	30.6	61.2	"	"	"	"	"	
Di-n-butyl phthalate	"	ND	30.6	61.2	"	"	"	"	"	
<b>Butyl benzyl phthalate</b>	"	<b>37.3</b>	30.6	61.2	"	"	"	"	"	J
<b>Bis(2-ethylhexyl)phthalate</b>	"	<b>139</b>	30.6	61.2	"	"	"	"	"	
Surrogate(s): 2-Fluorobiphenyl				89.6%		10 - 150 %				"
<i>p</i> -Terphenyl-d14				131%		10 - 150 %				"

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**Amended Report**

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Portland, OR 97201

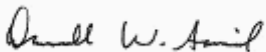
Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

Report Created:  
11/17/09 15:44

**Phthalates per EPA 8270-SIM**  
TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes	
<b>PSJ0657-06 (SS-405-101909-2)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 11:00</b>						<b>RL3</b>
Dimethyl phthalate	EPA 8270m	ND	29.6	59.3	ug/kg dry	2x	9100711	10/20/09 16:00	10/22/09 23:33		
Diethyl phthalate	"	ND	29.6	59.3	"	"	"	"	"		
Di-n-butyl phthalate	"	ND	29.6	59.3	"	"	"	"	"		
<b>Butyl benzyl phthalate</b>	"	<b>37.6</b>	29.6	59.3	"	"	"	"	"	<b>J</b>	
<b>Bis(2-ethylhexyl)phthalate</b>	"	<b>95.2</b>	29.6	59.3	"	"	"	"	"		
Di-n-octyl phthalate	"	ND	29.6	59.3	"	"	"	"	"		
<i>Surrogate(s): 2-Fluorobiphenyl</i>			86.6%		10 - 150 %						"
<i>p-Terphenyl-d14</i>			107%		10 - 150 %						"
<b>PSJ0657-07 (SS-406-101909-0)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 12:05</b>						<b>RL3</b>
Dimethyl phthalate	EPA 8270m	ND	148	296	ug/kg dry	10x	9100711	10/20/09 16:00	10/22/09 01:00		
Diethyl phthalate	"	ND	148	296	"	"	"	"	"		
Di-n-butyl phthalate	"	ND	148	296	"	"	"	"	"		
Butyl benzyl phthalate	"	ND	148	296	"	"	"	"	"		
<b>Bis(2-ethylhexyl)phthalate</b>	"	<b>335</b>	148	296	"	"	"	"	"		
Di-n-octyl phthalate	"	ND	296	296	"	"	"	"	"		
<i>Surrogate(s): 2-Fluorobiphenyl</i>			97.4%		10 - 150 %						"
<i>p-Terphenyl-d14</i>			125%		10 - 150 %						"
<b>PSJ0657-08 (SS-407-101909-0)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 10:55</b>						<b>RL1</b>
Di-n-octyl phthalate	EPA 8270m	ND	151	303	ug/kg dry	10x	9100711	10/20/09 16:00	10/22/09 01:35		
<i>Surrogate(s): 2-Fluorobiphenyl</i>			99.2%		10 - 150 %						"
<i>p-Terphenyl-d14</i>			102%		10 - 150 %						"
<b>PSJ0657-08RE1 (SS-407-101909-0)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 10:55</b>						
Dimethyl phthalate	EPA 8270m	ND	15.1	30.3	ug/kg dry	1x	9100711	10/20/09 16:00	10/23/09 01:21		
Diethyl phthalate	"	ND	15.1	30.3	"	"	"	"	"		
Di-n-butyl phthalate	"	ND	15.1	30.3	"	"	"	"	"		
<b>Butyl benzyl phthalate</b>	"	<b>31.0</b>	15.1	30.3	"	"	"	"	"		
<b>Bis(2-ethylhexyl)phthalate</b>	"	<b>467</b>	15.1	30.3	"	"	"	"	"		
<i>Surrogate(s): 2-Fluorobiphenyl</i>			87.2%		10 - 150 %						"
<i>p-Terphenyl-d14</i>			136%		10 - 150 %						"

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Darrell Auvil, Project Manager

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2020 SW 4th Suite 300  
Portland, OR 97201

Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

Report Created:  
11/17/09 15:44

**Phthalates per EPA 8270-SIM**  
TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
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**PSJ0657-09 (SS-408-101909-0)**

Soil

Sampled: 10/19/09 10:45

Di-n-octyl phthalate	EPA 8270m	ND	144	287	ug/kg dry	10x	9100711	10/20/09 16:00	10/22/09 02:11	RL1
Surrogate(s): 2-Fluorobiphenyl				93.1%		10 - 150 %				"
p-Terphenyl-d14				98.0%		10 - 150 %				"

**PSJ0657-09RE1 (SS-408-101909-0)**

Soil

Sampled: 10/19/09 10:45

Dimethyl phthalate	EPA 8270m	ND	14.4	28.7	ug/kg dry	1x	9100711	10/20/09 16:00	10/23/09 01:57	
Diethyl phthalate	"	ND	14.4	28.7	"	"	"	"	"	
Di-n-butyl phthalate	"	ND	14.4	28.7	"	"	"	"	"	
Butyl benzyl phthalate	"	14.5	14.4	28.7	"	"	"	"	"	J
Bis(2-ethylhexyl)phthalate	"	60.3	14.4	28.7	"	"	"	"	"	
Surrogate(s): 2-Fluorobiphenyl				83.3%		10 - 150 %				"
p-Terphenyl-d14				122%		10 - 150 %				"

**PSJ0657-10 (SS-409-101909-0)**

Soil

Sampled: 10/19/09 12:15

Di-n-octyl phthalate	EPA 8270m	ND	816	1630	ug/kg dry	50x	9100711	10/20/09 16:00	10/22/09 02:47	RL1
Surrogate(s): 2-Fluorobiphenyl				118%		10 - 150 %				" Z3
p-Terphenyl-d14				132%		10 - 150 %				" Z3

**PSJ0657-10RE1 (SS-409-101909-0)**

Soil

Sampled: 10/19/09 12:15

RL3

Dimethyl phthalate	EPA 8270m	ND	163	327	ug/kg dry	10x	9100711	10/20/09 16:00	10/23/09 22:07	
Diethyl phthalate	"	ND	163	327	"	"	"	"	"	
Di-n-butyl phthalate	"	ND	163	327	"	"	"	"	"	
Butyl benzyl phthalate	"	ND	163	327	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	"	667	163	327	"	"	"	"	"	
Surrogate(s): 2-Fluorobiphenyl				106%		10 - 150 %				"
p-Terphenyl-d14				129%		10 - 150 %				"

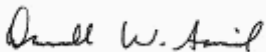
**PSJ0657-11 (SS-410-101909-0)**

Soil

Sampled: 10/19/09 10:15

Di-n-octyl phthalate	EPA 8270m	ND	305	610	ug/kg dry	20x	9100711	10/20/09 16:00	10/22/09 03:23	RL1
Surrogate(s): 2-Fluorobiphenyl				102%		10 - 150 %				" Z3
p-Terphenyl-d14				120%		10 - 150 %				" Z3

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Darrell Auvil, Project Manager

**Amended Report**

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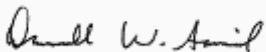
Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

Report Created:  
11/17/09 15:44

**Phthalates per EPA 8270-SIM**  
TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes	
<b>PSJ0657-11RE1 (SS-410-101909-0)</b>			<b>Soil</b>			<b>Sampled: 10/19/09 10:15</b>					
Dimethyl phthalate	EPA 8270m	ND	15.3	30.5	ug/kg dry	1x	9100711	10/20/09 16:00	10/23/09 02:33		
Diethyl phthalate	"	ND	15.3	30.5	"	"	"	"	"		
Di-n-butyl phthalate	"	ND	15.3	30.5	"	"	"	"	"		
<b>Butyl benzyl phthalate</b>	"	<b>49.2</b>	15.3	30.5	"	"	"	"	"		
<b>Bis(2-ethylhexyl)phthalate</b>	"	<b>178</b>	15.3	30.5	"	"	"	"	"		
<i>Surrogate(s): 2-Fluorobiphenyl</i>			82.3%		10 - 150 %				"		
<i>p-Terphenyl-d14</i>			150%		10 - 150 %				"		
<b>PSJ0657-12 (SS-411-101909-0)</b>			<b>Soil</b>			<b>Sampled: 10/19/09 10:30</b>					
Di-n-octyl phthalate	EPA 8270m	ND	783	1570	ug/kg dry	50x	9100711	10/20/09 16:00	10/22/09 03:59	<b>RL1</b>	
<i>Surrogate(s): 2-Fluorobiphenyl</i>			119%		10 - 150 %				" <b>Z3</b>		
<i>p-Terphenyl-d14</i>			134%		10 - 150 %				" <b>Z3</b>		
<b>PSJ0657-12RE1 (SS-411-101909-0)</b>			<b>Soil</b>			<b>Sampled: 10/19/09 10:30</b>					<b>RL3</b>
Dimethyl phthalate	EPA 8270m	ND	157	313	ug/kg dry	10x	9100711	10/20/09 16:00	10/23/09 23:19		
Diethyl phthalate	"	ND	157	313	"	"	"	"	"		
Di-n-butyl phthalate	"	ND	157	313	"	"	"	"	"		
<b>Butyl benzyl phthalate</b>	"	<b>637</b>	157	313	"	"	"	"	"		
<b>Bis(2-ethylhexyl)phthalate</b>	"	<b>1900</b>	157	313	"	"	"	"	"		
<i>Surrogate(s): 2-Fluorobiphenyl</i>			103%		10 - 150 %				"		
<i>p-Terphenyl-d14</i>			158%		10 - 150 %				" <b>ZX</b>		
<b>PSJ0657-13 (SS-411-101909-1)</b>			<b>Soil</b>			<b>Sampled: 10/19/09 10:30</b>					
Di-n-octyl phthalate	EPA 8270m	ND	760	1520	ug/kg dry	50x	9100711	10/20/09 16:00	10/22/09 04:35	<b>RL1</b>	
<i>Surrogate(s): 2-Fluorobiphenyl</i>			122%		10 - 150 %				" <b>Z3</b>		
<i>p-Terphenyl-d14</i>			134%		10 - 150 %				" <b>Z3</b>		
<b>PSJ0657-13RE1 (SS-411-101909-1)</b>			<b>Soil</b>			<b>Sampled: 10/19/09 10:30</b>					<b>RL3</b>
Dimethyl phthalate	EPA 8270m	ND	304	608	ug/kg dry	20x	9100711	10/20/09 16:00	10/23/09 22:43		
Diethyl phthalate	"	ND	304	608	"	"	"	"	"		
<b>Di-n-butyl phthalate</b>	"	<b>380</b>	304	608	"	"	"	"	"	<b>J</b>	
<b>Butyl benzyl phthalate</b>	"	<b>501</b>	304	608	"	"	"	"	"	<b>J</b>	
<b>Bis(2-ethylhexyl)phthalate</b>	"	<b>2970</b>	304	608	"	"	"	"	"		
<i>Surrogate(s): 2-Fluorobiphenyl</i>			101%		10 - 150 %				" <b>Z3</b>		
<i>p-Terphenyl-d14</i>			135%		10 - 150 %				" <b>Z3</b>		

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**Amended Report**

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**Amended Report**

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Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

Report Created:  
11/17/09 15:44

**Phthalates per EPA 8270-SIM**  
TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
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**Amended Report**

<b>CH2M-Hill</b> 2020 SW 4th Suite 300 Portland, OR 97201	Project Name: <b>NW Pipe Project</b> Project Number: NW Pipe Project Project Manager: Pat Heins	Report Created: 11/17/09 15:44
-----------------------------------------------------------------	-------------------------------------------------------------------------------------------------------	-----------------------------------

**Percent Dry Weight (Solids) per ASTM D2216-80**  
 TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
<b>PSJ0657-01 (SS-401-101909-0)</b>		<b>Soil</b>		<b>Sampled: 10/19/09 11:30</b>						
% Solids	NCA SOP	<b>90.8</b>	----	0.0100	% by Weight	1x	9100689	10/20/09 07:49	10/20/09 07:49	
<b>PSJ0657-02 (SS-402-101909-0)</b>		<b>Soil</b>		<b>Sampled: 10/19/09 11:40</b>						
% Solids	NCA SOP	<b>93.7</b>	----	0.0100	% by Weight	1x	9100689	10/20/09 07:49	10/20/09 07:49	
<b>PSJ0657-03 (SS-403-101909-0)</b>		<b>Soil</b>		<b>Sampled: 10/19/09 11:50</b>						
% Solids	NCA SOP	<b>92.8</b>	----	0.0100	% by Weight	1x	9100689	10/20/09 07:49	10/20/09 07:49	
<b>PSJ0657-04 (SS-404-101909-0)</b>		<b>Soil</b>		<b>Sampled: 10/19/09 11:20</b>						
% Solids	NCA SOP	<b>85.0</b>	----	0.0100	% by Weight	1x	9100689	10/20/09 07:49	10/20/09 07:49	
<b>PSJ0657-05 (SS-405-101909-0)</b>		<b>Soil</b>		<b>Sampled: 10/19/09 11:00</b>						
% Solids	NCA SOP	<b>87.3</b>	----	0.0100	% by Weight	1x	9100689	10/20/09 07:49	10/20/09 07:49	
<b>PSJ0657-06 (SS-405-101909-2)</b>		<b>Soil</b>		<b>Sampled: 10/19/09 11:00</b>						
% Solids	NCA SOP	<b>90.2</b>	----	0.0100	% by Weight	1x	9100689	10/20/09 07:49	10/20/09 07:49	
<b>PSJ0657-07 (SS-406-101909-0)</b>		<b>Soil</b>		<b>Sampled: 10/19/09 12:05</b>						
% Solids	NCA SOP	<b>89.7</b>	----	0.0100	% by Weight	1x	9100689	10/20/09 07:49	10/20/09 07:49	
<b>PSJ0657-08 (SS-407-101909-0)</b>		<b>Soil</b>		<b>Sampled: 10/19/09 10:55</b>						
% Solids	NCA SOP	<b>87.5</b>	----	0.0100	% by Weight	1x	9100689	10/20/09 07:49	10/20/09 07:49	
<b>PSJ0657-09 (SS-408-101909-0)</b>		<b>Soil</b>		<b>Sampled: 10/19/09 10:45</b>						
% Solids	NCA SOP	<b>92.9</b>	----	0.0100	% by Weight	1x	9100689	10/20/09 07:49	10/20/09 07:49	
<b>PSJ0657-10 (SS-409-101909-0)</b>		<b>Soil</b>		<b>Sampled: 10/19/09 12:15</b>						
% Solids	NCA SOP	<b>81.6</b>	----	0.0100	% by Weight	1x	9100689	10/20/09 07:49	10/20/09 07:49	
<b>PSJ0657-11 (SS-410-101909-0)</b>		<b>Soil</b>		<b>Sampled: 10/19/09 10:15</b>						

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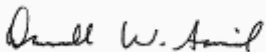
Project Name: **NW Pipe Project**  
 Project Number: NW Pipe Project  
 Project Manager: Pat Heins

Report Created:  
 11/17/09 15:44

**Percent Dry Weight (Solids) per ASTM D2216-80**  
 TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
<b>PSJ0657-11 (SS-410-101909-0)</b>										<b>Soil</b>
										<b>Sampled: 10/19/09 10:15</b>
% Solids	NCA SOP	<b>86.9</b>	----	0.0100	% by Weight	1x	9100689	10/20/09 07:49	10/20/09 07:49	
<b>PSJ0657-12 (SS-411-101909-0)</b>										<b>Soil</b>
										<b>Sampled: 10/19/09 10:30</b>
% Solids	NCA SOP	<b>85.4</b>	----	0.0100	% by Weight	1x	9100689	10/20/09 07:49	10/20/09 07:49	
<b>PSJ0657-13 (SS-411-101909-1)</b>										<b>Soil</b>
										<b>Sampled: 10/19/09 10:30</b>
% Solids	NCA SOP	<b>87.7</b>	----	0.0100	% by Weight	1x	9100689	10/20/09 07:49	10/20/09 07:49	

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Portland, OR 97201

Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

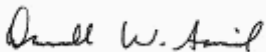
Report Created:  
11/17/09 15:44

**Organic Carbon, Total (TOC)**

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Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes	
<b>PSJ0657-01 (SS-401-101909-0)</b>										<b>Soil</b>	<b>Sampled: 10/19/09 11:30</b>
Total Organic Carbon	9060	<b>4300</b>	----	2000	mg/Kg	1x	53275	11/02/09 13:44	11/02/09 13:44		
<b>PSJ0657-02 (SS-402-101909-0)</b>										<b>Soil</b>	<b>Sampled: 10/19/09 11:40</b>
Total Organic Carbon	9060	<b>6000</b>	----	2000	mg/Kg	1x	53275	11/02/09 13:44	11/02/09 13:44		
<b>PSJ0657-03 (SS-403-101909-0)</b>										<b>Soil</b>	<b>Sampled: 10/19/09 11:50</b>
Total Organic Carbon	9060	<b>5300</b>	----	2000	mg/Kg	1x	53275	11/02/09 13:44	11/02/09 13:44		
<b>PSJ0657-04 (SS-404-101909-0)</b>										<b>Soil</b>	<b>Sampled: 10/19/09 11:20</b>
Total Organic Carbon	9060	<b>74000</b>	----	2000	mg/Kg	1x	53275	11/02/09 13:44	11/02/09 13:44		
<b>PSJ0657-05 (SS-405-101909-0)</b>										<b>Soil</b>	<b>Sampled: 10/19/09 11:00</b>
Total Organic Carbon	9060	<b>62000</b>	----	2000	mg/Kg	1x	53275	11/02/09 13:44	11/02/09 13:44		
<b>PSJ0657-06 (SS-405-101909-2)</b>										<b>Soil</b>	<b>Sampled: 10/19/09 11:00</b>
Total Organic Carbon	9060	<b>37000</b>	----	2000	mg/Kg	1x	53275	11/02/09 13:44	11/02/09 13:44		
<b>PSJ0657-07 (SS-406-101909-0)</b>										<b>Soil</b>	<b>Sampled: 10/19/09 12:05</b>
Total Organic Carbon	9060	<b>18000</b>	----	2000	mg/Kg	1x	53275	11/02/09 13:44	11/02/09 13:44		
<b>PSJ0657-08 (SS-407-101909-0)</b>										<b>Soil</b>	<b>Sampled: 10/19/09 10:55</b>
Total Organic Carbon	9060	<b>70000</b>	----	2000	mg/Kg	1x	53275	11/02/09 13:44	11/02/09 13:44		
<b>PSJ0657-09 (SS-408-101909-0)</b>										<b>Soil</b>	<b>Sampled: 10/19/09 10:45</b>
Total Organic Carbon	9060	<b>9300</b>	----	2000	mg/Kg	1x	53275	11/02/09 13:44	11/02/09 13:44		
<b>PSJ0657-10 (SS-409-101909-0)</b>										<b>Soil</b>	<b>Sampled: 10/19/09 12:15</b>
Total Organic Carbon	9060	<b>28000</b>	----	2000	mg/Kg	1x	53275	11/02/09 13:44	11/02/09 13:44		
<b>PSJ0657-11 (SS-410-101909-0)</b>										<b>Soil</b>	<b>Sampled: 10/19/09 10:15</b>
Total Organic Carbon	9060	<b>16000</b>	----	2000	mg/Kg	1x	53275	11/02/09 13:44	11/02/09 13:44		

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Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

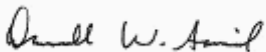
Report Created:  
11/17/09 15:44

**Organic Carbon, Total (TOC)**

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Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
<b>PSJ0657-12 (SS-411-101909-0)</b>				<b>Soil</b>		<b>Sampled: 10/19/09 10:30</b>				
<b>Total Organic Carbon</b>	9060	<b>42000</b>	----	2000	mg/Kg	1x	53275	11/02/09 13:44	11/02/09 13:44	
<b>PSJ0657-13 (SS-411-101909-1)</b>				<b>Soil</b>		<b>Sampled: 10/19/09 10:30</b>				
<b>Total Organic Carbon</b>	9060	<b>35000</b>	----	2000	mg/Kg	1x	53275	11/02/09 13:44	11/02/09 13:44	

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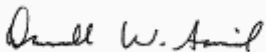
Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

Report Created:  
11/17/09 15:44

**Percent Moisture**  
TestAmerica Tacoma

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
<b>PSJ0657-01 (SS-401-101909-0)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 11:30</b>					
Percent Solids	Moisture	85	----	0.10	%	1x	53091	10/30/09 12:11	10/30/09 12:11	
Percent Moisture	"	15	----	0.10	"	"	"	"	"	
<b>PSJ0657-02 (SS-402-101909-0)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 11:40</b>					
Percent Solids	Moisture	88	----	0.10	%	1x	53091	10/30/09 12:11	10/30/09 12:11	
Percent Moisture	"	12	----	0.10	"	"	"	"	"	
<b>PSJ0657-03 (SS-403-101909-0)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 11:50</b>					
Percent Solids	Moisture	90	----	0.10	%	1x	53091	10/30/09 12:11	10/30/09 12:11	
Percent Moisture	"	9.8	----	0.10	"	"	"	"	"	
<b>PSJ0657-04 (SS-404-101909-0)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 11:20</b>					
Percent Solids	Moisture	81	----	0.10	%	1x	53091	10/30/09 12:11	10/30/09 12:11	
Percent Moisture	"	19	----	0.10	"	"	"	"	"	
<b>PSJ0657-05 (SS-405-101909-0)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 11:00</b>					
Percent Solids	Moisture	87	----	0.10	%	1x	53091	10/30/09 12:11	10/30/09 12:11	
Percent Moisture	"	13	----	0.10	"	"	"	"	"	
<b>PSJ0657-06 (SS-405-101909-2)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 11:00</b>					
Percent Solids	Moisture	87	----	0.10	%	1x	53091	10/30/09 12:11	10/30/09 12:11	
Percent Moisture	"	13	----	0.10	"	"	"	"	"	
<b>PSJ0657-07 (SS-406-101909-0)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 12:05</b>					
Percent Solids	Moisture	86	----	0.10	%	1x	53091	10/30/09 12:11	10/30/09 12:11	
Percent Moisture	"	14	----	0.10	"	"	"	"	"	
<b>PSJ0657-08 (SS-407-101909-0)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 10:55</b>					
Percent Solids	Moisture	85	----	0.10	%	1x	53091	10/30/09 12:11	10/30/09 12:11	
Percent Moisture	"	15	----	0.10	"	"	"	"	"	

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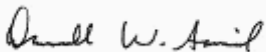
Project Name: **NW Pipe Project**  
 Project Number: NW Pipe Project  
 Project Manager: Pat Heins

Report Created:  
 11/17/09 15:44

**Percent Moisture**  
 TestAmerica Tacoma

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
<b>PSJ0657-09 (SS-408-101909-0)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 10:45</b>					
Percent Solids	Moisture	94	----	0.10	%	1x	53091	10/30/09 12:11	10/30/09 12:11	
Percent Moisture	"	6.0	----	0.10	"	"	"	"	"	
<b>PSJ0657-10 (SS-409-101909-0)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 12:15</b>					
Percent Solids	Moisture	82	----	0.10	%	1x	53091	10/30/09 12:11	10/30/09 12:11	
Percent Moisture	"	18	----	0.10	"	"	"	"	"	
<b>PSJ0657-11 (SS-410-101909-0)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 10:15</b>					
Percent Solids	Moisture	88	----	0.10	%	1x	53091	10/30/09 12:11	10/30/09 12:11	
Percent Moisture	"	12	----	0.10	"	"	"	"	"	
<b>PSJ0657-12 (SS-411-101909-0)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 10:30</b>					
Percent Solids	Moisture	76	----	0.10	%	1x	53091	10/30/09 12:11	10/30/09 12:11	
Percent Moisture	"	24	----	0.10	"	"	"	"	"	
<b>PSJ0657-13 (SS-411-101909-1)</b>		<b>Soil</b>			<b>Sampled: 10/19/09 10:30</b>					
Percent Solids	Moisture	84	----	0.10	%	1x	53091	10/30/09 12:11	10/30/09 12:11	
Percent Moisture	"	16	----	0.10	"	"	"	"	"	

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Darrell Auvil, Project Manager

**Amended Report**

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**Amended Report**

**CH2M-Hill**

2020 SW 4th Suite 300  
Portland, OR 97201

Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

Report Created:  
11/17/09 15:44

**Total Metals per EPA 6000/7000 Series Methods - Laboratory Quality Control Results**

TestAmerica Portland

QC Batch: 9100713

Soil Preparation Method: EPA 3050

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
<b>Blank (9100713-BLK1)</b>													Extracted: 10/20/09 11:18	
Aluminum	EPA 6010B	0.433	0.433	4.76	mg/kg wet	1x	--	--	--	--	--	--	10/22/09 00:40	J
Antimony	"	ND	0.533	1.90	"	"	--	--	--	--	--	--	"	
Arsenic	"	0.215	0.124	23.8	"	"	--	--	--	--	--	--	"	J
Cadmium	"	ND	0.00571	2.86	"	"	--	--	--	--	--	--	"	
Chromium	"	0.101	0.0333	1.43	"	"	--	--	--	--	--	--	"	J
Copper	"	0.111	0.0810	1.43	"	"	--	--	--	--	--	--	"	J
Lead	"	0.705	0.143	9.52	"	"	--	--	--	--	--	--	"	J
Nickel	"	ND	0.0571	1.19	"	"	--	--	--	--	--	--	"	
Selenium	"	ND	0.429	23.8	"	"	--	--	--	--	--	--	"	
Silver	"	ND	0.0333	2.86	"	"	--	--	--	--	--	--	"	
Zinc	"	0.174	0.0476	2.38	"	"	--	--	--	--	--	--	"	J

**LCS (9100713-BS1)**

Extracted: 10/20/09 11:18

Aluminum	EPA 6010B	257	0.450	4.95	mg/kg wet	1x	--	248	104%	(80-120)	--	--	10/22/09 00:47	
Antimony	"	50.3	0.554	1.98	"	"	--	49.5	102%	"	--	--	"	
Arsenic	"	48.5	0.129	24.8	"	"	--	"	97.9%	"	--	--	"	
Cadmium	"	25.7	0.00594	2.97	"	"	--	24.8	104%	"	--	--	"	
Chromium	"	50.5	0.0347	1.49	"	"	--	49.5	102%	"	--	--	"	
Copper	"	51.0	0.0842	1.49	"	"	--	"	103%	"	--	--	"	
Lead	"	51.3	0.149	9.90	"	"	--	"	104%	"	--	--	"	
Nickel	"	50.3	0.0594	1.24	"	"	--	"	102%	"	--	--	"	
Selenium	"	50.7	0.446	24.8	"	"	--	"	102%	"	--	--	"	
Silver	"	25.1	0.0347	2.97	"	"	--	24.8	102%	"	--	--	"	
Zinc	"	50.5	0.0495	2.48	"	"	--	49.5	102%	"	--	--	"	

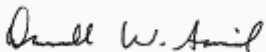
**Matrix Spike (9100713-MS1)**

QC Source: PSJ0657-06

Extracted: 10/20/09 11:18

Aluminum	EPA 6010B	16600	4.85	53.3	mg/kg dry	10x	14200	267	918%	(75-125)	--	--	10/22/09 20:02	MHA
Antimony	"	40.4	0.597	2.13	"	1x	4.08	53.3	68.2%	"	--	--	10/22/09 02:02	M8
Arsenic	"	50.1	0.139	26.7	"	"	3.68	"	87.0%	"	--	--	"	
Cadmium	"	26.4	0.00640	3.20	"	"	4.92	26.7	80.7%	"	--	--	"	
Chromium	"	2190	0.373	16.0	"	10x	1920	53.3	488%	"	--	--	10/22/09 20:02	MHA
Copper	"	143	0.0906	1.60	"	1x	92.7	"	94.2%	"	--	--	10/22/09 02:02	
Lead	"	68.4	0.160	10.7	"	"	24.1	"	83.1%	"	--	--	"	
Nickel	"	99.5	0.0640	1.33	"	"	38.5	"	114%	"	--	--	"	
Selenium	"	40.0	0.480	26.7	"	"	ND	"	75.0%	"	--	--	"	
Silver	"	27.8	0.0373	3.20	"	"	2.58	26.7	94.7%	"	--	--	"	
Zinc	"	174	0.0533	2.67	"	"	116	53.3	108%	"	--	--	"	

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Darrell Auvil, Project Manager

**Amended Report**

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**Amended Report**

**CH2M-Hill**

2020 SW 4th Suite 300  
 Portland, OR 97201

Project Name: **NW Pipe Project**  
 Project Number: NW Pipe Project  
 Project Manager: Pat Heins

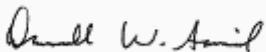
Report Created:  
 11/17/09 15:44

**Total Metals per EPA 6000/7000 Series Methods - Laboratory Quality Control Results**  
 TestAmerica Portland

QC Batch: 9100713      Soil Preparation Method: EPA 3050

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
<b>Matrix Spike Dup (9100713-MSD1)</b>			QC Source: PSJ0657-06				Extracted: 10/20/09 11:18							
Aluminum	EPA 6010B	13700	4.99	54.9	mg/kg dry	10x	14200	274	-163%	(75-125)	19.1%	(40)	10/22/09 20:08	MHA
Antimony	"	45.0	0.615	2.20	"	1x	4.08	54.9	74.5%	"	10.6%	"	10/22/09 02:08	M8
Arsenic	"	54.6	0.143	27.4	"	"	3.68	"	92.7%	"	8.65%	"	"	"
Cadmium	"	27.8	0.00659	3.29	"	"	4.92	27.4	83.4%	"	5.11%	"	"	"
Chromium	"	2210	0.384	16.5	"	10x	1920	54.9	526%	"	1.31%	"	10/22/09 20:08	MHA
Copper	"	153	0.0933	1.65	"	1x	92.7	"	110%	"	6.71%	"	10/22/09 02:08	"
Lead	"	73.0	0.165	11.0	"	"	24.1	"	89.1%	"	6.53%	"	"	"
Nickel	"	100	0.0659	1.37	"	"	38.5	"	113%	"	0.933%	"	"	"
Selenium	"	41.5	0.494	27.4	"	"	ND	"	75.6%	"	3.77%	"	"	"
Silver	"	28.0	0.0384	3.29	"	"	2.58	27.4	92.8%	"	0.808%	"	"	"
Zinc	"	173	0.0549	2.74	"	"	116	54.9	104%	"	0.395%	"	"	"

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Darrell Auvil, Project Manager

**Amended Report**

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**Amended Report**

<b>CH2M-Hill</b> 2020 SW 4th Suite 300 Portland, OR 97201	Project Name: <b>NW Pipe Project</b> Project Number: NW Pipe Project Project Manager: Pat Heins	Report Created: 11/17/09 15:44
-----------------------------------------------------------------	-------------------------------------------------------------------------------------------------------	-----------------------------------

**Total Mercury per EPA Method 7471A - Laboratory Quality Control Results**  
TestAmerica Portland

**QC Batch: 9100923      Other wet Preparation Method: EPA 7471A**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
<b>Blank (9100923-BLK1)</b>								<b>Extracted: 10/26/09 11:36</b>						
Mercury	EPA 7471A	ND	0.00659	0.0941	mg/kg	1x	--	--	--	--	--	--	10/28/09 11:35	
<b>LCS (9100923-BS1)</b>								<b>Extracted: 10/26/09 11:36</b>						
Mercury	EPA 7471A	0.510	0.00565	0.0806	mg/kg	1x	--	0.504	101%	(80-120)	--	--	10/28/09 11:37	
<b>LCS Dup (9100923-BSD1)</b>								<b>Extracted: 10/26/09 11:36</b>						
Mercury	EPA 7471A	0.532	0.00617	0.0881	mg/kg	1x	--	0.551	96.6%	(80-120)	4.18%	(20)	10/28/09 12:00	
<b>Duplicate (9100923-DUP1)</b>								<b>QC Source: PSJ0657-06</b>		<b>Extracted: 10/26/09 11:36</b>				
Mercury	EPA 7471A	0.0155	0.00519	0.0742	mg/kg	1x	0.00846	--	--	--	58.9%	(40)	10/28/09 12:06	R4, J
<b>Matrix Spike (9100923-MS1)</b>								<b>QC Source: PSJ0657-06</b>		<b>Extracted: 10/26/09 11:36</b>				
Mercury	EPA 7471A	0.378	0.00515	0.0735	mg/kg	1x	0.00846	0.460	80.4%	(75-125)	--	--	10/28/09 12:32	
<b>Matrix Spike Dup (9100923-MSD1)</b>								<b>QC Source: PSJ0657-06</b>		<b>Extracted: 10/26/09 11:36</b>				
Mercury	EPA 7471A	0.484	0.00562	0.0803	mg/kg	1x	0.00846	0.502	94.8%	(75-125)	24.7%	(40)	10/28/09 12:35	

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Darrell Auvil, Project Manager

**Amended Report**

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**Amended Report**

**CH2M-Hill**

2020 SW 4th Suite 300  
Portland, OR 97201

Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

Report Created:  
11/17/09 15:44

**Organochlorine Pesticides per EPA Method 8081A - Laboratory Quality Control Results**

TestAmerica Portland

QC Batch: 9100740

Soil Preparation Method: EPA 3550

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
<b>Blank (9100740-BLK2)</b>													Extracted: 10/21/09 11:30	
Aldrin	EPA 8081A	ND	0.330	0.669	ug/kg wet	1x	--	--	--	--	--	--	10/28/09 13:56	
alpha-BHC	"	ND	0.330	0.669	"	"	--	--	--	--	--	--	"	
beta-BHC	"	ND	0.330	0.669	"	"	--	--	--	--	--	--	"	
delta-BHC	"	ND	0.330	0.669	"	"	--	--	--	--	--	--	"	
gamma-BHC (Lindane)	"	ND	0.330	0.669	"	"	--	--	--	--	--	--	"	
gamma-Chlordane	"	ND	0.330	0.669	"	"	--	--	--	--	--	--	"	
alpha-Chlordane	"	ND	0.330	0.669	"	"	--	--	--	--	--	--	"	
Chlordane (tech)	"	ND	7.49	15.0	"	"	--	--	--	--	--	--	"	
4,4'-DDD	"	ND	0.330	0.669	"	"	--	--	--	--	--	--	"	
4,4'-DDE	"	ND	0.330	0.669	"	"	--	--	--	--	--	--	"	
4,4'-DDT	"	ND	0.330	0.669	"	"	--	--	--	--	--	--	"	
Dieldrin	"	ND	0.330	0.669	"	"	--	--	--	--	--	--	"	
Endosulfan I	"	ND	0.330	0.669	"	"	--	--	--	--	--	--	"	
Endosulfan II	"	ND	0.330	0.669	"	"	--	--	--	--	--	--	"	
Endosulfan sulfate	"	ND	0.330	0.669	"	"	--	--	--	--	--	--	"	
Endrin	"	ND	0.330	0.669	"	"	--	--	--	--	--	--	"	
Endrin aldehyde	"	ND	0.330	0.669	"	"	--	--	--	--	--	--	"	
Endrin ketone	"	ND	0.330	0.669	"	"	--	--	--	--	--	--	"	
Heptachlor	"	ND	0.330	0.669	"	"	--	--	--	--	--	--	"	
Heptachlor epoxide	"	ND	0.330	0.669	"	"	--	--	--	--	--	--	"	
Methoxychlor	"	ND	0.330	0.669	"	"	--	--	--	--	--	--	"	
Toxaphene	"	ND	9.99	20.0	"	"	--	--	--	--	--	--	"	

Surrogate(s): 2,4,5,6-Tetrachloro-m-xylene Recovery: 46.4% Limits: 36-140% 10/28/09 13:56

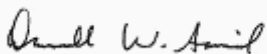
**LCS (9100740-BS1)**

Extracted: 10/21/09 11:30

Aldrin	EPA 8081A	2.62	0.330	0.670	ug/kg wet	1x	--	3.33	78.7%	(64-136)	--	--	10/28/09 14:22	
gamma-BHC (Lindane)	"	2.73	0.330	0.670	"	"	--	"	81.9%	(62-140)	--	--	"	
4,4'-DDT	"	3.04	0.330	0.670	"	"	--	"	91.4%	(65-130)	--	--	"	
Dieldrin	"	2.73	0.330	0.670	"	"	--	"	81.8%	(70-135)	--	--	"	
Endrin	"	2.85	0.330	0.670	"	"	--	"	85.5%	(65-135)	--	--	"	
Heptachlor	"	2.72	0.330	0.670	"	"	--	"	81.6%	(48-124)	--	--	"	

Surrogate(s): 2,4,5,6-Tetrachloro-m-xylene Recovery: 54.9% Limits: 36-140% 10/28/09 14:22

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Darrell Auvil, Project Manager

**Amended Report**

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**Amended Report**

**CH2M-Hill**

2020 SW 4th Suite 300  
Portland, OR 97201

Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

Report Created:  
11/17/09 15:44

**Organochlorine Pesticides per EPA Method 8081A - Laboratory Quality Control Results**

TestAmerica Portland

QC Batch: 9100740

Soil Preparation Method: EPA 3550

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
<b>Matrix Spike (9100740-MS1)</b>			QC Source: PSJ0657-06				Extracted: 10/21/09 11:30							
Aldrin	EPA 8081A	2.66	2.21	7.41	ug/kg dry	10x	ND	3.69	72.0%	(64-136)	-- --	-- --	10/30/09 13:24	J
gamma-BHC (Lindane)	"	2.96	2.21	7.41	"	"	ND	"	80.3%	(62-140)	-- --	-- --	"	J
4,4'-DDT	"	21.2	2.21	7.41	"	"	ND	"	575%	(65-130)	-- --	-- --	"	M1
Dieldrin	"	2.84	2.21	7.41	"	"	ND	"	77.1%	(70-135)	-- --	-- --	"	J
Endrin	"	11.9	2.21	7.41	"	"	ND	"	324%	(65-135)	-- --	-- --	"	M1
Heptachlor	"	2.74	2.21	7.41	"	"	ND	"	74.4%	(48-124)	-- --	-- --	"	J
Surrogate(s): 2,4,5,6-Tetrachloro-m-xylene		Recovery: 61.0%		Limits: 36-140%				10/30/09 13:24						

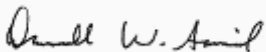
**Matrix Spike Dup (9100740-MSD1)**

QC Source: PSJ0657-06

Extracted: 10/21/09 11:30

Aldrin	EPA 8081A	2.82	2.20	7.38	ug/kg dry	10x	ND	3.67	76.8%	(64-136)	6.05% (50)	"	10/30/09 13:50	J
gamma-BHC (Lindane)	"	3.24	2.20	7.38	"	"	ND	"	88.3%	(62-140)	9.09%	"	"	J
4,4'-DDT	"	26.6	2.20	7.38	"	"	ND	"	723%	(65-130)	22.4%	"	"	M1
Dieldrin	"	3.27	2.20	7.38	"	"	ND	"	89.1%	(70-135)	14.0%	"	"	J
Endrin	"	15.0	2.20	7.38	"	"	ND	"	407%	(65-135)	22.4%	"	"	M1
Heptachlor	"	3.28	2.20	7.38	"	"	ND	"	89.3%	(48-124)	17.8%	"	"	J
Surrogate(s): 2,4,5,6-Tetrachloro-m-xylene		Recovery: 71.8%		Limits: 36-140%				10/30/09 13:50						

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Darrell Auvil, Project Manager

**Amended Report**

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**Amended Report**

<b>CH2M-Hill</b>	Project Name: <b>NW Pipe Project</b>	Report Created:
2020 SW 4th Suite 300	Project Number: NW Pipe Project	11/17/09 15:44
Portland, OR 97201	Project Manager: Pat Heins	

**Polychlorinated Biphenyls per EPA Method 8082 - Laboratory Quality Control Results**  
 TestAmerica Portland

**QC Batch: 9100740      Soil Preparation Method: EPA 3550**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
<b>Blank (9100740-BLK1)</b>										Extracted: 10/21/09 11:30				
Aroclor 1016	EPA 8082	ND	1.67	3.33	ug/kg wet	1x	--	--	--	--	--	--	10/27/09 21:34	
Aroclor 1221	"	ND	3.33	6.69	"	"	--	--	--	--	--	--	"	
Aroclor 1232	"	ND	1.67	3.33	"	"	--	--	--	--	--	--	"	
Aroclor 1242	"	ND	1.67	3.33	"	"	--	--	--	--	--	--	"	
Aroclor 1248	"	ND	1.67	3.33	"	"	--	--	--	--	--	--	"	
Aroclor 1254	"	ND	1.67	3.33	"	"	--	--	--	--	--	--	"	
Aroclor 1260	"	ND	1.67	3.33	"	"	--	--	--	--	--	--	"	
Aroclor 1262	"	ND	1.67	3.33	"	"	--	--	--	--	--	--	"	
Aroclor 1268	"	ND	1.67	3.33	"	"	--	--	--	--	--	--	"	
<i>Surrogate(s): Decachlorobiphenyl</i>		<i>Recovery: 70.8%</i>	<i>Limits: 16-149%</i>		<i>10/27/09 21:34</i>									

<b>LCS (9100740-BS2)</b>										Extracted: 10/21/09 11:30				
Aroclor 1016	EPA 8082	28.8	1.66	3.31	ug/kg wet	1x	--	33.2	86.8%	(57-135)	--	--	10/27/09 21:56	
Aroclor 1260	"	30.0	1.66	3.31	"	"	--	"	90.6%	(60-135)	--	--	"	
<i>Surrogate(s): Decachlorobiphenyl</i>		<i>Recovery: 74.3%</i>	<i>Limits: 16-149%</i>		<i>10/27/09 21:56</i>									

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Darrell Auvil, Project Manager

**Amended Report**

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**Amended Report**

**CH2M-Hill**

2020 SW 4th Suite 300  
Portland, OR 97201

Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

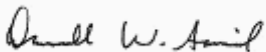
Report Created:  
11/17/09 15:44

**Polynuclear Aromatic Compounds per EPA 8270M-SIM - Laboratory Quality Control Results**  
TestAmerica Portland

QC Batch: 9100711 Soil Preparation Method: EPA 3550

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes	
<b>Matrix Spike (9100711-MS1)</b>			QC Source: PSJ0657-06					Extracted: 10/20/09 16:00							
Acenaphthene	EPA 8270m	213	36.5	148	ug/kg dry	10x	31.1	184	98.9%	(33-139)	--	--	10/21/09 16:24		
Benzo (a) pyrene	"	1150	36.5	148	"	"	1010	"	80.8%	(45-149)	--	--	"		
Pyrene	"	1240	36.5	148	"	"	1080	"	87.5%	(39-138)	--	--	"		
Surrogate(s): Fluorene-d10		Recovery:	97.5%	Limits: 24-125%										10/21/09 16:24	
Pyrene-d10			96.3%	41-141%										"	
Benzo (a) pyrene-d12			99.6%	38-143%										"	
<b>Matrix Spike (9100711-MS2)</b>			QC Source: PSJ0657-06					Extracted: 10/20/09 16:00							
Acenaphthene	EPA 8270m	213	36.5	148	ug/kg dry	10x	31.1	184	98.9%	(33-139)	--	--	10/21/09 16:24		
Benzo (a) pyrene	"	1150	36.5	148	"	"	1010	"	80.8%	(45-149)	--	--	"		
Pyrene	"	1240	36.5	148	"	"	1080	"	87.5%	(39-138)	--	--	"		
Surrogate(s): Fluorene-d10		Recovery:	97.5%	Limits: 24-125%										10/21/09 16:24	
Pyrene-d10			96.3%	41-141%										"	
Benzo (a) pyrene-d12			99.6%	38-143%										"	
<b>Matrix Spike Dup (9100711-MSD1)</b>			QC Source: PSJ0657-06					Extracted: 10/20/09 16:00							
Acenaphthene	EPA 8270m	193	36.3	147	ug/kg dry	10x	31.1	183	88.4%	(33-139)	9.92%	(60)	10/21/09 16:53		
Benzo (a) pyrene	"	1300	36.3	147	"	"	1010	"	160%	(45-149)	11.8%	"	"	MHA	
Pyrene	"	1370	36.3	147	"	"	1080	"	157%	(39-138)	9.75%	"	"	MHA	
Surrogate(s): Fluorene-d10		Recovery:	86.8%	Limits: 24-125%										10/21/09 16:53	
Pyrene-d10			85.2%	41-141%										"	
Benzo (a) pyrene-d12			87.1%	38-143%										"	
<b>Matrix Spike Dup (9100711-MSD2)</b>			QC Source: PSJ0657-06					Extracted: 10/20/09 16:00							
Acenaphthene	EPA 8270m	193	36.3	147	ug/kg dry	10x	31.1	183	88.4%	(33-139)	9.92%	(60)	10/21/09 16:53		
Benzo (a) pyrene	"	1300	36.3	147	"	"	1010	"	160%	(45-149)	11.8%	"	"	MHA	
Pyrene	"	1370	36.3	147	"	"	1080	"	157%	(39-138)	9.75%	"	"	MHA	
Surrogate(s): Fluorene-d10		Recovery:	86.8%	Limits: 24-125%										10/21/09 16:53	
Pyrene-d10			85.2%	41-141%										"	
Benzo (a) pyrene-d12			87.1%	38-143%										"	

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Darrell Auvil, Project Manager

**Amended Report**

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**Amended Report**

**CH2M-Hill**

2020 SW 4th Suite 300  
Portland, OR 97201

Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

Report Created:  
11/17/09 15:44

**Polynuclear Aromatic Compounds per EPA 8270M-SIM - Laboratory Quality Control Results**  
TestAmerica Portland

QC Batch: 9101141 Soil Preparation Method: EPA 3550

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
<b>Blank (9101141-BLK1)</b>													Extracted: 10/20/09 16:00	
Acenaphthene	EPA 8270m	ND	3.30	13.4	ug/kg wet	1x	--	--	--	--	--	--	10/21/09 15:54	
Acenaphthylene	"	ND	3.30	13.4	"	"	--	--	--	--	--	--	"	
Anthracene	"	ND	3.30	13.4	"	"	--	--	--	--	--	--	"	
Benzo (a) anthracene	"	ND	3.30	13.4	"	"	--	--	--	--	--	--	"	
Benzo (a) pyrene	"	ND	3.30	13.4	"	"	--	--	--	--	--	--	"	
Benzo (b) fluoranthene	"	ND	3.30	13.4	"	"	--	--	--	--	--	--	"	
Benzo (ghi) perylene	"	ND	3.30	13.4	"	"	--	--	--	--	--	--	"	
Benzo (k) fluoranthene	"	ND	3.30	13.4	"	"	--	--	--	--	--	--	"	
Chrysene	"	ND	3.30	13.4	"	"	--	--	--	--	--	--	"	
Dibenzo (a,h) anthracene	"	ND	3.30	13.4	"	"	--	--	--	--	--	--	"	
Fluoranthene	"	ND	3.30	13.4	"	"	--	--	--	--	--	--	"	
Fluorene	"	ND	3.30	13.4	"	"	--	--	--	--	--	--	"	
Indeno (1,2,3-cd) pyrene	"	ND	3.30	13.4	"	"	--	--	--	--	--	--	"	
Naphthalene	"	ND	3.30	13.4	"	"	--	--	--	--	--	--	"	
Phenanthrene	"	ND	3.30	13.4	"	"	--	--	--	--	--	--	"	
Pyrene	"	ND	3.30	13.4	"	"	--	--	--	--	--	--	"	

Surrogate(s): Fluorene-d10 Recovery: 77.8% Limits: 24-125% 10/21/09 15:54  
 Pyrene-d10 96.6% 41-141% "  
 Benzo (a) pyrene-d12 92.5% 38-143% "

**LCS (9101141-BS1)**

Extracted: 10/20/09 16:00

Acenaphthene	EPA 8270m	177	3.27	13.3	ug/kg wet	1x	--	165	107%	(33-139)	--	--	10/21/09 15:25	
Benzo (a) pyrene	"	175	3.27	13.3	"	"	--	"	106%	(45-149)	--	--	"	
Pyrene	"	186	3.27	13.3	"	"	--	"	112%	(39-138)	--	--	"	

Surrogate(s): Fluorene-d10 Recovery: 93.6% Limits: 24-125% 10/21/09 15:25  
 Pyrene-d10 100% 41-141% "  
 Benzo (a) pyrene-d12 95.2% 38-143% "

**Matrix Spike (9101141-MS1)**

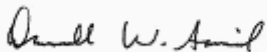
QC Source: PSJ0657-06

Extracted: 10/20/09 16:00

Acenaphthene	EPA 8270m	214	36.6	148	ug/kg dry	10x	31.1	185	98.9%	(33-139)	--	--	10/21/09 16:24	
Benzo (a) pyrene	"	1160	36.6	148	"	"	1010	"	82.4%	(45-149)	--	--	"	
Pyrene	"	1250	36.6	148	"	"	1080	"	89.2%	(39-138)	--	--	"	

Surrogate(s): Fluorene-d10 Recovery: 97.5% Limits: 24-125% 10/21/09 16:24  
 Pyrene-d10 96.3% 41-141% "  
 Benzo (a) pyrene-d12 99.6% 38-143% "

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**Amended Report**

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**CH2M-Hill**

2020 SW 4th Suite 300  
Portland, OR 97201

Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

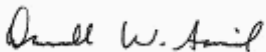
Report Created:  
11/17/09 15:44

**Polynuclear Aromatic Compounds per EPA 8270M-SIM - Laboratory Quality Control Results**  
TestAmerica Portland

QC Batch: 9101141 Soil Preparation Method: EPA 3550

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
<b>Matrix Spike Dup (9101141-MSD1)</b>			QC Source: PSJ0657-06				Extracted: 10/20/09 16:00							
Acenaphthene	EPA 8270m	194	36.5	148	ug/kg dry	10x	31.1	184	88.4%	(33-139)	9.75% (60)		10/21/09 16:53	
Benzo (a) pyrene	"	1310	36.5	148	"	"	1010	"	163%	(45-149)	12.0%	"	"	MHA
Pyrene	"	1380	36.5	148	"	"	1080	"	160%	(39-138)	9.92%	"	"	MHA
<i>Surrogate(s): Fluorene-d10</i>		<i>Recovery:</i>	<i>86.8%</i>	<i>Limits: 24-125%</i>										
<i>Pyrene-d10</i>			<i>85.2%</i>	<i>41-141%</i>										
<i>Benzo (a) pyrene-d12</i>			<i>87.1%</i>	<i>38-143%</i>										

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Portland, OR 97201

Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

Report Created:  
11/17/09 15:44

**Phthalates per EPA 8270-SIM - Laboratory Quality Control Results**

TestAmerica Portland

QC Batch: 9100711

Soil Preparation Method: EPA 3550

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
---------	--------	--------	------	-----	-------	-----	---------------	-----------	-------	----------	-------	----------	----------	-------

**Blank (9100711-BLK1)**

Extracted: 10/20/09 16:00

Dimethyl phthalate	EPA 8270m	ND	13.4	26.8	ug/kg wet	1x	--	--	--	--	--	--	10/21/09 20:47	
Diethyl phthalate	"	ND	13.4	26.8	"	"	--	--	--	--	--	--	"	
Di-n-butyl phthalate	"	ND	13.4	26.8	"	"	--	--	--	--	--	--	"	
Butyl benzyl phthalate	"	ND	13.4	26.8	"	"	--	--	--	--	--	--	"	
Bis(2-ethylhexyl)phthalate	"	ND	13.4	26.8	"	"	--	--	--	--	--	--	"	
Di-n-octyl phthalate	"	ND	13.4	26.8	"	"	--	--	--	--	--	--	"	

Surrogate(s): 2-Fluorobiphenyl Recovery: 110% Limits: 10-150% 10/21/09 20:47  
p-Terphenyl-d14 101% 10-150% "

**LCS (9100711-BS1)**

Extracted: 10/20/09 16:00

Dimethyl phthalate	EPA 8270m	122	13.4	26.8	ug/kg wet	1x	--	133	91.5%	(20-150)	--	--	10/21/09 21:24	
Diethyl phthalate	"	133	13.4	26.8	"	"	--	"	99.6%	"	--	--	"	
Di-n-butyl phthalate	"	145	13.4	26.8	"	"	--	"	109%	"	--	--	"	
Butyl benzyl phthalate	"	149	13.4	26.8	"	"	--	"	112%	"	--	--	"	
Bis(2-ethylhexyl)phthalate	"	148	13.4	26.8	"	"	--	"	111%	"	--	--	"	
Di-n-octyl phthalate	"	143	13.4	26.8	"	"	--	"	107%	"	--	--	"	

Surrogate(s): 2-Fluorobiphenyl Recovery: 127% Limits: 10-150% 10/21/09 21:24  
p-Terphenyl-d14 112% 10-150% "

**Matrix Spike (9100711-MS1)**

QC Source: PSJ0657-06

Extracted: 10/20/09 16:00

Dimethyl phthalate	EPA 8270m	152	148	296	ug/kg dry	10x	ND	147	103%	(10-150)	--	--	10/22/09 22:21	J
Diethyl phthalate	"	155	148	296	"	"	ND	"	106%	"	--	--	"	J
Di-n-butyl phthalate	"	162	148	296	"	"	ND	"	110%	"	--	--	"	J
Butyl benzyl phthalate	"	182	148	296	"	"	37.6	"	98.1%	"	--	--	"	J
Bis(2-ethylhexyl)phthalate	"	307	148	296	"	"	95.2	"	144%	"	--	--	"	
Di-n-octyl phthalate	"	141	55.2	296	"	"	ND	"	95.5%	"	--	--	"	J

Surrogate(s): 2-Fluorobiphenyl Recovery: 92.8% Limits: 10-150% 10/22/09 22:21  
p-Terphenyl-d14 93.2% 10-150% "

**Matrix Spike Dup (9100711-MSD1)**

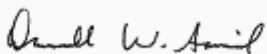
QC Source: PSJ0657-06

Extracted: 10/20/09 16:00

Dimethyl phthalate	EPA 8270m	149	147	295	ug/kg dry	10x	ND	147	101%	(10-150)	1.92%	(50)	10/22/09 22:57	J
Diethyl phthalate	"	216	147	295	"	"	ND	"	147%	"	32.4%	"	"	J
Di-n-butyl phthalate	"	160	147	295	"	"	ND	"	109%	"	0.724%	"	"	J
Butyl benzyl phthalate	"	205	147	295	"	"	37.6	"	114%	"	11.7%	"	"	J
Bis(2-ethylhexyl)phthalate	"	1330	147	295	"	"	95.2	"	841%	"	125%	"	"	M7, R2
Di-n-octyl phthalate	"	269	55.0	295	"	"	ND	"	183%	"	62.5%	"	"	M7, R2, J

Surrogate(s): 2-Fluorobiphenyl Recovery: 92.1% Limits: 10-150% 10/22/09 22:57  
p-Terphenyl-d14 91.1% 10-150% "

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**CH2M-Hill**

2020 SW 4th Suite 300  
 Portland, OR 97201

Project Name: **NW Pipe Project**  
 Project Number: NW Pipe Project  
 Project Manager: Pat Heins

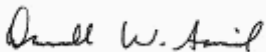
Report Created:  
 11/17/09 15:44

**Percent Dry Weight (Solids) per ASTM D2216-80 - Laboratory Quality Control Results**  
 TestAmerica Portland

**QC Batch: 9100689      Soil Preparation Method: Dry Weight**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes	
<b>Duplicate (9100689-DUP1)</b>			QC Source: PSJ0660-01					Extracted: 10/20/09 07:49							
% Solids	NCA SOP	83.5	---	0.0100	% by Weight	1x	83.6	--	--	--	0.120% (20)		10/20/09 07:49		
<b>Duplicate (9100689-DUP2)</b>			QC Source: PSJ0660-02					Extracted: 10/20/09 07:49							
% Solids	NCA SOP	80.7	---	0.0100	% by Weight	1x	81.5	--	--	--	0.986% (20)		10/20/09 07:49		

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**CH2M-Hill**

2020 SW 4th Suite 300  
 Portland, OR 97201

Project Name: **NW Pipe Project**  
 Project Number: NW Pipe Project  
 Project Manager: Pat Heins

Report Created:  
 11/17/09 15:44

**Organic Carbon, Total (TOC) - Laboratory Quality Control Results**

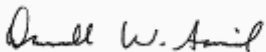
TestAmerica Tacoma

**QC Batch: 53275**

**Soil Preparation Method: NA**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes	
<b>Matrix Spike Dup (161561D)</b>			QC Source: PSJ0657-01					Extracted: 11/02/09 13:44							
Total Organic Carbon	9060	21000	---	2000	mg/Kg	1x	4300	18500	91%	(76-128)	7%	(28)	11/02/09 13:44		
<b>Matrix Spike (161561S)</b>			QC Source: PSJ0657-01					Extracted: 11/02/09 13:44							
Total Organic Carbon	9060	22500	---	2000	mg/Kg	1x	4300	19300	94%	(76-128)	--	--	11/02/09 13:44		
<b>Duplicate (161561X)</b>			QC Source: PSJ0657-01					Extracted: 11/02/09 13:44							
Total Organic Carbon	9060	4200	---	2000	mg/Kg	1x	4300	--	--	--	2%	(50)	11/02/09 13:44		
<b>Blank (580-53275-1)</b>			QC Source:					Extracted: 11/02/09 13:44							
Total Organic Carbon	9060	ND	---	2000	mg/Kg	1x	--	--	--	--	--	--	11/02/09 13:44		
<b>LCS (580-53275-2)</b>			QC Source:					Extracted: 11/02/09 13:44							
Total Organic Carbon	9060	4800	---	2000	mg/Kg	1x	--	3400	141%	(13-187)	--	--	11/02/09 13:44		

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Darrell Auvil, Project Manager

**Amended Report**

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**Amended Report**

<b>CH2M-Hill</b> 2020 SW 4th Suite 300 Portland, OR 97201	Project Name: <b>NW Pipe Project</b> Project Number: NW Pipe Project Project Manager: Pat Heins	Report Created: 11/17/09 15:44
-----------------------------------------------------------------	-------------------------------------------------------------------------------------------------------	-----------------------------------

**Percent Moisture - Laboratory Quality Control Results**  
 TestAmerica Tacoma

QC Batch: 53091	Soil Preparation Method: NA
-----------------	-----------------------------

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
<b>Duplicate (1615613X)</b>			QC Source: PSJ0657-13				Extracted: 10/30/09 12:11							
Percent Solids	Moisture	85	---	0.10	%	1x	84	--	--	--	1%	(20)	10/30/09 12:11	

TestAmerica Portland



Darrell Auvil, Project Manager

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**Amended Report**

**CH2M-Hill**

2020 SW 4th Suite 300  
Portland, OR 97201

Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

Report Created:  
11/17/09 15:44

**Notes and Definitions**


Report Specific Notes:

- C - Calibration Verification recovery was above the method control limit for this analyte. Analyte not detected, data not impacted.
- J - Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.
- M1 - The MS and/or MSD were above the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
- M7 - The MS and/or MSD were above the acceptance limits. See Blank Spike (LCS).
- M8 - The MS and/or MSD were below the acceptance limits. See Blank Spike (LCS).
- MHA - Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information. See Blank Spike (LCS).
- R2 - The RPD exceeded the acceptance limit.
- R4 - Due to the low levels of analyte in the sample, the duplicate RPD calculation does not provide useful information.
- RL1 - Reporting limit raised due to sample matrix effects.
- RL3 - Reporting limit raised due to high concentrations of non-target analytes.
- RL7 - Sample required dilution due to high concentrations of target analyte.
- Z3 - The sample required a dilution due to the nature of the sample matrix. Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.
- ZX - Due to sample matrix effects, the surrogate recovery was outside the acceptance limits.

Laboratory Reporting Conventions:

- DET - Analyte DETECTED at or above the Reporting Limit. Qualitative Analyses only.
- ND - Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate).
- NR/NA - Not Reported / Not Available
- dry - Sample results reported on a Dry Weight Basis. Results and Reporting Limits have been corrected for Percent Dry Weight.
- wet - Sample results and reporting limits reported on a Wet Weight Basis (as received). Results with neither 'wet' nor 'dry' are reported on a Wet Weight Basis.
- RPD - RELATIVE PERCENT DIFFERENCE (RPDs calculated using Results, not Percent Recoveries).
- MRL - METHOD REPORTING LIMIT. Reporting Level at, or above, the lowest level standard of the Calibration Table.
- MDL\* - METHOD DETECTION LIMIT. Reporting Level at, or above, the statistically derived limit based on 40CFR, Part 136, Appendix B. \*MDLs are listed on the report only if the data has been evaluated below the MRL. Results between the MDL and MRL are reported as Estimated Results.
- Dil - Dilutions are calculated based on deviations from the standard dilution performed for an analysis, and may not represent the dilution found on the analytical raw data.
- Reporting Limits - Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts, analytical dilutions and percent solids, where applicable.

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Darrell Auvil, Project Manager

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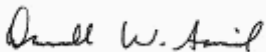
2020 SW 4th Suite 300  
Portland, OR 97201

Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat Heins

Report Created:  
11/17/09 15:44

Electronic Signature - Electronic Signature added in accordance with TestAmerica's *Electronic Reporting and Electronic Signatures Policy*.  
Application of electronic signature indicates that the report has been reviewed and approved for release by the laboratory.  
Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

TestAmerica Portland



Darrell Auvil, Project Manager

**Amended Report**

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## **GC Semivolatile Organic Compounds**

# ANALYSES DATA PACKAGE COVER PAGE

EPA 8081A

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

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**Client Sample Id:**

SS-401-101909-0  
SS-402-101909-0  
SS-403-101909-0  
SS-404-101909-0  
SS-405-101909-0  
SS-405-101909-2  
SS-406-101909-0  
SS-407-101909-0  
SS-407-101909-0  
SS-408-101909-0  
SS-409-101909-0  
SS-409-101909-0  
SS-410-101909-0  
SS-410-101909-0  
SS-411-101909-0  
SS-411-101909-1

**Lab Sample Id:**

PSJ0657-01  
PSJ0657-02  
PSJ0657-03  
PSJ0657-04  
PSJ0657-05  
PSJ0657-06  
PSJ0657-07  
PSJ0657-08  
PSJ0657-08RE1  
PSJ0657-09  
PSJ0657-10  
PSJ0657-10RE1  
PSJ0657-11  
PSJ0657-11RE1  
PSJ0657-12  
PSJ0657-13

# ANALYSES DATA PACKAGE COVER PAGE

EPA 8082

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

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**Client Sample Id:**

SS-401-101909-0  
SS-402-101909-0  
SS-403-101909-0  
SS-404-101909-0  
SS-405-101909-0  
SS-405-101909-2  
SS-406-101909-0  
SS-407-101909-0  
SS-408-101909-0  
SS-409-101909-0  
SS-410-101909-0  
SS-411-101909-0  
SS-411-101909-1

**Lab Sample Id:**

PSJ0657-01  
PSJ0657-02  
PSJ0657-03  
PSJ0657-04  
PSJ0657-05  
PSJ0657-06  
PSJ0657-07  
PSJ0657-08  
PSJ0657-09  
PSJ0657-10  
PSJ0657-11  
PSJ0657-12  
PSJ0657-13

## **GC Semivolatile Organic Compounds**

EPA 8081A  
Quality Control Summaries

**Form 2**  
**SURROGATE STANDARD RECOVERY AND RT SUMMARY**  
**EPA 8081A**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9J28010

Instrument: SV-ECD12

Matrix: Soil

Calibration: 9110202

Surrogate Compound	Spike Level ng/ml	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>Calibration Check (9J28010-CCV1 )</b>			Lab File ID: 10280904.D		Analyzed: 10/28/09 13:30			
2,4,5,6-Tetrachloro-m-xylene	100	105	85 - 115	9.36	9.38	-0.0200	+/-1.0	
<b>Calibration Check (9J28010-CCV2 )</b>			Lab File ID: 10280907.D		Analyzed: 10/28/09 14:48			
2,4,5,6-Tetrachloro-m-xylene	100	106	85 - 115	9.36	9.38	-0.0200	+/-1.0	
<b>Calibration Check (9J28010-CCV5 )</b>			Lab File ID: 10280931.D		Analyzed: 10/29/09 01:15			
2,4,5,6-Tetrachloro-m-xylene	100	111	85 - 115	9.35	9.38	-0.0300	+/-1.0	
<b>Calibration Check (9J28010-CCV6 )</b>			Lab File ID: 10280940.D		Analyzed: 10/29/09 05:09			
2,4,5,6-Tetrachloro-m-xylene	100	110	85 - 115	9.36	9.38	-0.0200	+/-1.0	
<b>Calibration Check (9J28010-CCV7 )</b>			Lab File ID: 10280951.D		Analyzed: 10/29/09 09:57			
2,4,5,6-Tetrachloro-m-xylene	100	111	85 - 115	9.36	9.38	-0.0200	+/-1.0	
<b>Calibration Check (9J28010-CCV8 )</b>			Lab File ID: 10280960.D		Analyzed: 10/29/09 13:52			
2,4,5,6-Tetrachloro-m-xylene	100	109	85 - 115	9.35	9.38	-0.0300	+/-1.0	

**Form 2**  
**SURROGATE STANDARD RECOVERY AND RT SUMMARY**  
**EPA 8081A**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9J28010

Instrument: SV-ECD12

Matrix: Soil

Calibration: 9110202

Surrogate Compound	Spike Level ug/kg dry	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>SS-402-101909-0 (PSJ0657-02)</b>			Lab File ID: 10280943.D		Analyzed: 10/29/09 06:28			
2,4,5,6-Tetrachloro-m-xylene	3.55	73.6	36 - 140	9.36	9.38	-0.0200	+/-1.0	
<b>SS-403-101909-0 (PSJ0657-03)</b>			Lab File ID: 10280945.D		Analyzed: 10/29/09 07:20			
2,4,5,6-Tetrachloro-m-xylene	3.59	62.0	36 - 140	9.36	9.38	-0.0200	+/-1.0	
<b>SS-404-101909-0 (PSJ0657-04)</b>			Lab File ID: 10280952.D		Analyzed: 10/29/09 10:23			
2,4,5,6-Tetrachloro-m-xylene	3.91	60.3	36 - 140	9.36	9.38	-0.0200	+/-1.0	
<b>SS-405-101909-0 (PSJ0657-05)</b>			Lab File ID: 10280953.D		Analyzed: 10/29/09 10:49			
2,4,5,6-Tetrachloro-m-xylene	3.80	66.6	36 - 140	9.36	9.38	-0.0200	+/-1.0	
<b>SS-405-101909-2 (PSJ0657-06)</b>			Lab File ID: 10280954.D		Analyzed: 10/29/09 11:15			
2,4,5,6-Tetrachloro-m-xylene	3.68	57.1	36 - 140	9.36	9.38	-0.0200	+/-1.0	
<b>SS-406-101909-0 (PSJ0657-07)</b>			Lab File ID: 10280946.D		Analyzed: 10/29/09 07:46			
2,4,5,6-Tetrachloro-m-xylene	3.71	59.8	36 - 140	9.36	9.38	-0.0200	+/-1.0	
<b>SS-409-101909-0 (PSJ0657-10)</b>			Lab File ID: 10280956.D		Analyzed: 10/29/09 12:07			
2,4,5,6-Tetrachloro-m-xylene	4.07	52.2	36 - 140	9.36	9.38	-0.0200	+/-1.0	
<b>SS-411-101909-0 (PSJ0657-12)</b>			Lab File ID: 10280957.D		Analyzed: 10/29/09 12:33			
2,4,5,6-Tetrachloro-m-xylene	3.89	43.9	36 - 140	9.36	9.38	-0.0200	+/-1.0	
<b>SS-411-101909-1 (PSJ0657-13)</b>			Lab File ID: 10280959.D		Analyzed: 10/29/09 13:26			
2,4,5,6-Tetrachloro-m-xylene	3.80	46.2	36 - 140	9.36	9.38	-0.0200	+/-1.0	

**Form 2**  
**SURROGATE STANDARD RECOVERY AND RT SUMMARY**  
**EPA 8081A**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9J28010

Instrument: SV-ECD12

Matrix: Soil

Calibration: 9110202

Surrogate Compound	Spike Level ug/kg	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>Blank (9100740-BLK2 )</b>			Lab File ID: 10280905.D		Analyzed: 10/28/09 13:56			
2,4,5,6-Tetrachloro-m-xylene	3.33	46.4	36 - 140	9.36	9.38	-0.0200	+/-1.0	
<b>LCS (9100740-BS1 )</b>			Lab File ID: 10280906.D		Analyzed: 10/28/09 14:22			
2,4,5,6-Tetrachloro-m-xylene	3.33	54.9	36 - 140	9.36	9.38	-0.0200	+/-1.0	

**Form 2**  
**SURROGATE STANDARD RECOVERY AND RT SUMMARY**  
**EPA 8081A**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9J30010

Instrument: SV-ECD12

Matrix: Soil

Calibration: 9110202

Surrogate Compound	Spike Level ng/ml	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>Calibration Check (9J30010-CCV1 )</b>			Lab File ID: 10300903.D		Analyzed: 10/30/09 11:47			
2,4,5,6-Tetrachloro-m-xylene	100	117	85 - 115	9.36	9.38	-0.0200	+/-1.0	*
<b>Calibration Check (9J30010-CCV2 )</b>			Lab File ID: 10300905.D		Analyzed: 10/30/09 12:50			
2,4,5,6-Tetrachloro-m-xylene	100	114	85 - 115	9.36	9.38	-0.0200	+/-1.0	
<b>Calibration Check (9J30010-CCV3 )</b>			Lab File ID: 10300908.D		Analyzed: 10/30/09 14:22			
2,4,5,6-Tetrachloro-m-xylene	100	109	85 - 115	9.35	9.38	-0.0300	+/-1.0	
<b>Calibration Check (9J30010-CCV4 )</b>			Lab File ID: 10300911.D		Analyzed: 10/30/09 15:46			
2,4,5,6-Tetrachloro-m-xylene	100	108	85 - 115	9.35	9.38	-0.0300	+/-1.0	
<b>Calibration Check (9J30010-CCV5 )</b>			Lab File ID: 10300913.D		Analyzed: 10/30/09 16:43			
2,4,5,6-Tetrachloro-m-xylene	100	112	85 - 115	9.36	9.38	-0.0200	+/-1.0	
<b>Calibration Check (9J30010-CCV6 )</b>			Lab File ID: 10300918.D		Analyzed: 10/30/09 19:36			
2,4,5,6-Tetrachloro-m-xylene	100	111	85 - 115	9.35	9.38	-0.0300	+/-1.0	

**Form 2**  
**SURROGATE STANDARD RECOVERY AND RT SUMMARY**  
**EPA 8081A**

Laboratory: TestAmerica Portland  
 Client: CH2M-Hill  
 Sequence: 9J30010  
 Matrix: Soil

SDG: PSJ0657  
 Project: NW Pipe Project  
 Instrument: SV-ECD12  
 Calibration: 9110202

Surrogate Compound	Spike Level ug/kg dry	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>Matrix Spike (9100740-MS1 )</b>			Lab File ID: 10300906.D		Analyzed: 10/30/09 13:24			
2,4,5,6-Tetrachloro-m-xylene	3.69	61.0	36 - 140	9.36	9.38	-0.0200	+/-1.0	
<b>Matrix Spike Dup (9100740-MSD1 )</b>			Lab File ID: 10300907.D		Analyzed: 10/30/09 13:50			
2,4,5,6-Tetrachloro-m-xylene	3.67	71.8	36 - 140	9.36	9.38	-0.0200	+/-1.0	
<b>SS-401-101909-0 (PSJ0657-01 )</b>			Lab File ID: 10300910.D		Analyzed: 10/30/09 15:20			
2,4,5,6-Tetrachloro-m-xylene	3.66	62.8	36 - 140	9.36	9.38	-0.0200	+/-1.0	
<b>SS-407-101909-0 (PSJ0657-08 )</b>			Lab File ID: 10300912.D		Analyzed: 10/30/09 16:17			
2,4,5,6-Tetrachloro-m-xylene	3.79	70.5	36 - 140	9.36	9.38	-0.0200	+/-1.0	
<b>SS-408-101909-0 (PSJ0657-09 )</b>			Lab File ID: 10300909.D		Analyzed: 10/30/09 14:54			
2,4,5,6-Tetrachloro-m-xylene	3.57	61.3	36 - 140	9.35	9.38	-0.0300	+/-1.0	
<b>SS-410-101909-0 (PSJ0657-11 )</b>			Lab File ID: 10300917.D		Analyzed: 10/30/09 19:10			
2,4,5,6-Tetrachloro-m-xylene	3.83	55.0	36 - 140	9.36	9.38	-0.0200	+/-1.0	

**CH2M-Hill**2020 SW 4th Suite 300  
Portland, OR 97201Project Name: **NW Pipe Project**

Project Number: NW Pipe Project

Project Manager: Pat Heins

Report Date:

11/17/09 15:44

**Laboratory Blank Report****Organochlorine Pesticides per EPA Method 8081A - Laboratory Quality Control Results**

TestAmerica Portland

**Batch 9100740**

Matrix	Lab Number	Sample Name	Dilution	File ID	Analyzed	Instrument
Soil	EPA 8081A	9100740-BLK2	Blank	1x 10280905.D	10/28/09 13:56	SV-ECD12
Soil	EPA 8081A	9100740-BS1	LCS	1x 10280906.D	10/28/09 14:22	SV-ECD12
Soil	EPA 8081A	9100740-MS1	Matrix Spike	10x 10300906.D	10/30/09 13:24	SV-ECD12
Soil	EPA 8081A	9100740-MSD1	Matrix Spike Dup	10x 10300907.D	10/30/09 13:50	SV-ECD12
Soil	EPA 8081A	PSJ0657-01	SS-401-101909-0	2x 10300910.D	10/30/09 15:20	SV-ECD12
Soil	EPA 8081A	PSJ0657-02	SS-402-101909-0	5x 10280943.D	10/29/09 06:28	SV-ECD12
Soil	EPA 8081A	PSJ0657-03	SS-403-101909-0	5x 10280945.D	10/29/09 07:20	SV-ECD12
Soil	EPA 8081A	PSJ0657-04	SS-404-101909-0	5x 10280952.D	10/29/09 10:23	SV-ECD12
Soil	EPA 8081A	PSJ0657-05	SS-405-101909-0	5x 10280953.D	10/29/09 10:49	SV-ECD12
Soil	EPA 8081A	PSJ0657-06	SS-405-101909-2	5x 10280954.D	10/29/09 11:15	SV-ECD12
Soil	EPA 8081A	PSJ0657-07	SS-406-101909-0	5x 10280946.D	10/29/09 07:46	SV-ECD12
Soil	EPA 8081A	PSJ0657-08	SS-407-101909-0	2x 10300912.D	10/30/09 16:17	SV-ECD12
Soil	EPA 8081A	PSJ0657-08RE1	SS-407-101909-0	5x 10280948.D	10/29/09 08:38	SV-ECD12
Soil	EPA 8081A	PSJ0657-09	SS-408-101909-0	2x 10300909.D	10/30/09 14:54	SV-ECD12
Soil	EPA 8081A	PSJ0657-10	SS-409-101909-0	10x 10280956.D	10/29/09 12:07	SV-ECD12
Soil	EPA 8081A	PSJ0657-10RE1	SS-409-101909-0	100x 10300904.D	10/30/09 12:24	SV-ECD12
Soil	EPA 8081A	PSJ0657-11	SS-410-101909-0	5x 10300917.D	10/30/09 19:10	SV-ECD12
Soil	EPA 8081A	PSJ0657-11RE1	SS-410-101909-0	10x 10280934.D	10/29/09 02:33	SV-ECD12
Soil	EPA 8081A	PSJ0657-12	SS-411-101909-0	10x 10280957.D	10/29/09 12:33	SV-ECD12
Soil	EPA 8081A	PSJ0657-13	SS-411-101909-1	10x 10280959.D	10/29/09 13:26	SV-ECD12



**Form 1**  
**METHOD BLANK DATA SHEET**  
**EPA 8081A**

Laboratory: TestAmerica Portland                                                  SDG:                          PSJ0657  
 Client: CH2M-Hill                                                                          Project: NW Pipe Project  
 Matrix: Soil                                                  Laboratory ID: 9100740-BLK2                          File ID: 10280905.D  
 Prepared: 10/21/09 11:30                          Preparation: EPA 3550                          Initial/Final: 60.06 g / 2 ml  
 Analyzed: 10/28/09 13:56                          Instrument: SV-ECD12  
 Batch: 9100740                                                  Sequence: 9J28010                          Calibration: 9110202

CAS NO.	COMPOUND	CONC. (ug/kg wet)	Q
72-54-8	4,4'-DDD	0.669	U
72-55-9	4,4'-DDE	0.669	U
50-29-3	4,4'-DDT	0.669	U
309-00-2	Aldrin	0.669	U
319-84-6	alpha-BHC	0.669	U
5103-71-9	alpha-Chlordane	0.669	U
319-85-7	beta-BHC	0.669	U
57-74-9	Chlordane (tech)	15.0	U
319-86-8	delta-BHC	0.669	U
60-57-1	Dieldrin	0.669	U
959-98-8	Endosulfan I	0.669	U
33213-65-9	Endosulfan II	0.669	U
1031-07-8	Endosulfan sulfate	0.669	U
72-20-8	Endrin	0.669	U
7421-93-4	Endrin aldehyde	0.669	U
53494-70-5	Endrin ketone	0.669	U
58-89-9	gamma-BHC (Lindane)	0.669	U
5103-74-2	gamma-Chlordane	0.669	U
76-44-8	Heptachlor	0.669	U
1024-57-3	Heptachlor epoxide	0.669	U
72-43-5	Methoxychlor	0.669	U
8001-35-2	Toxaphene	20.0	U

SYSTEM MONITORING COMPOUND	ADDED (ug/kg wet)	CONC (ug/kg wet)	% REC	QC LIMITS	Q
2,4,5,6-Tetrachloro-m-xylene	3.33	1.55	46.4	36 - 140	

**Form 3**  
**LCS / LCS DUPLICATE RECOVERY**  
**EPA 8081A**

Laboratory: TestAmerica Portland  
 Client: CH2M-Hill  
 Matrix: Soil  
 Batch: 9100740  
 Preparation: EPA 3550

SDG: PSJ0657  
 Project: NW Pipe Project  
 Spike standard: 9100030  
 Laboratory ID: 9100740-BS1  
 Initial/Final: 60.02 g / 2 ml

COMPOUND	SPIKE ADDED (ug/kg wet)	LCS CONCENTRATION (ug/kg wet)	LCS % REC. #	QC LIMITS REC.
4,4'-DDT	3.33	3.04	91.4	65 - 130
Aldrin	3.33	2.62	78.7	64 - 136
Dieldrin	3.33	2.73	81.8	70 - 135
Endrin	3.33	2.85	85.5	65 - 135
gamma-BHC (Lindane)	3.33	2.73	81.9	62 - 140
Heptachlor	3.33	2.72	81.6	48 - 124

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SS-405-101909-2

EPA 8081A

Laboratory: TestAmerica PortlandSDG: PSJ0657Client: CH2M-HillProject: NW Pipe ProjectMatrix: SoilSpike standard: 9100030Batch: 9100740Laboratory ID: 9100740-MS1Preparation: EPA 3550Initial/Final: 60.12 g / 2 mlSource Sample Name: SS-405-101909-2

COMPOUND	SPIKE ADDED (ug/kg dry)	SAMPLE CONCENTRATION (ug/kg dry)	MS CONCENTRATION (ug/kg dry)	MS % REC. #	QC LIMITS REC.
4,4'-DDT	3.69	ND	21.2	575 *	65 - 130
Aldrin	3.69	ND	2.66	72.0	64 - 136
Dieldrin	3.69	ND	2.84	77.1	70 - 135
Endrin	3.69	ND	11.9	324 *	65 - 135
gamma-BHC (Lindane)	3.69	ND	2.96	80.3	62 - 140
Heptachlor	3.69	ND	2.74	74.4	48 - 124

COMPOUND	SPIKE ADDED (ug/kg dry)	MSD CONCENTRATION (ug/kg dry)	MSD % REC. #	% RPD #	QC LIMITS	
					RPD	REC.
4,4'-DDT	3.67	26.6	723 *	22.4	50	65 - 130
Aldrin	3.67	2.82	76.8	6.05	50	64 - 136
Dieldrin	3.67	3.27	89.1	14.0	50	70 - 135
Endrin	3.67	15.0	407 *	22.4	50	65 - 135
gamma-BHC (Lindane)	3.67	3.24	88.3	9.09	50	62 - 140
Heptachlor	3.67	3.28	89.3	17.8	50	48 - 124

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

**Form 6**  
**INITIAL CALIBRATION DATA**  
**EPA 8081A**

Laboratory: TestAmerica Portland  
 Client: CH2M-Hill  
 Calibration: 9110202

SDG: PSJ0657  
 Project: NW Pipe Project  
 Instrument: SV-ECD12  
 Calibration Date: 11/02/09 12:10

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF
2,4,5,6-Tetrachloro-m-xylene	5	605541.4	10	608931.5	20	628725	50	677549.2	100	655552	150	685406
4,4'-DDD	5	646740	10	696055.6	20	734065.5	50	896888.6	100	915616.2	150	985407.4
4,4'-DDE	5	785689.2	10	864966.3	20	958987.5	50	1136826	100	1153888	150	1216269
4,4'-DDT	5	678319.4	10	719536.5	20	791119.5	50	939189.2	100	965228.1	150	1023527
Aldrin	5	1039180	10	1089593	20	1126747	50	1238559	100	1201534	150	1266854
alpha-BHC	5	821116	10	925822	20	1071346	50	1241070	100	1218781	150	1300934
alpha-Chlordane	5	1071760	10	1081069	20	1134078	50	1236384	100	1193722	150	1267051
beta-BHC	5	382419.8	10	379634.9	20	388195.9	50	419723.6	100	408194.5	150	431845.1
delta-BHC	5	737092.6	10	818294.1	20	938877.5	50	1132440	100	1165013	150	1241756
Dieldrin	5	981900	10	1044097	20	1126887	50	1262655	100	1210942	150	1294023
Endosulfan I	5	965547.4	10	978430.2	20	1024690	50	1122407	100	1062886	150	1132215
Endosulfan II	5	923300.4	10	949395.8	20	959758	50	1050675	100	1027899	150	1093725
Endosulfan sulfate	5	836838.6	10	821306	20	857643	50	912100.6	100	892035.1	150	946632.6
Endrin	5	800115.8	10	831799.7	20	894904	50	990694	100	995177.9	150	1022861
Endrin aldehyde	5	706488.4	10	693596.4	20	707593	50	769993.8	100	737020.9	150	769168.6
Endrin ketone	5	779008.6	10	800846.2	20	816398.5	50	889206.3	100	867784.5	150	897682
gamma-BHC (Lindane)	5	797184.8	10	868019.4	20	985517	50	1117236	100	1121422	150	1184659
gamma-Chlordane	5	1045732	10	1077715	20	1154254	50	1286101	100	1248216	150	1306521
Heptachlor	5	893752.4	10	930004.5	20	1024039	50	1166326	100	1125643	150	1192119
Heptachlor epoxide	5	992635.8	10	1021366	20	1082256	50	1182339	100	1116305	150	1167765
Methoxychlor	5	380360	10	378149.1	20	380109	50	403863.2	100	385028.8	150	416664.9

**Form 6**  
**INITIAL CALIBRATION DATA (Continued)**  
**EPA 8081A**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Calibration: 9110202

Instrument: SV-ECD12

Calibration Date: 11/02/09 12:10

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF
2,4,5,6-Tetrachloro-m-xylene	200	726316.5										
4,4'-DDD	200	1034423										
4,4'-DDE	200	1290127										
4,4'-DDT	200	1098823										
Aldrin	200	1312301										
alpha-BHC	200	1385652										
alpha-Chlordane	200	1310124										
beta-BHC	200	456818.2										
delta-BHC	200	1296858										
Dieldrin	200	1335247										
Endosulfan I	200	1162579										
Endosulfan II	200	1120298										
Endosulfan sulfate	200	968650.5										
Endrin	200	1076756										
Endrin aldehyde	200	807294.5										
Endrin ketone	200	963315.5										
gamma-BHC (Lindane)	200	1239533										
gamma-Chlordane	200	1373479										
Heptachlor	200	1248881										
Heptachlor epoxide	200	1217762										
Methoxychlor	200	438664										

**Form 6**  
**INITIAL CALIBRATION DATA (Continued)**  
**EPA 8081A**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Calibration: 9110202

Instrument: SV-ECD12

Calibration Date: 11/02/09 12:10

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
2,4,5,6-Tetrachloro-m-xylene	655431.7	6.759457	9.38	2.114114E-02				*
4,4'-DDD	844170.9	17.90446	15.1	9.475571E-03		0.9998407		
4,4'-DDE	1058108	17.91337	14.22	1.327264E-02		0.9998239		
4,4'-DDT	887963.2	17.99118	15.57	1.662531E-02		0.9998146		
Aldrin	1182110	8.441694	12.58	1.851048E-02				*
alpha-BHC	1137817	18.11512	10.58	1.762828E-02		0.9996267		
alpha-Chlordane	1184884	7.805549	14.01	6.991811E-03				*
beta-BHC	409547.4	6.994613	11.38	2.544225E-02				*
delta-BHC	1047190	20.68877	11.9	2.142066E-02		0.9998948		
Dieldrin	1179393	11.23919	14.54	1.957593E-02		0.9996159		
Endosulfan I	1064108	7.31399	14.12	2.041132E-02				*
Endosulfan II	1017864	7.442381	15.32	9.791477E-03				*
Endosulfan sulfate	890743.8	6.229456	16.23	0.0238347				*
Endrin	944615.5	10.96269	15.01	1.244777E-02		0.999807		
Endrin aldehyde	741593.7	5.666852	15.82	1.630161E-02				*
Endrin ketone	859177.4	7.507371	17.15	2.054667E-02				*
gamma-BHC (Lindane)	1044796	15.85664	11.24	1.280689E-02		0.9998616		
gamma-Chlordane	1213145	10.14122	13.79	0.0190743		0.9996765		
Heptachlor	1082966	12.55288	12.02	1.629871E-02		0.9996339		
Heptachlor epoxide	1111490	7.581531	13.49	2.048328E-02				*
Methoxychlor	397548.4	5.834877	16.58	1.404474E-02				*

# SECOND-SOURCE CALIBRATION VERIFICATION

## EPA 8081A

**Laboratory:** TestAmerica Portland

**SDG:** PSJ0657

**Client:** CH2M-Hill

**Project:** NW Pipe Project

**Calibration:** 9110202

**Laboratory ID:** 9J06012-SCV1

**Sequence:** 9J06012

**Standard ID:** 9070139

ANALYTE	EXPECTED (ng/ml)	FOUND (ng/ml)	% DRIFT	QC LIMIT
4,4'-DDD	50.0	52.8	5.6	30.00
4,4'-DDE	50.0	52.8	5.6	30.00
4,4'-DDT	50.0	51.5	3.0	30.00
Aldrin	50.0	52.3	4.6	30.00
alpha-BHC	50.0	52.4	4.7	30.00
alpha-Chlordane	50.0	51.7	3.4	30.00
beta-BHC	50.0	54.2	8.3	30.00
delta-BHC	50.0	50.9	1.8	30.00
Dieldrin	50.0	51.5	3.0	30.00
Endosulfan I	50.0	51.9	3.8	30.00
Endosulfan II	50.0	52.1	4.2	30.00
Endosulfan sulfate	50.0	51.1	2.3	30.00
Endrin	50.0	53.1	6.2	30.00
Endrin aldehyde	50.0	52.8	5.5	30.00
Endrin ketone	50.0	54.9	9.8	
gamma-BHC (Lindane)	50.0	53.9	7.8	30.00
gamma-Chlordane	50.0	51.3	2.6	30.00
Heptachlor	50.0	53.6	7.2	30.00
Heptachlor epoxide	50.0	51.6	3.3	30.00
Methoxychlor	50.0	49.5	-1.0	30.00

\* Values outside of QC limits

**Form 7**  
**CONTINUING CALIBRATION CHECK**  
**EPA 8081A**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Instrument ID: SV-ECD12

Calibration: 9110202

Lab File ID: 10280904.D

Calibration Date: 11/02/09 12:10

Sequence: 9J28010

Injection Date: 10/28/09

Lab Sample ID: 9J28010-CCV1

Injection Time: 13:30

COMPOUND	TYPE	CONC. (ng/ml)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
4,4'-DDD	Q	100	96.6	844170.9	892767.8		-3.4	15
4,4'-DDE	Q	100	97.7	1058108	1129666		-2.3	15
4,4'-DDT	Q	100	99.0	887963.2	956859.4		-1.0	15
Aldrin	A	100	104	1182110	1230053		4.1	15
alpha-BHC	Q	100	102	1137817	1269663		2.4	15
alpha-Chlordane	A	100	101	1184884	1198634		1.2	15
beta-BHC	A	100	101	409547.4	414934.1		1.3	15
delta-BHC	Q	100	96.5	1047190	1131668		-3.5	15
Dieldrin	Q	100	101	1179393	1248662		0.6	15
Endosulfan I	A	100	101	1064108	1073131		0.8	15
Endosulfan II	A	100	103	1017864	1050410		3.2	15
Endosulfan sulfate	A	100	104	890743.8	928340.9		4.2	15
Endrin	Q	100	100	944615.5	996893.4		0.2	15
Endrin aldehyde	A	100	99.2	741593.7	735976.5		-0.8	15
Endrin ketone	A	100	106	859177.4	907506.1		5.6	15
gamma-BHC (Lindane)	Q	100	101	1044796	1150535		1.4	15
gamma-Chlordane	Q	100	98.3	1213145	1238984		-1.7	15
Heptachlor	Q	100	99.7	1082966	1141073		-0.3	15
Heptachlor epoxide	A	100	102	1111490	1129498		1.6	15
Methoxychlor	A	100	97.3	397548.4	386852.4		-2.7	15

# Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

\* Values outside of QC limits

**Form 7**  
**CONTINUING CALIBRATION CHECK**  
**EPA 8081A**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Instrument ID: SV-ECD12

Calibration: 9110202

Lab File ID: 10280907.D

Calibration Date: 11/02/09 12:10

Sequence: 9J28010

Injection Date: 10/28/09

Lab Sample ID: 9J28010-CCV2

Injection Time: 14:48

COMPOUND	TYPE	CONC. (ng/ml)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
4,4'-DDD	Q	100	99.0	844170.9	917258.5		-1.0	15
4,4'-DDE	Q	100	102	1058108	1181640		1.7	15
4,4'-DDT	Q	100	102	887963.2	989107.7		2.0	15
Aldrin	A	100	106	1182110	1254690		6.1	15
alpha-BHC	Q	100	105	1137817	1303249		4.8	15
alpha-Chlordane	A	100	104	1184884	1236321		4.3	15
beta-BHC	A	100	102	409547.4	415693.2		1.5	15
delta-BHC	Q	100	98.7	1047190	1159678		-1.3	15
Dieldrin	Q	100	102	1179393	1266754		1.9	15
Endosulfan I	A	100	104	1064108	1110522		4.4	15
Endosulfan II	A	100	106	1017864	1078106		5.9	15
Endosulfan sulfate	A	100	108	890743.8	965925.6		8.4	15
Endrin	Q	100	102	944615.5	1016816		2.1	15
Endrin aldehyde	A	100	103	741593.7	764319		3.1	15
Endrin ketone	A	100	109	859177.4	936669.6		9.0	15
gamma-BHC (Lindane)	Q	100	104	1044796	1184106		4.1	15
gamma-Chlordane	Q	100	101	1213145	1281573		1.4	15
Heptachlor	Q	100	101	1082966	1154651		0.7	15
Heptachlor epoxide	A	100	105	1111490	1169638		5.2	15
Methoxychlor	A	100	99.9	397548.4	397104.2		-0.1	15

# Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

\* Values outside of QC limits

**Form 7**  
**CONTINUING CALIBRATION CHECK**  
**EPA 8081A**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Instrument ID: SV-ECD12

Calibration: 9110202

Lab File ID: 10280931.D

Calibration Date: 11/02/09 12:10

Sequence: 9J28010

Injection Date: 10/29/09

Lab Sample ID: 9J28010-CCV5

Injection Time: 01:15

COMPOUND	TYPE	CONC. (ng/ml)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
4,4'-DDD	Q	100	106	844170.9	992077.8		6.2	15
4,4'-DDE	Q	100	107	1058108	1253886		7.2	15
4,4'-DDT	Q	100	108	887963.2	1056482		8.0	15
Aldrin	A	100	111	1182110	1314161		11.2	15
alpha-BHC	Q	100	108	1137817	1344664		7.8	15
alpha-Chlordane	A	100	109	1184884	1287735		8.7	15
beta-BHC	A	100	109	409547.4	446059.6		8.9	15
delta-BHC	Q	100	106	1047190	1259259		6.3	15
Dieldrin	Q	100	108	1179393	1343171		7.6	15
Endosulfan I	A	100	109	1064108	1162865		9.3	15
Endosulfan II	A	100	105	1017864	1070502		5.2	15
Endosulfan sulfate	A	100	113	890743.8	1003533		12.7	15
Endrin	Q	100	107	944615.5	1072479		7.2	15
Endrin aldehyde	A	100	110	741593.7	813394.2		9.7	15
Endrin ketone	A	100	114	859177.4	979524.8		14.0	15
gamma-BHC (Lindane)	Q	100	106	1044796	1207446		5.9	15
gamma-Chlordane	Q	100	106	1213145	1343526		5.9	15
Heptachlor	Q	100	107	1082966	1232439		6.9	15
Heptachlor epoxide	A	100	109	1111490	1209859		8.9	15
Methoxychlor	A	100	109	397548.4	433686.8		9.1	15

# Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

\* Values outside of QC limits

**Form 7**  
**CONTINUING CALIBRATION CHECK**  
**EPA 8081A**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Instrument ID: SV-ECD12

Calibration: 9110202

Lab File ID: 10280940.D

Calibration Date: 11/02/09 12:10

Sequence: 9J28010

Injection Date: 10/29/09

Lab Sample ID: 9J28010-CCV6

Injection Time: 05:09

COMPOUND	TYPE	CONC. (ng/ml)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
4,4'-DDD	Q	100	99.4	844170.9	920915.7		-0.6	15
4,4'-DDE	Q	100	101	1058108	1176443		1.3	15
4,4'-DDT	Q	100	99.8	887963.2	965772.5		-0.2	15
Aldrin	A	100	108	1182110	1271352		7.5	15
alpha-BHC	Q	100	104	1137817	1285459		3.5	15
alpha-Chlordane	A	100	101	1184884	1201721		1.4	15
beta-BHC	A	100	106	409547.4	435588.2		6.4	15
delta-BHC	Q	100	103	1047190	1210198		2.6	15
Dieldrin	Q	100	101	1179393	1257010		1.2	15
Endosulfan I	A	100	103	1064108	1093746		2.8	15
Endosulfan II	A	100	107	1017864	1093400		7.4	15
Endosulfan sulfate	A	100	109	890743.8	969194.2		8.8	15
Endrin	Q	100	101	944615.5	1008913		1.3	15
Endrin aldehyde	A	100	103	741593.7	764652.9		3.1	15
Endrin ketone	A	100	107	859177.4	920726.9		7.2	15
gamma-BHC (Lindane)	Q	100	105	1044796	1190576		4.6	15
gamma-Chlordane	Q	100	98.8	1213145	1246883		-1.2	15
Heptachlor	Q	100	105	1082966	1207092		4.9	15
Heptachlor epoxide	A	100	102	1111490	1137632		2.4	15
Methoxychlor	A	100	119	397548.4	472030.9		18.7	15 *

# Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

\* Values outside of QC limits

**Form 7**  
**CONTINUING CALIBRATION CHECK**  
**EPA 8081A**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Instrument ID: SV-ECD12

Calibration: 9110202

Lab File ID: 10280951.D

Calibration Date: 11/02/09 12:10

Sequence: 9J28010

Injection Date: 10/29/09

Lab Sample ID: 9J28010-CCV7

Injection Time: 09:57

COMPOUND	TYPE	CONC. (ng/ml)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
4,4'-DDD	Q	100	102	844170.9	946237.8		1.8	15
4,4'-DDE	Q	100	101	1058108	1175775		1.2	15
4,4'-DDT	Q	100	95.2	887963.2	915462.9		-4.8	15
Aldrin	A	100	107	1182110	1269949		7.4	15
alpha-BHC	Q	100	105	1137817	1310132		5.3	15
alpha-Chlordane	A	100	103	1184884	1224112		3.3	15
beta-BHC	A	100	108	409547.4	443074.7		8.2	15
delta-BHC	Q	100	104	1047190	1235607		4.5	15
Dieldrin	Q	100	102	1179393	1262022		1.6	15
Endosulfan I	A	100	104	1064108	1107645		4.1	15
Endosulfan II	A	100	102	1017864	1038298		2.0	15
Endosulfan sulfate	A	100	101	890743.8	902147.4		1.3	15
Endrin	Q	100	99.7	944615.5	991203.8		-0.3	15
Endrin aldehyde	A	100	99.5	741593.7	737607.6		-0.5	15
Endrin ketone	A	100	103	859177.4	887427.8		3.3	15
gamma-BHC (Lindane)	Q	100	106	1044796	1204658		5.7	15
gamma-Chlordane	Q	100	101	1213145	1278934		1.2	15
Heptachlor	Q	100	106	1082966	1214416		5.5	15
Heptachlor epoxide	A	100	104	1111490	1159930		4.4	15
Methoxychlor	A	100	95.4	397548.4	379136.9		-4.6	15

# Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

\* Values outside of QC limits

**Form 7**  
**CONTINUING CALIBRATION CHECK**  
**EPA 8081A**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Instrument ID: SV-ECD12

Calibration: 9110202

Lab File ID: 10280960.D

Calibration Date: 11/02/09 12:10

Sequence: 9J28010

Injection Date: 10/29/09

Lab Sample ID: 9J28010-CCV8

Injection Time: 13:52

COMPOUND	TYPE	CONC. (ng/ml)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
4,4'-DDD	Q	100	98.8	844170.9	915039		-1.2	15
4,4'-DDE	Q	100	96.5	1058108	1114961		-3.5	15
4,4'-DDT	Q	100	88.2	887963.2	839669.5		-11.8	15
Aldrin	A	100	103	1182110	1212380		2.6	15
alpha-BHC	Q	100	99.7	1137817	1232141		-0.3	15
alpha-Chlordane	A	100	94.1	1184884	1114970		-5.9	15
beta-BHC	A	100	103	409547.4	423442.4		3.4	15
delta-BHC	Q	100	100	1047190	1182293		0.4	15
Dieldrin	Q	100	95.4	1179393	1180271		-4.6	15
Endosulfan I	A	100	97.7	1064108	1039614		-2.3	15
Endosulfan II	A	100	101	1017864	1024962		0.7	15
Endosulfan sulfate	A	100	104	890743.8	928075		4.2	15
Endrin	Q	100	95.3	944615.5	944228.8		-4.7	15
Endrin aldehyde	A	100	98.7	741593.7	731695.4		-1.3	15
Endrin ketone	A	100	98.0	859177.4	842348.3		-2.0	15
gamma-BHC (Lindane)	Q	100	101	1044796	1142041		0.7	15
gamma-Chlordane	Q	100	94.7	1213145	1190657		-5.3	15
Heptachlor	Q	100	102	1082966	1171803		2.1	15
Heptachlor epoxide	A	100	100	1111490	1112303		0.07	15
Methoxychlor	A	100	117	397548.4	465600.7		17.1	15 *

# Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

\* Values outside of QC limits

**Form 7**  
**CONTINUING CALIBRATION CHECK**  
**EPA 8081A**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Instrument ID: SV-ECD12

Calibration: 9110202

Lab File ID: 10300903.D

Calibration Date: 11/02/09 12:10

Sequence: 9J30010

Injection Date: 10/30/09

Lab Sample ID: 9J30010-CCV1

Injection Time: 11:47

COMPOUND	TYPE	CONC. (ng/ml)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
4,4'-DDD	Q	100	101	844170.9	935400.2		0.8	15
4,4'-DDE	Q	100	107	1058108	1245664		6.6	15
4,4'-DDT	Q	100	106	887963.2	1037992		6.4	15
Aldrin	A	100	114	1182110	1352429		14.4	15
alpha-BHC	Q	100	114	1137817	1428309		13.7	15
alpha-Chlordane	A	100	110	1184884	1299464		9.7	15
beta-BHC	A	100	113	409547.4	462082.6		12.8	15
delta-BHC	Q	100	108	1047190	1285502		8.2	15
Dieldrin	Q	100	106	1179393	1317876		5.7	15
Endosulfan I	A	100	108	1064108	1154329		8.5	15
Endosulfan II	A	100	107	1017864	1087232		6.8	15
Endosulfan sulfate	A	100	107	890743.8	948697.1		6.5	15
Endrin	Q	100	105	944615.5	1046847		4.9	15
Endrin aldehyde	A	100	105	741593.7	782011.5		5.5	15
Endrin ketone	A	100	104	859177.4	897513		4.5	15
gamma-BHC (Lindane)	Q	100	113	1044796	1295266		12.9	15
gamma-Chlordane	Q	100	108	1213145	1373386		8.0	15
Heptachlor	Q	100	112	1082966	1294802		11.9	15
Heptachlor epoxide	A	100	110	1111490	1220111		9.8	15
Methoxychlor	A	100	98.5	397548.4	391700		-1.5	15

# Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

\* Values outside of QC limits

**Form 7**  
**CONTINUING CALIBRATION CHECK**  
**EPA 8081A**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Instrument ID: SV-ECD12

Calibration: 9110202

Lab File ID: 10300905.D

Calibration Date: 11/02/09 12:10

Sequence: 9J30010

Injection Date: 10/30/09

Lab Sample ID: 9J30010-CCV2

Injection Time: 12:50

COMPOUND	TYPE	CONC. (ng/ml)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
4,4'-DDD	Q	100	94.6	844170.9	871408.8		-5.4	15
4,4'-DDE	Q	100	99.0	1058108	1146174		-1.0	15
4,4'-DDT	Q	100	98.1	887963.2	946797.2		-1.9	15
Aldrin	A	100	110	1182110	1294996		9.5	15
alpha-BHC	Q	100	108	1137817	1342805		7.6	15
alpha-Chlordane	A	100	102	1184884	1207332		1.9	15
beta-BHC	A	100	108	409547.4	440708		7.6	15
delta-BHC	Q	100	104	1047190	1228322		3.9	15
Dieldrin	Q	100	102	1179393	1264525		1.8	15
Endosulfan I	A	100	104	1064108	1106113		3.9	15
Endosulfan II	A	100	102	1017864	1040448		2.2	15
Endosulfan sulfate	A	100	103	890743.8	916582.4		2.9	15
Endrin	Q	100	100	944615.5	995904		0.1	15
Endrin aldehyde	A	100	97.9	741593.7	725905.7		-2.1	15
Endrin ketone	A	100	100	859177.4	859735.4		0.06	15
gamma-BHC (Lindane)	Q	100	107	1044796	1226973		7.5	15
gamma-Chlordane	Q	100	101	1213145	1281746		1.4	15
Heptachlor	Q	100	108	1082966	1251846		8.5	15
Heptachlor epoxide	A	100	106	1111490	1173443		5.6	15
Methoxychlor	A	100	102	397548.4	404480		1.7	15

# Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

\* Values outside of QC limits

**Form 7**  
**CONTINUING CALIBRATION CHECK**  
**EPA 8081A**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Instrument ID: SV-ECD12

Calibration: 9110202

Lab File ID: 10300908.D

Calibration Date: 11/02/09 12:10

Sequence: 9J30010

Injection Date: 10/30/09

Lab Sample ID: 9J30010-CCV3

Injection Time: 14:22

COMPOUND	TYPE	CONC. (ng/ml)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
4,4'-DDD	Q	100	92.2	844170.9	847011.2		-7.8	15
4,4'-DDE	Q	100	97.8	1058108	1130658		-2.2	15
4,4'-DDT	Q	100	95.8	887963.2	922177.8		-4.2	15
Aldrin	A	100	103	1182110	1220210		3.2	15
alpha-BHC	Q	100	104	1137817	1292414		4.0	15
alpha-Chlordane	A	100	97.2	1184884	1151306		-2.8	15
beta-BHC	A	100	103	409547.4	421313.6		2.9	15
delta-BHC	Q	100	99.2	1047190	1165882		-0.8	15
Dieldrin	Q	100	97.3	1179393	1204604		-2.7	15
Endosulfan I	A	100	98.8	1064108	1051521		-1.2	15
Endosulfan II	A	100	98.8	1017864	1005636		-1.2	15
Endosulfan sulfate	A	100	100	890743.8	893652.8		0.3	15
Endrin	Q	100	99.2	944615.5	985353.7		-0.8	15
Endrin aldehyde	A	100	118	741593.7	875885.1		18.1	15 *
Endrin ketone	A	100	96.7	859177.4	830531.8		-3.3	15
gamma-BHC (Lindane)	Q	100	104	1044796	1179049		3.7	15
gamma-Chlordane	Q	100	96.0	1213145	1207780		-4.0	15
Heptachlor	Q	100	105	1082966	1202094		4.5	15
Heptachlor epoxide	A	100	100	1111490	1111424		-0.006	15
Methoxychlor	A	100	97.4	397548.4	387064.7		-2.6	15

# Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

\* Values outside of QC limits

**Form 7**  
**CONTINUING CALIBRATION CHECK**  
**EPA 8081A**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Instrument ID: SV-ECD12

Calibration: 9110202

Lab File ID: 10300911.D

Calibration Date: 11/02/09 12:10

Sequence: 9J30010

Injection Date: 10/30/09

Lab Sample ID: 9J30010-CCV4

Injection Time: 15:46

COMPOUND	TYPE	CONC. (ng/ml)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
4,4'-DDD	Q	100	92.9	844170.9	854011.9		-7.1	15
4,4'-DDE	Q	100	93.1	1058108	1071490		-6.9	15
4,4'-DDT	Q	100	86.6	887963.2	822364		-13.4	15
Aldrin	A	100	103	1182110	1215318		2.8	15
alpha-BHC	Q	100	105	1137817	1306484		5.0	15
alpha-Chlordane	A	100	95.1	1184884	1126468		-4.9	15
beta-BHC	A	100	104	409547.4	427532.7		4.4	15
delta-BHC	Q	100	100	1047190	1179875		0.2	15
Dieldrin	Q	100	94.4	1179393	1166332		-5.6	15
Endosulfan I	A	100	98.4	1064108	1047444		-1.6	15
Endosulfan II	A	100	95.2	1017864	968626.3		-4.8	15
Endosulfan sulfate	A	100	92.8	890743.8	827018.2		-7.2	15
Endrin	Q	100	94.4	944615.5	933967.4		-5.6	15
Endrin aldehyde	A	100	93.2	741593.7	691367.8		-6.8	15
Endrin ketone	A	100	91.1	859177.4	783076.8		-8.9	15
gamma-BHC (Lindane)	Q	100	101	1044796	1150817		1.4	15
gamma-Chlordane	Q	100	94.6	1213145	1189188		-5.4	15
Heptachlor	Q	100	104	1082966	1190282		3.6	15
Heptachlor epoxide	A	100	99.3	1111490	1103712		-0.7	15
Methoxychlor	A	100	85.2	397548.4	338545.8		-14.8	15

# Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

\* Values outside of QC limits

**Form 7**  
**CONTINUING CALIBRATION CHECK**  
**EPA 8081A**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Instrument ID: SV-ECD12

Calibration: 9110202

Lab File ID: 10300913.D

Calibration Date: 11/02/09 12:10

Sequence: 9J30010

Injection Date: 10/30/09

Lab Sample ID: 9J30010-CCV5

Injection Time: 16:43

COMPOUND	TYPE	CONC. (ng/ml)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
4,4'-DDD	Q	100	95.7	844170.9	883405.1		-4.3	15
4,4'-DDE	Q	100	95.8	1058108	1105891		-4.2	15
4,4'-DDT	Q	100	83.1	887963.2	784857.3		-16.9	15 *
Aldrin	A	100	105	1182110	1243583		5.2	15
alpha-BHC	Q	100	106	1137817	1316475		5.7	15
alpha-Chlordane	A	100	97.8	1184884	1158676		-2.2	15
beta-BHC	A	100	106	409547.4	433513.5		5.9	15
delta-BHC	Q	100	103	1047190	1217029		3.1	15
Dieldrin	Q	100	97.5	1179393	1207689		-2.5	15
Endosulfan I	A	100	99.0	1064108	1054005		-0.9	15
Endosulfan II	A	100	97.9	1017864	996275.9		-2.1	15
Endosulfan sulfate	A	100	93.4	890743.8	831515.2		-6.6	15
Endrin	Q	100	97.2	944615.5	964149.4		-2.8	15
Endrin aldehyde	A	100	95.0	741593.7	704335.2		-5.0	15
Endrin ketone	A	100	92.3	859177.4	792928		-7.7	15
gamma-BHC (Lindane)	Q	100	104	1044796	1187924		4.4	15
gamma-Chlordane	Q	100	96.0	1213145	1207781		-4.0	15
Heptachlor	Q	100	105	1082966	1213444		5.4	15
Heptachlor epoxide	A	100	101	1111490	1122129		1.0	15
Methoxychlor	A	100	90.7	397548.4	360502.9		-9.3	15

# Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

\* Values outside of QC limits

**Form 7**  
**CONTINUING CALIBRATION CHECK**  
**EPA 8081A**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Instrument ID: SV-ECD12

Calibration: 9110202

Lab File ID: 10300918.D

Calibration Date: 11/02/09 12:10

Sequence: 9J30010

Injection Date: 10/30/09

Lab Sample ID: 9J30010-CCV6

Injection Time: 19:36

COMPOUND	TYPE	CONC. (ng/ml)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
4,4'-DDD	Q	100	95.8	844170.9	884485.8		-4.2	15
4,4'-DDE	Q	100	96.4	1058108	1112697		-3.6	15
4,4'-DDT	Q	100	87.7	887963.2	833928.8		-12.3	15
Aldrin	A	100	107	1182110	1262213		6.8	15
alpha-BHC	Q	100	107	1137817	1329338		6.7	15
alpha-Chlordane	A	100	99.0	1184884	1173495		-1.0	15
beta-BHC	A	100	109	409547.4	444535.6		8.5	15
delta-BHC	Q	100	105	1047190	1238436		4.7	15
Dieldrin	Q	100	97.9	1179393	1213046		-2.1	15
Endosulfan I	A	100	101	1064108	1070267		0.6	15
Endosulfan II	A	100	98.3	1017864	1000330		-1.7	15
Endosulfan sulfate	A	100	98.6	890743.8	878317		-1.4	15
Endrin	Q	100	96.9	944615.5	961593.6		-3.1	15
Endrin aldehyde	A	100	94.6	741593.7	701306.6		-5.4	15
Endrin ketone	A	100	93.7	859177.4	804988.8		-6.3	15
gamma-BHC (Lindane)	Q	100	105	1044796	1201734		5.5	15
gamma-Chlordane	Q	100	97.7	1213145	1231819		-2.3	15
Heptachlor	Q	100	106	1082966	1215359		5.6	15
Heptachlor epoxide	A	100	102	1111490	1139128		2.5	15
Methoxychlor	A	100	101	397548.4	402303.6		1.2	15

# Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

\* Values outside of QC limits

# INITIAL CALIBRATION STANDARDS

## EPA 8081A

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9J06012

Instrument: SV-ECD12

Calibration: 9110202

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
9070021	OC Pest Cal 5ppb	9J06012-CAL1	10060905.D	10/06/09 13:45
9070022	OC Pest Cal 10ppb	9J06012-CAL2	10060906.D	10/06/09 14:11
9070023	OC Pest Cal 20ppb	9J06012-CAL3	10060907.D	10/06/09 14:37
9070024	OC Pest Cal 50ppb	9J06012-CAL4	10060908.D	10/06/09 15:03
9070025	OC Pest Cal 100ppb	9J06012-CAL5	10060909.D	10/06/09 15:29
9070026	OC Pest Cal 150ppb	9J06012-CAL6	10060910.D	10/06/09 15:55
9070027	OC Pest Cal 200ppb	9J06012-CAL7	10060911.D	10/06/09 16:21
9070139	OC pest ICV 50ppb	9J06012-SCV1	10060912.D	10/06/09 16:47

**Form 5**  
**ANALYSIS BATCH (SEQUENCE) SUMMARY**  
**EPA 8081A**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9J06012

Instrument: SV-ECD12

Calibration: 9110202

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Performance Mix	9J06012-PEM1	10060903.D	10/06/09 12:52
Cal Standard	9J06012-CAL1	10060905.D	10/06/09 13:45
Cal Standard	9J06012-CAL2	10060906.D	10/06/09 14:11
Cal Standard	9J06012-CAL3	10060907.D	10/06/09 14:37
Cal Standard	9J06012-CAL4	10060908.D	10/06/09 15:03
Cal Standard	9J06012-CAL5	10060909.D	10/06/09 15:29
Cal Standard	9J06012-CAL6	10060910.D	10/06/09 15:55
Cal Standard	9J06012-CAL7	10060911.D	10/06/09 16:21
Secondary Cal Check	9J06012-SCV1	10060912.D	10/06/09 16:47

**Form 5**  
**ANALYSIS BATCH (SEQUENCE) SUMMARY**  
**EPA 8081A**

Laboratory: TestAmerica Portland  
 Client: CH2M-Hill  
 Sequence: 9J28010

SDG: PSJ0657  
 Project: NW Pipe Project  
 Instrument: SV-ECD12  
 Calibration: 9110202

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Performance Mix	9J28010-PEM2	10280903.D	10/28/09 12:57
Calibration Check	9J28010-CCV1	10280904.D	10/28/09 13:30
Blank	9100740-BLK2	10280905.D	10/28/09 13:56
LCS	9100740-BS1	10280906.D	10/28/09 14:22
Calibration Check	9J28010-CCV2	10280907.D	10/28/09 14:48
Performance Mix	9J28010-PEM3	10280919.D	10/28/09 20:01
Calibration Check	9J28010-CCV5	10280931.D	10/29/09 01:15
SS-410-101909-0	PSJ0657-11RE1	10280934.D	10/29/09 02:33
Calibration Check	9J28010-CCV6	10280940.D	10/29/09 05:09
Performance Mix	9J28010-PEM4	10280941.D	10/29/09 05:36
SS-402-101909-0	PSJ0657-02	10280943.D	10/29/09 06:28
SS-403-101909-0	PSJ0657-03	10280945.D	10/29/09 07:20
SS-406-101909-0	PSJ0657-07	10280946.D	10/29/09 07:46
SS-407-101909-0	PSJ0657-08RE1	10280948.D	10/29/09 08:38
Calibration Check	9J28010-CCV7	10280951.D	10/29/09 09:57
SS-404-101909-0	PSJ0657-04	10280952.D	10/29/09 10:23
SS-405-101909-0	PSJ0657-05	10280953.D	10/29/09 10:49
SS-405-101909-2	PSJ0657-06	10280954.D	10/29/09 11:15
SS-409-101909-0	PSJ0657-10	10280956.D	10/29/09 12:07
SS-411-101909-0	PSJ0657-12	10280957.D	10/29/09 12:33
SS-411-101909-1	PSJ0657-13	10280959.D	10/29/09 13:26
Calibration Check	9J28010-CCV8	10280960.D	10/29/09 13:52

**Form 5**  
**ANALYSIS BATCH (SEQUENCE) SUMMARY**  
**EPA 8081A**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9J30010

Instrument: SV-ECD12

Calibration: 9110202

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Performance Mix	9J30010-PEM1	10300902.D	10/30/09 11:20
Calibration Check	9J30010-CCV1	10300903.D	10/30/09 11:47
SS-409-101909-0	PSJ0657-10RE1	10300904.D	10/30/09 12:24
Calibration Check	9J30010-CCV2	10300905.D	10/30/09 12:50
SS-405-101909-2	9100740-MS1	10300906.D	10/30/09 13:24
SS-405-101909-2	9100740-MSD1	10300907.D	10/30/09 13:50
Calibration Check	9J30010-CCV3	10300908.D	10/30/09 14:22
SS-408-101909-0	PSJ0657-09	10300909.D	10/30/09 14:54
SS-401-101909-0	PSJ0657-01	10300910.D	10/30/09 15:20
Calibration Check	9J30010-CCV4	10300911.D	10/30/09 15:46
SS-407-101909-0	PSJ0657-08	10300912.D	10/30/09 16:17
Calibration Check	9J30010-CCV5	10300913.D	10/30/09 16:43
SS-410-101909-0	PSJ0657-11	10300917.D	10/30/09 19:10
Calibration Check	9J30010-CCV6	10300918.D	10/30/09 19:36

## Semi-Volatile GC Analysis QCAR

Work Order #: PSJ0657 Batch #: 9100740 Test Code: TSC 8081A

Primary Review Date/Initial:

Secondary Review Date/Initial:

VKN 11/2/09

VKN 11/2/09

Check here if data package is needed

### Sample Integrity

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Samples extracted within hold time  
All work is completed according to work order  
Special Instructions are checked

### Data Analysis

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Initial data is checked vs. confirmation data (if applicable)  
Proper dilution factors/multipliers are used  
Standards are within acceptance limits  
Surrogates are within limits (or properly flagged if out)  
Proper standards are used for quantitation  
Concentrations are within calibration range  
Data has been Q-edited  
All prep and analysis bench sheets are fully completed  
All chromatograms are included and labeled

### Reporting

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Units and significant figures are correct  
Reporting limits are correct  
Final report matches analytical results  
Percent solids are included (if applicable)  
Extraction and analysis dates and times are correct  
Control limits are met for spike recoveries, proper comments included  
Proper QC reports are included  
Necessary comments are included  
Analytes and QC are updated to "analyzed" and locked  
Analytes and QC are updated to "reviewed"

Comments: \_\_\_\_\_

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## **GC Semivolatile Organic Compounds**

### EPA 8081A Target Analyte Results Summaries

**Form 1**  
**ORGANIC ANALYSIS DATA SHEET**

SS-401-101909-0

**EPA 8081A**

Laboratory: <u>TestAmerica Portland</u>	SDG: <u>PSJ0657</u>	
Client: <u>CH2M-Hill</u>	Project: <u>NW Pipe Project</u>	
Matrix: <u>Soil</u>	Laboratory ID: <u>PSJ0657-01</u>	File ID: <u>10300910.D</u>
Sampled: <u>10/19/09 11:30</u>	Prepared: <u>10/21/09 11:30</u>	Analyzed: <u>10/30/09 15:20</u>
Solids: <u>90.80</u>	Preparation: <u>EPA 3550</u>	Initial/Final: <u>60.1 g / 2 ml</u>
Batch: <u>9100740</u>	Sequence: <u>9J30010</u>	Calibration: <u>9110202</u>
		Instrument: <u>SV-ECD12</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	
72-54-8	4,4'-DDD	2	1.47	DU	
72-55-9	4,4'-DDE	2	1.47	DU	
50-29-3	4,4'-DDT	2	3.69	DU	
309-00-2	Aldrin	2	1.47	DU	
319-84-6	alpha-BHC	2	1.47	DU	
5103-71-9	alpha-Chlordane	2	1.47	DU	
319-85-7	beta-BHC	2	1.47	DU	
57-74-9	Chlordane (tech)	2	33.0	DU	
319-86-8	delta-BHC	2	1.47	DU	
60-57-1	Dieldrin	2	1.47	DU	
959-98-8	Endosulfan I	2	1.47	DU	
33213-65-9	Endosulfan II	2	1.47	DU	
1031-07-8	Endosulfan sulfate	2	1.47	DU	
72-20-8	Endrin	2	1.47	DU	
7421-93-4	Endrin aldehyde	2	1.47	DCU	
53494-70-5	Endrin ketone	2	1.47	DU	
58-89-9	gamma-BHC (Lindane)	2	1.47	DU	
5103-74-2	gamma-Chlordane	2	1.47	DU	
76-44-8	Heptachlor	2	1.47	DU	
1024-57-3	Heptachlor epoxide	2	1.47	DU	
72-43-5	Methoxychlor	2	1.47	DU	
8001-35-2	Toxaphene	2	44.0	DU	
<b>SYSTEM MONITORING COMPOUND</b>		<b>ADDED (ug/kg dry)</b>	<b>CONC (ug/kg dry)</b>	<b>% REC</b>	<b>QC LIMITS</b>
2,4,5,6-Tetrachloro-m-xylene		3.66	2.30	62.8	36 - 140

\* Values outside of QC limits

**Form 1**  
**ORGANIC ANALYSIS DATA SHEET**

SS-402-101909-0

**EPA 8081A**

Laboratory: TestAmerica Portland SDG: PSJ0657  
 Client: CH2M-Hill Project: NW Pipe Project  
 Matrix: Soil Laboratory ID: PSJ0657-02 File ID: 10280943.D  
 Sampled: 10/19/09 11:40 Prepared: 10/21/09 11:30 Analyzed: 10/29/09 06:28  
 Solids: 93.70 Preparation: EPA 3550 Initial/Final: 60.14 g / 2 ml  
 Batch: 9100740 Sequence: 9J28010 Calibration: 9110202 Instrument: SV-ECD12

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	
72-54-8	4,4'-DDD	5	3.57	DU	
72-55-9	4,4'-DDE	5	5.32	DU	
50-29-3	4,4'-DDT	5	21.4	DU	
309-00-2	Aldrin	5	3.57	DU	
319-84-6	alpha-BHC	5	3.57	DU	
5103-71-9	alpha-Chlordane	5	3.57	DU	
319-85-7	beta-BHC	5	3.57	DU	
57-74-9	Chlordane (tech)	5	79.9	DU	
319-86-8	delta-BHC	5	3.57	DU	
60-57-1	Dieldrin	5	3.57	DU	
959-98-8	Endosulfan I	5	3.57	DU	
33213-65-9	Endosulfan II	5	3.57	DU	
1031-07-8	Endosulfan sulfate	5	3.57	DU	
72-20-8	Endrin	5	3.57	DU	
7421-93-4	Endrin aldehyde	5	3.57	DU	
53494-70-5	Endrin ketone	5	3.57	DU	
58-89-9	gamma-BHC (Lindane)	5	3.57	DU	
5103-74-2	gamma-Chlordane	5	5.32	DU	
76-44-8	Heptachlor	5	3.57	DU	
1024-57-3	Heptachlor epoxide	5	3.57	DU	
72-43-5	Methoxychlor	5	3.57	DCU	
8001-35-2	Toxaphene	5	106	DU	
<b>SYSTEM MONITORING COMPOUND</b>	<b>ADDED (ug/kg dry)</b>	<b>CONC (ug/kg dry)</b>	<b>% REC</b>	<b>QC LIMITS</b>	<b>Q</b>
2,4,5,6-Tetrachloro-m-xylene	3.55	2.61	73.6	36 - 140	

\* Values outside of QC limits

Form 1  
**ORGANIC ANALYSIS DATA SHEET**  
EPA 8081A

SS-403-101909-0

Laboratory:	<u>TestAmerica Portland</u>	SDG:	<u>PSJ0657</u>	
Client:	<u>CH2M-Hill</u>	Project:	<u>NW Pipe Project</u>	
Matrix:	<u>Soil</u>	Laboratory ID:	<u>PSJ0657-03</u>	File ID: <u>10280945.D</u>
Sampled:	<u>10/19/09 11:50</u>	Prepared:	<u>10/21/09 11:30</u>	Analyzed: <u>10/29/09 07:20</u>
Solids:	<u>92.80</u>	Preparation:	<u>EPA 3550</u>	Initial/Final: <u>60.04 g / 2 ml</u>
Batch:	<u>9100740</u>	Sequence:	<u>9J28010</u>	Calibration: <u>9110202</u> Instrument: <u>SV-ECD12</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	
72-54-8	4,4'-DDD	5	3.61	DU	
72-55-9	4,4'-DDE	5	7.22	DU	
50-29-3	4,4'-DDT	5	28.9	DU	
309-00-2	Aldrin	5	3.61	DU	
319-84-6	alpha-BHC	5	3.61	DU	
5103-71-9	alpha-Chlordane	5	3.61	DU	
319-85-7	beta-BHC	5	3.61	DU	
57-74-9	Chlordane (tech)	5	80.8	DU	
319-86-8	delta-BHC	5	3.61	DU	
60-57-1	Dieldrin	5	7.22	DU	
959-98-8	Endosulfan I	5	3.61	DU	
33213-65-9	Endosulfan II	5	3.61	DU	
1031-07-8	Endosulfan sulfate	5	3.61	DU	
72-20-8	Endrin	5	3.61	DU	
7421-93-4	Endrin aldehyde	5	3.61	DU	
53494-70-5	Endrin ketone	5	3.61	DU	
58-89-9	gamma-BHC (Lindane)	5	3.61	DU	
5103-74-2	gamma-Chlordane	5	3.61	DU	
76-44-8	Heptachlor	5	3.61	DU	
1024-57-3	Heptachlor epoxide	5	3.61	DU	
72-43-5	Methoxychlor	5	14.4	DCU	
8001-35-2	Toxaphene	5	108	DU	
SYSTEM MONITORING COMPOUND	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
2,4,5,6-Tetrachloro-m-xylene	3.59	2.22	62.0	36 - 140	

\* Values outside of QC limits

**Form 1**  
**ORGANIC ANALYSIS DATA SHEET**

SS-404-101909-0

**EPA 8081A**

Laboratory:	<u>TestAmerica Portland</u>	SDG:	PSJ0657				
Client:	<u>CH2M-Hill</u>	Project:	<u>NW Pipe Project</u>				
Matrix:	<u>Soil</u>	Laboratory ID:	<u>PSJ0657-04</u>	File ID:	<u>10280952.D</u>		
Sampled:	<u>10/19/09 11:20</u>	Prepared:	<u>10/21/09 11:30</u>	Analyzed:	<u>10/29/09 10:23</u>		
Solids:	<u>85.00</u>	Preparation:	<u>EPA 3550</u>	Initial/Final:	<u>60.13 g / 2 ml</u>		
Batch:	<u>9100740</u>	Sequence:	<u>9J28010</u>	Calibration:	<u>9110202</u>	Instrument:	<u>SV-ECD12</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)		Q
72-54-8	4,4'-DDD	5	3.93		DU
72-55-9	4,4'-DDE	5	5.87		DU
50-29-3	4,4'-DDT	5	19.7		DU
309-00-2	Aldrin	5	3.93		DU
319-84-6	alpha-BHC	5	3.93		DU
5103-71-9	alpha-Chlordane	5	3.93		DU
319-85-7	beta-BHC	5	3.93		DU
57-74-9	Chlordane (tech)	5	88.0		DU
319-86-8	delta-BHC	5	3.93		DU
60-57-1	Dieldrin	5	5.87		DU
959-98-8	Endosulfan I	5	3.93		DU
33213-65-9	Endosulfan II	5	3.93		DU
1031-07-8	Endosulfan sulfate	5	3.93		DU
72-20-8	Endrin	5	3.93		DU
7421-93-4	Endrin aldehyde	5	3.93		DU
53494-70-5	Endrin ketone	5	3.93		DU
58-89-9	gamma-BHC (Lindane)	5	3.93		DU
5103-74-2	gamma-Chlordane	5	3.93		DU
76-44-8	Heptachlor	5	3.93		DU
1024-57-3	Heptachlor epoxide	5	3.93		DU
72-43-5	Methoxychlor	5	3.93		DCU
8001-35-2	Toxaphene	5	117		DU
SYSTEM MONITORING COMPOUND	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
2,4,5,6-Tetrachloro-m-xylene	3.91	2.36	60.3	36 - 140	

\* Values outside of QC limits

Form 1  
ORGANIC ANALYSIS DATA SHEET

SS-405-101909-0

EPA 8081A

Laboratory: TestAmerica Portland                      SDG:                      PSJ0657  
 Client: CH2M-Hill                                              Project: NW Pipe Project  
 Matrix: Soil                      Laboratory ID: PSJ0657-05                      File ID: 10280953.D  
 Sampled: 10/19/09 11:00                      Prepared: 10/21/09 11:30                      Analyzed: 10/29/09 10:49  
 Solids: 87.30                      Preparation: EPA 3550                      Initial/Final: 60.24 g / 2 ml  
 Batch: 9100740                      Sequence: 9J28010                      Calibration: 9110202                      Instrument: SV-ECD12

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)		Q	
72-54-8	4,4'-DDD	5	3.82		DU	
72-55-9	4,4'-DDE	5	7.64		DU	
50-29-3	4,4'-DDT	5	22.9		DU	
309-00-2	Aldrin	5	3.82		DU	
319-84-6	alpha-BHC	5	3.82		DU	
5103-71-9	alpha-Chlordane	5	3.82		DU	
319-85-7	beta-BHC	5	3.82		DU	
57-74-9	Chlordane (tech)	5	85.6		DU	
319-86-8	delta-BHC	5	3.82		DU	
60-57-1	Dieldrin	5	9.58		DU	
959-98-8	Endosulfan I	5	3.82		DU	
33213-65-9	Endosulfan II	5	3.82		DU	
1031-07-8	Endosulfan sulfate	5	3.82		DU	
72-20-8	Endrin	5	3.82		DU	
7421-93-4	Endrin aldehyde	5	3.82		DU	
53494-70-5	Endrin ketone	5	13.4		DU	
58-89-9	gamma-BHC (Lindane)	5	3.82		DU	
5103-74-2	gamma-Chlordane	5	3.82		DU	
76-44-8	Heptachlor	5	3.82		DU	
1024-57-3	Heptachlor epoxide	5	3.82		DU	
72-43-5	Methoxychlor	5	11.5		DCU	
8001-35-2	Toxaphene	5	114		DU	
SYSTEM MONITORING COMPOUND		ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
2,4,5,6-Tetrachloro-m-xylene		3.80	2.53	66.6	36 - 140	

\* Values outside of QC limits

**Form 1  
ORGANIC ANALYSIS DATA SHEET**

**SS-405-101909-2**

**EPA 8081A**

Laboratory:	<u>TestAmerica Portland</u>	SDG:	<u>PSJ0657</u>				
Client:	<u>CH2M-Hill</u>	Project:	<u>NW Pipe Project</u>				
Matrix:	<u>Soil</u>	Laboratory ID:	<u>PSJ0657-06</u>	File ID:	<u>10280954.D</u>		
Sampled:	<u>10/19/09 11:00</u>	Prepared:	<u>10/21/09 11:30</u>	Analyzed:	<u>10/29/09 11:15</u>		
Solids:	<u>90.20</u>	Preparation:	<u>EPA 3550</u>	Initial/Final:	<u>60.33 g / 2 ml</u>		
Batch:	<u>9100740</u>	Sequence:	<u>9J28010</u>	Calibration:	<u>9110202</u>	Instrument:	<u>SV-ECD12</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	
72-54-8	4,4'-DDD	5	3.69	DU	
72-55-9	4,4'-DDE	5	5.51	DU	
50-29-3	4,4'-DDT	5	18.5	DU	
309-00-2	Aldrin	5	3.69	DU	
319-84-6	alpha-BHC	5	3.69	DU	
5103-71-9	alpha-Chlordane	5	3.69	DU	
319-85-7	beta-BHC	5	3.69	DU	
57-74-9	Chlordane (tech)	5	82.7	DU	
319-86-8	delta-BHC	5	3.69	DU	
60-57-1	Dieldrin	5	5.51	DU	
959-98-8	Endosulfan I	5	3.69	DU	
33213-65-9	Endosulfan II	5	3.69	DU	
1031-07-8	Endosulfan sulfate	5	3.69	DU	
72-20-8	Endrin	5	3.69	DU	
7421-93-4	Endrin aldehyde	5	3.69	DU	
53494-70-5	Endrin ketone	5	11.1	DU	
58-89-9	gamma-BHC (Lindane)	5	3.69	DU	
5103-74-2	gamma-Chlordane	5	3.69	DU	
76-44-8	Heptachlor	5	3.69	DU	
1024-57-3	Heptachlor epoxide	5	3.69	DU	
72-43-5	Methoxychlor	5	14.8	DCU	
8001-35-2	Toxaphene	5	110	DU	
SYSTEM MONITORING COMPOUND	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
2,4,5,6-Tetrachloro-m-xylene	3.68	2.10	57.1	36 - 140	

\* Values outside of QC limits



**Form 1**  
**ORGANIC ANALYSIS DATA SHEET**

SS-407-101909-0

**EPA 8081A**

Laboratory: TestAmerica Portland SDG: PSJ0657  
 Client: CH2M-Hill Project: NW Pipe Project  
 Matrix: Soil Laboratory ID: PSJ0657-08 File ID: 10300912.D  
 Sampled: 10/19/09 10:55 Prepared: 10/21/09 11:30 Analyzed: 10/30/09 16:17  
 Solids: 87.50 Preparation: EPA 3550 Initial/Final: 60.27 g / 2 ml  
 Batch: 9100740 Sequence: 9J30010 Calibration: 9110202 Instrument: SV-ECD12

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	
72-54-8	4,4'-DDD	2	1.52	DU	
72-55-9	4,4'-DDE	2	1.52	DU	
309-00-2	Aldrin	2	1.52	DU	
319-84-6	alpha-BHC	2	1.52	DU	
5103-71-9	alpha-Chlordane	2	1.52	DU	
319-85-7	beta-BHC	2	1.52	DU	
57-74-9	Chlordane (tech)	2	34.1	DU	
319-86-8	delta-BHC	2	1.52	DU	
60-57-1	Dieldrin	2	2.28	DU	
959-98-8	Endosulfan I	2	1.52	DU	
33213-65-9	Endosulfan II	2	1.52	DU	
1031-07-8	Endosulfan sulfate	2	1.52	DU	
72-20-8	Endrin	2	1.52	DU	
7421-93-4	Endrin aldehyde	2	1.52	DU	
53494-70-5	Endrin ketone	2	1.52	DU	
58-89-9	gamma-BHC (Lindane)	2	1.52	DU	
5103-74-2	gamma-Chlordane	2	1.52	DU	
76-44-8	Heptachlor	2	1.52	DU	
1024-57-3	Heptachlor epoxide	2	1.52	DU	
72-43-5	Methoxychlor	2	4.57	DU	
8001-35-2	Toxaphene	2	45.5	DU	
SYSTEM MONITORING COMPOUND	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
2,4,5,6-Tetrachloro-m-xylene	3.79	2.67	70.5	36 - 140	

\* Values outside of QC limits

## ORGANIC ANALYSIS DATA SHEET

SS-407-101909-0

## EPA 8081A

Laboratory: TestAmerica Portland                                 SDG:                 PSJ0657  
 Client: CH2M-Hill                                                             Project: NW Pipe Project  
 Matrix: Soil                                                         Laboratory ID: PSJ0657-08RE1                 File ID: 10280948.D  
 Sampled: 10/19/09 10:55                                 Prepared: 10/21/09 11:30                 Analyzed: 10/29/09 08:38  
 Solids: 87.50                                                         Preparation: EPA 3550                                 Initial/Final: 60.27 g / 2 ml  
 Batch: 9100740                 Sequence: 9J28010                 Calibration: 9110202                 Instrument: SV-ECD12

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q
50-29-3	4,4'-DDT	5	9.56	DU

\* Values outside of QC limits

**Form 1  
ORGANIC ANALYSIS DATA SHEET**

SS-408-101909-0

**EPA 8081A**

Laboratory: TestAmerica Portland                                  SDG:                                  PSJ0657  
 Client: CH2M-Hill                                                                                  Project: NW Pipe Project  
 Matrix: Soil                                                          Laboratory ID: PSJ0657-09                                  File ID: 10300909.D  
 Sampled: 10/19/09 10:45                                  Prepared: 10/21/09 11:30                                  Analyzed: 10/30/09 14:54  
 Solids: 92.90                                                          Preparation: EPA 3550                                  Initial/Final: 60.23 g / 2 ml  
 Batch: 9100740                                  Sequence: 9J30010                                  Calibration: 9110202                                  Instrument: SV-ECD12

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	
72-54-8	4,4'-DDD	2	1.44	DU	
72-55-9	4,4'-DDE	2	1.44	DU	
50-29-3	4,4'-DDT	2	2.14	DU	
309-00-2	Aldrin	2	1.44	DU	
319-84-6	alpha-BHC	2	1.44	DU	
5103-71-9	alpha-Chlordane	2	1.44	DU	
319-85-7	beta-BHC	2	1.44	DU	
57-74-9	Chlordane (tech)	2	32.2	DU	
319-86-8	delta-BHC	2	1.44	DU	
60-57-1	Dieldrin	2	1.44	DU	
959-98-8	Endosulfan I	2	1.44	DU	
33213-65-9	Endosulfan II	2	1.44	DU	
1031-07-8	Endosulfan sulfate	2	1.44	DU	
72-20-8	Endrin	2	1.44	DU	
7421-93-4	Endrin aldehyde	2	1.44	DCU	
53494-70-5	Endrin ketone	2	1.44	DU	
58-89-9	gamma-BHC (Lindane)	2	1.44	DU	
5103-74-2	gamma-Chlordane	2	1.44	DU	
76-44-8	Heptachlor	2	1.44	DU	
1024-57-3	Heptachlor epoxide	2	1.44	DU	
72-43-5	Methoxychlor	2	1.44	DU	
8001-35-2	Toxaphene	2	42.9	DU	
SYSTEM MONITORING COMPOUND	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
2,4,5,6-Tetrachloro-m-xylene	3.57	2.19	61.3	36 - 140	

\* Values outside of QC limits

**Form 1**  
**ORGANIC ANALYSIS DATA SHEET**  
**EPA 8081A**

SS-409-101909-0

Laboratory:	<u>TestAmerica Portland</u>	SDG:	<u>PSJ0657</u>				
Client:	<u>CH2M-Hill</u>	Project:	<u>NW Pipe Project</u>				
Matrix:	<u>Soil</u>	Laboratory ID:	<u>PSJ0657-10</u>	File ID:	<u>10280956.D</u>		
Sampled:	<u>10/19/09 12:15</u>	Prepared:	<u>10/21/09 11:30</u>	Analyzed:	<u>10/29/09 12:07</u>		
Solids:	<u>81.60</u>	Preparation:	<u>EPA 3550</u>	Initial/Final:	<u>60.17 g / 2 ml</u>		
Batch:	<u>9100740</u>	Sequence:	<u>9J28010</u>	Calibration:	<u>9110202</u>	Instrument:	<u>SV-ECD12</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	
72-54-8	4,4'-DDD	10	8.19	DU	
72-55-9	4,4'-DDE	10	81.9	DU	
309-00-2	Aldrin	10	8.19	DU	
319-84-6	alpha-BHC	10	8.19	DU	
5103-71-9	alpha-Chlordane	10	12.2	DU	
319-85-7	beta-BHC	10	8.19	DU	
57-74-9	Chlordane (tech)	10	183	DU	
319-86-8	delta-BHC	10	8.19	DU	
60-57-1	Dieldrin	10	57.3	DU	
959-98-8	Endosulfan I	10	20.5	DU	
33213-65-9	Endosulfan II	10	40.9	DU	
1031-07-8	Endosulfan sulfate	10	8.19	DU	
72-20-8	Endrin	10	40.9	DU	
7421-93-4	Endrin aldehyde	10	32.8	DU	
53494-70-5	Endrin ketone	10	32.8	DU	
58-89-9	gamma-BHC (Lindane)	10	8.19	DU	
5103-74-2	gamma-Chlordane	10	81.9	DU	
76-44-8	Heptachlor	10	8.19	DU	
1024-57-3	Heptachlor epoxide	10	49.1	DU	
8001-35-2	Toxaphene	10	244	DU	
SYSTEM MONITORING COMPOUND	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
2,4,5,6-Tetrachloro-m-xylene	4.07	2.13	52.2	36 - 140	

\* Values outside of QC limits

**Form 1  
ORGANIC ANALYSIS DATA SHEET**

SS-409-101909-0

**EPA 8081A**

Laboratory:	<u>TestAmerica Portland</u>	SDG:	<u>PSJ0657</u>				
Client:	<u>CH2M-Hill</u>	Project:	<u>NW Pipe Project</u>				
Matrix:	<u>Soil</u>	Laboratory ID:	<u>PSJ0657-10RE1</u>	File ID:	<u>10300904.D</u>		
Sampled:	<u>10/19/09 12:15</u>	Prepared:	<u>10/21/09 11:30</u>	Analyzed:	<u>10/30/09 12:24</u>		
Solids:	<u>81.60</u>	Preparation:	<u>EPA 3550</u>	Initial/Final:	<u>60.17 g / 2 ml</u>		
Batch:	<u>9100740</u>	Sequence:	<u>9J30010</u>	Calibration:	<u>9110202</u>	Instrument:	<u>SV-ECD12</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q
50-29-3	4,4'-DDT	100	491	DU
72-43-5	Methoxychlor	100	205	DU

\* Values outside of QC limits

**Form 1**  
**ORGANIC ANALYSIS DATA SHEET**

SS-410-101909-0

**EPA 8081A**

Laboratory: <u>TestAmerica Portland</u>	SDG: <u>PSJ0657</u>	Project: <u>NW Pipe Project</u>
Client: <u>CH2M-Hill</u>	Laboratory ID: <u>PSJ0657-11</u>	File ID: <u>10300917.D</u>
Matrix: <u>Soil</u>	Prepared: <u>10/21/09 11:30</u>	Analyzed: <u>10/30/09 19:10</u>
Sampled: <u>10/19/09 10:15</u>	Preparation: <u>EPA 3550</u>	Initial/Final: <u>60.03 g / 2 ml</u>
Solids: <u>86.90</u>	Batch: <u>9100740</u>	Instrument: <u>SV-ECD12</u>
Sequence: <u>9J30010</u>	Calibration: <u>9110202</u>	

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	
72-54-8	4,4'-DDD	5	3.85	DU	
72-55-9	4,4'-DDE	5	3.85	DU	
309-00-2	Aldrin	5	3.85	DU	
319-84-6	alpha-BHC	5	3.85	DU	
5103-71-9	alpha-Chlordane	5	3.85	DU	
319-85-7	beta-BHC	5	3.85	DU	
57-74-9	Chlordane (tech)	5	86.3	DU	
319-86-8	delta-BHC	5	3.85	DU	
60-57-1	Dieldrin	5	5.75	DU	
959-98-8	Endosulfan I	5	3.85	DU	
33213-65-9	Endosulfan II	5	3.85	DU	
1031-07-8	Endosulfan sulfate	5	3.85	DU	
72-20-8	Endrin	5	3.85	DU	
7421-93-4	Endrin aldehyde	5	3.85	DU	
53494-70-5	Endrin ketone	5	3.85	DU	
58-89-9	gamma-BHC (Lindane)	5	3.85	DU	
5103-74-2	gamma-Chlordane	5	3.85	DU	
76-44-8	Heptachlor	5	3.85	DU	
1024-57-3	Heptachlor epoxide	5	3.85	DU	
72-43-5	Methoxychlor	5	3.85	DU	
8001-35-2	Toxaphene	5	115	DU	
SYSTEM MONITORING COMPOUND	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
2,4,5,6-Tetrachloro-m-xylene	3.83	2.11	55.0	36 - 140	

\* Values outside of QC limits



**Form 1  
ORGANIC ANALYSIS DATA SHEET**

SS-411-101909-0

**EPA 8081A**

Laboratory: TestAmerica Portland SDG: PSJ0657  
 Client: CH2M-Hill Project: NW Pipe Project  
 Matrix: Soil Laboratory ID: PSJ0657-12 File ID: 10280957.D  
 Sampled: 10/19/09 10:30 Prepared: 10/21/09 11:30 Analyzed: 10/29/09 12:33  
 Solids: 85.40 Preparation: EPA 3550 Initial/Final: 60.18 g / 2 ml  
 Batch: 9100740 Sequence: 9J28010 Calibration: 9110202 Instrument: SV-ECD12

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)		Q
72-54-8	4,4'-DDD	10	7.82		DU
72-55-9	4,4'-DDE	10	11.7		DU
50-29-3	4,4'-DDT	10	46.9		DU
309-00-2	Aldrin	10	7.82		DU
319-84-6	alpha-BHC	10	7.82		DU
5103-71-9	alpha-Chlordane	10	7.82		DU
319-85-7	beta-BHC	10	7.82		DU
57-74-9	Chlordane (tech)	10	175		DU
319-86-8	delta-BHC	10	7.82		DU
60-57-1	Dieldrin	10	19.6		DU
959-98-8	Endosulfan I	10	7.82		DU
33213-65-9	Endosulfan II	10	7.82		DU
1031-07-8	Endosulfan sulfate	10	7.82		DU
72-20-8	Endrin	10	7.82		DU
7421-93-4	Endrin aldehyde	10	7.82		DU
53494-70-5	Endrin ketone	10	27.4		DU
58-89-9	gamma-BHC (Lindane)	10	7.82		DU
5103-74-2	gamma-Chlordane	10	7.82		DU
76-44-8	Heptachlor	10	7.82		DU
1024-57-3	Heptachlor epoxide	10	7.82		DU
72-43-5	Methoxychlor	10	31.3		DCU
8001-35-2	Toxaphene	10	233		DU
SYSTEM MONITORING COMPOUND	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
2,4,5,6-Tetrachloro-m-xylene	3.89	1.71	43.9	36 - 140	

\* Values outside of QC limits

**Form 1  
ORGANIC ANALYSIS DATA SHEET**

SS-411-101909-1
-----------------

**EPA 8081A**

Laboratory: <u>TestAmerica Portland</u>	SDG: <u>PSJ0657</u>		
Client: <u>CH2M-Hill</u>	Project: <u>NW Pipe Project</u>		
Matrix: <u>Soil</u>	Laboratory ID: <u>PSJ0657-13</u>	File ID: <u>10280959.D</u>	
Sampled: <u>10/19/09 10:30</u>	Prepared: <u>10/21/09 11:30</u>	Analyzed: <u>10/29/09 13:26</u>	
Solids: <u>87.70</u>	Preparation: <u>EPA 3550</u>	Initial/Final: <u>60.07 g / 2 ml</u>	
Batch: <u>9100740</u>	Sequence: <u>9J28010</u>	Calibration: <u>9110202</u>	Instrument: <u>SV-ECD12</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	
72-54-8	4,4'-DDD	10	7.63	DU	
72-55-9	4,4'-DDE	10	11.4	DU	
50-29-3	4,4'-DDT	10	45.8	DU	
309-00-2	Aldrin	10	7.63	DU	
319-84-6	alpha-BHC	10	7.63	DU	
5103-71-9	alpha-Chlordane	10	7.63	DU	
319-85-7	beta-BHC	10	15.3	DU	
57-74-9	Chlordane (tech)	10	171	DU	
319-86-8	delta-BHC	10	7.63	DU	
60-57-1	Dieldrin	10	15.3	DU	
959-98-8	Endosulfan I	10	7.63	DU	
33213-65-9	Endosulfan II	10	7.63	DU	
1031-07-8	Endosulfan sulfate	10	7.63	DU	
72-20-8	Endrin	10	7.63	DU	
7421-93-4	Endrin aldehyde	10	22.9	DU	
53494-70-5	Endrin ketone	10	42.0	DU	
58-89-9	gamma-BHC (Lindane)	10	7.63	DU	
5103-74-2	gamma-Chlordane	10	11.4	DU	
76-44-8	Heptachlor	10	7.63	DU	
1024-57-3	Heptachlor epoxide	10	7.63	DU	
72-43-5	Methoxychlor	10	22.9	DCU	
8001-35-2	Toxaphene	10	228	DU	
SYSTEM MONITORING COMPOUND	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
2,4,5,6-Tetrachloro-m-xylene	3.80	1.75	46.2	36 - 140	

\* Values outside of QC limits

## **GC Semivolatile Organic Compounds**

EPA 8081A  
Preparation Logs

**Form 4**  
**PREPARATION BATCH SUMMARY**  
**EPA 8081A**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Batch: 9100740      Batch Matrix: Soil

Preparation: EPA 3550

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	9100740-BLK2	10280905.D	10/21/09 11:30	
LCS	9100740-BS1	10280906.D	10/21/09 11:30	
SS-405-101909-2	9100740-MS1	10300906.D	10/21/09 11:30	
SS-405-101909-2	9100740-MSD1	10300907.D	10/21/09 11:30	
SS-401-101909-0	PSJ0657-01	10300910.D	10/21/09 11:30	level 3 dp.
SS-402-101909-0	PSJ0657-02	10280943.D	10/21/09 11:30	level 3 dp.
SS-403-101909-0	PSJ0657-03	10280945.D	10/21/09 11:30	level 3 dp.
SS-404-101909-0	PSJ0657-04	10280952.D	10/21/09 11:30	level 3 dp.
SS-405-101909-0	PSJ0657-05	10280953.D	10/21/09 11:30	level 3 dp.
SS-405-101909-2	PSJ0657-06	10280954.D	10/21/09 11:30	level 3 dp, MS/ MSD, or appropriate QC
SS-406-101909-0	PSJ0657-07	10280946.D	10/21/09 11:30	level 3 dp.
SS-407-101909-0	PSJ0657-08	10300912.D	10/21/09 11:30	level 3 dp.
SS-407-101909-0	PSJ0657-08RE1	10280948.D	10/21/09 11:30	Added 10/31/2009 by YX
SS-408-101909-0	PSJ0657-09	10300909.D	10/21/09 11:30	level 3 dp.
SS-409-101909-0	PSJ0657-10	10280956.D	10/21/09 11:30	level 3 dp.
SS-409-101909-0	PSJ0657-10RE1	10300904.D	10/21/09 11:30	Added 10/31/2009 by YX
SS-410-101909-0	PSJ0657-11	10300917.D	10/21/09 11:30	level 3 dp.
SS-410-101909-0	PSJ0657-11RE1	10280934.D	10/21/09 11:30	Added 10/31/2009 by YX
SS-411-101909-0	PSJ0657-12	10280957.D	10/21/09 11:30	level 3 dp.
SS-411-101909-1	PSJ0657-13	10280959.D	10/21/09 11:30	level 3 dp.

QCAR - Organic Prep, Semi-Volatiles

Batch# 910740 Prep Method/Analysis EPA # 3550 Matrix Soil

7/P JSC

Sample Integrity 10-21-09 CD

Is the method appropriate for the sample? Yes  No   
Is there adequate amount of sample? Yes  No   
Are the sample containers appropriate? Yes  No   
Are the samples within hold time? If not fill out a CAR. Yes  No   
Do sample ID's match the work order? Yes  No   
Is sample available for MS/MSD? Yes  No

Extraction 10-21-09 CD

Was all glassware triple rinsed with solvent? Yes  No   
Was the "whole bottle extraction procedure" used if water? Yes  No

Concentration Final Solvent: Hexane

Samples transferred into KDs (date/init.) NA

Macro conc. (date/init./temp.) 10/21/09 AG Micro conc. (date/init.) 10/21/09 AG  
15±2°

If applicable:  
 GPC  
 OPP Soil: poured over Na<sub>2</sub>SO<sub>4</sub> (date/init.) \_\_\_\_\_  
transferred into KDs (date/init.) \_\_\_\_\_  
Macro conc. (date/init./temp.) 10/26/09 AG Micro conc. (date/init.) 10/26/09 AG  
15±2°

Sample Vialing 10/26/09 AG

Are the samples being brought to their normal final volume? Yes  No   
Is the solvent level indicated on the ALS vials? Yes  No   
Was the SOP followed with no deviation? If no, explain below. Yes  No   
Is the GPC or TCLP log attached (if applicable)? Yes  No   
Is the paperwork complete, correct and undated in the computer? Yes  No

Comments: 657-07 poiled dry 10/26/09 AG  
GPC stopped on 657-07. purged system and re-baked sample  
down to run on GPC 10-22-09 AG

PREPARATION BENCH SHEET

Batch 9100740

Printed: 10/21/2009 7:58:12AM

Prep method: EPA 3550

TestAmerica Portland

Matrix: Soil

Surrogate 1: 9090028

Lab Number	Analysis	Prepared	Initial (g)	Final (ml)	Final /init	Spike ID	Spike Amt (uL)	Source ID	Surr 1 (uL)	Surr 2 (uL)	pH	Extraction Comments
9100740-BLKI	QC <sub>2</sub>	10/21/09 07:56	60.24	2	0.33	9100030	200		100			
9100740-BS1	QC	10/21/09 07:56	60.102	2	0.17	9070273	200		100			
9100740-BS2	QC	10/21/09 07:56	60.33	2	0.55	9100030	200		100			
9100740-MS1	QC	10/21/09 07:56	60.12	2	0.20	9100030	200		100			
9100740-MSD1	QC	10/21/09 07:56	60.56	2	0.93	9100030	200		100			
PSJ0657-01	JSC 8081A Pest	10/21/09 07:56	60.10	2	0.17				100			level 3 dp.
PSJ0657-01	JSC 8082 PCB	10/21/09 07:56	60.1	2	0.17				100			level 3 dp.
PSJ0657-02	JSC 8081A Pest	10/21/09 07:56	60.14	2	0.23				100			level 3 dp.
PSJ0657-02	JSC 8082 PCB	10/21/09 07:56	60.1	2	0.17				100			level 3 dp.
PSJ0657-03	JSC 8081A Pest	10/21/09 07:56	60.04	2	0.07				100			level 3 dp.
PSJ0657-03	JSC 8082 PCB	10/21/09 07:56	60.1	2	0.17				100			level 3 dp.
PSJ0657-04	JSC 8081A Pest	10/21/09 07:56	60.13	2	0.22				100			level 3 dp.
PSJ0657-04	JSC 8082 PCB	10/21/09 07:56	60.1	2	0.17				100			level 3 dp.
PSJ0657-05	JSC 8081A Pest	10/21/09 07:56	60.34	2	0.57				100			level 3 dp.
PSJ0657-05	JSC 8082 PCB	10/21/09 07:56	60.1	2	0.17				100			level 3 dp.
PSJ0657-06	JSC 8081A Pest	10/21/09 07:56	60.33	2	0.55				100			level 3 dp, MS/ MSD, or appropriate QC
PSJ0657-06	JSC 8082 PCB	10/21/09 07:56	60.1	2	0.17				100			level 3 dp, MS/ MSD, or appropriate QC
PSJ0657-07	JSC 8081A Pest	10/21/09 07:56	60.27	2	0.45				100			level 3 dp.
PSJ0657-07	JSC 8082 PCB	10/21/09 07:56	60.1	2	0.17				100			level 3 dp.
PSJ0657-08	JSC 8081A Pest	10/21/09 07:56	60.37	2	0.62				100			level 3 dp.
PSJ0657-08	JSC 8082 PCB	10/21/09 07:56	60.1	2	0.17				100			level 3 dp.
PSJ0657-09	JSC 8081A Pest	10/21/09 07:56	60.23	2	0.38				100			level 3 dp.
PSJ0657-09	JSC 8082 PCB	10/21/09 07:56	60.1	2	0.17				100			level 3 dp.
PSJ0657-10	JSC 8081A Pest	10/21/09 07:56	60.17	2	0.28				100			level 3 dp.
PSJ0657-10	JSC 8082 PCB	10/21/09 07:56	60.1	2	0.17				100			level 3 dp.
PSJ0657-11	JSC 8081A Pest	10/21/09 07:56	60.03	2	0.05				100			level 3 dp. Very Wet/Rocks
PSJ0657-11	JSC 8082 PCB	10/21/09 07:56	60.1	2	0.17				100			level 3 dp.
PSJ0657-12	JSC 8081A Pest	10/21/09 07:56	60.18	2	0.30				100			level 3 dp. Fibers
PSJ0657-12	JSC 8082 PCB	10/21/09 07:56	60.1	2	0.17				100			level 3 dp.

Spiking Witnessed By [Signature] Date 10/21/09

Preparation Reviewed By [Signature] Date 10/26/09

11-2-09



**PREPARATION BENCH SHEET**

**Batch 9100740**

Prep method: EPA 3550

TestAmerica Portland

Printed: 10/21/2009 7:58:12AM

Matrix: Soil

Surrogate 1: 9090028

Lab Number	Analysis	Prepared	Initial (g)	Final (ml)	Spike ID	Spike Amt (uL)	Source ID	Surr 1 (uL)	Surr 2 (uL)	pH	Extraction Comments
PSJ0657-13	JSC 8081A Pest	10/21/09 07:56	60.07	2				100			level 3 dp. fibers
PSJ0657-13	JSC 8082 PCB	10/21/09 07:56	60.1	2				100			level 3 dp.

Batch Comments:  
 DCM# 910013  
 ACETONE# A020156  
 GLASSWOOL# 00509001  
 Na2SO4# V85V3A  
 FILTER PAPER# WHATMAN 41  
 BALANCE ID# NCAP-0087  
 HEXANE# A10034  
 H2SO4# 7082272

10-21-09 1130 OD

# Sequence Log Report

Print Date: 10/26/2009  
Print Time 8:32:49AM

Sequence: 102309A

POS	Sample ID	Description	Method	Injection	Column	Status	Comments
20	PSJ0657-08	9100740	P_P_101909_Meth od	5000	ABC 1	Sample processed normally	
21	PSJ0657-09	9100740	P_P_101909_Meth od	5000	ABC 1	Sample processed normally	
22	PSJ0657-10	9100740	P_P_101909_Meth od	5000	ABC 1	Sample processed normally	
23	PSJ0657-11	9100740	P_P_101909_Meth od	5000	ABC 1	Sample processed normally	
24	PSJ0657-12	9100740	P_P_101909_Meth od	5000	ABC 1	Sample processed normally	
25	PSJ0657-13	9100740	P_P_101909_Meth od	5000	ABC 1	Sample processed normally	
26	PSJ0657-07	9100740	P_P_101909_Meth od	5000	ABC 1	Sample processed normally	



SAMPLE TABLE:

Pos	Desig	Description	Type	Inj	Meth name	V(uL)	Done?	Start	Fin
1	GPC BLK	102209	sample	1	P_P_101909_Method	5000	Y	11:54:16,	
2	BKL1	9100660	sample	1	P_P_101909_Method	5000	Y	12:54:40,	
3	BS1	9100660	sample	1	P_P_101909_Method	5000	Y	13:55:01,	
4	BS2	9100660	sample	1	P_P_101909_Method	5000	Y	14:55:22,	
5	BSD1	9100660	sample	1	P_P_101909_Method	5000	Y	15:55:42,	
6	PSJ0463-01	9100660	sample	1	P_P_101909_Method	5000	Y	16:56:03,	
7	PSJ0573-03	9100660	sample	1	P_P_101909_Method	5000	Y	17:56:24,	
8	BLK1	9100740	sample	1	P_P_101909_Method	5000	Y	18:56:45,	
9	BS1	9100740	sample	1	P_P_101909_Method	5000	Y	19:57:05,	
10	BS2	9100740	sample	1	P_P_101909_Method	5000	Y	20:57:26,	
11	MS1	9100740	sample	1	P_P_101909_Method	5000	Y	21:57:47,	
12	MSD1	9100740	sample	1	P_P_101909_Method	5000	Y	22:58:07,	
13	PSJ0657-01	9100740	sample	1	P_P_101909_Method	5000	Y	23:58:27,	
14	PSJ0657-02	9100740	sample	1	P_P_101909_Method	5000	Y	00:58:49,	
15	PSJ0657-03	9100740	sample	1	P_P_101909_Method	5000	Y	01:59:10,	
16	PSJ0657-04	9100740	sample	1	P_P_101909_Method	5000	Y	02:59:31,	
17	PSJ0657-05	9100740	sample	1	P_P_101909_Method	5000	Y	03:59:51,	
18	PSJ0657-06	9100740	sample	1	P_P_101909_Method	5000	Y	05:00:12,	
19	PSJ0657-07	9100740	sample	1	P_P_101909_Method	5000			
20	PSJ0657-08	9100740	sample	1	P_P_101909_Method	5000			
21	PSJ0657-09	9100740	sample	1	P_P_101909_Method	5000			
22	PSJ0657-10	9100740	sample	1	P_P_101909_Method	5000			
23	PSJ0657-11	9100740	sample	1	P_P_101909_Method	5000			
24	PSJ0657-12	9100740	sample	1	P_P_101909_Method	5000			
25	PSJ0657-13	9100740	sample	1	P_P_101909_Method	5000			

## **GC Semivolatile Organic Compounds**

EPA 8082  
Quality Control Summaries

**Form 2**  
**SURROGATE STANDARD RECOVERY AND RT SUMMARY**  
**EPA 8082**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9J27005

Instrument: GC4 Dual F

Matrix: Soil

Calibration: 9100902

Surrogate Compound	Spike Level ng/ml	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>Calibration Check (9J27005-CCV2)</b>			Lab File ID: 10270923.D		Analyzed: 10/27/09 17:26			
Decachlorobiphenyl	100	106	85 - 115	11.87	11.88125	-0.0113	+/-1.0	
<b>Calibration Check (9J27005-CCV3)</b>			Lab File ID: 10270934.D		Analyzed: 10/27/09 22:18			
Decachlorobiphenyl	100	110	85 - 115	11.87	11.88125	-0.0113	+/-1.0	
<b>Calibration Check (9J27005-CCV4)</b>			Lab File ID: 10270940.D		Analyzed: 10/28/09 00:29			
Decachlorobiphenyl	100	107	85 - 115	11.87	11.88125	-0.0113	+/-1.0	

**Form 2**  
**SURROGATE STANDARD RECOVERY AND RT SUMMARY**  
**EPA 8082**

Laboratory: TestAmerica Portland  
 Client: CH2M-Hill  
 Sequence: 9J27005  
 Matrix: Soil

SDG: PSJ0657  
 Project: NW Pipe Project  
 Instrument: GC4 Dual F  
 Calibration: 9100902

Surrogate Compound	Spike Level ug/kg dry	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>SS-401-101909-0 (PSJ0657-01 )</b>			Lab File ID: 10270924.D		Analyzed: 10/27/09 18:38			
Decachlorobiphenyl	3.66	66.1	16 - 149	11.86	11.88125	-0.0213	+/-1.0	
<b>SS-402-101909-0 (PSJ0657-02 )</b>			Lab File ID: 10270925.D		Analyzed: 10/27/09 19:00			
Decachlorobiphenyl	3.55	57.6	16 - 149	11.87	11.88125	-0.0113	+/-1.0	
<b>SS-404-101909-0 (PSJ0657-04 )</b>			Lab File ID: 10270927.D		Analyzed: 10/27/09 19:44			
Decachlorobiphenyl	3.91	59.5	16 - 149	11.87	11.88125	-0.0113	+/-1.0	
<b>SS-405-101909-0 (PSJ0657-05 )</b>			Lab File ID: 10270928.D		Analyzed: 10/27/09 20:06			
Decachlorobiphenyl	3.80	59.8	16 - 149	11.87	11.88125	-0.0113	+/-1.0	
<b>SS-405-101909-2 (PSJ0657-06 )</b>			Lab File ID: 10270929.D		Analyzed: 10/27/09 20:28			
Decachlorobiphenyl	3.68	61.6	16 - 149	11.87	11.88125	-0.0113	+/-1.0	
<b>SS-406-101909-0 (PSJ0657-07 )</b>			Lab File ID: 10270930.D		Analyzed: 10/27/09 20:50			
Decachlorobiphenyl	3.71	38.3	16 - 149	11.87	11.88125	-0.0113	+/-1.0	
<b>SS-407-101909-0 (PSJ0657-08 )</b>			Lab File ID: 10270931.D		Analyzed: 10/27/09 21:12			
Decachlorobiphenyl	3.79	62.9	16 - 149	11.87	11.88125	-0.0113	+/-1.0	
<b>SS-408-101909-0 (PSJ0657-09 )</b>			Lab File ID: 10270935.D		Analyzed: 10/27/09 22:40			
Decachlorobiphenyl	3.57	66.4	16 - 149	11.87	11.88125	-0.0113	+/-1.0	
<b>SS-409-101909-0 (PSJ0657-10 )</b>			Lab File ID: 10270936.D		Analyzed: 10/27/09 23:02			
Decachlorobiphenyl	4.07		16 - 149	11.87	11.88125	-0.0113	+/-1.0	*
<b>SS-410-101909-0 (PSJ0657-11 )</b>			Lab File ID: 10270937.D		Analyzed: 10/27/09 23:23			
Decachlorobiphenyl	3.83	60.2	16 - 149	11.87	11.88125	-0.0113	+/-1.0	
<b>SS-411-101909-0 (PSJ0657-12 )</b>			Lab File ID: 10270938.D		Analyzed: 10/27/09 23:45			
Decachlorobiphenyl	3.89		16 - 149	11.87	11.88125	-0.0113	+/-1.0	*
<b>SS-411-101909-1 (PSJ0657-13 )</b>			Lab File ID: 10270939.D		Analyzed: 10/28/09 00:07			
Decachlorobiphenyl	3.80		16 - 149	11.87	11.88125	-0.0113	+/-1.0	*

**Form 2**  
**SURROGATE STANDARD RECOVERY AND RT SUMMARY**  
**EPA 8082**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9J27005

Instrument: GC4 Dual F

Matrix: Soil

Calibration: 9100902

Surrogate Compound	Spike Level ug/kg	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>Blank (9100740-BLK1 )</b>			Lab File ID: 10270932.D		Analyzed: 10/27/09 21:34			
Decachlorobiphenyl	3.33	70.8	16 - 149	11.87	11.88125	-0.0113	+/-1.0	
<b>LCS (9100740-BS2 )</b>			Lab File ID: 10270933.D		Analyzed: 10/27/09 21:56			
Decachlorobiphenyl	3.32	74.3	16 - 149	11.87	11.88125	-0.0113	+/-1.0	

**Form 2**  
**SURROGATE STANDARD RECOVERY AND RT SUMMARY**  
**EPA 8082**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9J27005

Instrument: GC4 Dual F

Matrix: Water

Calibration: 9100902

Surrogate Compound	Spike Level ng/ml	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>Calibration Check (9J27005-CCV2 )</b>			Lab File ID: 10270923.D		Analyzed: 10/27/09 17:26			
Decachlorobiphenyl	100	106	85 - 115	11.87	11.88125	-0.0113	+/-1.0	
<b>Calibration Check (9J27005-CCV3 )</b>			Lab File ID: 10270934.D		Analyzed: 10/27/09 22:18			
Decachlorobiphenyl	100	110	85 - 115	11.87	11.88125	-0.0113	+/-1.0	
<b>Calibration Check (9J27005-CCV4 )</b>			Lab File ID: 10270940.D		Analyzed: 10/28/09 00:29			
Decachlorobiphenyl	100	107	85 - 115	11.87	11.88125	-0.0113	+/-1.0	

**Form 2**  
**SURROGATE STANDARD RECOVERY AND RT SUMMARY**  
**EPA 8082**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9J30005

Instrument: GC4 Dual F

Matrix: Soil

Calibration: 9100902

Surrogate Compound	Spike Level ng/ml	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>Calibration Check (9J30005-CCV1)</b>			Lab File ID: 10300906.D		Analyzed: 10/30/09 11:49			
Decachlorobiphenyl	80.0	103	85 - 115	11.87	11.88125	-0.0113	+/-1.0	
<b>Calibration Check (9J30005-CCV2)</b>			Lab File ID: 10300910.D		Analyzed: 10/30/09 15:06			
Decachlorobiphenyl	80.0	108	85 - 115	11.87	11.88125	-0.0113	+/-1.0	

**Form 2**  
**SURROGATE STANDARD RECOVERY AND RT SUMMARY**  
**EPA 8082**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9J30005

Instrument: GC4 Dual F

Matrix: Soil

Calibration: 9100902

Surrogate Compound	Spike Level ug/kg dry	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>SS-403-101909-0 (PSJ0657-03 )</b>			Lab File ID: 10300908.D		Analyzed: 10/30/09 14:22			
Decachlorobiphenyl	3.59	58.3	16 - 149	11.86	11.88125	-0.0213	+/-1.0	

**Form 2**  
**SURROGATE STANDARD RECOVERY AND RT SUMMARY**  
**EPA 8082**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9J30005

Instrument: GC4 Dual F

Matrix: Water

Calibration: 9100902

Surrogate Compound	Spike Level ng/ml	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>Calibration Check (9J30005-CCV1 )</b>			Lab File ID: 10300906.D		Analyzed: 10/30/09 11:49			
Decachlorobiphenyl	80.0	103	85 - 115	11.87	11.88125	-0.0113	+/-1.0	
<b>Calibration Check (9J30005-CCV2 )</b>			Lab File ID: 10300910.D		Analyzed: 10/30/09 15:06			
Decachlorobiphenyl	80.0	108	85 - 115	11.87	11.88125	-0.0113	+/-1.0	

**CH2M-Hill**2020 SW 4th Suite 300  
Portland, OR 97201Project Name: **NW Pipe Project**

Project Number: NW Pipe Project

Project Manager: Pat Heins

Report Date:

11/17/09 15:44

**Laboratory Blank Report****Polychlorinated Biphenyls per EPA Method 8082 - Laboratory Quality Control Results**

TestAmerica Portland

**Batch 9100740**

Matrix		Lab Number	Sample Name	Dilution	File ID	Analyzed	Instrument
Soil	EPA 8082	9100740-BLK1	Blank	1x	10270932.D	10/27/09 21:34	GC4 Dual F
Soil	EPA 8082	9100740-BS2	LCS	1x	10270933.D	10/27/09 21:56	GC4 Dual F
Soil	EPA 8082	PSJ0657-01	SS-401-101909-0	2x	10270924.D	10/27/09 18:38	GC4 Dual F
Soil	EPA 8082	PSJ0657-02	SS-402-101909-0	10x	10270925.D	10/27/09 19:00	GC4 Dual F
Soil	EPA 8082	PSJ0657-03	SS-403-101909-0	20x	10300908.D	10/30/09 14:22	GC4 Dual F
Soil	EPA 8082	PSJ0657-04	SS-404-101909-0	10x	10270927.D	10/27/09 19:44	GC4 Dual F
Soil	EPA 8082	PSJ0657-05	SS-405-101909-0	10x	10270928.D	10/27/09 20:06	GC4 Dual F
Soil	EPA 8082	PSJ0657-06	SS-405-101909-2	10x	10270929.D	10/27/09 20:28	GC4 Dual F
Soil	EPA 8082	PSJ0657-07	SS-406-101909-0	20x	10270930.D	10/27/09 20:50	GC4 Dual F
Soil	EPA 8082	PSJ0657-08	SS-407-101909-0	4x	10270931.D	10/27/09 21:12	GC4 Dual F
Soil	EPA 8082	PSJ0657-09	SS-408-101909-0	1x	10270935.D	10/27/09 22:40	GC4 Dual F
Soil	EPA 8082	PSJ0657-10	SS-409-101909-0	200x	10270936.D	10/27/09 23:02	GC4 Dual F
Soil	EPA 8082	PSJ0657-11	SS-410-101909-0	4x	10270937.D	10/27/09 23:23	GC4 Dual F
Soil	EPA 8082	PSJ0657-12	SS-411-101909-0	50x	10270938.D	10/27/09 23:45	GC4 Dual F
Soil	EPA 8082	PSJ0657-13	SS-411-101909-1	40x	10270939.D	10/28/09 00:07	GC4 Dual F



**Form 1**  
**METHOD BLANK DATA SHEET**  
**EPA 8082**

Laboratory:	<u>TestAmerica Portland</u>	SDG:	<u>PSJ0657</u>
Client:	<u>CH2M-Hill</u>	Project:	<u>NW Pipe Project</u>
Matrix:	<u>Soil</u>	Laboratory ID:	<u>9100740-BLK1</u>
Prepared:	<u>10/21/09 11:30</u>	Preparation:	<u>EPA 3550</u>
Analyzed:	<u>10/27/09 21:34</u>	Instrument:	<u>GC4 Dual F</u>
Batch:	<u>9100740</u>	Sequence:	<u>9J27005</u>
		File ID:	<u>10270932.D</u>
		Initial/Final:	<u>60.06 g / 2 ml</u>
		Calibration:	<u>9100902</u>

CAS NO.	COMPOUND	CONC. (ug/kg wet)	Q
12674-11-2	Aroclor 1016	3.33	U
11104-28-2	Aroclor 1221	6.69	U
11141-16-5	Aroclor 1232	3.33	U
53469-21-9	Aroclor 1242	3.33	U
12672-29-6	Aroclor 1248	3.33	U
11097-69-1	Aroclor 1254	3.33	U
11096-82-5	Aroclor 1260	3.33	U
37324-23-5	Aroclor 1262	3.33	U
11100-14-4	Aroclor 1268	3.33	U

SYSTEM MONITORING COMPOUND	ADDED (ug/kg wet)	CONC (ug/kg wet)	% REC	QC LIMITS	Q
Decachlorobiphenyl	3.33	2.36	70.8	16 - 149	

**Form 3**  
**LCS / LCS DUPLICATE RECOVERY**  
**EPA 8082**

Laboratory: TestAmerica Portland  
 Client: CH2M-Hill  
 Matrix: Soil  
 Batch: 9100740  
 Preparation: EPA 3550

SDG: PSJ0657  
 Project: NW Pipe Project  
 Spike standard: 9070273  
 Laboratory ID: 9100740-BS2  
 Initial/Final: 60.33 g / 2 ml

COMPOUND	SPIKE ADDED (ug/kg wet)	LCS CONCENTRATION (ug/kg wet)	LCS % REC. #	QC LIMITS REC.
Aroclor 1016	33.2	28.8	86.8	57 - 135
Aroclor 1260	33.2	30.0	90.6	60 - 135

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

**Form 6**  
**INITIAL CALIBRATION DATA**  
**EPA 8082**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Calibration: 9100902

Instrument: GC4 Dual F

Calibration Date: 10/09/09 11:50

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF
Aroclor 1016	50	53.7	100	57.03	200	55.49	400	54.3175	800	53.72625	1000	52.7
Aroclor 1260	50	94.92	100	96.93	200	91.49	400	88.3825	800	84.88375	1000	83.504
Decachlorobiphenyl	5	326.4	10	336.2	20	314.65	40	293.7	80	275.2875	100	268.76

**Form 6**  
**INITIAL CALIBRATION DATA (Continued)**  
**EPA 8082**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Calibration: 9100902

Instrument: GC4 Dual F

Calibration Date: 10/09/09 11:50

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF
Aroclor 1016	1200	50.55333	1600	49.43312								
Aroclor 1260	1200	79.60333	1600	77.61313								
Decachlorobiphenyl	120	254.2083	160	245.8625								

**Form 6**  
**INITIAL CALIBRATION DATA (Continued)**  
**EPA 8082**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Calibration: 9100902

Instrument: GC4 Dual F

Calibration Date: 10/09/09 11:50

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Aroclor 1016	53.36878	4.638931	0	0				*
Aroclor 1260	87.16584	8.027242	0	0		0.9997513		
Decachlorobiphenyl	289.3835	11.66345	11.88125	2.402468E-02		0.9996339		

# SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8082

**Laboratory:** TestAmerica Portland

**SDG:** PSJ0657

**Client:** CH2M-Hill

**Project:** NW Pipe Project

**Calibration:** 9100902

**Laboratory ID:** 9J08006-SCV1

**Sequence:** 9J08006

**Standard ID:** 9080264

ANALYTE	EXPECTED (ng/ml)	FOUND (ng/ml)	% DRIFT	QC LIMIT
Aroclor 1016	1000	981	-1.9	30.00
Aroclor 1260	1000	944	-5.6	30.00

\* Values outside of QC limits

**Form 7**  
**CONTINUING CALIBRATION CHECK**  
**EPA 8082**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Instrument ID: GC4 Dual F

Calibration: 9100902

Lab File ID: 10270923.D

Calibration Date: 10/09/09 11:50

Sequence: 9J27005

Injection Date: 10/27/09

Lab Sample ID: 9J27005-CCV2

Injection Time: 17:26

COMPOUND	TYPE	CONC. (ng/ml)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Aroclor 1016	A	1000	994	53.36878	53.053		-0.6	15
Aroclor 1260	Q	1000	1040	87.16584	85.822		4.3	15

# Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

\* Values outside of QC limits

**Form 7**  
**CONTINUING CALIBRATION CHECK**  
**EPA 8082**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Instrument ID: GC4 Dual F

Calibration: 9100902

Lab File ID: 10270934.D

Calibration Date: 10/09/09 11:50

Sequence: 9J27005

Injection Date: 10/27/09

Lab Sample ID: 9J27005-CCV3

Injection Time: 22:18

COMPOUND	TYPE	CONC. (ng/ml)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Aroclor 1016	A	1000	1100	53.36878	58.78		10.1	15
Aroclor 1260	Q	1000	1130	87.16584	91.828		12.7	15

# Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

\* Values outside of QC limits

**Form 7**  
**CONTINUING CALIBRATION CHECK**  
**EPA 8082**

Laboratory: <u>TestAmerica Portland</u>	SDG: <u>PSJ0657</u>
Client: <u>CH2M-Hill</u>	Project: <u>NW Pipe Project</u>
Instrument ID: <u>GC4 Dual F</u>	Calibration: <u>9100902</u>
Lab File ID: <u>10270940.D</u>	Calibration Date: <u>10/09/09 11:50</u>
Sequence: <u>9J27005</u>	Injection Date: <u>10/28/09</u>
Lab Sample ID: <u>9J27005-CCV4</u>	Injection Time: <u>00:29</u>

COMPOUND	TYPE	CONC. (ng/ml)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Aroclor 1016	A	1000	1140	53.36878	60.846		14.0	15
Aroclor 1260	Q	1000	1130	87.16584	92.421		13.5	15

# Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

\* Values outside of QC limits

**Form 7**  
**CONTINUING CALIBRATION CHECK**  
**EPA 8082**

Laboratory: <u>TestAmerica Portland</u>	SDG: <u>PSJ0657</u>
Client: <u>CH2M-Hill</u>	Project: <u>NW Pipe Project</u>
Instrument ID: <u>GC4 Dual F</u>	Calibration: <u>9100902</u>
Lab File ID: <u>10300906.D</u>	Calibration Date: <u>10/09/09 11:50</u>
Sequence: <u>9J30005</u>	Injection Date: <u>10/30/09</u>
Lab Sample ID: <u>9J30005-CCV1</u>	Injection Time: <u>11:49</u>

COMPOUND	TYPE	CONC. (ng/ml)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Aroclor 1016	A	800	871	53.36878	58.0775		8.8	15
Aroclor 1260	Q	800	849	87.16584	89.15875		6.1	15

# Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

\* Values outside of QC limits

**Form 7**  
**CONTINUING CALIBRATION CHECK**  
**EPA 8082**

Laboratory: <u>TestAmerica Portland</u>	SDG: <u>PSJ0657</u>
Client: <u>CH2M-Hill</u>	Project: <u>NW Pipe Project</u>
Instrument ID: <u>GC4 Dual F</u>	Calibration: <u>9100902</u>
Lab File ID: <u>10300910.D</u>	Calibration Date: <u>10/09/09 11:50</u>
Sequence: <u>9J30005</u>	Injection Date: <u>10/30/09</u>
Lab Sample ID: <u>9J30005-CCV2</u>	Injection Time: <u>15:06</u>

COMPOUND	TYPE	CONC. (ng/ml)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Aroclor 1016	A	800	900	53.36878	60.03		12.5	15
Aroclor 1260	Q	800	875	87.16584	91.58125		9.3	15

# Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

\* Values outside of QC limits

# INITIAL CALIBRATION STANDARDS

## EPA 8082

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9J08006

Instrument: GC4 Dual F

Calibration: 9100902

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
9090154	AR 1660 Cal 50-5ppb	9J08006-CAL1	10080906.D	10/08/09 09:41
9090155	AR 1660 Cal 100-10ppb	9J08006-CAL2	10080908.D	10/08/09 10:54
9090156	AR 1660 Cal 200-20ppb	9J08006-CAL3	10080910.D	10/08/09 11:16
9090157	AR 1660 Cal 400-40ppb	9J08006-CAL4	10080912.D	10/08/09 11:39
9090158	AR 1660 Cal 800-80ppb	9J08006-CAL5	10080914.D	10/08/09 12:02
9090159	AR 1660 Cal 1000-100ppb	9J08006-CAL6	10080916.D	10/08/09 12:25
9090160	AR 1660 Cal 1200-120ppb	9J08006-CAL7	10080918.D	10/08/09 12:48
9090161	AR 1660 Cal 1600-160ppb	9J08006-CAL8	10080920.D	10/08/09 13:11
9080264	AR 1660 ICV (1ppm)	9J08006-SCV1	10080922.D	10/08/09 13:34

**Form 5**  
**ANALYSIS BATCH (SEQUENCE) SUMMARY**  
**EPA 8082**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9J08006

Instrument: GC4 Dual F

Calibration: 9100902

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	9J08006-CAL1	10080906.D	10/08/09 09:41
Cal Standard	9J08006-CAL2	10080908.D	10/08/09 10:54
Cal Standard	9J08006-CAL3	10080910.D	10/08/09 11:16
Cal Standard	9J08006-CAL4	10080912.D	10/08/09 11:39
Cal Standard	9J08006-CAL5	10080914.D	10/08/09 12:02
Cal Standard	9J08006-CAL6	10080916.D	10/08/09 12:25
Cal Standard	9J08006-CAL7	10080918.D	10/08/09 12:48
Cal Standard	9J08006-CAL8	10080920.D	10/08/09 13:11
Secondary Cal Check	9J08006-SCV1	10080922.D	10/08/09 13:34

**Form 5**  
**ANALYSIS BATCH (SEQUENCE) SUMMARY**  
**EPA 8082**

Laboratory: TestAmerica Portland  
 Client: CH2M-Hill  
 Sequence: 9J27005

SDG: PSJ0657  
 Project: NW Pipe Project  
 Instrument: GC4 Dual F  
 Calibration: 9100902

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Aroclor Reference	9J27005-ARC2	10270908.D	10/27/09 12:31
Calibration Check	9J27005-CCV2	10270923.D	10/27/09 17:26
SS-401-101909-0	PSJ0657-01	10270924.D	10/27/09 18:38
SS-402-101909-0	PSJ0657-02	10270925.D	10/27/09 19:00
SS-404-101909-0	PSJ0657-04	10270927.D	10/27/09 19:44
SS-405-101909-0	PSJ0657-05	10270928.D	10/27/09 20:06
SS-405-101909-2	PSJ0657-06	10270929.D	10/27/09 20:28
SS-406-101909-0	PSJ0657-07	10270930.D	10/27/09 20:50
SS-407-101909-0	PSJ0657-08	10270931.D	10/27/09 21:12
Blank	9100740-BLK1	10270932.D	10/27/09 21:34
LCS	9100740-BS2	10270933.D	10/27/09 21:56
Calibration Check	9J27005-CCV3	10270934.D	10/27/09 22:18
SS-408-101909-0	PSJ0657-09	10270935.D	10/27/09 22:40
SS-409-101909-0	PSJ0657-10	10270936.D	10/27/09 23:02
SS-410-101909-0	PSJ0657-11	10270937.D	10/27/09 23:23
SS-411-101909-0	PSJ0657-12	10270938.D	10/27/09 23:45
SS-411-101909-1	PSJ0657-13	10270939.D	10/28/09 00:07
Calibration Check	9J27005-CCV4	10270940.D	10/28/09 00:29

**Form 5**  
**ANALYSIS BATCH (SEQUENCE) SUMMARY**  
**EPA 8082**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9J30005

Instrument: GC4 Dual F

Calibration: 9100902

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Aroclor Reference	9J30005-ARC2	10300904.D	10/30/09 11:05
Calibration Check	9J30005-CCV1	10300906.D	10/30/09 11:49
SS-403-101909-0	PSJ0657-03	10300908.D	10/30/09 14:22
Calibration Check	9J30005-CCV2	10300910.D	10/30/09 15:06

## Semi-Volatile GC Analysis QCAR

Work Order #: PSJ0657 Batch #: 9100740 Test Code: JSC 8082

Primary Review Date/Initial:

STJ 10-29-09

Secondary Review Date/Initial:

[Signature] 11/3/9

Check here if data package is needed

L3

### Sample Integrity

<u>/</u>	<u>/</u>	Samples extracted within hold time
<u>/</u>	<u>/</u>	All work is completed according to work order
<u>/</u>	<u>/</u>	Special Instructions are checked

### Data Analysis

<u>/</u>	<u>/</u>	Initial data is checked vs. confirmation data (if applicable)
<u>/</u>	<u>/</u>	Proper dilution factors/multipliers are used
<u>/</u>	<u>/</u>	Standards are within acceptance limits
<u>"Z3"</u>	<u>/</u>	Surrogates are within limits (or properly flagged if out)
<u>/</u>	<u>/</u>	Proper standards are used for quantitation
<u>/</u>	<u>/</u>	Concentrations are within calibration range
<u>/</u>	<u>/</u>	Data has been Q-edited
<u>/</u>	<u>/</u>	All prep and analysis bench sheets are fully completed
<u>/</u>	<u>/</u>	All chromatograms are included and labeled

### Reporting

<u>/</u>	<u>/</u>	Units and significant figures are correct
<u>"RL7"</u>	<u>/</u>	Reporting limits are correct
<u>/</u>	<u>/</u>	Final report matches analytical results
<u>/</u>	<u>/</u>	Percent solids are included (if applicable)
<u>/</u>	<u>/</u>	Extraction and analysis dates and times are correct
<u>/</u>	<u>/</u>	Control limits are met for spike recoveries, proper comments included
<u>/</u>	<u>/</u>	Proper QC reports are included
<u>/</u>	<u>/</u>	Necessary comments are included
<u>/</u>	<u>/</u>	Analytes and QC are updated to "analyzed" and locked
<u>/</u>	<u>/</u>	Analytes and QC are updated to "reviewed"

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## **GC Semivolatile Organic Compounds**

### EPA 8082 Target Analyte Results Summaries



**Form 1**  
**ORGANIC ANALYSIS DATA SHEET**  
**EPA 8082**

<b>SS-402-101909-0</b>
------------------------

Laboratory: <u>TestAmerica Portland</u>	SDG: <u>PSJ0657</u>	Project: <u>NW Pipe Project</u>
Client: <u>CH2M-Hill</u>	Laboratory ID: <u>PSJ0657-02</u>	File ID: <u>10270925.D</u>
Matrix: <u>Soil</u>	Prepared: <u>10/21/09 11:30</u>	Analyzed: <u>10/27/09 19:00</u>
Sampled: <u>10/19/09 11:40</u>	Preparation: <u>EPA 3550</u>	Initial/Final: <u>60.14 g / 2 ml</u>
Solids: <u>93.70</u>	Batch: <u>9100740</u>	Instrument: <u>GC4 Dual F</u>
Sequence: <u>9J27005</u>	Calibration: <u>9100902</u>	

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	
12674-11-2	Aroclor 1016	10	35.5	UD	
11104-28-2	Aroclor 1221	10	71.3	UD	
11141-16-5	Aroclor 1232	10	35.5	UD	
53469-21-9	Aroclor 1242	10	35.5	UD	
12672-29-6	Aroclor 1248	10	35.5	UD	
11097-69-1	Aroclor 1254	10	368	D	
11096-82-5	Aroclor 1260	10	35.5	UD	
37324-23-5	Aroclor 1262	10	35.5	UD	
11100-14-4	Aroclor 1268	10	35.5	UD	
SYSTEM MONITORING COMPOUND	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Decachlorobiphenyl	3.55	2.05	57.6	16 - 149	

\* Values outside of QC limits



**Form 1**  
**ORGANIC ANALYSIS DATA SHEET**  
**EPA 8082**

<b>SS-404-101909-0</b>
------------------------

Laboratory:	<u>TestAmerica Portland</u>	SDG:	<u>PSJ0657</u>				
Client:	<u>CH2M-Hill</u>	Project:	<u>NW Pipe Project</u>				
Matrix:	<u>Soil</u>	Laboratory ID:	<u>PSJ0657-04</u>	File ID:	<u>10270927.D</u>		
Sampled:	<u>10/19/09 11:20</u>	Prepared:	<u>10/21/09 11:30</u>	Analyzed:	<u>10/27/09 19:44</u>		
Solids:	<u>85.00</u>	Preparation:	<u>EPA 3550</u>	Initial/Final:	<u>60.13 g / 2 ml</u>		
Batch:	<u>9100740</u>	Sequence:	<u>9J27005</u>	Calibration:	<u>9100902</u>	Instrument:	<u>GC4 Dual F</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)		Q
12674-11-2	Aroclor 1016	10	39.1		UD
11104-28-2	Aroclor 1221	10	78.7		UD
11141-16-5	Aroclor 1232	10	39.1		UD
53469-21-9	Aroclor 1242	10	39.1		UD
12672-29-6	Aroclor 1248	10	39.1		UD
11097-69-1	Aroclor 1254	10	302		D
11096-82-5	Aroclor 1260	10	39.1		UD
37324-23-5	Aroclor 1262	10	39.1		UD
11100-14-4	Aroclor 1268	10	39.1		UD
SYSTEM MONITORING COMPOUND	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Decachlorobiphenyl	3.91	2.33	59.5	16 - 149	

\* Values outside of QC limits



**Form 1**  
**ORGANIC ANALYSIS DATA SHEET**  
**EPA 8082**

<b>SS-405-101909-2</b>
------------------------

Laboratory: <u>TestAmerica Portland</u>	SDG: <u>PSJ0657</u>	Project: <u>NW Pipe Project</u>
Client: <u>CH2M-Hill</u>	Laboratory ID: <u>PSJ0657-06</u>	File ID: <u>10270929.D</u>
Matrix: <u>Soil</u>	Prepared: <u>10/21/09 11:30</u>	Analyzed: <u>10/27/09 20:28</u>
Sampled: <u>10/19/09 11:00</u>	Preparation: <u>EPA 3550</u>	Initial/Final: <u>60.33 g / 2 ml</u>
Solids: <u>90.20</u>	Batch: <u>9100740</u>	Instrument: <u>GC4 Dual F</u>
Sequence: <u>9J27005</u>	Calibration: <u>9100902</u>	

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	
12674-11-2	Aroclor 1016	10	36.7	UD	
11104-28-2	Aroclor 1221	10	73.9	UD	
11141-16-5	Aroclor 1232	10	36.7	UD	
53469-21-9	Aroclor 1242	10	36.7	UD	
12672-29-6	Aroclor 1248	10	36.7	UD	
11097-69-1	Aroclor 1254	10	342	D	
11096-82-5	Aroclor 1260	10	36.7	UD	
37324-23-5	Aroclor 1262	10	36.7	UD	
11100-14-4	Aroclor 1268	10	36.7	UD	
SYSTEM MONITORING COMPOUND	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Decachlorobiphenyl	3.68	2.27	61.6	16 - 149	

\* Values outside of QC limits

**Form 1**  
**ORGANIC ANALYSIS DATA SHEET**  
**EPA 8082**

SS-406-101909-0

Laboratory: <u>TestAmerica Portland</u>	SDG: <u>PSJ0657</u>	
Client: <u>CH2M-Hill</u>	Project: <u>NW Pipe Project</u>	
Matrix: <u>Soil</u>	Laboratory ID: <u>PSJ0657-07</u>	File ID: <u>10270930.D</u>
Sampled: <u>10/19/09 12:05</u>	Prepared: <u>10/21/09 11:30</u>	Analyzed: <u>10/27/09 20:50</u>
Solids: <u>89.70</u>	Preparation: <u>EPA 3550</u>	Initial/Final: <u>60.07 g / 2 ml</u>
Batch: <u>9100740</u>	Sequence: <u>9J27005</u>	Calibration: <u>9100902</u>
		Instrument: <u>GC4 Dual F</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q		
12674-11-2	Aroclor 1016	20	74.2	UD		
11104-28-2	Aroclor 1221	20	149	UD		
11141-16-5	Aroclor 1232	20	74.2	UD		
53469-21-9	Aroclor 1242	20	74.2	UD		
12672-29-6	Aroclor 1248	20	74.2	UD		
11097-69-1	Aroclor 1254	20	460	D		
11096-82-5	Aroclor 1260	20	74.2	UD		
37324-23-5	Aroclor 1262	20	74.2	UD		
11100-14-4	Aroclor 1268	20	74.2	UD		
SYSTEM MONITORING COMPOUND		ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Decachlorobiphenyl		3.71	1.42	38.3	16 - 149	

\* Values outside of QC limits

**Form 1**  
**ORGANIC ANALYSIS DATA SHEET**  
**EPA 8082**

SS-407-101909-0

Laboratory:	<u>TestAmerica Portland</u>	SDG:	PSJ0657
Client:	<u>CH2M-Hill</u>	Project:	<u>NW Pipe Project</u>
Matrix:	<u>Soil</u>	Laboratory ID:	<u>PSJ0657-08</u>
		File ID:	<u>10270931.D</u>
Sampled:	<u>10/19/09 10:55</u>	Prepared:	<u>10/21/09 11:30</u>
		Analyzed:	<u>10/27/09 21:12</u>
Solids:	<u>87.50</u>	Preparation:	<u>EPA 3550</u>
		Initial/Final:	<u>60.27 g / 2 ml</u>
Batch:	<u>9100740</u>	Sequence:	<u>9J27005</u>
		Calibration:	<u>9100902</u>
		Instrument:	<u>GC4 Dual F</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	
12674-11-2	Aroclor 1016	4	15.2	UD	
11104-28-2	Aroclor 1221	4	30.5	UD	
11141-16-5	Aroclor 1232	4	15.2	UD	
53469-21-9	Aroclor 1242	4	15.2	UD	
12672-29-6	Aroclor 1248	4	15.2	UD	
11097-69-1	Aroclor 1254	4	120	D	
11096-82-5	Aroclor 1260	4	15.2	UD	
37324-23-5	Aroclor 1262	4	15.2	UD	
11100-14-4	Aroclor 1268	4	15.2	UD	
SYSTEM MONITORING COMPOUND	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Decachlorobiphenyl	3.79	2.38	62.9	16 - 149	

\* Values outside of QC limits

**Form 1**  
**ORGANIC ANALYSIS DATA SHEET**

SS-408-101909-0

**EPA 8082**

Laboratory:	<u>TestAmerica Portland</u>	SDG:	<u>PSJ0657</u>
Client:	<u>CH2M-Hill</u>	Project:	<u>NW Pipe Project</u>
Matrix:	<u>Soil</u>	Laboratory ID:	<u>PSJ0657-09</u>
Sampled:	<u>10/19/09 10:45</u>	Prepared:	<u>10/21/09 11:30</u>
Solids:	<u>92.90</u>	Preparation:	<u>EPA 3550</u>
Batch:	<u>9100740</u>	Sequence:	<u>9J27005</u>
		Calibration:	<u>9100902</u>
		Instrument:	<u>GC4 Dual F</u>
File ID:	<u>10270935.D</u>		
Analyzed:	<u>10/27/09 22:40</u>		
Initial/Final:	<u>60.23 g / 2 ml</u>		

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q		
12674-11-2	Aroclor 1016	1	3.57	U		
11104-28-2	Aroclor 1221	1	7.18	U		
11141-16-5	Aroclor 1232	1	3.57	U		
53469-21-9	Aroclor 1242	1	3.57	U		
12672-29-6	Aroclor 1248	1	3.57	U		
11097-69-1	Aroclor 1254	1	25.0			
11096-82-5	Aroclor 1260	1	3.57	U		
37324-23-5	Aroclor 1262	1	3.57	U		
11100-14-4	Aroclor 1268	1	3.57	U		
SYSTEM MONITORING COMPOUND		ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Decachlorobiphenyl		3.57	2.37	66.4	16 - 149	

\* Values outside of QC limits

**Form 1**  
**ORGANIC ANALYSIS DATA SHEET**

**SS-409-101909-0**

**EPA 8082**

Laboratory: <u>TestAmerica Portland</u>	SDG: <u>PSJ0657</u>	
Client: <u>CH2M-Hill</u>	Project: <u>NW Pipe Project</u>	
Matrix: <u>Soil</u>	Laboratory ID: <u>PSJ0657-10</u>	File ID: <u>10270936.D</u>
Sampled: <u>10/19/09 12:15</u>	Prepared: <u>10/21/09 11:30</u>	Analyzed: <u>10/27/09 23:02</u>
Solids: <u>81.60</u>	Preparation: <u>EPA 3550</u>	Initial/Final: <u>60.17 g / 2 ml</u>
Batch: <u>9100740</u>	Sequence: <u>9J27005</u>	Calibration: <u>9100902</u> Instrument: <u>GC4 Dual F</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q		
12674-11-2	Aroclor 1016	200	814	UD		
11104-28-2	Aroclor 1221	200	1640	UD		
11141-16-5	Aroclor 1232	200	814	UD		
53469-21-9	Aroclor 1242	200	814	UD		
12672-29-6	Aroclor 1248	200	814	UD		
11097-69-1	Aroclor 1254	200	8740	D		
11096-82-5	Aroclor 1260	200	814	UD		
37324-23-5	Aroclor 1262	200	814	UD		
11100-14-4	Aroclor 1268	200	814	UD		
<b>SYSTEM MONITORING COMPOUND</b>		<b>ADDED (ug/kg dry)</b>	<b>CONC (ug/kg dry)</b>	<b>% REC</b>	<b>QC LIMITS</b>	<b>Q</b>
Decachlorobiphenyl		4.07	0.00		16 - 149	D

\* Values outside of QC limits

Form 1  
**ORGANIC ANALYSIS DATA SHEET**  
EPA 8082

SS-410-101909-0

Laboratory: TestAmerica Portland                                               SDG:                       PSJ0657  
 Client: CH2M-Hill                                                                       Project:                   NW Pipe Project  
 Matrix: Soil                                   Laboratory ID: PSJ0657-11                   File ID:               10270937.D  
 Sampled: 10/19/09 10:15                   Prepared: 10/21/09 11:30                   Analyzed:             10/27/09 23:23  
 Solids: 86.90                                   Preparation: EPA 3550                   Initial/Final:         60.03 g / 2 ml  
 Batch: 9100740               Sequence: 9J27005                   Calibration: 9100902                   Instrument: GC4 Dual F

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)		Q	
12674-11-2	Aroclor 1016	4	15.3		UD	
11104-28-2	Aroclor 1221	4	30.8		UD	
11141-16-5	Aroclor 1232	4	15.3		UD	
53469-21-9	Aroclor 1242	4	15.3		UD	
12672-29-6	Aroclor 1248	4	15.3		UD	
11097-69-1	Aroclor 1254	4	181		D	
11096-82-5	Aroclor 1260	4	15.3		UD	
37324-23-5	Aroclor 1262	4	15.3		UD	
11100-14-4	Aroclor 1268	4	15.3		UD	
SYSTEM MONITORING COMPOUND		ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Decachlorobiphenyl		3.83	2.31	60.2	16 - 149	

\* Values outside of QC limits

**Form 1**  
**ORGANIC ANALYSIS DATA SHEET**  
**EPA 8082**

SS-411-101909-0

Laboratory:	<u>TestAmerica Portland</u>	SDG:	<u>PSJ0657</u>
Client:	<u>CH2M-Hill</u>	Project:	<u>NW Pipe Project</u>
Matrix:	<u>Soil</u>	Laboratory ID:	<u>PSJ0657-12</u>
		File ID:	<u>10270938.D</u>
Sampled:	<u>10/19/09 10:30</u>	Prepared:	<u>10/21/09 11:30</u>
		Analyzed:	<u>10/27/09 23:45</u>
Solids:	<u>85.40</u>	Preparation:	<u>EPA 3550</u>
		Initial/Final:	<u>60.18 g / 2 ml</u>
Batch:	<u>9100740</u>	Sequence:	<u>9J27005</u>
		Calibration:	<u>9100902</u>
		Instrument:	<u>GC4 Dual F</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q		
12674-11-2	Aroclor 1016	50	194	UD		
11104-28-2	Aroclor 1221	50	391	UD		
11141-16-5	Aroclor 1232	50	194	UD		
53469-21-9	Aroclor 1242	50	194	UD		
12672-29-6	Aroclor 1248	50	194	UD		
11097-69-1	Aroclor 1254	50	1140	D		
11096-82-5	Aroclor 1260	50	194	UD		
37324-23-5	Aroclor 1262	50	194	UD		
11100-14-4	Aroclor 1268	50	194	UD		
SYSTEM MONITORING COMPOUND		ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Decachlorobiphenyl		3.89	0.00		16 - 149	D

\* Values outside of QC limits

**Form 1**  
**ORGANIC ANALYSIS DATA SHEET**

SS-411-101909-1

**EPA 8082**

Laboratory: TestAmerica Portland SDG: PSJ0657  
 Client: CH2M-Hill Project: NW Pipe Project  
 Matrix: Soil Laboratory ID: PSJ0657-13 File ID: 10270939.D  
 Sampled: 10/19/09 10:30 Prepared: 10/21/09 11:30 Analyzed: 10/28/09 00:07  
 Solids: 87.70 Preparation: EPA 3550 Initial/Final: 60.07 g / 2 ml  
 Batch: 9100740 Sequence: 9J27005 Calibration: 9100902 Instrument: GC4 Dual F

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)		Q	
12674-11-2	Aroclor 1016	40	152		UD	
11104-28-2	Aroclor 1221	40	305		UD	
11141-16-5	Aroclor 1232	40	152		UD	
53469-21-9	Aroclor 1242	40	152		UD	
12672-29-6	Aroclor 1248	40	152		UD	
11097-69-1	Aroclor 1254	40	948		D	
11096-82-5	Aroclor 1260	40	152		UD	
37324-23-5	Aroclor 1262	40	152		UD	
11100-14-4	Aroclor 1268	40	152		UD	
SYSTEM MONITORING COMPOUND		ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Decachlorobiphenyl		3.80	0.00		16 - 149	D

\* Values outside of QC limits

## **GC Semivolatile Organic Compounds**

### EPA 8082 Preparation Logs

**Form 4**  
**PREPARATION BATCH SUMMARY**  
**EPA 8082**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Batch: 9100740      Batch Matrix: Soil

Preparation: EPA 3550

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	9100740-BLK1	10270932.D	10/21/09 11:30	
LCS	9100740-BS2	10270933.D	10/21/09 11:30	
SS-401-101909-0	PSJ0657-01	10270924.D	10/21/09 11:30	level 3 dp.
SS-402-101909-0	PSJ0657-02	10270925.D	10/21/09 11:30	level 3 dp.
SS-403-101909-0	PSJ0657-03	10300908.D	10/21/09 11:30	level 3 dp.
SS-404-101909-0	PSJ0657-04	10270927.D	10/21/09 11:30	level 3 dp.
SS-405-101909-0	PSJ0657-05	10270928.D	10/21/09 11:30	level 3 dp.
SS-405-101909-2	PSJ0657-06	10270929.D	10/21/09 11:30	level 3 dp, MS/ MSD, or appropriate QC
SS-406-101909-0	PSJ0657-07	10270930.D	10/21/09 11:30	level 3 dp.
SS-407-101909-0	PSJ0657-08	10270931.D	10/21/09 11:30	level 3 dp.
SS-408-101909-0	PSJ0657-09	10270935.D	10/21/09 11:30	level 3 dp.
SS-409-101909-0	PSJ0657-10	10270936.D	10/21/09 11:30	level 3 dp.
SS-410-101909-0	PSJ0657-11	10270937.D	10/21/09 11:30	level 3 dp.
SS-411-101909-0	PSJ0657-12	10270938.D	10/21/09 11:30	level 3 dp.
SS-411-101909-1	PSJ0657-13	10270939.D	10/21/09 11:30	level 3 dp.

QCAR - Organic Prep, Semi-Volatiles

Batch# 9100740 Prep Method/Analysis EPA # 3550 Matrix Soil

7/P JSC

Sample Integrity

Date/Initials

10-21-09 CD

- Is the method appropriate for the sample?
- Is there adequate amount of sample?
- Are the sample containers appropriate?
- Are the samples within hold time? If not fill out a CAR.
- Do sample ID's match the work order?
- Is sample available for MS/MSD?

- Yes  No
- Yes  No
- Yes  No
- Yes  No
- Yes  No
- Yes  No

Extraction

Date/Initials

10-21-09 CD

- Was all glassware triple rinsed with solvent?
- Was the "whole bottle extraction procedure" used if water?

- Yes  No
- Yes  No

Concentration

Final Solvent:

Hexane

Samples transferred into KDs (date/init.) NA

Macro conc. (date/init./temp.) 10/21/09 AG Micro conc. (date/init.) 10/21/09  
75±2°

If applicable:

<input checked="" type="checkbox"/> GPC	_____
<input type="checkbox"/> OPP Soil: poured over Na <sub>2</sub> SO <sub>4</sub> (date/init.)	_____
transferred into KDs (date/init.)	_____
Macro conc. (date/init./temp.) <u>10/26/09 AG</u>	Micro conc. (date/init.) <u>10/26/09 AG</u>

Sample Vialing

75±2

Date/Initials

10/26/09 AG

- Are the samples being brought to their normal final volume?
- Is the solvent level indicated on the ALS vials?
- Was the SOP followed with no deviation? If no, explain below.
- Is the GPC or TCLP log attached (if applicable)?
- Is the paperwork complete, correct and undated in the computer?

- Yes  No
- Yes  No
- Yes  No
- Yes  No
- Yes  No

Comments: 657-07 failed dry 10/26/09 AG  
GPC stopped on 657-07. purged system and re-baked sample  
down to run on GPC 10-22-09 AG

**PREPARATION BENCH SHEET**

Prep method: EPA 3550

Matrix: Soil

**Batch 9100740**

TestAmerica Portland

Surrogate 1: 9090028

Printed: 10/21/2009 7:58:12AM

Lab Number	Analysis	Prepared	Initial (g)	Final (ml)	Spike ID	Spike Amt (uL)	Source ID	Surr 1 (uL)	Surr 2 (uL)	pH	Extraction Comments
9100740-BLK1	QC <sub>2</sub>	10/21/09 07:56	60.04	2				100			
9100740-BS1	QC	10/21/09 07:56	60.02	2	9100030	200		100			
9100740-BS2	QC	10/21/09 07:56	60.32	2	9070273	200		100			
9100740-MS1	QC	10/21/09 07:56	60.02	2	9100030	200	657-4	100			
9100740-MSD1	QC	10/21/09 07:56	60.56	2	9100030	200		100			
PSJ0657-01	JSC 8081A Pest	10/21/09 07:56	60.10	2				100			level 3 dp.
PSJ0657-01	JSC 8082 PCB	10/21/09 07:56	60	2				100			level 3 dp.
PSJ0657-02	JSC 8081A Pest	10/21/09 07:56	60.14	2				100			level 3 dp.
PSJ0657-02	JSC 8082 PCB	10/21/09 07:56	60	2				100			level 3 dp.
PSJ0657-03	JSC 8081A Pest	10/21/09 07:56	60.04	2				100			level 3 dp.
PSJ0657-03	JSC 8082 PCB	10/21/09 07:56	60	2				100			level 3 dp.
PSJ0657-04	JSC 8081A Pest	10/21/09 07:56	60.13	2				100			level 3 dp.
PSJ0657-04	JSC 8082 PCB	10/21/09 07:56	60	2				100			level 3 dp.
PSJ0657-05	JSC 8081A Pest	10/21/09 07:56	60.34	2				100			level 3 dp.
PSJ0657-05	JSC 8082 PCB	10/21/09 07:56	60	2				100			level 3 dp.
PSJ0657-06	JSC 8081A Pest	10/21/09 07:56	60.33	2				100			level 3 dp, MS/ MSD, or appropriate QC
PSJ0657-06	JSC 8082 PCB	10/21/09 07:56	60	2				100			level 3 dp, MS/ MSD, or appropriate QC
PSJ0657-07	JSC 8081A Pest	10/21/09 07:56	60.07	2				100			level 3 dp.
PSJ0657-07	JSC 8082 PCB	10/21/09 07:56	60	2				100			level 3 dp.
PSJ0657-08	JSC 8081A Pest	10/21/09 07:56	60.37	2				100			level 3 dp.
PSJ0657-08	JSC 8082 PCB	10/21/09 07:56	60	2				100			level 3 dp.
PSJ0657-09	JSC 8081A Pest	10/21/09 07:56	60.33	2				100			level 3 dp.
PSJ0657-09	JSC 8082 PCB	10/21/09 07:56	60	2				100			level 3 dp.
PSJ0657-10	JSC 8081A Pest	10/21/09 07:56	60.17	2				100			level 3 dp.
PSJ0657-10	JSC 8082 PCB	10/21/09 07:56	60	2				100			level 3 dp.
PSJ0657-11	JSC 8081A Pest	10/21/09 07:56	60.02	2				100			level 3 dp. Very Wet/Rocks
PSJ0657-11	JSC 8082 PCB	10/21/09 07:56	60	2				100			level 3 dp.
PSJ0657-12	JSC 8081A Pest	10/21/09 07:56	60.18	2				100			level 3 dp. F.B.W.S
PSJ0657-12	JSC 8082 PCB	10/21/09 07:56	60	2				100			level 3 dp.

1820  
 Spiking Witnessed By [Signature] Date 10/21/09  
 Preparation Reviewed By [Signature] Date 10/26/09

11-2-09

**PREPARATION BENCH SHEET**

**Batch 9100740**  
 TestAmerica Portland

Printed: 10/21/2009 7:58:12AM

Prep method: EPA 3550

Matrix: Soil

Surrogate 1: 9090028

Lab Number	Analysis	Prepared	Initial (g)	Final (ml)	Spike ID	Spike Amt (uL)	Source ID	Surr 1 (uL)	Surr 2 (uL)	pH	Extraction Comments
PSJ0657-13	JSC 8081A Pest	10/21/09 07:56	60.07	2				100			level 3 dp.
PSJ0657-13	JSC 8082 PCB	10/21/09 07:56	60.1	2				100			level 3 dp.

Batch Comments:  
 DCM# 100013  
 ACETONE# 9020156  
 GLASSWOOL# 00509001  
 Na2SO4# 085138  
 FILTER PAPER# WHATMAN 41  
 BALANCE ID# NCAP-0087  
 HEXANE# 9100134  
 H2SO4# 9082172

10-21-09 1130 OD

## **GC/MS Semivolatile Organic Compounds**

# ANALYSES DATA PACKAGE COVER PAGE

EPA 8270m

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

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**Client Sample Id:**

SS-401-101909-0  
SS-403-101909-0  
SS-404-101909-0  
SS-404-101909-0  
SS-405-101909-0  
SS-405-101909-2  
SS-406-101909-0  
SS-406-101909-0  
SS-407-101909-0  
SS-408-101909-0  
SS-411-101909-0  
SS-411-101909-0  
SS-411-101909-1  
SS-411-101909-1

**Lab Sample Id:**

PSJ0657-01  
PSJ0657-03  
PSJ0657-04  
PSJ0657-04RE1  
PSJ0657-05  
PSJ0657-06  
PSJ0657-07  
PSJ0657-07RE1  
PSJ0657-08  
PSJ0657-09  
PSJ0657-12  
PSJ0657-12RE1  
PSJ0657-13  
PSJ0657-13RE1

# ANALYSES DATA PACKAGE COVER PAGE

EPA 8270m

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

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**Client Sample Id:**

SS-401-101909-0  
SS-402-101909-0  
SS-402-101909-0  
SS-403-101909-0  
SS-403-101909-0  
SS-404-101909-0  
SS-404-101909-0  
SS-405-101909-0  
SS-405-101909-0  
SS-405-101909-2  
SS-406-101909-0  
SS-407-101909-0  
SS-407-101909-0  
SS-408-101909-0  
SS-408-101909-0  
SS-409-101909-0  
SS-409-101909-0  
SS-410-101909-0  
SS-410-101909-0  
SS-411-101909-0  
SS-411-101909-0  
SS-411-101909-1  
SS-411-101909-1

**Lab Sample Id:**

PSJ0657-01  
PSJ0657-02  
PSJ0657-02RE1  
PSJ0657-03  
PSJ0657-03RE1  
PSJ0657-04  
PSJ0657-04RE1  
PSJ0657-05  
PSJ0657-05RE1  
PSJ0657-06  
PSJ0657-07  
PSJ0657-08  
PSJ0657-08RE1  
PSJ0657-09  
PSJ0657-09RE1  
PSJ0657-10  
PSJ0657-10RE1  
PSJ0657-11  
PSJ0657-11RE1  
PSJ0657-12  
PSJ0657-12RE1  
PSJ0657-13  
PSJ0657-13RE1

## **GC/MS Semivolatile Organic Compounds**

### Target Analyte Results Summaries

**Form 1**  
**ORGANIC ANALYSIS DATA SHEET**

SS-401-101909-0

**EPA 8270m**

Laboratory: <u>TestAmerica Portland</u>	SDG: <u>PSJ0657</u>	Project: <u>NW Pipe Project</u>
Client: <u>CH2M-Hill</u>	Laboratory ID: <u>PSJ0657-01</u>	File ID: <u>10210923.D</u>
Matrix: <u>Soil</u>	Prepared: <u>10/20/09 16:00</u>	Analyzed: <u>10/21/09 23:18</u>
Sampled: <u>10/19/09 11:30</u>	Preparation: <u>EPA 3550</u>	Initial/Final: <u>30.08 g / 2 ml</u>
Solids: <u>90.80</u>	Calibration: <u>9081701</u>	Instrument: <u>SV-5973BF</u>
Batch: <u>9101141</u>	Sequence: <u>9J21005</u>	

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q		
83-32-9	Acenaphthene	1	5.45	J		
208-96-8	Acenaphthylene	1	14.7	U		
120-12-7	Anthracene	1	10.4	J		
56-55-3	Benzo (a) anthracene	1	73.6			
50-32-8	Benzo (a) pyrene	1	78.6			
205-99-2	Benzo (b) fluoranthene	1	91.0			
191-24-2	Benzo (ghi) perylene	1	72.6			
207-08-9	Benzo (k) fluoranthene	1	71.8			
218-01-9	Chrysene	1	94.1			
53-70-3	Dibenzo (a,h) anthracene	1	18.1			
206-44-0	Fluoranthene	1	168			
86-73-7	Fluorene	1	6.23	J		
193-39-5	Indeno (1,2,3-cd) pyrene	1	61.4			
91-20-3	Naphthalene	1	12.3	J		
85-01-8	Phenanthrene	1	77.3			
129-00-0	Pyrene	1	150			
SYSTEM MONITORING COMPOUND		ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Benzo (a) pyrene-d12		91.5	83.1	90.8	38 - 143	
Fluorene-d10		91.5	69.9	76.4	24 - 125	
Pyrene-d10		91.5	79.7	87.1	41 - 141	
INTERNAL STANDARD		AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10		28208	8.9	21823	8.91	
Chrysene-d12		43040	14	42340	14	
Naphthalene-d8		42990	6.75	37650	6.75	
Perylene-d12		42204	15.71	37293	15.72	
Phenanthrene-d10		48851	10.71	38987	10.72	

\* Values outside of QC limits

**Form 1**  
**ORGANIC ANALYSIS DATA SHEET**

SS-401-101909-0

**EPA 8270m**

Laboratory: <u>TestAmerica Portland</u>	SDG: <u>PSJ0657</u>	Project: <u>NW Pipe Project</u>
Client: <u>CH2M-Hill</u>	Laboratory ID: <u>PSJ0657-01</u>	File ID: <u>10220913.D</u>
Matrix: <u>Soil</u>	Prepared: <u>10/20/09 16:00</u>	Analyzed: <u>10/23/09 00:09</u>
Sampled: <u>10/19/09 11:30</u>	Preparation: <u>EPA 3550</u>	Initial/Final: <u>30.08 g / 2 ml</u>
Solids: <u>90.80</u>	Batch: <u>9100711</u>	Instrument: <u>5970</u>
Sequence: <u>9J22016</u>	Calibration: <u>9102702</u>	

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q		
117-81-7	Bis(2-ethylhexyl)phthalate	1	66.8			
85-68-7	Butyl benzyl phthalate	1	382			
84-66-2	Diethyl phthalate	1	29.4	U		
131-11-3	Dimethyl phthalate	1	29.4	U		
84-74-2	Di-n-butyl phthalate	1	29.4	U		
117-84-0	Di-n-octyl phthalate	1	29.4	U		
SYSTEM MONITORING COMPOUND		ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl		183	171	93.5	10 - 150	
p-Terphenyl-d14		183	206	112	10 - 150	
INTERNAL STANDARD		AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10		77671	12.01	66661	12	
Chrysene-d12		109760	18.79	90621	18.79	
Perylene-d12		51810	21.31	74012	21.31	
Phenanthrene-d10		135265	14.42	100121	14.42	

\* Values outside of QC limits

**Form 1  
ORGANIC ANALYSIS DATA SHEET**

SS-402-101909-0

**EPA 8270m**

Laboratory:	<u>TestAmerica Portland</u>	SDG:	PSJ0657
Client:	<u>CH2M-Hill</u>	Project:	<u>NW Pipe Project</u>
Matrix:	<u>Soil</u>	Laboratory ID:	<u>PSJ0657-02</u>
		File ID:	<u>10210908.D</u>
Sampled:	<u>10/19/09 11:40</u>	Prepared:	<u>10/20/09 16:00</u>
		Analyzed:	<u>10/21/09 23:11</u>
Solids:	<u>93.70</u>	Preparation:	<u>EPA 3550</u>
		Initial/Final:	<u>30.34 g / 2 ml</u>
Batch:	<u>9100711</u>	Sequence:	<u>9J21020</u>
		Calibration:	<u>9102702</u>
		Instrument:	<u>5970</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)		Q
117-84-0	Di-n-octyl phthalate	10	283		UD
SYSTEM MONITORING COMPOUND		ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS
					Q
2-Fluorobiphenyl	176	211	120	10 - 150	
p-Terphenyl-d14	176	211	120	10 - 150	
INTERNAL STANDARD		AREA	RT	REF AREA	REF RT
					Q
Acenaphthene-d10	81387	12.03	63503	12.03	
Chrysene-d12	125647	18.81	87324	18.81	
Perylene-d12	101581	21.35	68879	21.35	
Phenanthrene-d10	139863	14.44	96802	14.45	

\* Values outside of QC limits

**Form 1**  
**ORGANIC ANALYSIS DATA SHEET**

SS-402-101909-0
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**EPA 8270m**

Laboratory:	<u>TestAmerica Portland</u>	SDG:	PSJ0657
Client:	<u>CH2M-Hill</u>	Project:	<u>NW Pipe Project</u>
Matrix:	<u>Soil</u>	Laboratory ID:	<u>PSJ0657-02RE1</u>
		File ID:	<u>10230922.D</u>
Sampled:	<u>10/19/09 11:40</u>	Prepared:	<u>10/20/09 16:00</u>
		Analyzed:	<u>10/24/09 00:31</u>
Solids:	<u>93.70</u>	Preparation:	<u>EPA 3550</u>
		Initial/Final:	<u>30.34 g / 2 ml</u>
Batch:	<u>9100711</u>	Sequence:	<u>9J23013</u>
		Calibration:	<u>9102702</u>
		Instrument:	<u>5970</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)		Q	
117-81-7	Bis(2-ethylhexyl)phthalate	5	389		D	
85-68-7	Butyl benzyl phthalate	5	84.6		JD	
84-66-2	Diethyl phthalate	5	141		UD	
131-11-3	Dimethyl phthalate	5	141		UD	
84-74-2	Di-n-butyl phthalate	5	141		UD	
SYSTEM MONITORING COMPOUND		ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl		176	204	116	10 - 150	
p-Terphenyl-d14		176	311	177	10 - 150	*
INTERNAL STANDARD		AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10		81871	11.98	79332	12	
Chrysene-d12		82079	18.76	111960	18.77	
Phenanthrene-d10		138220	14.4	123900	14.41	

\* Values outside of QC limits

**Form 1**  
**ORGANIC ANALYSIS DATA SHEET**

SS-403-101909-0

**EPA 8270m**

Laboratory:	<u>TestAmerica Portland</u>	SDG:	<u>PSJ0657</u>				
Client:	<u>CH2M-Hill</u>	Project:	<u>NW Pipe Project</u>				
Matrix:	<u>Soil</u>	Laboratory ID:	<u>PSJ0657-03</u>	File ID:	<u>10220914.D</u>		
Sampled:	<u>10/19/09 11:50</u>	Prepared:	<u>10/20/09 16:00</u>	Analyzed:	<u>10/22/09 18:49</u>		
Solids:	<u>92.80</u>	Preparation:	<u>EPA 3550</u>	Initial/Final:	<u>30.03 g / 2 ml</u>		
Batch:	<u>9101141</u>	Sequence:	<u>9J22011</u>	Calibration:	<u>9081701</u>	Instrument:	<u>SV-5973BF</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)		Q	
83-32-9	Acenaphthene	1	5.67		J	
208-96-8	Acenaphthylene	1	3.66		J	
120-12-7	Anthracene	1	25.0			
56-55-3	Benzo (a) anthracene	1	376			
50-32-8	Benzo (a) pyrene	1	430			
205-99-2	Benzo (b) fluoranthene	1	506			
191-24-2	Benzo (ghi) perylene	1	371			
207-08-9	Benzo (k) fluoranthene	1	479			
218-01-9	Chrysene	1	510			
53-70-3	Dibenzo (a,h) anthracene	1	105			
206-44-0	Fluoranthene	1	421			
86-73-7	Fluorene	1	4.60		J	
193-39-5	Indeno (1,2,3-cd) pyrene	1	326			
91-20-3	Naphthalene	1	4.46		J	
85-01-8	Phenanthrene	1	77.1			
129-00-0	Pyrene	1	439			
SYSTEM MONITORING COMPOUND		ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Benzo (a) pyrene-d12		89.7	82.9	92.4	38 - 143	
Fluorene-d10		89.7	77.6	86.5	24 - 125	
Pyrene-d10		89.7	73.4	81.8	41 - 141	
INTERNAL STANDARD		AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10		30269	8.89	38310	8.89	
Chrysene-d12		44414	13.99	66561	13.99	
Naphthalene-d8		52364	6.73	62735	6.73	
Perylene-d12		43678	15.7	56425	15.7	
Phenanthrene-d10		48494	10.7	68460	10.7	

\* Values outside of QC limits

**Form 1**  
**ORGANIC ANALYSIS DATA SHEET**

**SS-403-101909-0**

**EPA 8270m**

Laboratory: TestAmerica Portland      SDG: PSJ0657  
 Client: CH2M-Hill      Project: NW Pipe Project  
 Matrix: Soil      Laboratory ID: PSJ0657-03      File ID: 10210909.D  
 Sampled: 10/19/09 11:50      Prepared: 10/20/09 16:00      Analyzed: 10/21/09 23:48  
 Solids: 92.80      Preparation: EPA 3550      Initial/Final: 30.03 g / 2 ml  
 Batch: 9100711      Sequence: 9J21020      Calibration: 9102702      Instrument: 5970

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	
117-84-0	Di-n-octyl phthalate	20	577	UD	
SYSTEM MONITORING COMPOUND	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	179	192	107	10 - 150	
p-Terphenyl-d14	179	185	103	10 - 150	
INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10	75590	12.03	63503	12.03	
Chrysene-d12	117171	18.81	87324	18.81	
Perylene-d12	96221	21.34	68879	21.35	
Phenanthrene-d10	125733	14.44	96802	14.45	

\* Values outside of QC limits

**Form 1**  
**ORGANIC ANALYSIS DATA SHEET**

**SS-403-101909-0**

**EPA 8270m**

Laboratory: TestAmerica Portland SDG: PSJ0657  
 Client: CH2M-Hill Project: NW Pipe Project  
 Matrix: Soil Laboratory ID: PSJ0657-03RE1 File ID: 10220914.D  
 Sampled: 10/19/09 11:50 Prepared: 10/20/09 16:00 Analyzed: 10/23/09 00:45  
 Solids: 92.80 Preparation: EPA 3550 Initial/Final: 30.03 g / 2 ml  
 Batch: 9100711 Sequence: 9J22016 Calibration: 9102702 Instrument: 5970

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	
117-81-7	Bis(2-ethylhexyl)phthalate	1	191		
85-68-7	Butyl benzyl phthalate	1	28.3	J	
84-66-2	Diethyl phthalate	1	28.9	U	
131-11-3	Dimethyl phthalate	1	28.9	U	
84-74-2	Di-n-butyl phthalate	1	28.9	U	
<b>SYSTEM MONITORING COMPOUND</b>	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	179	162	90.2	10 - 150	
p-Terphenyl-d14	179	251	140	10 - 150	
<b>INTERNAL STANDARD</b>	AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10	80143	12.01	66661	12	
Chrysene-d12	79002	18.79	90621	18.79	
Phenanthrene-d10	133252	14.42	100121	14.42	

\* Values outside of QC limits

**Form 1**  
**ORGANIC ANALYSIS DATA SHEET**

SS-404-101909-0

**EPA 8270m**

Laboratory: <u>TestAmerica Portland</u>	SDG: <u>PSJ0657</u>	Project: <u>NW Pipe Project</u>
Client: <u>CH2M-Hill</u>	Laboratory ID: <u>PSJ0657-04</u>	File ID: <u>10210925.D</u>
Matrix: <u>Soil</u>	Prepared: <u>10/20/09 16:00</u>	Analyzed: <u>10/22/09 00:17</u>
Sampled: <u>10/19/09 11:20</u>	Preparation: <u>EPA 3550</u>	Initial/Final: <u>30.14 g / 2 ml</u>
Solids: <u>85.00</u>	Batch: <u>9101141</u>	Instrument: <u>SV-5973BF</u>
Sequence: <u>9J21005</u>	Calibration: <u>9081701</u>	

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q		
83-32-9	Acenaphthene	1	58.9			
208-96-8	Acenaphthylene	1	11.6	J		
86-73-7	Fluorene	1	63.1			
91-20-3	Naphthalene	1	17.1			
SYSTEM MONITORING COMPOUND		ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Benzo (a) pyrene-d12		97.6	81.4	83.4	38 - 143	
Fluorene-d10		97.6	75.8	77.7	24 - 125	
Pyrene-d10		97.6	73.2	75.0	41 - 141	
INTERNAL STANDARD		AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10		28673	8.9	21823	8.91	
Chrysene-d12		56080	14	42340	14	
Naphthalene-d8		45788	6.74	37650	6.75	
Perylene-d12		52667	15.71	37293	15.72	
Phenanthrene-d10		49435	10.71	38987	10.72	

\* Values outside of QC limits

## ORGANIC ANALYSIS DATA SHEET

EPA 8270m

Laboratory: TestAmerica Portland SDG: PSJ0657  
Client: CH2M-Hill Project: NW Pipe Project  
Matrix: Soil Laboratory ID: PSJ0657-04RE1 File ID: 10220915.D  
Sampled: 10/19/09 11:20 Prepared: 10/20/09 16:00 Analyzed: 10/22/09 19:19  
Solids: 85.00 Preparation: EPA 3550 Initial/Final: 30.14 g / 2 ml  
Batch: 9101141 Sequence: 9J22011 Calibration: 9081701 Instrument: SV-5973BF

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	
120-12-7	Anthracene	10	272	D	
56-55-3	Benzo (a) anthracene	10	1780	D	
50-32-8	Benzo (a) pyrene	10	1490	D	
205-99-2	Benzo (b) fluoranthene	10	1670	D	
191-24-2	Benzo (ghi) perylene	10	1050	D	
207-08-9	Benzo (k) fluoranthene	10	1310	D	
218-01-9	Chrysene	10	1980	D	
53-70-3	Dibenzo (a,h) anthracene	10	367	D	
206-44-0	Fluoranthene	10	3450	D	
193-39-5	Indeno (1,2,3-cd) pyrene	10	959	D	
85-01-8	Phenanthrene	10	1380	D	
129-00-0	Pyrene	10	3070	D	
SYSTEM MONITORING COMPOUND	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Benzo (a) pyrene-d12	97.6	90.1	92.4	38 - 143	
Fluorene-d10	97.6	79.4	81.4	24 - 125	
Pyrene-d10	97.6	87.5	89.7	41 - 141	
INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10	27316	8.89	38310	8.89	
Chrysene-d12	37893	13.99	66561	13.99	
Naphthalene-d8	40781	6.73	62735	6.73	
Perylene-d12	41529	15.7	56425	15.7	
Phenanthrene-d10	46793	10.7	68460	10.7	

\* Values outside of QC limits

**Form 1**  
**ORGANIC ANALYSIS DATA SHEET**

SS-404-101909-0

**EPA 8270m**

Laboratory: <u>TestAmerica Portland</u>	SDG: <u>PSJ0657</u>		
Client: <u>CH2M-Hill</u>	Project: <u>NW Pipe Project</u>		
Matrix: <u>Soil</u>	Laboratory ID: <u>PSJ0657-04</u>	File ID: <u>10210920.D</u>	
Sampled: <u>10/19/09 11:20</u>	Prepared: <u>10/20/09 16:00</u>	Analyzed: <u>10/22/09 06:23</u>	
Solids: <u>85.00</u>	Preparation: <u>EPA 3550</u>	Initial/Final: <u>30.14 g / 2 ml</u>	
Batch: <u>9100711</u>	Sequence: <u>9J21020</u>	Calibration: <u>9102702</u>	Instrument: <u>5970</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q		
117-84-0	Di-n-octyl phthalate	10	314	UD		
SYSTEM MONITORING COMPOUND		ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
	2-Fluorobiphenyl	195	185	94.8	10 - 150	
	p-Terphenyl-d14	195	192	98.1	10 - 150	
INTERNAL STANDARD		AREA	RT	REF AREA	REF RT	Q
	Acenaphthene-d10	70462	12.02	63503	12.03	
	Chrysene-d12	116725	18.81	87324	18.81	
	Perylene-d12	77909	21.34	68879	21.35	
	Phenanthrene-d10	124608	14.44	96802	14.45	

\* Values outside of QC limits

**Form 1**  
**ORGANIC ANALYSIS DATA SHEET**

SS-404-101909-0
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**EPA 8270m**

Laboratory:	<u>TestAmerica Portland</u>	SDG:	<u>PSJ0657</u>
Client:	<u>CH2M-Hill</u>	Project:	<u>NW Pipe Project</u>
Matrix:	<u>Soil</u>	Laboratory ID:	<u>PSJ0657-04RE1</u>
Sampled:	<u>10/19/09 11:20</u>	Prepared:	<u>10/20/09 16:00</u>
Solids:	<u>85.00</u>	Preparation:	<u>EPA 3550</u>
Batch:	<u>9100711</u>	Sequence:	<u>9J22016</u>
		Calibration:	<u>9102702</u>
		Instrument:	<u>5970</u>
		File ID:	<u>10220918.D</u>
		Analyzed:	<u>10/23/09 03:09</u>
		Initial/Final:	<u>30.14 g / 2 ml</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)		Q	
117-81-7	Bis(2-ethylhexyl)phthalate	2	325		D	
85-68-7	Butyl benzyl phthalate	2	75.0		D	
84-66-2	Diethyl phthalate	2	62.8		UD	
131-11-3	Dimethyl phthalate	2	62.8		UD	
84-74-2	Di-n-butyl phthalate	2	62.8		UD	
SYSTEM MONITORING COMPOUND		ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl		195	179	91.8	10 - 150	
p-Terphenyl-d14		195	288	148	10 - 150	
INTERNAL STANDARD		AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10		83235	12.01	66661	12	
Chrysene-d12		81283	18.79	90621	18.79	
Phenanthrene-d10		144817	14.42	100121	14.42	

\* Values outside of QC limits

**Form 1**  
**ORGANIC ANALYSIS DATA SHEET**

SS-405-101909-0

**EPA 8270m**

Laboratory: <u>TestAmerica Portland</u>	SDG: <u>PSJ0657</u>	Project: <u>NW Pipe Project</u>
Client: <u>CH2M-Hill</u>	Laboratory ID: <u>PSJ0657-05</u>	File ID: <u>10220916.D</u>
Matrix: <u>Soil</u>	Prepared: <u>10/20/09 16:00</u>	Analyzed: <u>10/22/09 19:48</u>
Sampled: <u>10/19/09 11:00</u>	Preparation: <u>EPA 3550</u>	Initial/Final: <u>30.08 g / 2 ml</u>
Solids: <u>87.30</u>	Batch: <u>9101141</u>	Instrument: <u>SV-5973BF</u>
Sequence: <u>9J22011</u>	Calibration: <u>9081701</u>	

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	
83-32-9	Acenaphthene	4	33.9	JD	
208-96-8	Acenaphthylene	4	276	D	
120-12-7	Anthracene	4	413	D	
56-55-3	Benzo (a) anthracene	4	1670	D	
50-32-8	Benzo (a) pyrene	4	1550	D	
205-99-2	Benzo (b) fluoranthene	4	2180	D	
191-24-2	Benzo (ghi) perylene	4	1180	D	
207-08-9	Benzo (k) fluoranthene	4	1710	D	
218-01-9	Chrysene	4	2090	D	
53-70-3	Dibenzo (a,h) anthracene	4	451	D	
206-44-0	Fluoranthene	4	1680	D	
86-73-7	Fluorene	4	38.7	JD	
193-39-5	Indeno (1,2,3-cd) pyrene	4	1160	D	
91-20-3	Naphthalene	4	17.8	JD	
85-01-8	Phenanthrene	4	462	D	
129-00-0	Pyrene	4	1700	D	
SYSTEM MONITORING COMPOUND	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Benzo (a) pyrene-d12	95.2	83.0	87.2	38 - 143	
Fluorene-d10	95.2	82.6	86.7	24 - 125	
Pyrene-d10	95.2	85.6	89.9	41 - 141	
INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10	28768	8.89	38310	8.89	
Chrysene-d12	42532	13.99	66561	13.99	
Naphthalene-d8	42861	6.73	62735	6.73	
Perylene-d12	49943	15.7	56425	15.7	
Phenanthrene-d10	50146	10.7	68460	10.7	

\* Values outside of QC limits

**Form 1**  
**ORGANIC ANALYSIS DATA SHEET**

<b>SS-405-101909-0</b>
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**EPA 8270m**

Laboratory: <u>TestAmerica Portland</u>	SDG: <u>PSJ0657</u>	
Client: <u>CH2M-Hill</u>	Project: <u>NW Pipe Project</u>	
Matrix: <u>Soil</u>	Laboratory ID: <u>PSJ0657-05</u>	File ID: <u>10210910.D</u>
Sampled: <u>10/19/09 11:00</u>	Prepared: <u>10/20/09 16:00</u>	Analyzed: <u>10/22/09 00:24</u>
Solids: <u>87.30</u>	Preparation: <u>EPA 3550</u>	Initial/Final: <u>30.08 g / 2 ml</u>
Batch: <u>9100711</u>	Sequence: <u>9J21020</u>	Calibration: <u>9102702</u>
		Instrument: <u>5970</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q
117-84-0	Di-n-octyl phthalate	25	765	UD
<b>SYSTEM MONITORING COMPOUND</b>				<b>Q</b>
	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS
2-Fluorobiphenyl	190	198	104	10 - 150 D
p-Terphenyl-d14	190	202	106	10 - 150 D
<b>INTERNAL STANDARD</b>				<b>Q</b>
	AREA	RT	REF AREA	REF RT
Acenaphthene-d10	75115	12.02	63503	12.03
Chrysene-d12	123657	18.81	87324	18.81
Perylene-d12	104527	21.35	68879	21.35
Phenanthrene-d10	126675	14.44	96802	14.45

\* Values outside of QC limits

**Form 1**  
**ORGANIC ANALYSIS DATA SHEET**

SS-405-101909-0

**EPA 8270m**

Laboratory: TestAmerica Portland                                                  SDG:                          PSJ0657  
 Client: CH2M-Hill                                                                          Project: NW Pipe Project  
 Matrix: Soil                                                  Laboratory ID: PSJ0657-05RE1                          File ID: 10230921.D  
 Sampled: 10/19/09 11:00                          Prepared: 10/20/09 16:00                          Analyzed: 10/23/09 23:55  
 Solids: 87.30                                                  Preparation: EPA 3550                          Initial/Final: 30.08 g / 2 ml  
 Batch: 9100711                          Sequence: 9J23013                          Calibration: 9102702                          Instrument: 5970

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)		Q	
117-81-7	Bis(2-ethylhexyl)phthalate	2	139		D	
85-68-7	Butyl benzyl phthalate	2	37.3		JD	
84-66-2	Diethyl phthalate	2	61.2		UD	
131-11-3	Dimethyl phthalate	2	61.2		UD	
84-74-2	Di-n-butyl phthalate	2	61.2		UD	
SYSTEM MONITORING COMPOUND		ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl		190	171	89.6	10 - 150	
p-Terphenyl-d14		190	249	131	10 - 150	
INTERNAL STANDARD		AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10		90424	11.98	79332	12	
Chrysene-d12		99526	18.77	111960	18.77	
Phenanthrene-d10		151693	14.39	123900	14.41	

\* Values outside of QC limits

**Form 1**  
**ORGANIC ANALYSIS DATA SHEET**

SS-405-101909-2

**EPA 8270m**

Laboratory: <u>TestAmerica Portland</u>	SDG: PSJ0657	Project: <u>NW Pipe Project</u>
Client: <u>CH2M-Hill</u>	Laboratory ID: <u>PSJ0657-06</u>	File ID: <u>10210911.D</u>
Matrix: <u>Soil</u>	Prepared: <u>10/20/09 16:00</u>	Analyzed: <u>10/21/09 17:23</u>
Sampled: <u>10/19/09 11:00</u>	Preparation: <u>EPA 3550</u>	Initial/Final: <u>30.08 g / 2 ml</u>
Solids: <u>90.20</u>	Batch: <u>9101141</u>	Instrument: <u>SV-5973BF</u>
Sequence: <u>9J21005</u>	Calibration: <u>9081701</u>	

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	
83-32-9	Acenaphthene	4	31.1	JD	
208-96-8	Acenaphthylene	4	310	D	
120-12-7	Anthracene	4	426	D	
56-55-3	Benzo (a) anthracene	4	956	D	
50-32-8	Benzo (a) pyrene	4	1010	D	
205-99-2	Benzo (b) fluoranthene	4	1490	D	
191-24-2	Benzo (ghi) perylene	4	1180	D	
207-08-9	Benzo (k) fluoranthene	4	1110	D	
218-01-9	Chrysene	4	1220	D	
53-70-3	Dibenzo (a,h) anthracene	4	384	D	
206-44-0	Fluoranthene	4	1250	D	
86-73-7	Fluorene	4	32.6	JD	
193-39-5	Indeno (1,2,3-cd) pyrene	4	1060	D	
91-20-3	Naphthalene	4	59.3	UD	
85-01-8	Phenanthrene	4	368	D	
129-00-0	Pyrene	4	1080	D	
SYSTEM MONITORING COMPOUND	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Benzo (a) pyrene-d12	92.1	82.7	89.8	38 - 143	
Fluorene-d10	92.1	84.2	91.4	24 - 125	
Pyrene-d10	92.1	84.1	91.2	41 - 141	
INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10	16995	8.91	21823	8.91	
Chrysene-d12	28564	14	42340	14	
Naphthalene-d8	25293	6.75	37650	6.75	
Perylene-d12	35285	15.72	37293	15.72	
Phenanthrene-d10	31035	10.71	38987	10.72	

\* Values outside of QC limits

# Form 1 ORGANIC ANALYSIS DATA SHEET

SS-405-101909-2

## EPA 8270m

Laboratory: <u>TestAmerica Portland</u>	SDG: <u>PSJ0657</u>	Project: <u>NW Pipe Project</u>
Client: <u>CH2M-Hill</u>	Laboratory ID: <u>PSJ0657-06</u>	File ID: <u>10220912.D</u>
Matrix: <u>Soil</u>	Prepared: <u>10/20/09 16:00</u>	Analyzed: <u>10/22/09 23:33</u>
Sampled: <u>10/19/09 11:00</u>	Preparation: <u>EPA 3550</u>	Initial/Final: <u>30.08 g / 2 ml</u>
Solids: <u>90.20</u>	Batch: <u>9100711</u>	Instrument: <u>5970</u>
Sequence: <u>9J22016</u>	Calibration: <u>9102702</u>	

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	
117-81-7	Bis(2-ethylhexyl)phthalate	2	95.2	D	
85-68-7	Butyl benzyl phthalate	2	37.6	JD	
84-66-2	Diethyl phthalate	2	59.3	UD	
131-11-3	Dimethyl phthalate	2	59.3	UD	
84-74-2	Di-n-butyl phthalate	2	59.3	UD	
117-84-0	Di-n-octyl phthalate	2	59.3	UD	
SYSTEM MONITORING COMPOUND		ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS
2-Fluorobiphenyl		184	160	86.6	10 - 150
p-Terphenyl-d14		184	198	107	10 - 150
INTERNAL STANDARD		AREA	RT	REF AREA	REF RT
Acenaphthene-d10		82252	12	66661	12
Chrysene-d12		107171	18.79	90621	18.79
Perylene-d12		51772	21.31	74012	21.31
Phenanthrene-d10		140315	14.42	100121	14.42

\* Values outside of QC limits

# Form 1 ORGANIC ANALYSIS DATA SHEET

SS-406-101909-0

## EPA 8270m

Laboratory: TestAmerica Portland                                                  SDG:                          PSJ0657  
Client: CH2M-Hill                                                                          Project: NW Pipe Project  
Matrix: Soil                                                  Laboratory ID: PSJ0657-07                          File ID: 10220917.D  
Sampled: 10/19/09 12:05                          Prepared: 10/20/09 16:00                          Analyzed: 10/22/09 20:18  
Solids: 89.70                                                  Preparation: EPA 3550                          Initial/Final: 3.27 g / 2 ml  
Batch: 9101141                          Sequence: 9J22011                          Calibration: 9081701                          Instrument: SV-5973BF

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)		Q
83-32-9	Acenaphthene	1	49.8		J
208-96-8	Acenaphthylene	1	84.6		J
120-12-7	Anthracene	1	156		
206-44-0	Fluoranthene	1	1780		
86-73-7	Fluorene	1	58.2		J
91-20-3	Naphthalene	1	139		
85-01-8	Phenanthrene	1	443		
SYSTEM MONITORING COMPOUND	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Benzo (a) pyrene-d12	852	748	87.7	38 - 143	
Fluorene-d10	852	761	89.3	24 - 125	
Pyrene-d10	852	739	86.7	41 - 141	
INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10	28360	8.89	38310	8.89	
Chrysene-d12	63321	14.02	66561	13.99	
Naphthalene-d8	46362	6.73	62735	6.73	
Perylene-d12	53005	15.77	56425	15.7	
Phenanthrene-d10	44590	10.7	68460	10.7	

\* Values outside of QC limits

**Form 1**  
**ORGANIC ANALYSIS DATA SHEET**

SS-406-101909-0

**EPA 8270m**

Laboratory:	<u>TestAmerica Portland</u>	SDG:	<u>PSJ0657</u>				
Client:	<u>CH2M-Hill</u>	Project:	<u>NW Pipe Project</u>				
Matrix:	<u>Soil</u>	Laboratory ID:	<u>PSJ0657-07RE1</u>	File ID:	<u>10260908.D</u>		
Sampled:	<u>10/19/09 12:05</u>	Prepared:	<u>10/20/09 16:00</u>	Analyzed:	<u>10/26/09 12:07</u>		
Solids:	<u>89.70</u>	Preparation:	<u>EPA 3550</u>	Initial/Final:	<u>3.27 g / 2 ml</u>		
Batch:	<u>9101141</u>	Sequence:	<u>9J26003</u>	Calibration:	<u>9081701</u>	Instrument:	<u>SV-5973BF</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)		Q
120-12-7	Anthracene	3	125		JD
56-55-3	Benzo (a) anthracene	3	545		D
50-32-8	Benzo (a) pyrene	3	274		JD
205-99-2	Benzo (b) fluoranthene	3	2160		D
191-24-2	Benzo (ghi) perylene	3	1800		D
207-08-9	Benzo (k) fluoranthene	3	1790		D
218-01-9	Chrysene	3	1640		D
53-70-3	Dibenzo (a,h) anthracene	3	290		JD
206-44-0	Fluoranthene	3	1370		D
193-39-5	Indeno (1,2,3-cd) pyrene	3	1140		D
85-01-8	Phenanthrene	3	450		D
129-00-0	Pyrene	3	1900		D
SYSTEM MONITORING COMPOUND	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Benzo (a) pyrene-d12	852	866	102	38 - 143	
Fluorene-d10	852	738	86.6	24 - 125	
Pyrene-d10	852	631	74.0	41 - 141	
INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10	29329	8.89	38718	8.89	
Chrysene-d12	54037	13.99	58301	13.98	
Naphthalene-d8	46827	6.73	62464	6.73	
Perylene-d12	48996	15.71	48194	15.69	
Phenanthrene-d10	42157	10.69	67126	10.69	

\* Values outside of QC limits

**Form 1  
ORGANIC ANALYSIS DATA SHEET**

**SS-406-101909-0**

**EPA 8270m**

Laboratory: TestAmerica Portland SDG: PSJ0657  
 Client: CH2M-Hill Project: NW Pipe Project  
 Matrix: Soil Laboratory ID: PSJ0657-07 File ID: 10210911.D  
 Sampled: 10/19/09 12:05 Prepared: 10/20/09 16:00 Analyzed: 10/22/09 01:00  
 Solids: 89.70 Preparation: EPA 3550 Initial/Final: 30.27 g / 2 ml  
 Batch: 9100711 Sequence: 9J21020 Calibration: 9102702 Instrument: 5970

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)		Q	
117-81-7	Bis(2-ethylhexyl)phthalate	10	335		D	
85-68-7	Butyl benzyl phthalate	10	296		UD	
84-66-2	Diethyl phthalate	10	296		UD	
131-11-3	Dimethyl phthalate	10	296		UD	
84-74-2	Di-n-butyl phthalate	10	296		UD	
117-84-0	Di-n-octyl phthalate	10	296		UD	
SYSTEM MONITORING COMPOUND		ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl		184	179	97.4	10 - 150	
p-Terphenyl-d14		184	230	125	10 - 150	
INTERNAL STANDARD		AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10		74083	12.03	63503	12.03	
Chrysene-d12		84956	18.81	87324	18.81	
Perylene-d12		47725	21.35	68879	21.35	
Phenanthrene-d10		128983	14.44	96802	14.45	

\* Values outside of QC limits

**Form 1**  
**ORGANIC ANALYSIS DATA SHEET**

SS-407-101909-0

**EPA 8270m**

Laboratory: <u>TestAmerica Portland</u>	SDG: <u>PSJ0657</u>	Project: <u>NW Pipe Project</u>
Client: <u>CH2M-Hill</u>	Laboratory ID: <u>PSJ0657-08</u>	File ID: <u>10220918.D</u>
Matrix: <u>Soil</u>	Prepared: <u>10/20/09 16:00</u>	Analyzed: <u>10/22/09 20:47</u>
Sampled: <u>10/19/09 10:55</u>	Preparation: <u>EPA 3550</u>	Initial/Final: <u>30.33 g / 2 ml</u>
Solids: <u>87.50</u>	Batch: <u>9101141</u>	Instrument: <u>SV-5973BF</u>
Sequence: <u>9J22011</u>	Calibration: <u>9081701</u>	

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	
83-32-9	Acenaphthene	1	15.6		
208-96-8	Acenaphthylene	1	16.3		
120-12-7	Anthracene	1	41.1		
56-55-3	Benzo (a) anthracene	1	252		
50-32-8	Benzo (a) pyrene	1	257		
205-99-2	Benzo (b) fluoranthene	1	375		
191-24-2	Benzo (ghi) perylene	1	218		
207-08-9	Benzo (k) fluoranthene	1	223		
218-01-9	Chrysene	1	339		
53-70-3	Dibenzo (a,h) anthracene	1	63.0		
206-44-0	Fluoranthene	1	457		
86-73-7	Fluorene	1	9.44	J	
193-39-5	Indeno (1,2,3-cd) pyrene	1	199		
91-20-3	Naphthalene	1	7.50	J	
85-01-8	Phenanthrene	1	143		
129-00-0	Pyrene	1	283		
SYSTEM MONITORING COMPOUND	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Benzo (a) pyrene-d12	94.2	66.7	70.8	38 - 143	
Fluorene-d10	94.2	84.8	90.0	24 - 125	
Pyrene-d10	94.2	64.1	68.0	41 - 141	
INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10	29771	8.9	38310	8.89	
Chrysene-d12	74508	13.99	66561	13.99	
Naphthalene-d8	53529	6.73	62735	6.73	
Perylene-d12	84055	15.71	56425	15.7	
Phenanthrene-d10	52291	10.7	68460	10.7	

\* Values outside of QC limits

Form 1  
**ORGANIC ANALYSIS DATA SHEET**

SS-407-101909-0
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**EPA 8270m**

Laboratory: <u>TestAmerica Portland</u>	SDG: <u>PSJ0657</u>		
Client: <u>CH2M-Hill</u>	Project: <u>NW Pipe Project</u>		
Matrix: <u>Soil</u>	Laboratory ID: <u>PSJ0657-08</u>	File ID: <u>10210912.D</u>	
Sampled: <u>10/19/09 10:55</u>	Prepared: <u>10/20/09 16:00</u>	Analyzed: <u>10/22/09 01:35</u>	
Solids: <u>87.50</u>	Preparation: <u>EPA 3550</u>	Initial/Final: <u>30.33 g / 2 ml</u>	
Batch: <u>9100711</u>	Sequence: <u>9J21020</u>	Calibration: <u>9102702</u>	Instrument: <u>5970</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)		Q
117-84-0	Di-n-octyl phthalate	10	303		UD
SYSTEM MONITORING COMPOUND	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	188	187	99.2	10 - 150	
p-Terphenyl-d14	188	192	102	10 - 150	
INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10	71513	12.03	63503	12.03	
Chrysene-d12	113197	18.81	87324	18.81	
Perylene-d12	89886	21.34	68879	21.35	
Phenanthrene-d10	121367	14.44	96802	14.45	

\* Values outside of QC limits

**Form 1**  
**ORGANIC ANALYSIS DATA SHEET**

SS-407-101909-0

**EPA 8270m**

Laboratory:	<u>TestAmerica Portland</u>	SDG:	PSJ0657				
Client:	<u>CH2M-Hill</u>	Project:	<u>NW Pipe Project</u>				
Matrix:	<u>Soil</u>	Laboratory ID:	<u>PSJ0657-08RE1</u>	File ID:	<u>10220915.D</u>		
Sampled:	<u>10/19/09 10:55</u>	Prepared:	<u>10/20/09 16:00</u>	Analyzed:	<u>10/23/09 01:21</u>		
Solids:	<u>87.50</u>	Preparation:	<u>EPA 3550</u>	Initial/Final:	<u>30.33 g / 2 ml</u>		
Batch:	<u>9100711</u>	Sequence:	<u>9J22016</u>	Calibration:	<u>9102702</u>	Instrument:	<u>5970</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)		Q	
117-81-7	Bis(2-ethylhexyl)phthalate	1	467			
85-68-7	Butyl benzyl phthalate	1	31.0			
84-66-2	Diethyl phthalate	1	30.3		U	
131-11-3	Dimethyl phthalate	1	30.3		U	
84-74-2	Di-n-butyl phthalate	1	30.3		U	
SYSTEM MONITORING COMPOUND		ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl		188	164	87.2	10 - 150	
p-Terphenyl-d14		188	257	136	10 - 150	
INTERNAL STANDARD		AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10		82547	12.01	66661	12	
Chrysene-d12		82195	18.79	90621	18.79	
Phenanthrene-d10		140929	14.42	100121	14.42	

\* Values outside of QC limits

**Form 1**  
**ORGANIC ANALYSIS DATA SHEET**

SS-408-101909-0

**EPA 8270m**

Laboratory:	<u>TestAmerica Portland</u>	SDG:	PSJ0657				
Client:	<u>CH2M-Hill</u>	Project:	<u>NW Pipe Project</u>				
Matrix:	<u>Soil</u>	Laboratory ID:	<u>PSJ0657-09</u>	File ID:	<u>10220919.D</u>		
Sampled:	<u>10/19/09 10:45</u>	Prepared:	<u>10/20/09 16:00</u>	Analyzed:	<u>10/22/09 21:17</u>		
Solids:	<u>92.90</u>	Preparation:	<u>EPA 3550</u>	Initial/Final:	<u>30.11 g / 2 ml</u>		
Batch:	<u>9101141</u>	Sequence:	<u>9J22011</u>	Calibration:	<u>9081701</u>	Instrument:	<u>SV-5973BF</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)		Q
83-32-9	Acenaphthene	1	14.4		U
208-96-8	Acenaphthylene	1	5.45		J
120-12-7	Anthracene	1	11.2		J
56-55-3	Benzo (a) anthracene	1	41.1		
50-32-8	Benzo (a) pyrene	1	51.5		
205-99-2	Benzo (b) fluoranthene	1	96.5		
191-24-2	Benzo (ghi) perylene	1	62.8		
207-08-9	Benzo (k) fluoranthene	1	68.7		
218-01-9	Chrysene	1	68.5		
53-70-3	Dibenzo (a,h) anthracene	1	16.3		
206-44-0	Fluoranthene	1	70.1		
86-73-7	Fluorene	1	14.4		U
193-39-5	Indeno (1,2,3-cd) pyrene	1	51.8		
91-20-3	Naphthalene	1	14.4		U
85-01-8	Phenanthrene	1	18.4		
129-00-0	Pyrene	1	63.3		
SYSTEM MONITORING COMPOUND	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Benzo (a) pyrene-d12	89.4	84.1	94.1	38 - 143	
Fluorene-d10	89.4	73.6	82.3	24 - 125	
Pyrene-d10	89.4	75.8	84.9	41 - 141	
INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10	31308	8.89	38310	8.89	
Chrysene-d12	51273	13.99	66561	13.99	
Naphthalene-d8	52079	6.73	62735	6.73	
Perylene-d12	47639	15.7	56425	15.7	
Phenanthrene-d10	51190	10.7	68460	10.7	

\* Values outside of QC limits

**Form 1**  
**ORGANIC ANALYSIS DATA SHEET**

SS-408-101909-0

**EPA 8270m**

Laboratory: TestAmerica Portland                                                          SDG:                                  PSJ0657  
Client: CH2M-Hill                                                                                              Project:                              NW Pipe Project  
Matrix: Soil                                                                                              Laboratory ID: PSJ0657-09                                  File ID:                              10210913.D  
Sampled: 10/19/09 10:45                                                                                  Prepared:                              10/20/09 16:00                                                              Analyzed:                              10/22/09 02:11  
Solids: 92.90                                                                                                          Preparation:                              EPA 3550                                                              Initial/Final:                              30.11 g / 2 ml  
Batch: 9100711                                  Sequence: 9J21020                                  Calibration: 9102702                                  Instrument: 5970

CAS NO.	COMPOUND		DILUTION	CONC. (ug/kg dry)		Q
117-84-0	Di-n-octyl phthalate		10	287		UD
SYSTEM MONITORING COMPOUND		ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
	2-Fluorobiphenyl	179	166	93.1	10 - 150	
	p-Terphenyl-d14	179	175	98.0	10 - 150	
INTERNAL STANDARD		AREA	RT	REF AREA	REF RT	Q
	Acenaphthene-d10	68924	12.03	63503	12.03	
	Chrysene-d12	105542	18.81	87324	18.81	
	Perylene-d12	81261	21.34	68879	21.35	
	Phenanthrene-d10	114480	14.44	96802	14.45	

\* Values outside of QC limits

Form 1  
ORGANIC ANALYSIS DATA SHEET

SS-408-101909-0

EPA 8270m

Laboratory: TestAmerica Portland SDG: PSJ0657  
Client: CH2M-Hill Project: NW Pipe Project  
Matrix: Soil Laboratory ID: PSJ0657-09RE1 File ID: 10220916.D  
Sampled: 10/19/09 10:45 Prepared: 10/20/09 16:00 Analyzed: 10/23/09 01:57  
Solids: 92.90 Preparation: EPA 3550 Initial/Final: 30.11 g / 2 ml  
Batch: 9100711 Sequence: 9J22016 Calibration: 9102702 Instrument: 5970

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)		Q	
117-81-7	Bis(2-ethylhexyl)phthalate	1	60.3			
85-68-7	Butyl benzyl phthalate	1	14.5		J	
84-66-2	Diethyl phthalate	1	28.7		U	
131-11-3	Dimethyl phthalate	1	28.7		U	
84-74-2	Di-n-butyl phthalate	1	28.7		U	
SYSTEM MONITORING COMPOUND		ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl		179	149	83.3	10 - 150	
p-Terphenyl-d14		179	219	122	10 - 150	
INTERNAL STANDARD		AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10		82441	12.01	66661	12	
Chrysene-d12		89200	18.79	90621	18.79	
Phenanthrene-d10		140777	14.42	100121	14.42	

\* Values outside of QC limits



**Form 1**  
**ORGANIC ANALYSIS DATA SHEET**

**SS-409-101909-0**

**EPA 8270m**

Laboratory: TestAmerica Portland SDG: PSJ0657  
 Client: CH2M-Hill Project: NW Pipe Project  
 Matrix: Soil Laboratory ID: PSJ0657-10RE1 File ID: 10230918.D  
 Sampled: 10/19/09 12:15 Prepared: 10/20/09 16:00 Analyzed: 10/23/09 22:07  
 Solids: 81.60 Preparation: EPA 3550 Initial/Final: 30.17 g / 2 ml  
 Batch: 9100711 Sequence: 9J23013 Calibration: 9102702 Instrument: 5970

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)		Q	
117-81-7	Bis(2-ethylhexyl)phthalate	10	667		D	
85-68-7	Butyl benzyl phthalate	10	327		UD	
84-66-2	Diethyl phthalate	10	327		UD	
131-11-3	Dimethyl phthalate	10	327		UD	
84-74-2	Di-n-butyl phthalate	10	327		UD	
SYSTEM MONITORING COMPOUND		ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl		203	216	106	10 - 150	
p-Terphenyl-d14		203	262	129	10 - 150	
INTERNAL STANDARD		AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10		91196	11.99	79332	12	
Chrysene-d12		124415	18.78	111960	18.77	
Phenanthrene-d10		153669	14.4	123900	14.41	

\* Values outside of QC limits

**Form 1**  
**ORGANIC ANALYSIS DATA SHEET**  
**EPA 8270m**

**SS-410-101909-0**

Laboratory: TestAmerica Portland SDG: PSJ0657  
 Client: CH2M-Hill Project: NW Pipe Project  
 Matrix: Soil Laboratory ID: PSJ0657-11 File ID: 10210915.D  
 Sampled: 10/19/09 10:15 Prepared: 10/20/09 16:00 Analyzed: 10/22/09 03:23  
 Solids: 86.90 Preparation: EPA 3550 Initial/Final: 30.32 g / 2 ml  
 Batch: 9100711 Sequence: 9J21020 Calibration: 9102702 Instrument: 5970

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	
117-84-0	Di-n-octyl phthalate	20	610	UD	
SYSTEM MONITORING COMPOUND	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	190	193	102	10 - 150	
p-Terphenyl-d14	190	227	120	10 - 150	
INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10	70684	12.03	63503	12.03	
Chrysene-d12	114365	18.81	87324	18.81	
Perylene-d12	83541	21.34	68879	21.35	
Phenanthrene-d10	121152	14.44	96802	14.45	

\* Values outside of QC limits

## ORGANIC ANALYSIS DATA SHEET

## EPA 8270m

Laboratory: TestAmerica Portland SDG: PSJ0657  
 Client: CH2M-Hill Project: NW Pipe Project  
 Matrix: Soil Laboratory ID: PSJ0657-11RE1 File ID: 10220917.D  
 Sampled: 10/19/09 10:15 Prepared: 10/20/09 16:00 Analyzed: 10/23/09 02:33  
 Solids: 86.90 Preparation: EPA 3550 Initial/Final: 30.32 g / 2 ml  
 Batch: 9100711 Sequence: 9J22016 Calibration: 9102702 Instrument: 5970

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)		Q
117-81-7	Bis(2-ethylhexyl)phthalate	1	178		
85-68-7	Butyl benzyl phthalate	1	49.2		
84-66-2	Diethyl phthalate	1	30.5		U
131-11-3	Dimethyl phthalate	1	30.5		U
84-74-2	Di-n-butyl phthalate	1	30.5		U
SYSTEM MONITORING COMPOUND	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	190	156	82.3	10 - 150	
p-Terphenyl-d14	190	284	150	10 - 150	
INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10	88612	12.01	66661	12	
Chrysene-d12	82939	18.79	90621	18.79	
Phenanthrene-d10	152760	14.42	100121	14.42	

\* Values outside of QC limits

Form 1  
**ORGANIC ANALYSIS DATA SHEET**

SS-411-101909-0

**EPA 8270m**

Laboratory: TestAmerica Portland SDG: PSJ0657  
Client: CH2M-Hill Project: NW Pipe Project  
Matrix: Soil Laboratory ID: PSJ0657-12 File ID: 10220920.D  
Sampled: 10/19/09 10:30 Prepared: 10/20/09 16:00 Analyzed: 10/22/09 21:46  
Solids: 85.40 Preparation: EPA 3550 Initial/Final: 30.06 g / 2 ml  
Batch: 9101141 Sequence: 9J22011 Calibration: 9081701 Instrument: SV-5973BF

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)		Q	
83-32-9	Acenaphthene	10	2020		D	
208-96-8	Acenaphthylene	10	197		D	
86-73-7	Fluorene	10	2130		D	
91-20-3	Naphthalene	10	631		D	
SYSTEM MONITORING COMPOUND		ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Fluorene-d10		97.4	91.7	94.2	24 - 125	
INTERNAL STANDARD		AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10		28588	8.89	38310	8.89	
Naphthalene-d8		46650	6.73	62735	6.73	

\* Values outside of QC limits

**Form 1**  
**ORGANIC ANALYSIS DATA SHEET**

**SS-411-101909-0**

**EPA 8270m**

Laboratory: TestAmerica Portland SDG: PSJ0657  
 Client: CH2M-Hill Project: NW Pipe Project  
 Matrix: Soil Laboratory ID: PSJ0657-12RE1 File ID: 10260906.D  
 Sampled: 10/19/09 10:30 Prepared: 10/20/09 16:00 Analyzed: 10/26/09 11:07  
 Solids: 85.40 Preparation: EPA 3550 Initial/Final: 30.06 g / 2 ml  
 Batch: 9101141 Sequence: 9J26003 Calibration: 9081701 Instrument: SV-5973BF

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)		Q
120-12-7	Anthracene	250	10100		D
56-55-3	Benzo (a) anthracene	250	54200		D
50-32-8	Benzo (a) pyrene	250	35300		D
205-99-2	Benzo (b) fluoranthene	250	38600		D
191-24-2	Benzo (ghi) perylene	250	19100		D
207-08-9	Benzo (k) fluoranthene	250	36700		D
218-01-9	Chrysene	250	56200		D
53-70-3	Dibenzo (a,h) anthracene	250	6350		D
206-44-0	Fluoranthene	250	115000		D
193-39-5	Indeno (1,2,3-cd) pyrene	250	19200		D
85-01-8	Phenanthrene	250	46800		D
129-00-0	Pyrene	250	127000		D
SYSTEM MONITORING COMPOUND	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Benzo (a) pyrene-d12	97.4	0.00		38 - 143	D
Fluorene-d10	97.4	0.00		24 - 125	D
Pyrene-d10	97.4	0.00		41 - 141	D
INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10	31291	8.89	38718	8.89	
Chrysene-d12	40916	13.98	58301	13.98	
Naphthalene-d8	48769	6.73	62464	6.73	
Perylene-d12	37037	15.69	48194	15.69	
Phenanthrene-d10	52720	10.69	67126	10.69	

\* Values outside of QC limits

Form 1  
**ORGANIC ANALYSIS DATA SHEET**

SS-411-101909-0

**EPA 8270m**

Laboratory: <u>TestAmerica Portland</u>	SDG: <u>PSJ0657</u>	Project: <u>NW Pipe Project</u>
Client: <u>CH2M-Hill</u>	Laboratory ID: <u>PSJ0657-12</u>	File ID: <u>10210916.D</u>
Matrix: <u>Soil</u>	Prepared: <u>10/20/09 16:00</u>	Analyzed: <u>10/22/09 03:59</u>
Sampled: <u>10/19/09 10:30</u>	Preparation: <u>EPA 3550</u>	Initial/Final: <u>30.06 g / 2 ml</u>
Solids: <u>85.40</u>	Batch: <u>9100711</u>	Sequence: <u>9J21020</u>
Calibration: <u>9102702</u>	Instrument: <u>5970</u>	

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)		Q
117-84-0	Di-n-octyl phthalate	50	1570		UD
SYSTEM MONITORING COMPOUND		ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS
INTERNAL STANDARD		AREA	RT	REF AREA	REF RT
	2-Fluorobiphenyl	195	232	119	10 - 150
	p-Terphenyl-d14	195	262	134	10 - 150
	Acenaphthene-d10	70173	12.03	63503	12.03
	Chrysene-d12	115321	18.81	87324	18.81
	Perylene-d12	64957	21.35	68879	21.35
	Phenanthrene-d10	126837	14.44	96802	14.45

\* Values outside of QC limits

**Form 1**  
**ORGANIC ANALYSIS DATA SHEET**  
**EPA 8270m**

<b>SS-411-101909-0</b>
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Laboratory: <u>TestAmerica Portland</u>	SDG: <u>PSJ0657</u>	Project: <u>NW Pipe Project</u>
Client: <u>CH2M-Hill</u>	Laboratory ID: <u>PSJ0657-12RE1</u>	File ID: <u>10230920.D</u>
Matrix: <u>Soil</u>	Prepared: <u>10/20/09 16:00</u>	Analyzed: <u>10/23/09 23:19</u>
Sampled: <u>10/19/09 10:30</u>	Preparation: <u>EPA 3550</u>	Initial/Final: <u>30.06 g / 2 ml</u>
Solids: <u>85.40</u>	Batch: <u>9100711</u>	Instrument: <u>5970</u>
Sequence: <u>9J23013</u>	Calibration: <u>9102702</u>	

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)		Q	
117-81-7	Bis(2-ethylhexyl)phthalate	10	1900		D	
85-68-7	Butyl benzyl phthalate	10	637		D	
84-66-2	Diethyl phthalate	10	313		UD	
131-11-3	Dimethyl phthalate	10	313		UD	
84-74-2	Di-n-butyl phthalate	10	313		UD	
SYSTEM MONITORING COMPOUND		ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl		195	201	103	10 - 150	
p-Terphenyl-d14		195	307	158	10 - 150	*
INTERNAL STANDARD		AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10		91844	11.98	79332	12	
Chrysene-d12		97087	18.78	111960	18.77	
Phenanthrene-d10		152869	14.4	123900	14.41	

\* Values outside of QC limits

**Form 1**  
**ORGANIC ANALYSIS DATA SHEET**

SS-411-101909-1

**EPA 8270m**

Laboratory:	<u>TestAmerica Portland</u>	SDG:	<u>PSJ0657</u>				
Client:	<u>CH2M-Hill</u>	Project:	<u>NW Pipe Project</u>				
Matrix:	<u>Soil</u>	Laboratory ID:	<u>PSJ0657-13</u>	File ID:	<u>10220921.D</u>		
Sampled:	<u>10/19/09 10:30</u>	Prepared:	<u>10/20/09 16:00</u>	Analyzed:	<u>10/22/09 22:16</u>		
Solids:	<u>87.70</u>	Preparation:	<u>EPA 3550</u>	Initial/Final:	<u>30.15 g / 2 ml</u>		
Batch:	<u>9101141</u>	Sequence:	<u>9J22011</u>	Calibration:	<u>9081701</u>	Instrument:	<u>SV-5973BF</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)		Q	
83-32-9	Acenaphthene	10	2270		D	
208-96-8	Acenaphthylene	10	155		D	
86-73-7	Fluorene	10	2010		D	
91-20-3	Naphthalene	10	135		JD	
SYSTEM MONITORING COMPOUND		ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Fluorene-d10		94.5	73.5	77.7	24 - 125	
INTERNAL STANDARD		AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10		30618	8.89	38310	8.89	
Naphthalene-d8		50070	6.73	62735	6.73	

\* Values outside of QC limits

**Form 1  
ORGANIC ANALYSIS DATA SHEET**

**SS-411-101909-1**

**EPA 8270m**

Laboratory:	<u>TestAmerica Portland</u>	SDG:	<u>PSJ0657</u>
Client:	<u>CH2M-Hill</u>	Project:	<u>NW Pipe Project</u>
Matrix:	<u>Soil</u>	Laboratory ID:	<u>PSJ0657-13RE1</u>
Sampled:	<u>10/19/09 10:30</u>	Prepared:	<u>10/20/09 16:00</u>
Solids:	<u>87.70</u>	Preparation:	<u>EPA 3550</u>
Batch:	<u>9101141</u>	Sequence:	<u>9J26003</u>
		Calibration:	<u>9081701</u>
		Instrument:	<u>SV-5973BF</u>
		File ID:	<u>10260907.D</u>
		Analyzed:	<u>10/26/09 11:37</u>
		Initial/Final:	<u>30.15 g / 2 ml</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)		Q
120-12-7	Anthracene	200	8410		D
56-55-3	Benzo (a) anthracene	200	37200		D
50-32-8	Benzo (a) pyrene	200	24200		D
205-99-2	Benzo (b) fluoranthene	200	27600		D
191-24-2	Benzo (ghi) perylene	200	13200		D
207-08-9	Benzo (k) fluoranthene	200	24300		D
218-01-9	Chrysene	200	38200		D
53-70-3	Dibenzo (a,h) anthracene	200	4340		D
206-44-0	Fluoranthene	200	83100		D
193-39-5	Indeno (1,2,3-cd) pyrene	200	13100		D
85-01-8	Phenanthrene	200	35400		D
129-00-0	Pyrene	200	86500		D
SYSTEM MONITORING COMPOUND	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Benzo (a) pyrene-d12	94.5	0.00		38 - 143	D
Fluorene-d10	94.5	0.00		24 - 125	D
Pyrene-d10	94.5	0.00		41 - 141	D
INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10	32298	8.89	38718	8.89	
Chrysene-d12	42576	13.98	58301	13.98	
Naphthalene-d8	51134	6.73	62464	6.73	
Perylene-d12	38839	15.69	48194	15.69	
Phenanthrene-d10	54513	10.69	67126	10.69	

\* Values outside of QC limits

Form 1  
**ORGANIC ANALYSIS DATA SHEET**

SS-411-101909-1
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**EPA 8270m**

Laboratory:	<u>TestAmerica Portland</u>	SDG:	<u>PSJ0657</u>
Client:	<u>CH2M-Hill</u>	Project:	<u>NW Pipe Project</u>
Matrix:	<u>Soil</u>	Laboratory ID:	<u>PSJ0657-13</u>
		File ID:	<u>10210917.D</u>
Sampled:	<u>10/19/09 10:30</u>	Prepared:	<u>10/20/09 16:00</u>
		Analyzed:	<u>10/22/09 04:35</u>
Solids:	<u>87.70</u>	Preparation:	<u>EPA 3550</u>
		Initial/Final:	<u>30.15 g / 2 ml</u>
Batch:	<u>9100711</u>	Sequence:	<u>9J21020</u>
		Calibration:	<u>9102702</u>
		Instrument:	<u>5970</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)		Q
117-84-0	Di-n-octyl phthalate	50	1520		UD
SYSTEM MONITORING COMPOUND	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	189	230	122	10 - 150	D
p-Terphenyl-d14	189	253	134	10 - 150	D
INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10	70477	12.03	63503	12.03	
Chrysene-d12	113333	18.81	87324	18.81	
Perylene-d12	66847	21.35	68879	21.35	
Phenanthrene-d10	124677	14.44	96802	14.45	

\* Values outside of QC limits

## ORGANIC ANALYSIS DATA SHEET

SS-411-101909-1

## EPA 8270m

Laboratory: TestAmerica Portland SDG: PSJ0657  
 Client: CH2M-Hill Project: NW Pipe Project  
 Matrix: Soil Laboratory ID: PSJ0657-13RE1 File ID: 10230919.D  
 Sampled: 10/19/09 10:30 Prepared: 10/20/09 16:00 Analyzed: 10/23/09 22:43  
 Solids: 87.70 Preparation: EPA 3550 Initial/Final: 30.15 g / 2 ml  
 Batch: 9100711 Sequence: 9J23013 Calibration: 9102702 Instrument: 5970

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)		Q	
117-81-7	Bis(2-ethylhexyl)phthalate	20	2970		D	
85-68-7	Butyl benzyl phthalate	20	501		JD	
84-66-2	Diethyl phthalate	20	608		UD	
131-11-3	Dimethyl phthalate	20	608		UD	
84-74-2	Di-n-butyl phthalate	20	380		JD	
SYSTEM MONITORING COMPOUND		ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
2-Fluorobiphenyl		189	191	101	10 - 150	
p-Terphenyl-d14		189	255	135	10 - 150	
INTERNAL STANDARD		AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10		90967	11.98	79332	12	
Chrysene-d12		116675	18.77	111960	18.77	
Phenanthrene-d10		155024	14.4	123900	14.41	

\* Values outside of QC limits

## **GC/MS Semivolatile Organic Compounds**

PAH EPA 8270m SIM  
Quality Control Summaries

**Form 2**  
**SURROGATE STANDARD RECOVERY AND RT SUMMARY**  
**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9H12013

Instrument: SV-5973BF

Matrix: Soil

Calibration: 9081701

Surrogate Compound	Spike Level ng/ml	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>Secondary Cal Check (9H12013-SCV1 )</b>			Lab File ID: 08120913.D		Analyzed: 08/12/09 15:24			
Benzo (a) pyrene-d12	1000	83.9	0 - 200	16.21	16.21	0.0000	+/-1.0	
Fluorene-d10	1000	89.1	0 - 200	9.97	9.973333	-0.0033	+/-1.0	
Pyrene-d10	1000	82.6	0 - 200	12.96	12.96111	-0.0011	+/-1.0	

**Form 2**  
**SURROGATE STANDARD RECOVERY AND RT SUMMARY**  
**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9J21005

Instrument: SV-5973BF

Matrix: Soil

Calibration: 9081701

Surrogate Compound	Spike Level ng/ml	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>Calibration Check (9J21005-CCV1 )</b>			Lab File ID: 10210902.D		Analyzed: 10/21/09 12:56			
Benzo (a) pyrene-d12	2000	104	0 - 200	15.62	16.21	-0.5900	+/-1.0	
Fluorene-d10	2000	107	0 - 200	9.52	9.973333	-0.4533	+/-1.0	
Pyrene-d10	2000	91.0	0 - 200	12.48	12.96111	-0.4811	+/-1.0	

**Form 2**  
**SURROGATE STANDARD RECOVERY AND RT SUMMARY**  
**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9J21005

Instrument: SV-5973BF

Matrix: Soil

Calibration: 9081701

Surrogate Compound	Spike Level ug/kg	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>Blank (9101141-BLK1 )</b>		Lab File ID: 10210908.D			Analyzed: 10/21/09 15:54			
Benzo (a) pyrene-d12	83.3	92.5	38 - 143	15.61	16.21	-0.6000	+/-1.0	
Fluorene-d10	83.3	77.8	24 - 125	9.53	9.973333	-0.4433	+/-1.0	
Pyrene-d10	83.3	96.6	41 - 141	12.48	12.96111	-0.4811	+/-1.0	
<b>LCS (9101141-BS1 )</b>		Lab File ID: 10210907.D			Analyzed: 10/21/09 15:25			
Benzo (a) pyrene-d12	82.6	95.2	38 - 143	15.62	16.21	-0.5900	+/-1.0	
Fluorene-d10	82.6	93.6	24 - 125	9.52	9.973333	-0.4533	+/-1.0	
Pyrene-d10	82.6	100	41 - 141	12.48	12.96111	-0.4811	+/-1.0	

**Form 2**  
**SURROGATE STANDARD RECOVERY AND RT SUMMARY**  
**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9J21005

Instrument: SV-5973BF

Matrix: Soil

Calibration: 9081701

Surrogate Compound	Spike Level ug/kg dry	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>Matrix Spike (9101141-MS1 )</b>		Lab File ID: 10210909.D			Analyzed: 10/21/09 16:24			
Benzo (a) pyrene-d12	92.3	99.6	38 - 143	15.61	16.21	-0.6000	+/-1.0	
Fluorene-d10	92.3	97.5	24 - 125	9.53	9.973333	-0.4433	+/-1.0	
Pyrene-d10	92.3	96.3	41 - 141	12.48	12.96111	-0.4811	+/-1.0	
<b>Matrix Spike Dup (9101141-MSD1 )</b>		Lab File ID: 10210910.D			Analyzed: 10/21/09 16:53			
Benzo (a) pyrene-d12	92.0	87.1	38 - 143	15.62	16.21	-0.5900	+/-1.0	
Fluorene-d10	92.0	86.8	24 - 125	9.52	9.973333	-0.4533	+/-1.0	
Pyrene-d10	92.0	85.2	41 - 141	12.48	12.96111	-0.4811	+/-1.0	
<b>SS-401-101909-0 (PSJ0657-01 )</b>		Lab File ID: 10210923.D			Analyzed: 10/21/09 23:18			
Benzo (a) pyrene-d12	91.5	90.8	38 - 143	15.61	16.21	-0.6000	+/-1.0	
Fluorene-d10	91.5	76.4	24 - 125	9.52	9.973333	-0.4533	+/-1.0	
Pyrene-d10	91.5	87.1	41 - 141	12.48	12.96111	-0.4811	+/-1.0	
<b>SS-404-101909-0 (PSJ0657-04 )</b>		Lab File ID: 10210925.D			Analyzed: 10/22/09 00:17			
Benzo (a) pyrene-d12	97.6	83.4	38 - 143	15.62	16.21	-0.5900	+/-1.0	
Fluorene-d10	97.6	77.7	24 - 125	9.52	9.973333	-0.4533	+/-1.0	
Pyrene-d10	97.6	75.0	41 - 141	12.48	12.96111	-0.4811	+/-1.0	
<b>SS-405-101909-2 (PSJ0657-06 )</b>		Lab File ID: 10210911.D			Analyzed: 10/21/09 17:23			
Benzo (a) pyrene-d12	92.1	89.8	38 - 143	15.62	16.21	-0.5900	+/-1.0	
Fluorene-d10	92.1	91.4	24 - 125	9.52	9.973333	-0.4533	+/-1.0	
Pyrene-d10	92.1	91.2	41 - 141	12.48	12.96111	-0.4811	+/-1.0	

**Form 2**  
**SURROGATE STANDARD RECOVERY AND RT SUMMARY**  
**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9J22011

Instrument: SV-5973BF

Matrix: Soil

Calibration: 9081701

Surrogate Compound	Spike Level ng/ml	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>Calibration Check (9J22011-CCV1 )</b>			Lab File ID: 10220904.D		Analyzed: 10/22/09 13:54			
Benzo (a) pyrene-d12	2000	105	0 - 200	15.6	16.21	-0.6100	+/-1.0	
Fluorene-d10	2000	107	0 - 200	9.51	9.973333	-0.4633	+/-1.0	
Pyrene-d10	2000	98.4	0 - 200	12.47	12.96111	-0.4911	+/-1.0	

**Form 2**  
**SURROGATE STANDARD RECOVERY AND RT SUMMARY**  
**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9J22011

Instrument: SV-5973BF

Matrix: Soil

Calibration: 9081701

Surrogate Compound	Spike Level ug/kg dry	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>SS-403-101909-0 (PSJ0657-03 )</b>			Lab File ID: 10220914.D		Analyzed: 10/22/09 18:49			
Benzo (a) pyrene-d12	89.7	92.4	38 - 143	15.6	16.21	-0.6100	+/-1.0	
Fluorene-d10	89.7	86.5	24 - 125	9.51	9.973333	-0.4633	+/-1.0	
Pyrene-d10	89.7	81.8	41 - 141	12.47	12.96111	-0.4911	+/-1.0	
<b>SS-404-101909-0 (PSJ0657-04RE1 )</b>			Lab File ID: 10220915.D		Analyzed: 10/22/09 19:19			
Benzo (a) pyrene-d12	97.6	92.4	38 - 143	15.6	16.21	-0.6100	+/-1.0	
Fluorene-d10	97.6	81.4	24 - 125	9.51	9.973333	-0.4633	+/-1.0	
Pyrene-d10	97.6	89.7	41 - 141	12.47	12.96111	-0.4911	+/-1.0	
<b>SS-405-101909-0 (PSJ0657-05 )</b>			Lab File ID: 10220916.D		Analyzed: 10/22/09 19:48			
Benzo (a) pyrene-d12	95.2	87.2	38 - 143	15.6	16.21	-0.6100	+/-1.0	
Fluorene-d10	95.2	86.7	24 - 125	9.51	9.973333	-0.4633	+/-1.0	
Pyrene-d10	95.2	89.9	41 - 141	12.47	12.96111	-0.4911	+/-1.0	
<b>SS-406-101909-0 (PSJ0657-07 )</b>			Lab File ID: 10220917.D		Analyzed: 10/22/09 20:18			
Benzo (a) pyrene-d12	852	87.7	38 - 143	15.67	16.21	-0.5400	+/-1.0	
Fluorene-d10	852	89.3	24 - 125	9.51	9.973333	-0.4633	+/-1.0	
Pyrene-d10	852	86.7	41 - 141	12.48	12.96111	-0.4811	+/-1.0	
<b>SS-407-101909-0 (PSJ0657-08 )</b>			Lab File ID: 10220918.D		Analyzed: 10/22/09 20:47			
Benzo (a) pyrene-d12	94.2	70.8	38 - 143	15.61	16.21	-0.6000	+/-1.0	
Fluorene-d10	94.2	90.0	24 - 125	9.51	9.973333	-0.4633	+/-1.0	
Pyrene-d10	94.2	68.0	41 - 141	12.48	12.96111	-0.4811	+/-1.0	
<b>SS-408-101909-0 (PSJ0657-09 )</b>			Lab File ID: 10220919.D		Analyzed: 10/22/09 21:17			
Benzo (a) pyrene-d12	89.4	94.1	38 - 143	15.6	16.21	-0.6100	+/-1.0	
Fluorene-d10	89.4	82.3	24 - 125	9.51	9.973333	-0.4633	+/-1.0	
Pyrene-d10	89.4	84.9	41 - 141	12.47	12.96111	-0.4911	+/-1.0	
<b>SS-411-101909-0 (PSJ0657-12 )</b>			Lab File ID: 10220920.D		Analyzed: 10/22/09 21:46			
Fluorene-d10	97.4	94.2	24 - 125	9.51	9.973333	-0.4633	+/-1.0	
<b>SS-411-101909-1 (PSJ0657-13 )</b>			Lab File ID: 10220921.D		Analyzed: 10/22/09 22:16			
Fluorene-d10	94.5	77.7	24 - 125	9.51	9.973333	-0.4633	+/-1.0	

**Form 2**  
**SURROGATE STANDARD RECOVERY AND RT SUMMARY**  
**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9J26003

Instrument: SV-5973BF

Matrix: Soil

Calibration: 9081701

Surrogate Compound	Spike Level ng/ml	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>Calibration Check (9J26003-CCV1 )</b>			Lab File ID: 10260902.D		Analyzed: 10/26/09 09:09			
Benzo (a) pyrene-d12	2000	101	0 - 200	15.59	16.21	-0.6200	+/-1.0	
Fluorene-d10	2000	105	0 - 200	9.5	9.973333	-0.4733	+/-1.0	
Pyrene-d10	2000	106	0 - 200	12.46	12.96111	-0.5011	+/-1.0	

**Form 2**  
**SURROGATE STANDARD RECOVERY AND RT SUMMARY**  
**EPA 8270m**

Laboratory: TestAmerica Portland  
 Client: CH2M-Hill  
 Sequence: 9J26003  
 Matrix: Soil

SDG: PSJ0657  
 Project: NW Pipe Project  
 Instrument: SV-5973BF  
 Calibration: 9081701

Surrogate Compound	Spike Level ug/kg dry	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>SS-406-101909-0 (PSJ0657-07RE1 )</b>		Lab File ID: 10260908.D			Analyzed: 10/26/09 12:07			
Benzo (a) pyrene-d12	852	102	38 - 143	15.61	16.21	-0.6000	+/-1.0	
Fluorene-d10	852	86.6	24 - 125	9.5	9.973333	-0.4733	+/-1.0	
Pyrene-d10	852	74.0	41 - 141	12.46	12.96111	-0.5011	+/-1.0	
<b>SS-411-101909-0 (PSJ0657-12RE1 )</b>		Lab File ID: 10260906.D			Analyzed: 10/26/09 11:07			
Benzo (a) pyrene-d12	97.4		38 - 143	0	16.21	-16.2100	+/-1.0	*
Fluorene-d10	97.4		24 - 125	9.51	9.973333	-0.4633	+/-1.0	*
Pyrene-d10	97.4		41 - 141	12.46	12.96111	-0.5011	+/-1.0	*
<b>SS-411-101909-1 (PSJ0657-13RE1 )</b>		Lab File ID: 10260907.D			Analyzed: 10/26/09 11:37			
Benzo (a) pyrene-d12	94.5		38 - 143	0	16.21	-16.2100	+/-1.0	*
Fluorene-d10	94.5		24 - 125	9.51	9.973333	-0.4633	+/-1.0	*
Pyrene-d10	94.5		41 - 141	12.46	12.96111	-0.5011	+/-1.0	*

**CH2M-Hill**2020 SW 4th Suite 300  
Portland, OR 97201Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat HeinsReport Date:  
11/17/09 15:44**Laboratory Blank Report****Polynuclear Aromatic Compounds per EPA 8270M-SIM - Laboratory Quality Control Results**  
**TestAmerica Portland****Batch 9100711**

Matrix		Lab Number	Sample Name	Dilution	File ID	Analyzed	Instrument
Soil	EPA 8270m	9100711-MS1	Matrix Spike	10x	10210909.D	10/21/09 16:24	5970
Soil	EPA 8270m	9100711-MS2	Matrix Spike	10x	10210909.D	10/21/09 16:24	SV5973BF
Soil	EPA 8270m	9100711-MSD1	Matrix Spike Dup	10x	10210910.D	10/21/09 16:53	5970
Soil	EPA 8270m	9100711-MSD2	Matrix Spike Dup	10x	10210910.D	10/21/09 16:53	SV5973BF
Soil	EPA 8270m	9101141-BLK1	Blank	1x	10210908.D	10/21/09 15:54	SV-5973BF
Soil	EPA 8270m	9101141-BS1	LCS	1x	10210907.D	10/21/09 15:25	SV-5973BF
Soil	EPA 8270m	9101141-MS1	Matrix Spike	10x	10210909.D	10/21/09 16:24	SV-5973BF
Soil	EPA 8270m	9101141-MSD1	Matrix Spike Dup	10x	10210910.D	10/21/09 16:53	SV-5973BF
Soil	EPA 8270m	PSJ0657-01	SS-401-101909-0	1x	10210923.D	10/21/09 23:18	SV-5973BF
Soil	EPA 8270m	PSJ0657-03	SS-403-101909-0	1x	10220914.D	10/22/09 18:49	SV-5973BF
Soil	EPA 8270m	PSJ0657-04	SS-404-101909-0	1x	10210925.D	10/22/09 00:17	SV-5973BF
Soil	EPA 8270m	PSJ0657-04RE1	SS-404-101909-0	10x	10220915.D	10/22/09 19:19	SV-5973BF
Soil	EPA 8270m	PSJ0657-05	SS-405-101909-0	4x	10220916.D	10/22/09 19:48	SV-5973BF
Soil	EPA 8270m	PSJ0657-06	SS-405-101909-2	4x	10210911.D	10/21/09 17:23	SV-5973BF
Soil	EPA 8270m	PSJ0657-07	SS-406-101909-0	1x	10220917.D	10/22/09 20:18	SV-5973BF
Soil	EPA 8270m	PSJ0657-07RE1	SS-406-101909-0	3x	10260908.D	10/26/09 12:07	SV-5973BF
Soil	EPA 8270m	PSJ0657-08	SS-407-101909-0	1x	10220918.D	10/22/09 20:47	SV-5973BF
Soil	EPA 8270m	PSJ0657-09	SS-408-101909-0	1x	10220919.D	10/22/09 21:17	SV-5973BF
Soil	EPA 8270m	PSJ0657-12	SS-411-101909-0	10x	10220920.D	10/22/09 21:46	SV-5973BF
Soil	EPA 8270m	PSJ0657-12RE1	SS-411-101909-0	250x	10260906.D	10/26/09 11:07	SV-5973BF
Soil	EPA 8270m	PSJ0657-13	SS-411-101909-1	10x	10220921.D	10/22/09 22:16	SV-5973BF
Soil	EPA 8270m	PSJ0657-13RE1	SS-411-101909-1	200x	10260907.D	10/26/09 11:37	SV-5973BF



**Form 1**  
**METHOD BLANK DATA SHEET**  
**EPA 8270m**

Laboratory: <u>TestAmerica Portland</u>	SDG: <u>PSJ0657</u>	
Client: <u>CH2M-Hill</u>	Project: <u>NW Pipe Project</u>	
Matrix: <u>Soil</u>	Laboratory ID: <u>9101141-BLK1</u>	File ID: <u>10210908.D</u>
Prepared: <u>10/20/09 16:00</u>	Preparation: <u>EPA 3550</u>	Initial/Final: <u>30.02 g / 2 ml</u>
Analyzed: <u>10/21/09 15:54</u>	Instrument: <u>SV-5973BF</u>	
Batch: <u>9101141</u>	Sequence: <u>9J21005</u>	Calibration: <u>9081701</u>

CAS NO.	COMPOUND	CONC. (ug/kg wet)	Q
83-32-9	Acenaphthene	13.4	U
208-96-8	Acenaphthylene	13.4	U
120-12-7	Anthracene	13.4	U
56-55-3	Benzo (a) anthracene	13.4	U
50-32-8	Benzo (a) pyrene	13.4	U
205-99-2	Benzo (b) fluoranthene	13.4	U
191-24-2	Benzo (ghi) perylene	13.4	U
207-08-9	Benzo (k) fluoranthene	13.4	U
218-01-9	Chrysene	13.4	U
53-70-3	Dibenzo (a,h) anthracene	13.4	U
206-44-0	Fluoranthene	13.4	U
86-73-7	Fluorene	13.4	U
193-39-5	Indeno (1,2,3-cd) pyrene	13.4	U
91-20-3	Naphthalene	13.4	U
85-01-8	Phenanthrene	13.4	U
129-00-0	Pyrene	13.4	U

SYSTEM MONITORING COMPOUND	ADDED (ug/kg wet)	CONC (ug/kg wet)	% REC	QC LIMITS	Q
Benzo (a) pyrene-d12	83.3	77.1	92.5	38 - 143	
Fluorene-d10	83.3	64.8	77.8	24 - 125	
Pyrene-d10	83.3	80.4	96.6	41 - 141	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10	26286	8.91	21823	8.91	
Chrysene-d12	42101	14.01	42340	14	
Naphthalene-d8	38838	6.75	37650	6.75	
Perylene-d12	40342	15.72	37293	15.72	
Phenanthrene-d10	45883	10.72	38987	10.72	

**Form 3**  
**LCS / LCS DUPLICATE RECOVERY**  
**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Matrix: Soil

Spike standard: 9080007 9080162

Batch: 9101141

Laboratory ID: 9101141-BS1

Preparation: EPA 3550

Initial/Final: 30.25 g / 2 ml

COMPOUND	SPIKE ADDED (ug/kg wet)	LCS CONCENTRATION (ug/kg wet)	LCS % REC. #	QC LIMITS REC.
Acenaphthene	165	177	107	33 - 139
Benzo (a) pyrene	165	175	106	45 - 149
Pyrene	165	186	112	39 - 138

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

Form 3

**MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY**

SS-405-101909-2

**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Matrix: Soil

Spike standard: 9080007 9080162

Batch: 9101141

Laboratory ID: 9101141-MS1

Preparation: EPA 3550

Initial/Final: 30.02 g / 2 ml

Source Sample Name: SS-405-101909-2

COMPOUND	SPIKE ADDED (ug/kg dry)	SAMPLE CONCENTRATION (ug/kg dry)	MS CONCENTRATION (ug/kg dry)	MS % REC. #	QC LIMITS REC.
Acenaphthene	185	31.1	214	98.9	33 - 139
Benzo (a) pyrene	185	1010	1160	82.4	45 - 149
Pyrene	185	1080	1250	89.2	39 - 138

COMPOUND	SPIKE ADDED (ug/kg dry)	MSD CONCENTRATION (ug/kg dry)	MSD % REC. #	% RPD #	QC LIMITS	
					RPD	REC.
Acenaphthene	184	194	88.4	9.75	60	33 - 139
Benzo (a) pyrene	184	1310	163 *	12.0	60	45 - 149
Pyrene	184	1380	160 *	9.92	60	39 - 138

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

**Form 5**

**MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK**

**EPA 8270m**

Laboratory:	<u>TestAmerica Portland</u>	SDG:	PSJ0657
Client:	<u>CH2M-Hill</u>	Project:	<u>NW Pipe Project</u>
Lab File ID:	<u>08120902.D</u>	Injection Date:	<u>08/12/09</u>
Instrument ID:	<u>SV-5973BF</u>	Injection Time:	<u>10:15</u>
Sequence:	<u>9H12013</u>	Lab Sample ID:	<u>9H12013-TUN1</u>

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
m/z 51	30 - 60% of m/z 198	46.142	PASS
m/z 68	Less than 2% of m/z 69	0.9873	PASS
m/z 69	Less than 100% of m/z 198	52.29	PASS
m/z 70	Less than 2% of m/z 69	0.57128	PASS
m/z 127	40 - 60% of m/z 198	48.726	PASS
m/z 197	Less than 1% of m/z 198	0	PASS
m/z 198	Base peak, 100% relative abundance	100	PASS
m/z 199	5 - 9% of m/z 198	6.6453	PASS
m/z 275	10 - 30% of m/z 198	25.055	PASS
m/z 365	1 - 100% of m/z 198	3.6181	PASS
m/z 441	0.001 - 100% of m/z 443	73.571	PASS
m/z 442	40 - 100% of m/z 198	52.747	PASS
m/z 443	17 - 23% of m/z 442	19.637	PASS

**Form 5**

**MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK**

**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Lab File ID: 10210901.D

Injection Date: 10/21/09

Instrument ID: SV-5973BF

Injection Time: 12:36

Sequence: 9J21005

Lab Sample ID: 9J21005-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
m/z 51	30 - 60% of m/z 198	55.671	PASS
m/z 68	Less than 2% of m/z 69	0.82465	PASS
m/z 69	Less than 100% of m/z 198	60.395	PASS
m/z 70	Less than 2% of m/z 69	0.61475	PASS
m/z 127	40 - 60% of m/z 198	51.463	PASS
m/z 197	Less than 1% of m/z 198	0.37812	PASS
m/z 198	Base peak, 100% relative abundance	100	PASS
m/z 199	5 - 9% of m/z 198	6.7725	PASS
m/z 275	10 - 30% of m/z 198	23.719	PASS
m/z 365	1 - 100% of m/z 198	4.1539	PASS
m/z 441	0.001 - 100% of m/z 443	77.899	PASS
m/z 442	40 - 100% of m/z 198	44.218	PASS
m/z 443	17 - 23% of m/z 442	19.259	PASS

**Form 5**

**MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK**

**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Lab File ID: 10220903.D

Injection Date: 10/22/09

Instrument ID: SV-5973BF

Injection Time: 13:34

Sequence: 9J22011

Lab Sample ID: 9J22011-TUN3

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
m/z 51	30 - 60% of m/z 198	54.369	PASS
m/z 68	Less than 2% of m/z 69	1.2007	PASS
m/z 69	Less than 100% of m/z 198	60.042	PASS
m/z 70	Less than 2% of m/z 69	0.53875	PASS
m/z 127	40 - 60% of m/z 198	51.062	PASS
m/z 197	Less than 1% of m/z 198	0	PASS
m/z 198	Base peak, 100% relative abundance	100	PASS
m/z 199	5 - 9% of m/z 198	6.8806	PASS
m/z 275	10 - 30% of m/z 198	23.962	PASS
m/z 365	1 - 100% of m/z 198	3.8044	PASS
m/z 441	0.001 - 100% of m/z 443	73.758	PASS
m/z 442	40 - 100% of m/z 198	49.817	PASS
m/z 443	17 - 23% of m/z 442	19.483	PASS

**Form 5**

**MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK**

**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Lab File ID: 10260901.D

Injection Date: 10/26/09

Instrument ID: SV-5973BF

Injection Time: 08:46

Sequence: 9J26003

Lab Sample ID: 9J26003-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
m/z 51	30 - 60% of m/z 198	50.215	PASS
m/z 68	Less than 2% of m/z 69	1.6302	PASS
m/z 69	Less than 100% of m/z 198	56.294	PASS
m/z 70	Less than 2% of m/z 69	0.60804	PASS
m/z 127	40 - 60% of m/z 198	50.574	PASS
m/z 197	Less than 1% of m/z 198	0.10171	PASS
m/z 198	Base peak, 100% relative abundance	100	PASS
m/z 199	5 - 9% of m/z 198	6.6089	PASS
m/z 275	10 - 30% of m/z 198	24.486	PASS
m/z 365	1 - 100% of m/z 198	3.9964	PASS
m/z 441	0.001 - 100% of m/z 443	73.234	PASS
m/z 442	40 - 100% of m/z 198	54.852	PASS
m/z 443	17 - 23% of m/z 442	19.445	PASS

**Form 6**  
**INITIAL CALIBRATION DATA**  
**EPA 8270m**

Laboratory: TestAmerica Portland  
 Client: CH2M-Hill  
 Calibration: 9081701

SDG: PSJ0657  
 Project: NW Pipe Project  
 Instrument: SV-5973BF  
 Calibration Date: 08/17/09 10:01

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF
1-Methylnaphthalene	50	0.6885487	100	0.6873425	200	0.7427762	500	0.7458224	1000	0.7564795	2000	0.7527661
2-Methylnaphthalene	50	0.7758042	100	0.7618437	200	0.8382779	500	0.8361128	1000	0.8538218	2000	0.8571846
Acenaphthene	50	1.083922	100	1.052826	200	1.146506	500	1.140711	1000	1.171013	2000	1.177739
Acenaphthylene	50	1.862325	100	1.790786	200	1.9329	500	1.917869	1000	1.987276	2000	1.998275
Anthracene	50	1.181333	100	1.147042	200	1.221222	500	1.251446	1000	1.286742	2000	1.304256
Benzo (a) anthracene	50	1.361742	100	1.285702	200	1.357243	500	1.375782	1000	1.400249	2000	1.415676
Benzo (a) pyrene	50	1.297225	100	1.235695	200	1.329805	500	1.340671	1000	1.399193	2000	1.416591
Benzo (a) pyrene-d12	50	1.105263	100	1.025641	200	1.10498	500	1.098562	1000	1.139112	2000	1.155661
Benzo (b) fluoranthene	50	1.417033	100	1.227616	200	1.431946	500	1.430487	1000	1.488659	2000	1.467426
Benzo (ghi) perylene	50	1.160191	100	1.122392	200	1.195478	500	1.189629	1000	1.23061	2000	1.246292
Benzo (k) fluoranthene	50	1.296268	100	1.379541	200	1.374068	500	1.431719	1000	1.484263	2000	1.545067
Chrysene	50	1.389756	100	1.333796	200	1.42965	500	1.413287	1000	1.436448	2000	1.426172
Dibenzo (a,h) anthracene	50	1.102392	100	1.017759	200	1.1223	500	1.133118	1000	1.207624	2000	1.217972
Fluoranthene	50	1.25237	100	1.19496	200	1.288818	500	1.302342	1000	1.359508	2000	1.362236
Fluorene	50	1.250808	100	1.207862	200	1.341311	500	1.354711	1000	1.398077	2000	1.414581
Fluorene-d10	50	1.280019	100	1.197052	200	1.270563	500	1.261183	1000	1.307247	2000	1.320987
Indeno (1,2,3-cd) pyrene	50	1.306794	100	1.26476	200	1.34573	500	1.35791	1000	1.424524	2000	1.446721
Naphthalene	50	1.009577	100	0.9704814	200	1.041508	500	1.026898	1000	1.047934	2000	1.048889
Phenanthrene	50	1.221282	100	1.158158	200	1.237054	500	1.247734	1000	1.27046	2000	1.280204
Pyrene	50	1.523753	100	1.462801	200	1.544814	500	1.577497	1000	1.565287	2000	1.580207
Pyrene-d10	50	1.35516	100	1.27077	200	1.299385	500	1.290913	1000	1.28931	2000	1.301426

**Form 6**  
**INITIAL CALIBRATION DATA (Continued)**  
**EPA 8270m**

Laboratory: TestAmerica Portland  
 Client: CH2M-Hill  
 Calibration: 9081701

SDG: PSJ0657  
 Project: NW Pipe Project  
 Instrument: SV-5973BF  
 Calibration Date: 08/17/09 10:01

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF
1-Methylnaphthalene	3000	0.7431684	5000	0.7596652	10000	0.7317451						
2-Methylnaphthalene	3000	0.8509332	5000	0.8668893	10000	0.8364045						
Acenaphthene	3000	1.173576	5000	1.183376	10000	1.17071						
Acenaphthylene	3000	2.004818	5000	2.033616	10000	2.006249						
Anthracene	3000	1.306301	5000	1.314529	10000	1.257777						
Benzo (a) anthracene	3000	1.42717	5000	1.441133	10000	1.378519						
Benzo (a) pyrene	3000	1.449684	5000	1.420377	10000	1.358336						
Benzo (a) pyrene-d12	3000	1.184882	5000	1.164207	10000	1.115587						
Benzo (b) fluoranthene	3000	1.480662	5000	1.573503	10000	1.415434						
Benzo (ghi) perylene	3000	1.276263	5000	1.237249	10000	1.183836						
Benzo (k) fluoranthene	3000	1.600536	5000	1.442569	10000	1.446444						
Chrysene	3000	1.422193	5000	1.415786	10000	1.340452						
Dibenzo (a,h) anthracene	3000	1.259351	5000	1.235901	10000	1.20339						
Fluoranthene	3000	1.362913	5000	1.381561	10000	1.335877						
Fluorene	3000	1.422926	5000	1.432975	10000	1.418846						
Fluorene-d10	3000	1.325249	5000	1.343108	10000	1.325634						
Indeno (1,2,3-cd) pyrene	3000	1.492069	5000	1.463563	10000	1.420351						
Naphthalene	3000	1.043061	5000	1.064097	10000	1.026658						
Phenanthrene	3000	1.284677	5000	1.286767	10000	1.23173						
Pyrene	3000	1.573635	5000	1.582228	10000	1.48913						
Pyrene-d10	3000	1.303465	5000	1.306089	10000	1.240412						

**Form 6**  
**INITIAL CALIBRATION DATA (Continued)**  
**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Calibration: 9081701

Instrument: SV-5973BF

Calibration Date: 08/17/09 10:01

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
1-Methylnaphthalene	0.7342571	3.749708	8.172222	5.476873E-02				*
2-Methylnaphthalene	0.830808	4.428408	8.036667	6.434325E-02				*
Acenaphthene	1.144487	4.021137	9.39	1.809336E-02				*
Acenaphthylene	1.948235	4.106836	9.164444	5.328811E-02				*
Anthracene	1.252294	4.706139	11.26222	3.892163E-02				*
Benzo (a) anthracene	1.38258	3.368165	14.46	0.0118104				*
Benzo (a) pyrene	1.360842	5.004266	16.24556	2.832141E-02				*
Benzo (a) pyrene-d12	1.121544	4.182696	16.21	4.417475E-02				*
Benzo (b) fluoranthene	1.436974	6.45862	15.77333	3.300731E-02				*
Benzo (ghi) perylene	1.20466	3.946845	18.96444	8.472273E-02				*
Benzo (k) fluoranthene	1.444497	6.352704	15.80222	2.388941E-02				*
Chrysene	1.400838	2.746091	14.51556	3.433184E-02				*
Dibenzo (a,h) anthracene	1.166645	6.669954	18.34778	7.508915E-02				*
Fluoranthene	1.315621	4.696999	12.69778	3.269121E-02				*
Fluorene	1.360233	5.962477	10.01	9.609407E-03				*
Fluorene-d10	1.292338	3.512906	9.973333	4.607405E-02				*
Indeno (1,2,3-cd) pyrene	1.39138	5.493605	18.34111	6.793667E-02				*
Naphthalene	1.031012	2.681603	7.203333	6.834402E-02				*
Phenanthrene	1.246452	3.300333	11.20222	3.849116E-02				*
Pyrene	1.544372	2.826071	12.98222	3.772864E-02				*
Pyrene-d10	1.295214	2.362375	12.96111	1.352087E-02				*

# SECOND-SOURCE CALIBRATION VERIFICATION

**EPA 8270m**

**Laboratory:** TestAmerica Portland

**SDG:** PSJ0657

**Client:** CH2M-Hill

**Project:** NW Pipe Project

**Calibration:** 9081701

**Laboratory ID:** 9H12013-SCV1

**Sequence:** 9H12013

**Standard ID:** 9080115

ANALYTE	EXPECTED (ng/ml)	FOUND (ng/ml)	% DRIFT	QC LIMIT
1-Methylnaphthalene	2000	1690	-15.5	30.00
2-Methylnaphthalene	2000	1540	-23.1	30.00
Acenaphthene	2000	1650	-17.3	30.00
Acenaphthylene	2000	1600	-20.0	30.00
Anthracene	2000	1700	-15.0	30.00
Benzo (a) anthracene	2000	1710	-14.7	30.00
Benzo (a) pyrene	2000	1720	-14.1	30.00
Benzo (a) pyrene-d12	1000	839	-16.1	
Benzo (b) fluoranthene	2000	1810	-9.6	30.00
Benzo (ghi) perylene	2000	1670	-16.4	30.00
Benzo (k) fluoranthene	2000	1680	-15.8	30.00
Chrysene	2000	1680	-16.0	30.00
Dibenzo (a,h) anthracene	2000	1700	-15.2	30.00
Fluoranthene	2000	1650	-17.3	30.00
Fluorene	2000	1690	-15.3	30.00
Fluorene-d10	1000	891	-10.9	
Indeno (1,2,3-cd) pyrene	2000	1730	-13.7	30.00
Naphthalene	2000	1670	-16.4	30.00
Phenanthrene	2000	1700	-15.0	30.00
Pyrene	2000	1710	-14.6	30.00
Pyrene-d10	1000	826	-17.4	

\* Values outside of QC limits

**Form 7**  
**CONTINUING CALIBRATION CHECK**  
**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Instrument ID: SV-5973BF

Calibration: 9081701

Lab File ID: 10210902.D

Calibration Date: 08/17/09 10:01

Sequence: 9J21005

Injection Date: 10/21/09

Lab Sample ID: 9J21005-CCV1

Injection Time: 12:56

COMPOUND	TYPE	CONC. (ng/ml)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
1-Methylnaphthalene	A	2000	1780	0.7342571	0.6525259		-11.1	30
2-Methylnaphthalene	A	2000	1780	0.830808	0.7389376		-11.1	30
Acenaphthene	A	2000	2070	1.144487	1.18475		3.5	30
Acenaphthylene	A	2000	2010	1.948235	1.961783		0.7	30
Anthracene	A	2000	2030	1.252294	1.271634		1.5	30
Benzo (a) anthracene	A	2000	2010	1.38258	1.386042		0.3	30
Benzo (a) pyrene	A	2000	2120	1.360842	1.439214		5.8	30
Benzo (b) fluoranthene	A	2000	2020	1.436974	1.451087		1.0	30
Benzo (ghi) perylene	A	2000	2280	1.20466	1.372558		13.9	30
Benzo (k) fluoranthene	A	2000	2240	1.444497	1.618239		12.0	30
Chrysene	A	2000	2030	1.400838	1.419069		1.3	30
Dibenzo (a,h) anthracene	A	2000	2270	1.166645	1.326689		13.7	30
Fluoranthene	A	2000	2220	1.315621	1.460964		11.0	30
Fluorene	A	2000	2150	1.360233	1.464281		7.6	30
Indeno (1,2,3-cd) pyrene	A	2000	2270	1.39138	1.582254		13.7	30
Naphthalene	A	2000	2050	1.031012	1.059272		2.7	30
Phenanthrene	A	2000	2070	1.246452	1.291077		3.6	30
Pyrene	A	2000	1880	1.544372	1.451592		-6.0	30

# Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

\* Values outside of QC limits

**Form 7**  
**CONTINUING CALIBRATION CHECK**  
**EPA 8270m**

Laboratory: TestAmerica Portland  
 Client: CH2M-Hill  
 Instrument ID: SV-5973BF  
 Lab File ID: 10220904.D  
 Sequence: 9J22011  
 Lab Sample ID: 9J22011-CCV1

SDG: PSJ0657  
 Project: NW Pipe Project  
 Calibration: 9081701  
 Calibration Date: 08/17/09 10:01  
 Injection Date: 10/22/09  
 Injection Time: 13:54

COMPOUND	TYPE	CONC. (ng/ml)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
1-Methylnaphthalene	A	2000	1800	0.7342571	0.6619463		-9.8	30
2-Methylnaphthalene	A	2000	1820	0.830808	0.7563497		-9.0	30
Acenaphthene	A	2000	2060	1.144487	1.178037		2.9	30
Acenaphthylene	A	2000	2040	1.948235	1.986009		1.9	30
Anthracene	A	2000	2050	1.252294	1.284505		2.6	30
Benzo (a) anthracene	A	2000	2080	1.38258	1.434936		3.8	30
Benzo (a) pyrene	A	2000	2100	1.360842	1.427782		4.9	30
Benzo (b) fluoranthene	A	2000	2190	1.436974	1.57679		9.7	30
Benzo (ghi) perylene	A	2000	2110	1.20466	1.273226		5.7	30
Benzo (k) fluoranthene	A	2000	2030	1.444497	1.464638		1.4	30
Chrysene	A	2000	2000	1.400838	1.402218		0.1	30
Dibenzo (a,h) anthracene	A	2000	2200	1.166645	1.284548		10.1	30
Fluoranthene	A	2000	2150	1.315621	1.41752		7.7	30
Fluorene	A	2000	2150	1.360233	1.460235		7.4	30
Indeno (1,2,3-cd) pyrene	A	2000	2170	1.39138	1.512642		8.7	30
Naphthalene	A	2000	2040	1.031012	1.053157		2.1	30
Phenanthrene	A	2000	2050	1.246452	1.279454		2.6	30
Pyrene	A	2000	2010	1.544372	1.549541		0.3	30

# Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

\* Values outside of QC limits

**Form 7**  
**CONTINUING CALIBRATION CHECK**  
**EPA 8270m**

Laboratory: TestAmerica Portland  
 Client: CH2M-Hill  
 Instrument ID: SV-5973BF  
 Lab File ID: 10260902.D  
 Sequence: 9J26003  
 Lab Sample ID: 9J26003-CCV1

SDG: PSJ0657  
 Project: NW Pipe Project  
 Calibration: 9081701  
 Calibration Date: 08/17/09 10:01  
 Injection Date: 10/26/09  
 Injection Time: 09:09

COMPOUND	TYPE	CONC. (ng/ml)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
1-Methylnaphthalene	A	2000	1830	0.7342571	0.6720415		-8.5	30
2-Methylnaphthalene	A	2000	1820	0.830808	0.7541656		-9.2	30
Acenaphthene	A	2000	2030	1.144487	1.16317		1.6	30
Acenaphthylene	A	2000	2040	1.948235	1.985567		1.9	30
Anthracene	A	2000	2040	1.252294	1.27772		2.0	30
Benzo (a) anthracene	A	2000	2100	1.38258	1.448593		4.8	30
Benzo (a) pyrene	A	2000	2030	1.360842	1.383712		1.7	30
Benzo (b) fluoranthene	A	2000	2200	1.436974	1.57803		9.8	30
Benzo (ghi) perylene	A	2000	2050	1.20466	1.232988		2.4	30
Benzo (k) fluoranthene	A	2000	1930	1.444497	1.395041		-3.4	30
Chrysene	A	2000	1990	1.400838	1.396501		-0.3	30
Dibenzo (a,h) anthracene	A	2000	2110	1.166645	1.232203		5.6	30
Fluoranthene	A	2000	2100	1.315621	1.382767		5.1	30
Fluorene	A	2000	2110	1.360233	1.436536		5.6	30
Indeno (1,2,3-cd) pyrene	A	2000	2090	1.39138	1.45536		4.6	30
Naphthalene	A	2000	2030	1.031012	1.045601		1.4	30
Phenanthrene	A	2000	2040	1.246452	1.268468		1.8	30
Pyrene	A	2000	2160	1.544372	1.666362		7.9	30

# Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

\* Values outside of QC limits

**Form 8**  
**INTERNAL STANDARD AREA AND RT SUMMARY**  
**EPA 8270m**

Laboratory: TestAmerica Portland  
 Client: CH2M-Hill  
 Sequence: 9H12013  
 Matrix: Water

SDG: PSJ0657  
 Project: NW Pipe Project  
 Instrument: SV-5973BF  
 Calibration: 9081701

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
<b>Cal Standard (9H12013-CAL1)</b>			Lab File ID: 08120904.D			Analyzed: 08/12/09 10:48			
Acenaphthene-d10	33412	9.36	32957	9.35	101	50 - 200	0.0100	+/-0.50	
Chrysene-d12	47404	14.49	47461	14.48	100	50 - 200	0.0100	+/-0.50	
Naphthalene-d8	48868	7.18	48138	7.18	102	50 - 200	0.0000	+/-0.50	
Perylene-d12	41800	16.34	41578	16.33	101	50 - 200	0.0100	+/-0.50	
Phenanthrene-d10	55070	11.18	53882	11.18	102	50 - 200	0.0000	+/-0.50	
<b>Cal Standard (9H12013-CAL2)</b>			Lab File ID: 08120905.D			Analyzed: 08/12/09 11:18			
Acenaphthene-d10	32560	9.35	32957	9.35	99	50 - 200	0.0000	+/-0.50	
Chrysene-d12	46076	14.49	47461	14.48	97	50 - 200	0.0100	+/-0.50	
Naphthalene-d8	46818	7.18	48138	7.18	97	50 - 200	0.0000	+/-0.50	
Perylene-d12	40599	16.34	41578	16.33	98	50 - 200	0.0100	+/-0.50	
Phenanthrene-d10	53257	11.18	53882	11.18	99	50 - 200	0.0000	+/-0.50	
<b>Cal Standard (9H12013-CAL3)</b>			Lab File ID: 08120906.D			Analyzed: 08/12/09 11:49			
Acenaphthene-d10	32340	9.35	32957	9.35	98	50 - 200	0.0000	+/-0.50	
Chrysene-d12	47150	14.49	47461	14.48	99	50 - 200	0.0100	+/-0.50	
Naphthalene-d8	46617	7.18	48138	7.18	97	50 - 200	0.0000	+/-0.50	
Perylene-d12	41570	16.34	41578	16.33	100	50 - 200	0.0100	+/-0.50	
Phenanthrene-d10	53435	11.18	53882	11.18	99	50 - 200	0.0000	+/-0.50	
<b>Cal Standard (9H12013-CAL4)</b>			Lab File ID: 08120907.D			Analyzed: 08/12/09 12:20			
Acenaphthene-d10	32957	9.35	32957	9.35	100	50 - 200	0.0000	+/-0.50	
Chrysene-d12	47461	14.48	47461	14.48	100	50 - 200	0.0000	+/-0.50	
Naphthalene-d8	48138	7.18	48138	7.18	100	50 - 200	0.0000	+/-0.50	
Perylene-d12	41578	16.33	41578	16.33	100	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	53882	11.18	53882	11.18	100	50 - 200	0.0000	+/-0.50	
<b>Cal Standard (9H12013-CAL5)</b>			Lab File ID: 08120908.D			Analyzed: 08/12/09 12:51			
Acenaphthene-d10	31311	9.35	32957	9.35	95	50 - 200	0.0000	+/-0.50	
Chrysene-d12	48178	14.49	47461	14.48	102	50 - 200	0.0100	+/-0.50	
Naphthalene-d8	46130	7.18	48138	7.18	96	50 - 200	0.0000	+/-0.50	
Perylene-d12	42130	16.33	41578	16.33	101	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	52376	11.18	53882	11.18	97	50 - 200	0.0000	+/-0.50	

**Form 8**  
**INTERNAL STANDARD AREA AND RT SUMMARY**  
**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9H12013

Instrument: SV-5973BF

Matrix: Water

Calibration: 9081701

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
<b>Cal Standard (9H12013-CAL6 )</b>			Lab File ID: 08120909.D			Analyzed: 08/12/09 13:21			
Acenaphthene-d10	31301	9.36	32957	9.35	95	50 - 200	0.0100	+/-0.50	
Chrysene-d12	47562	14.48	47461	14.48	100	50 - 200	0.0000	+/-0.50	
Naphthalene-d8	46509	7.18	48138	7.18	97	50 - 200	0.0000	+/-0.50	
Perylene-d12	40551	16.33	41578	16.33	98	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	52097	11.17	53882	11.18	97	50 - 200	-0.0100	+/-0.50	
<b>Cal Standard (9H12013-CAL7 )</b>			Lab File ID: 08120910.D			Analyzed: 08/12/09 13:52			
Acenaphthene-d10	31022	9.35	32957	9.35	94	50 - 200	0.0000	+/-0.50	
Chrysene-d12	47417	14.48	47461	14.48	100	50 - 200	0.0000	+/-0.50	
Naphthalene-d8	46453	7.18	48138	7.18	96	50 - 200	0.0000	+/-0.50	
Perylene-d12	39766	16.33	41578	16.33	96	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	51715	11.18	53882	11.18	96	50 - 200	0.0000	+/-0.50	
<b>Cal Standard (9H12013-CAL8 )</b>			Lab File ID: 08120911.D			Analyzed: 08/12/09 14:23			
Acenaphthene-d10	31863	9.36	32957	9.35	97	50 - 200	0.0100	+/-0.50	
Chrysene-d12	49479	14.48	47461	14.48	104	50 - 200	0.0000	+/-0.50	
Naphthalene-d8	47070	7.18	48138	7.18	98	50 - 200	0.0000	+/-0.50	
Perylene-d12	42069	16.34	41578	16.33	101	50 - 200	0.0100	+/-0.50	
Phenanthrene-d10	53698	11.17	53882	11.18	100	50 - 200	-0.0100	+/-0.50	
<b>Cal Standard (9H12013-CAL9 )</b>			Lab File ID: 08120912.D			Analyzed: 08/12/09 14:54			
Acenaphthene-d10	32639	9.35	32957	9.35	99	50 - 200	0.0000	+/-0.50	
Chrysene-d12	53406	14.48	47461	14.48	113	50 - 200	0.0000	+/-0.50	
Naphthalene-d8	49362	7.18	48138	7.18	103	50 - 200	0.0000	+/-0.50	
Perylene-d12	45864	16.34	41578	16.33	110	50 - 200	0.0100	+/-0.50	
Phenanthrene-d10	56650	11.18	53882	11.18	105	50 - 200	0.0000	+/-0.50	
<b>Secondary Cal Check (9H12013-SCV1 )</b>			Lab File ID: 08120913.D			Analyzed: 08/12/09 15:24			
Acenaphthene-d10	39144	9.36	32957	9.35	119	50 - 200	0.0100	+/-0.50	
Chrysene-d12	57621	14.48	47461	14.48	121	50 - 200	0.0000	+/-0.50	
Naphthalene-d8	58079	7.18	48138	7.18	121	50 - 200	0.0000	+/-0.50	
Perylene-d12	48143	16.33	41578	16.33	116	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	64615	11.18	53882	11.18	120	50 - 200	0.0000	+/-0.50	

**Form 8**  
**INTERNAL STANDARD AREA AND RT SUMMARY**  
**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9J21005

Instrument: SV-5973BF

Matrix: Water

Calibration: 9081701

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
<b>Calibration Check (9J21005-CCV1)</b>			Lab File ID: 10210902.D			Analyzed: 10/21/09 12:56			
Acenaphthene-d10	21823	8.91				50 - 200		+/-0.50	
Chrysene-d12	42340	14				50 - 200		+/-0.50	
Naphthalene-d8	37650	6.75				50 - 200		+/-0.50	
Perylene-d12	37293	15.72				50 - 200		+/-0.50	
Phenanthrene-d10	38987	10.72				50 - 200		+/-0.50	
<b>LCS (9101141-BS1)</b>			Lab File ID: 10210907.D			Analyzed: 10/21/09 15:25			
Acenaphthene-d10	24892	8.91	21823	8.91	114	50 - 200	0.0000	+/-0.50	
Chrysene-d12	40882	14	42340	14	97	50 - 200	0.0000	+/-0.50	
Naphthalene-d8	36607	6.75	37650	6.75	97	50 - 200	0.0000	+/-0.50	
Perylene-d12	40649	15.72	37293	15.72	109	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	45453	10.71	38987	10.72	117	50 - 200	-0.0100	+/-0.50	
<b>Blank (9101141-BLK1)</b>			Lab File ID: 10210908.D			Analyzed: 10/21/09 15:54			
Acenaphthene-d10	26286	8.91	21823	8.91	120	50 - 200	0.0000	+/-0.50	
Chrysene-d12	42101	14.01	42340	14	99	50 - 200	0.0100	+/-0.50	
Naphthalene-d8	38838	6.75	37650	6.75	103	50 - 200	0.0000	+/-0.50	
Perylene-d12	40342	15.72	37293	15.72	108	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	45883	10.72	38987	10.72	118	50 - 200	0.0000	+/-0.50	
<b>Matrix Spike (9101141-MS1)</b>			Lab File ID: 10210909.D			Analyzed: 10/21/09 16:24			
Acenaphthene-d10	15583	8.91	21823	8.91	71	50 - 200	0.0000	+/-0.50	
Chrysene-d12	27509	14	42340	14	65	50 - 200	0.0000	+/-0.50	
Naphthalene-d8	23574	6.75	37650	6.75	63	50 - 200	0.0000	+/-0.50	
Perylene-d12	29470	15.72	37293	15.72	79	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	28314	10.72	38987	10.72	73	50 - 200	0.0000	+/-0.50	
<b>Matrix Spike Dup (9101141-MSD1)</b>			Lab File ID: 10210910.D			Analyzed: 10/21/09 16:53			
Acenaphthene-d10	20943	8.91	21823	8.91	96	50 - 200	0.0000	+/-0.50	
Chrysene-d12	34204	14	42340	14	81	50 - 200	0.0000	+/-0.50	
Naphthalene-d8	31425	6.75	37650	6.75	83	50 - 200	0.0000	+/-0.50	
Perylene-d12	37770	15.72	37293	15.72	101	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	37591	10.72	38987	10.72	96	50 - 200	0.0000	+/-0.50	

**Form 8**  
**INTERNAL STANDARD AREA AND RT SUMMARY**  
**EPA 8270m**

Laboratory: TestAmerica Portland  
 Client: CH2M-Hill  
 Sequence: 9J21005  
 Matrix: Water

SDG: PSJ0657  
 Project: NW Pipe Project  
 Instrument: SV-5973BF  
 Calibration: 9081701

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
<b>SS-405-101909-2 (PSJ0657-06)</b>			Lab File ID: 10210911.D			Analyzed: 10/21/09 17:23			
Acenaphthene-d10	16995	8.91	21823	8.91	78	50 - 200	0.0000	+/-0.50	
Chrysene-d12	28564	14	42340	14	67	50 - 200	0.0000	+/-0.50	
Naphthalene-d8	25293	6.75	37650	6.75	67	50 - 200	0.0000	+/-0.50	
Perylene-d12	35285	15.72	37293	15.72	95	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	31035	10.71	38987	10.72	80	50 - 200	-0.0100	+/-0.50	
<b>SS-401-101909-0 (PSJ0657-01)</b>			Lab File ID: 10210923.D			Analyzed: 10/21/09 23:18			
Acenaphthene-d10	28208	8.9	21823	8.91	129	50 - 200	-0.0100	+/-0.50	
Chrysene-d12	43040	14	42340	14	102	50 - 200	0.0000	+/-0.50	
Naphthalene-d8	42990	6.75	37650	6.75	114	50 - 200	0.0000	+/-0.50	
Perylene-d12	42204	15.71	37293	15.72	113	50 - 200	-0.0100	+/-0.50	
Phenanthrene-d10	48851	10.71	38987	10.72	125	50 - 200	-0.0100	+/-0.50	
<b>SS-404-101909-0 (PSJ0657-04)</b>			Lab File ID: 10210925.D			Analyzed: 10/22/09 00:17			
Acenaphthene-d10	28673	8.9	21823	8.91	131	50 - 200	-0.0100	+/-0.50	
Chrysene-d12	56080	14	42340	14	132	50 - 200	0.0000	+/-0.50	
Naphthalene-d8	45788	6.74	37650	6.75	122	50 - 200	-0.0100	+/-0.50	
Perylene-d12	52667	15.71	37293	15.72	141	50 - 200	-0.0100	+/-0.50	
Phenanthrene-d10	49435	10.71	38987	10.72	127	50 - 200	-0.0100	+/-0.50	

**Form 8**  
**INTERNAL STANDARD AREA AND RT SUMMARY**  
**EPA 8270m**

Laboratory: TestAmerica Portland  
 Client: CH2M-Hill  
 Sequence: 9J22011  
 Matrix: Water

SDG: PSJ0657  
 Project: NW Pipe Project  
 Instrument: SV-5973BF  
 Calibration: 9081701

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
<b>Calibration Check (9J22011-CCV1)</b>			Lab File ID: 10220904.D			Analyzed: 10/22/09 13:54			
Acenaphthene-d10	38310	8.89				50 - 200		+/-0.50	
Chrysene-d12	66561	13.99				50 - 200		+/-0.50	
Naphthalene-d8	62735	6.73				50 - 200		+/-0.50	
Perylene-d12	56425	15.7				50 - 200		+/-0.50	
Phenanthrene-d10	68460	10.7				50 - 200		+/-0.50	
<b>SS-403-101909-0 (PSJ0657-03)</b>			Lab File ID: 10220914.D			Analyzed: 10/22/09 18:49			
Acenaphthene-d10	30269	8.89	38310	8.89	79	50 - 200	0.0000	+/-0.50	
Chrysene-d12	44414	13.99	66561	13.99	67	50 - 200	0.0000	+/-0.50	
Naphthalene-d8	52364	6.73	62735	6.73	83	50 - 200	0.0000	+/-0.50	
Perylene-d12	43678	15.7	56425	15.7	77	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	48494	10.7	68460	10.7	71	50 - 200	0.0000	+/-0.50	
<b>SS-404-101909-0 (PSJ0657-04RE1)</b>			Lab File ID: 10220915.D			Analyzed: 10/22/09 19:19			
Acenaphthene-d10	27316	8.89	38310	8.89	71	50 - 200	0.0000	+/-0.50	
Chrysene-d12	37893	13.99	66561	13.99	57	50 - 200	0.0000	+/-0.50	
Naphthalene-d8	40781	6.73	62735	6.73	65	50 - 200	0.0000	+/-0.50	
Perylene-d12	41529	15.7	56425	15.7	74	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	46793	10.7	68460	10.7	68	50 - 200	0.0000	+/-0.50	
<b>SS-405-101909-0 (PSJ0657-05)</b>			Lab File ID: 10220916.D			Analyzed: 10/22/09 19:48			
Acenaphthene-d10	28768	8.89	38310	8.89	75	50 - 200	0.0000	+/-0.50	
Chrysene-d12	42532	13.99	66561	13.99	64	50 - 200	0.0000	+/-0.50	
Naphthalene-d8	42861	6.73	62735	6.73	68	50 - 200	0.0000	+/-0.50	
Perylene-d12	49943	15.7	56425	15.7	89	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	50146	10.7	68460	10.7	73	50 - 200	0.0000	+/-0.50	
<b>SS-406-101909-0 (PSJ0657-07)</b>			Lab File ID: 10220917.D			Analyzed: 10/22/09 20:18			
Acenaphthene-d10	28360	8.89	38310	8.89	74	50 - 200	0.0000	+/-0.50	
Chrysene-d12	63321	14.02	66561	13.99	95	50 - 200	0.0300	+/-0.50	
Naphthalene-d8	46362	6.73	62735	6.73	74	50 - 200	0.0000	+/-0.50	
Perylene-d12	53005	15.77	56425	15.7	94	50 - 200	0.0700	+/-0.50	
Phenanthrene-d10	44590	10.7	68460	10.7	65	50 - 200	0.0000	+/-0.50	

**Form 8**  
**INTERNAL STANDARD AREA AND RT SUMMARY**  
**EPA 8270m**

Laboratory: TestAmerica Portland  
 Client: CH2M-Hill  
 Sequence: 9J22011  
 Matrix: Water

SDG: PSJ0657  
 Project: NW Pipe Project  
 Instrument: SV-5973BF  
 Calibration: 9081701

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
<b>SS-407-101909-0 (PSJ0657-08)</b>			Lab File ID: 10220918.D			Analyzed: 10/22/09 20:47			
Acenaphthene-d10	29771	8.9	38310	8.89	78	50 - 200	0.0100	+/-0.50	
Chrysene-d12	74508	13.99	66561	13.99	112	50 - 200	0.0000	+/-0.50	
Naphthalene-d8	53529	6.73	62735	6.73	85	50 - 200	0.0000	+/-0.50	
Perylene-d12	84055	15.71	56425	15.7	149	50 - 200	0.0100	+/-0.50	
Phenanthrene-d10	52291	10.7	68460	10.7	76	50 - 200	0.0000	+/-0.50	
<b>SS-408-101909-0 (PSJ0657-09)</b>			Lab File ID: 10220919.D			Analyzed: 10/22/09 21:17			
Acenaphthene-d10	31308	8.89	38310	8.89	82	50 - 200	0.0000	+/-0.50	
Chrysene-d12	51273	13.99	66561	13.99	77	50 - 200	0.0000	+/-0.50	
Naphthalene-d8	52079	6.73	62735	6.73	83	50 - 200	0.0000	+/-0.50	
Perylene-d12	47639	15.7	56425	15.7	84	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	51190	10.7	68460	10.7	75	50 - 200	0.0000	+/-0.50	
<b>SS-411-101909-0 (PSJ0657-12)</b>			Lab File ID: 10220920.D			Analyzed: 10/22/09 21:46			
Acenaphthene-d10	28588	8.89	38310	8.89	75	50 - 200	0.0000	+/-0.50	
Naphthalene-d8	46650	6.73	62735	6.73	74	50 - 200	0.0000	+/-0.50	
<b>SS-411-101909-1 (PSJ0657-13)</b>			Lab File ID: 10220921.D			Analyzed: 10/22/09 22:16			
Acenaphthene-d10	30618	8.89	38310	8.89	80	50 - 200	0.0000	+/-0.50	
Naphthalene-d8	50070	6.73	62735	6.73	80	50 - 200	0.0000	+/-0.50	

**Form 8**  
**INTERNAL STANDARD AREA AND RT SUMMARY**  
**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9J26003

Instrument: SV-5973BF

Matrix: Water

Calibration: 9081701

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
<b>Calibration Check (9J26003-CCV1)</b>			Lab File ID: 10260902.D			Analyzed: 10/26/09 09:09			
Acenaphthene-d10	38718	8.89				50 - 200		+/-0.50	
Chrysene-d12	58301	13.98				50 - 200		+/-0.50	
Naphthalene-d8	62464	6.73				50 - 200		+/-0.50	
Perylene-d12	48194	15.69				50 - 200		+/-0.50	
Phenanthrene-d10	67126	10.69				50 - 200		+/-0.50	
<b>SS-411-101909-0 (PSJ0657-12RE1)</b>			Lab File ID: 10260906.D			Analyzed: 10/26/09 11:07			
Acenaphthene-d10	31291	8.89	38718	8.89	81	50 - 200	0.0000	+/-0.50	
Chrysene-d12	40916	13.98	58301	13.98	70	50 - 200	0.0000	+/-0.50	
Naphthalene-d8	48769	6.73	62464	6.73	78	50 - 200	0.0000	+/-0.50	
Perylene-d12	37037	15.69	48194	15.69	77	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	52720	10.69	67126	10.69	79	50 - 200	0.0000	+/-0.50	
<b>SS-411-101909-1 (PSJ0657-13RE1)</b>			Lab File ID: 10260907.D			Analyzed: 10/26/09 11:37			
Acenaphthene-d10	32298	8.89	38718	8.89	83	50 - 200	0.0000	+/-0.50	
Chrysene-d12	42576	13.98	58301	13.98	73	50 - 200	0.0000	+/-0.50	
Naphthalene-d8	51134	6.73	62464	6.73	82	50 - 200	0.0000	+/-0.50	
Perylene-d12	38839	15.69	48194	15.69	81	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	54513	10.69	67126	10.69	81	50 - 200	0.0000	+/-0.50	
<b>SS-406-101909-0 (PSJ0657-07RE1)</b>			Lab File ID: 10260908.D			Analyzed: 10/26/09 12:07			
Acenaphthene-d10	29329	8.89	38718	8.89	76	50 - 200	0.0000	+/-0.50	
Chrysene-d12	54037	13.99	58301	13.98	93	50 - 200	0.0100	+/-0.50	
Naphthalene-d8	46827	6.73	62464	6.73	75	50 - 200	0.0000	+/-0.50	
Perylene-d12	48996	15.71	48194	15.69	102	50 - 200	0.0200	+/-0.50	
Phenanthrene-d10	42157	10.69	67126	10.69	63	50 - 200	0.0000	+/-0.50	

**Form 5**  
**ANALYSIS BATCH (SEQUENCE) SUMMARY**  
**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9H12013

Instrument: SV-5973BF

Calibration: 9081701

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	9H12013-TUN1	08120902.D	08/12/09 10:15
Cal Standard	9H12013-CAL1	08120904.D	08/12/09 10:48
Cal Standard	9H12013-CAL2	08120905.D	08/12/09 11:18
Cal Standard	9H12013-CAL3	08120906.D	08/12/09 11:49
Cal Standard	9H12013-CAL4	08120907.D	08/12/09 12:20
Cal Standard	9H12013-CAL5	08120908.D	08/12/09 12:51
Cal Standard	9H12013-CAL6	08120909.D	08/12/09 13:21
Cal Standard	9H12013-CAL7	08120910.D	08/12/09 13:52
Cal Standard	9H12013-CAL8	08120911.D	08/12/09 14:23
Cal Standard	9H12013-CAL9	08120912.D	08/12/09 14:54
Secondary Cal Check	9H12013-SCV1	08120913.D	08/12/09 15:24

**Form 5**  
**ANALYSIS BATCH (SEQUENCE) SUMMARY**  
**EPA 8270m**

Laboratory: TestAmerica Portland  
 Client: CH2M-Hill  
 Sequence: 9J21005

SDG: PSJ0657  
 Project: NW Pipe Project  
 Instrument: SV-5973BF  
 Calibration: 9081701

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	9J21005-TUN1	10210901.D	10/21/09 12:36
Calibration Check	9J21005-CCV1	10210902.D	10/21/09 12:56
LCS	9101141-BS1	10210907.D	10/21/09 15:25
Blank	9101141-BLK1	10210908.D	10/21/09 15:54
SS-405-101909-2	9101141-MS1	10210909.D	10/21/09 16:24
SS-405-101909-2	9101141-MSD1	10210910.D	10/21/09 16:53
SS-405-101909-2	PSJ0657-06	10210911.D	10/21/09 17:23
SS-401-101909-0	PSJ0657-01	10210923.D	10/21/09 23:18
SS-404-101909-0	PSJ0657-04	10210925.D	10/22/09 00:17

**Form 5**  
**ANALYSIS BATCH (SEQUENCE) SUMMARY**  
**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9J22011

Instrument: SV-5973BF

Calibration: 9081701

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	9J22011-TUN3	10220903.D	10/22/09 13:34
Calibration Check	9J22011-CCV1	10220904.D	10/22/09 13:54
SS-403-101909-0	PSJ0657-03	10220914.D	10/22/09 18:49
SS-404-101909-0	PSJ0657-04RE1	10220915.D	10/22/09 19:19
SS-405-101909-0	PSJ0657-05	10220916.D	10/22/09 19:48
SS-406-101909-0	PSJ0657-07	10220917.D	10/22/09 20:18
SS-407-101909-0	PSJ0657-08	10220918.D	10/22/09 20:47
SS-408-101909-0	PSJ0657-09	10220919.D	10/22/09 21:17
SS-411-101909-0	PSJ0657-12	10220920.D	10/22/09 21:46
SS-411-101909-1	PSJ0657-13	10220921.D	10/22/09 22:16

**Form 5**  
**ANALYSIS BATCH (SEQUENCE) SUMMARY**  
**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9J26003

Instrument: SV-5973BF

Calibration: 9081701

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	9J26003-TUN1	10260901.D	10/26/09 08:46
Calibration Check	9J26003-CCV1	10260902.D	10/26/09 09:09
SS-411-101909-0	PSJ0657-12RE1	10260906.D	10/26/09 11:07
SS-411-101909-1	PSJ0657-13RE1	10260907.D	10/26/09 11:37
SS-406-101909-0	PSJ0657-07RE1	10260908.D	10/26/09 12:07

## Semi-Volatile GCMS Analysis QCAR

Work Order #: PS50 657 Batch #: 9101141 ~~4100711~~ Test Code: 8270 SEM PAH

Primary Review Date/Initial: Secondary Review Date/Initial:

10/29/09 MF

Low 10/29/9

Check here if data package is needed

### Sample Integrity

/  
/  
/

Samples extracted within hold time  
All work is completed according to work order  
Special instructions are checked

### Data Analysis

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Proper daily calibration file used for quantitation  
Proper dilution factors/multipliers are used  
Daily calibration and tuning criteria are within acceptable limits  
Internal standard areas and retention time are within limits  
Surrogates are within limits (or properly flagged if out)  
All prep and analysis bench sheets are fully completed  
Concentrations are within calibration range  
All chromatograms are included and labeled  
Reported results are within 12 hours of valid DFTPP tune

### Reporting

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Method blank is non-detected and reported from same prep batch  
Reporting limits are correct  
Proper units and significant figures are correct  
Percent solids are included (if applicable)  
Extraction, analysis (and TCLP if applicable) dates and times are correct  
Control limits are met for spike recoveries, proper comments included  
Proper QC reports are included  
Necessary comments are included  
Analytes and QC are updated to "analyzed" and locked  
Analytes and QC are updated to "reviewed"

Comments: Changed samples to puppet batch 9101141  
for sequencing purposes - 10/30/09 MF

## **GC/MS Semivolatile Organic Compounds**

PAH EPA 8270m SIM  
Preparation Logs

**Form 4**  
**PREPARATION BATCH SUMMARY**  
**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Batch: 9101141      Batch Matrix: Soil

Preparation: EPA 3550

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	9101141-BLK1	10210908.D	10/20/09 16:00	
LCS	9101141-BS1	10210907.D	10/20/09 16:00	
SS-405-101909-2	9101141-MS1	10210909.D	10/20/09 16:00	
SS-405-101909-2	9101141-MSD1	10210910.D	10/20/09 16:00	
SS-401-101909-0	PSJ0657-01	10210923.D	10/20/09 16:00	level 3 dp.
SS-403-101909-0	PSJ0657-03	10220914.D	10/20/09 16:00	level 3 dp.
SS-404-101909-0	PSJ0657-04	10210925.D	10/20/09 16:00	level 3 dp.
SS-404-101909-0	PSJ0657-04RE1	10220915.D	10/20/09 16:00	Added 10/30/2009 by NAF
SS-405-101909-0	PSJ0657-05	10220916.D	10/20/09 16:00	level 3 dp.
SS-405-101909-2	PSJ0657-06	10210911.D	10/20/09 16:00	level 3 dp, MS/ MSD, or appropriate QC
SS-406-101909-0	PSJ0657-07	10220917.D	10/20/09 16:00	level 3 dp.
SS-406-101909-0	PSJ0657-07RE1	10260908.D	10/20/09 16:00	Added 10/30/2009 by NAF
SS-407-101909-0	PSJ0657-08	10220918.D	10/20/09 16:00	level 3 dp.
SS-408-101909-0	PSJ0657-09	10220919.D	10/20/09 16:00	level 3 dp.
SS-411-101909-0	PSJ0657-12	10220920.D	10/20/09 16:00	level 3 dp.
SS-411-101909-0	PSJ0657-12RE1	10260906.D	10/20/09 16:00	Added 10/30/2009 by NAF
SS-411-101909-1	PSJ0657-13	10220921.D	10/20/09 16:00	level 3 dp.
SS-411-101909-1	PSJ0657-13RE1	10260907.D	10/20/09 16:00	Added 10/30/2009 by NAF

QCAR - Organic Prep, Semi-Volatiles

Batch# 9100711 Prep Method/Analysis 3SS0/8270 SIMPAH Matrix Soil  
Phthalates

Sample Integrity Date/Initials 10/20/09 AG

- Is the method appropriate for the sample? Yes  No
- Is there adequate amount of sample? Yes  No
- Are the sample containers appropriate? Yes  No
- Are the samples within hold time? If not fill out a CAR. Yes  No
- Do sample ID's match the work order? Yes  No
- Is sample available for MS/MSD? Yes  No

Extraction Date/Initials 10/20/09 AG

- Was all glassware triple rinsed with solvent? Yes  No
- Was the "whole bottle extraction procedure" used if water? Yes  No  NA

Concentration Final Solvent: DCM

Samples transferred into KDs (date/init.) NA

Macro conc. (date/init./temp.) 10/20/09 AG Micro conc. (date/init.) 10/20/09 AG  
75-20

If applicable:

<input type="checkbox"/> GPC	
<input type="checkbox"/> OPF Soil: poured over Na <sub>2</sub> SO <sub>4</sub> (date/init.)	_____
transferred into KDs (date/init.)	_____
Macro conc. (date/init./temp.)	Micro conc. (date/init.)

Sample Vialing Date/Initials 10/21/09 AG

- Are the samples being brought to their normal final volume? Yes  No
- Is the solvent level indicated on the ALS vials? Yes  No
- Was the SOP followed with no deviation? If no, explain below. Yes  No
- Is the GPC or TCLP log attached (if applicable)? Yes  No  NA
- Is the paperwork complete, correct and undated in the computer? Yes  No

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**PREPARATION BENCH SHEET**

**Batch 9101141**

Printed: 10/30/2009 3:46:08PM

Prep method: EPA 3550

TestAmerica Portland

Matrix: Soil

Surrogate 1: 9080045 Surrogate 2: 9080267

Lab Number	Analysis	Prepared	Initial (g)	Final /nit (ml)	Spike ID	Spike Amt (uL)	Source ID	Surr 1 /nit (uL)	Surr 2 /nit (uL)	pH	Extraction Comments
9101141-BLK1	QC	10/20/09 16:00	30.02	2				50	5		
9101141-BS1	QC	10/20/09 16:00	30.25	2	9080007	20		50	5		
"	(Second Spike)	"	"	"	9080162	500		"	"		
9101141-MS1	QC	10/20/09 16:00	30.02	2	9080007	20	PSJ0657-06	50	5		
"	(Second Spike)	"	"	"	9080162	500	PSJ0657-06	"	"		
9101141-MSD1	QC	10/20/09 16:00	30.11	2	9080007	20	PSJ0657-06	50	5		
"	(Second Spike)	"	"	"	9080162	500	PSJ0657-06	"	"		
PSJ0657-01	8270 SIM PAH	10/20/09 16:00	30.08	2				50	5		level 3 dp.
PSJ0657-03	8270 SIM PAH	10/20/09 16:00	30.03	2				50	5		level 3 dp.
PSJ0657-04	8270 SIM PAH	10/20/09 16:00	30.14	2				50	5		level 3 dp.
PSJ0657-05	8270 SIM PAH	10/20/09 16:00	30.08	2				50	5		level 3 dp.
PSJ0657-06	8270 SIM PAH	10/20/09 16:00	30.08	2				50	5		level 3 dp, MS/MSD, or appropriate QC
PSJ0657-07	8270 SIM PAH	10/20/09 16:00	3.27	2				50	5		level 3 dp.
PSJ0657-08	8270 SIM PAH	10/20/09 16:00	30.33	2				50	5		level 3 dp.
PSJ0657-09	8270 SIM PAH	10/20/09 16:00	30.11	2				50	5		level 3 dp.
PSJ0657-12	8270 SIM PAH	10/20/09 16:00	30.06	2				50	5		level 3 dp.
PSJ0657-13	8270 SIM PAH	10/20/09 16:00	30.15	2				50	5		level 3 dp.

Batch Comments:

DCM# 9100013  
 ACETONE# 9020156  
 GLASSWOOL# 00509001  
 NA2SO4# 085139  
 FILTER PAPER# WHATMAN 41  
 BALANCE ID# NCAP-0087

Spiking Witnessed By \_\_\_\_\_

Date \_\_\_\_\_

Preparation Reviewed By \_\_\_\_\_

Date \_\_\_\_\_

**PREPARATION BENCH SHEET**

**Batch 9100711**

Printed: 10/20/2009 12:36:15PM

Prep method: EPA 3550  
Matrix: Soil

TestAmerica Portland

Surrogate 1-904014Z Surrogate 2-9060195-9080267

Lab Number	Analysis	Prepared	Initial (g)	Final (ml)	Spike Amt (uL)	Spike ID	Source ID	Surr 1 (uL)	Surr 2 (uL)	pH	Extraction Comments
9100711-BLKI	QC	10/20/09 11:09	30.02	2		9080007		50	5		
9100711-BSI	QC	10/20/09 11:09	30.02	2		9080007		50	5		
"	(Second Spike)	"	"	"	500	9080162		"	"		
9100711-BS2	QC	10/20/09 11:09	30.01	2	1	9080007		50	5		
9100711-MS1	QC	10/20/09 11:09	30.11	2	20	9080007	PSJ0657-06	50	5		rocky
"	(Second Spike)	"	"	"	500	9080162	PSJ0657-06	"	"		
9100711-MSD1	QC	10/20/09 11:09	30.25	2	20	9080007	PSJ0657-06	50	5		
"	(Second Spike)	"	"	"	500	9080162	PSJ0657-06	"	"		
PSJ0242-07	8270SIM Phthalates	10/20/09 11:09	30.29	2				50	5		wet pigenerics
PSJ0417-02	8270 SIM PAH	10/20/09 11:09	30.30	2				50	5		MDL report added 10/19, clay, rocks
PSJ0505-02	8270 SIM PAH	10/20/09 11:09	30.07	2				50	5		No Naphthalene, report in mg/kg and clay, rocks
PSJ0657-01	8270 SIM PAH	10/20/09 11:09	30.08	2				50	5		level 3 dp. sand
PSJ0657-01	8270SIM Phthalates	10/20/09 11:09	30.08	2				50	5		level 3 dp.
PSJ0657-02	8270SIM Phthalates	10/20/09 11:09	30.34	2				50	5		level 3 dp. clay/rocks
PSJ0657-03	8270 SIM PAH	10/20/09 11:09	30.03	2				50	5		level 3 dp. rocks
PSJ0657-03	8270SIM Phthalates	10/20/09 11:09	30.03	2				50	5		level 3 dp.
PSJ0657-04	8270 SIM PAH	10/20/09 11:09	30.14	2				50	5		level 3 dp. wet rocks
PSJ0657-04	8270SIM Phthalates	10/20/09 11:09	30.14	2				50	5		level 3 dp.
PSJ0657-05	8270 SIM PAH	10/20/09 11:09	30.03	2				50	5		level 3 dp. rocks, soil, pigenerics
PSJ0657-05	8270SIM Phthalates	10/20/09 11:09	30.03	2				50	5		level 3 dp.
PSJ0657-06	8270 SIM PAH	10/20/09 11:09	30.08	2				50	5		level 3 dp. MS/MSD, or appropriate QC
PSJ0657-06	8270SIM Phthalates	10/20/09 11:09	30.08	2				50	5		level 3 dp. MS/MSD, or appropriate QC
PSJ0657-07	8270 SIM PAH	10/20/09 11:09	30.27	2				50	5		level 3 dp. red clay, rocks
PSJ0657-07	8270SIM Phthalates	10/20/09 11:09	30.27	2				50	5		level 3 dp.
PSJ0657-08	8270 SIM PAH	10/20/09 11:09	30.33	2				50	5		level 3 dp. wet rocks, soil
PSJ0657-08	8270SIM Phthalates	10/20/09 11:09	30.33	2				50	5		level 3 dp.
PSJ0657-09	8270 SIM PAH	10/20/09 11:09	30.11	2				50	5		level 3 dp. wet rocks, soil
PSJ0657-09	8270SIM Phthalates	10/20/09 11:09	30.11	2				50	5		level 3 dp.
PSJ0657-10	8270SIM Phthalates	10/20/09 11:09	30.17	2				50	5		level 3 dp. clay

2650  
Spiking Witnessed By: *[Signature]* Date: 10/20/09

Preparation Reviewed By: *[Signature]* Date: 10/21/09

**PREPARATION BENCH SHEET**

**Batch 9100711**

Printed: 10/20/2009 12:36:15PM

TestAmerica Portland

Prep method: EPA 3550  
Matrix: Soil

Surrogate 1: 9040142 Surrogate 2: 9060195

Lab Number	Analysis	Prepared	Initial (g)	Final (ml)	Init	Spike ID	Spike Amt (uL)	Init	Surr 1 (uL)	Surr 2 (uL)	Init	pH	Extraction Comments
PSJ0657-11	8270SIM Phthalates	10/20/09 11:09	30.32	2	PA			PA	50	5	PA		level 3 dp. wet soil, rods
PSJ0657-12	8270 SIM PAH	10/20/09 11:09	30.06	2	PA			PA	50	5	PA		level 3 dp. soil, Degraded
PSJ0657-12	8270SIM Phthalates	10/20/09 11:09	30.66	2	PA			PA	50	5	PA		level 3 dp.
PSJ0657-13	8270 SIM PAH	10/20/09 11:09	30.15	2	PA			PA	50	5	PA		level 3 dp. soil, Degraded
PSJ0657-13	8270SIM Phthalates	10/20/09 11:09	30.15	2	PA			PA	50	5	PA		level 3 dp.
PSJ0675-01	8270 SIM PAH	10/20/09 11:09	30.23	2	PA			PA	50	5	PA		rods, deg, chunks of tar low 10/20/09

Batch Comments:  
DCM# 9100013  
ACETONE# 9820156  
GLASSWOOL# 00509001  
Na2SO4# 065139  
FILTER PAPER# WHATMAN 41  
BALANCE ID# NCAP-0087

1600 10/20/09 PA

## **GC/MS Semivolatile Organic Compounds**

Phthalates EPA 8270m SIM  
Quality Control Summaries

**Form 2**  
**SURROGATE STANDARD RECOVERY AND RT SUMMARY**  
**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9J21020

Instrument: 5970

Matrix: Soil

Calibration: 9102702

Surrogate Compound	Spike Level ng/ml	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>Calibration Check (9J21020-CCV1 )</b>			Lab File ID: 10210903.D		Analyzed: 10/21/09 20:11			
2-Fluorobiphenyl	1000	111	70 - 130	10.9	11.16333	-0.2633	+/-1.0	
p-Terphenyl-d14	1000	101	70 - 130	17.04	17.33	-0.2900	+/-1.0	

**Form 2**  
**SURROGATE STANDARD RECOVERY AND RT SUMMARY**  
**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9J21020

Instrument: 5970

Matrix: Soil

Calibration: 9102702

Surrogate Compound	Spike Level ug/kg	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>Blank (9100711-BLK1 )</b>			Lab File ID: 10210904.D		Analyzed: 10/21/09 20:47			
2-Fluorobiphenyl	167	110	10 - 150	10.89	11.16333	-0.2733	+/-1.0	
p-Terphenyl-d14	167	101	10 - 150	17.04	17.33	-0.2900	+/-1.0	
<b>LCS (9100711-BS1 )</b>			Lab File ID: 10210905.D		Analyzed: 10/21/09 21:24			
2-Fluorobiphenyl	167	127	10 - 150	10.89	11.16333	-0.2733	+/-1.0	
p-Terphenyl-d14	167	112	10 - 150	17.04	17.33	-0.2900	+/-1.0	

**Form 2**  
**SURROGATE STANDARD RECOVERY AND RT SUMMARY**  
**EPA 8270m**

Laboratory: TestAmerica Portland  
 Client: CH2M-Hill  
 Sequence: 9J21020  
 Matrix: Soil

SDG: PSJ0657  
 Project: NW Pipe Project  
 Instrument: 5970  
 Calibration: 9102702

Surrogate Compound	Spike Level ug/kg dry	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>SS-402-101909-0 (PSJ0657-02)</b>		Lab File ID: 10210908.D		Analyzed: 10/21/09 23:11				
2-Fluorobiphenyl	176	120	10 - 150	10.89	11.16333	-0.2733	+/-1.0	
p-Terphenyl-d14	176	120	10 - 150	17.04	17.33	-0.2900	+/-1.0	
<b>SS-403-101909-0 (PSJ0657-03)</b>		Lab File ID: 10210909.D		Analyzed: 10/21/09 23:48				
2-Fluorobiphenyl	179	107	10 - 150	10.89	11.16333	-0.2733	+/-1.0	
p-Terphenyl-d14	179	103	10 - 150	17.04	17.33	-0.2900	+/-1.0	
<b>SS-404-101909-0 (PSJ0657-04)</b>		Lab File ID: 10210920.D		Analyzed: 10/22/09 06:23				
2-Fluorobiphenyl	195	94.8	10 - 150	10.89	11.16333	-0.2733	+/-1.0	
p-Terphenyl-d14	195	98.1	10 - 150	17.04	17.33	-0.2900	+/-1.0	
<b>SS-405-101909-0 (PSJ0657-05)</b>		Lab File ID: 10210910.D		Analyzed: 10/22/09 00:24				
2-Fluorobiphenyl	190	104	10 - 150	10.89	11.16333	-0.2733	+/-1.0	
p-Terphenyl-d14	190	106	10 - 150	17.04	17.33	-0.2900	+/-1.0	
<b>SS-406-101909-0 (PSJ0657-07)</b>		Lab File ID: 10210911.D		Analyzed: 10/22/09 01:00				
2-Fluorobiphenyl	184	97.4	10 - 150	10.89	11.16333	-0.2733	+/-1.0	
p-Terphenyl-d14	184	125	10 - 150	17.04	17.33	-0.2900	+/-1.0	
<b>SS-407-101909-0 (PSJ0657-08)</b>		Lab File ID: 10210912.D		Analyzed: 10/22/09 01:35				
2-Fluorobiphenyl	188	99.2	10 - 150	10.89	11.16333	-0.2733	+/-1.0	
p-Terphenyl-d14	188	102	10 - 150	17.04	17.33	-0.2900	+/-1.0	
<b>SS-408-101909-0 (PSJ0657-09)</b>		Lab File ID: 10210913.D		Analyzed: 10/22/09 02:11				
2-Fluorobiphenyl	179	93.1	10 - 150	10.89	11.16333	-0.2733	+/-1.0	
p-Terphenyl-d14	179	98.0	10 - 150	17.04	17.33	-0.2900	+/-1.0	
<b>SS-409-101909-0 (PSJ0657-10)</b>		Lab File ID: 10210914.D		Analyzed: 10/22/09 02:47				
2-Fluorobiphenyl	203	118	10 - 150	10.89	11.16333	-0.2733	+/-1.0	
p-Terphenyl-d14	203	132	10 - 150	17.04	17.33	-0.2900	+/-1.0	
<b>SS-410-101909-0 (PSJ0657-11)</b>		Lab File ID: 10210915.D		Analyzed: 10/22/09 03:23				
2-Fluorobiphenyl	190	102	10 - 150	10.89	11.16333	-0.2733	+/-1.0	
p-Terphenyl-d14	190	120	10 - 150	17.04	17.33	-0.2900	+/-1.0	
<b>SS-411-101909-0 (PSJ0657-12)</b>		Lab File ID: 10210916.D		Analyzed: 10/22/09 03:59				
2-Fluorobiphenyl	195	119	10 - 150	10.89	11.16333	-0.2733	+/-1.0	
p-Terphenyl-d14	195	134	10 - 150	17.04	17.33	-0.2900	+/-1.0	
<b>SS-411-101909-1 (PSJ0657-13)</b>		Lab File ID: 10210917.D		Analyzed: 10/22/09 04:35				
2-Fluorobiphenyl	189	122	10 - 150	10.89	11.16333	-0.2733	+/-1.0	
p-Terphenyl-d14	189	134	10 - 150	17.04	17.33	-0.2900	+/-1.0	

**Form 2**  
**SURROGATE STANDARD RECOVERY AND RT SUMMARY**  
**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9J22016

Instrument: 5970

Matrix: Soil

Calibration: 9102702

Surrogate Compound	Spike Level ng/ml	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>Calibration Check (9J22016-CCV1 )</b>			Lab File ID: 10220904.D		Analyzed: 10/22/09 18:45			
2-Fluorobiphenyl	1000	114	70 - 130	10.87	11.16333	-0.2933	+/-1.0	
p-Terphenyl-d14	1000	102	70 - 130	17.02	17.33	-0.3100	+/-1.0	

**Form 2**  
**SURROGATE STANDARD RECOVERY AND RT SUMMARY**  
**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9J22016

Instrument: 5970

Matrix: Soil

Calibration: 9102702

Surrogate Compound	Spike Level ug/kg dry	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>Matrix Spike (9100711-MS1 )</b>		Lab File ID: 10220910.D		Analyzed: 10/22/09 22:21				
2-Fluorobiphenyl	184	92.8	10 - 150	10.87	11.16333	-0.2933	+/-1.0	
p-Terphenyl-d14	184	93.2	10 - 150	17.02	17.33	-0.3100	+/-1.0	
<b>Matrix Spike Dup (9100711-MSD1 )</b>		Lab File ID: 10220911.D		Analyzed: 10/22/09 22:57				
2-Fluorobiphenyl	183	92.1	10 - 150	10.87	11.16333	-0.2933	+/-1.0	
p-Terphenyl-d14	183	91.1	10 - 150	17.02	17.33	-0.3100	+/-1.0	
<b>SS-401-101909-0 (PSJ0657-01 )</b>		Lab File ID: 10220913.D		Analyzed: 10/23/09 00:09				
2-Fluorobiphenyl	183	93.5	10 - 150	10.87	11.16333	-0.2933	+/-1.0	
p-Terphenyl-d14	183	112	10 - 150	17.02	17.33	-0.3100	+/-1.0	
<b>SS-403-101909-0 (PSJ0657-03RE1 )</b>		Lab File ID: 10220914.D		Analyzed: 10/23/09 00:45				
2-Fluorobiphenyl	179	90.2	10 - 150	10.87	11.16333	-0.2933	+/-1.0	
p-Terphenyl-d14	179	140	10 - 150	17.02	17.33	-0.3100	+/-1.0	
<b>SS-404-101909-0 (PSJ0657-04RE1 )</b>		Lab File ID: 10220918.D		Analyzed: 10/23/09 03:09				
2-Fluorobiphenyl	195	91.8	10 - 150	10.87	11.16333	-0.2933	+/-1.0	
p-Terphenyl-d14	195	148	10 - 150	17.02	17.33	-0.3100	+/-1.0	
<b>SS-405-101909-2 (PSJ0657-06 )</b>		Lab File ID: 10220912.D		Analyzed: 10/22/09 23:33				
2-Fluorobiphenyl	184	86.6	10 - 150	10.87	11.16333	-0.2933	+/-1.0	
p-Terphenyl-d14	184	107	10 - 150	17.02	17.33	-0.3100	+/-1.0	
<b>SS-407-101909-0 (PSJ0657-08RE1 )</b>		Lab File ID: 10220915.D		Analyzed: 10/23/09 01:21				
2-Fluorobiphenyl	188	87.2	10 - 150	10.87	11.16333	-0.2933	+/-1.0	
p-Terphenyl-d14	188	136	10 - 150	17.02	17.33	-0.3100	+/-1.0	
<b>SS-408-101909-0 (PSJ0657-09RE1 )</b>		Lab File ID: 10220916.D		Analyzed: 10/23/09 01:57				
2-Fluorobiphenyl	179	83.3	10 - 150	10.87	11.16333	-0.2933	+/-1.0	
p-Terphenyl-d14	179	122	10 - 150	17.02	17.33	-0.3100	+/-1.0	
<b>SS-410-101909-0 (PSJ0657-11RE1 )</b>		Lab File ID: 10220917.D		Analyzed: 10/23/09 02:33				
2-Fluorobiphenyl	190	82.3	10 - 150	10.87	11.16333	-0.2933	+/-1.0	
p-Terphenyl-d14	190	150	10 - 150	17.02	17.33	-0.3100	+/-1.0	

**Form 2**  
**SURROGATE STANDARD RECOVERY AND RT SUMMARY**  
**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9J23013

Instrument: 5970

Matrix: Soil

Calibration: 9102702

Surrogate Compound	Spike Level ng/ml	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>Calibration Check (9J23013-CCV1 )</b>			Lab File ID: 10230903.D		Analyzed: 10/23/09 13:05			
2-Fluorobiphenyl	1000	108	70 - 130	10.86	11.16333	-0.3033	+/-1.0	
p-Terphenyl-d14	1000	104	70 - 130	17.01	17.33	-0.3200	+/-1.0	

**Form 2**  
**SURROGATE STANDARD RECOVERY AND RT SUMMARY**  
**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9J23013

Instrument: 5970

Matrix: Soil

Calibration: 9102702

Surrogate Compound	Spike Level ug/kg dry	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
<b>SS-402-101909-0 (PSJ0657-02RE1 )</b>		Lab File ID: 10230922.D			Analyzed: 10/24/09 00:31			
2-Fluorobiphenyl	176	116	10 - 150	10.85	11.16333	-0.3133	+/-1.0	
p-Terphenyl-d14	176	177	10 - 150	16.99	17.33	-0.3400	+/-1.0	*
<b>SS-405-101909-0 (PSJ0657-05RE1 )</b>		Lab File ID: 10230921.D			Analyzed: 10/23/09 23:55			
2-Fluorobiphenyl	190	89.6	10 - 150	10.85	11.16333	-0.3133	+/-1.0	
p-Terphenyl-d14	190	131	10 - 150	16.99	17.33	-0.3400	+/-1.0	
<b>SS-409-101909-0 (PSJ0657-10RE1 )</b>		Lab File ID: 10230918.D			Analyzed: 10/23/09 22:07			
2-Fluorobiphenyl	203	106	10 - 150	10.85	11.16333	-0.3133	+/-1.0	
p-Terphenyl-d14	203	129	10 - 150	17	17.33	-0.3300	+/-1.0	
<b>SS-411-101909-0 (PSJ0657-12RE1 )</b>		Lab File ID: 10230920.D			Analyzed: 10/23/09 23:19			
2-Fluorobiphenyl	195	103	10 - 150	10.85	11.16333	-0.3133	+/-1.0	
p-Terphenyl-d14	195	158	10 - 150	17	17.33	-0.3300	+/-1.0	*
<b>SS-411-101909-1 (PSJ0657-13RE1 )</b>		Lab File ID: 10230919.D			Analyzed: 10/23/09 22:43			
2-Fluorobiphenyl	189	101	10 - 150	10.85	11.16333	-0.3133	+/-1.0	
p-Terphenyl-d14	189	135	10 - 150	17	17.33	-0.3300	+/-1.0	

**CH2M-Hill**2020 SW 4th Suite 300  
Portland, OR 97201Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat HeinsReport Date:  
11/17/09 15:44**Laboratory Blank Report****Phthalates per EPA 8270-SIM - Laboratory Quality Control Results**  
**TestAmerica Portland****Batch 9100711**

Matrix	Lab Number	Sample Name	Dilution	File ID	Analyzed	Instrument	
Soil	EPA 8270m	9100711-BLK1	Blank	1x	10210904.D	10/21/09 20:47	5970
Soil	EPA 8270m	9100711-BS1	LCS	1x	10210905.D	10/21/09 21:24	5970
Soil	EPA 8270m	9100711-MS1	Matrix Spike	10x	10220910.D	10/22/09 22:21	5970
Soil	EPA 8270m	9100711-MSD1	Matrix Spike Dup	10x	10220911.D	10/22/09 22:57	5970
Soil	EPA 8270m	PSJ0657-01	SS-401-101909-0	1x	10220913.D	10/23/09 00:09	5970
Soil	EPA 8270m	PSJ0657-02	SS-402-101909-0	10x	10210908.D	10/21/09 23:11	5970
Soil	EPA 8270m	PSJ0657-02RE1	SS-402-101909-0	5x	10230922.D	10/24/09 00:31	5970
Soil	EPA 8270m	PSJ0657-03	SS-403-101909-0	20x	10210909.D	10/21/09 23:48	5970
Soil	EPA 8270m	PSJ0657-03RE1	SS-403-101909-0	1x	10220914.D	10/23/09 00:45	5970
Soil	EPA 8270m	PSJ0657-04	SS-404-101909-0	10x	10210920.D	10/22/09 06:23	5970
Soil	EPA 8270m	PSJ0657-04RE1	SS-404-101909-0	2x	10220918.D	10/23/09 03:09	5970
Soil	EPA 8270m	PSJ0657-05	SS-405-101909-0	25x	10210910.D	10/22/09 00:24	5970
Soil	EPA 8270m	PSJ0657-05RE1	SS-405-101909-0	2x	10230921.D	10/23/09 23:55	5970
Soil	EPA 8270m	PSJ0657-06	SS-405-101909-2	2x	10220912.D	10/22/09 23:33	5970
Soil	EPA 8270m	PSJ0657-07	SS-406-101909-0	10x	10210911.D	10/22/09 01:00	5970
Soil	EPA 8270m	PSJ0657-08	SS-407-101909-0	10x	10210912.D	10/22/09 01:35	5970
Soil	EPA 8270m	PSJ0657-08RE1	SS-407-101909-0	1x	10220915.D	10/23/09 01:21	5970
Soil	EPA 8270m	PSJ0657-09	SS-408-101909-0	10x	10210913.D	10/22/09 02:11	5970
Soil	EPA 8270m	PSJ0657-09RE1	SS-408-101909-0	1x	10220916.D	10/23/09 01:57	5970
Soil	EPA 8270m	PSJ0657-10	SS-409-101909-0	50x	10210914.D	10/22/09 02:47	5970
Soil	EPA 8270m	PSJ0657-10RE1	SS-409-101909-0	10x	10230918.D	10/23/09 22:07	5970
Soil	EPA 8270m	PSJ0657-11	SS-410-101909-0	20x	10210915.D	10/22/09 03:23	5970
Soil	EPA 8270m	PSJ0657-11RE1	SS-410-101909-0	1x	10220917.D	10/23/09 02:33	5970
Soil	EPA 8270m	PSJ0657-12	SS-411-101909-0	50x	10210916.D	10/22/09 03:59	5970
Soil	EPA 8270m	PSJ0657-12RE1	SS-411-101909-0	10x	10230920.D	10/23/09 23:19	5970
Soil	EPA 8270m	PSJ0657-13	SS-411-101909-1	50x	10210917.D	10/22/09 04:35	5970
Soil	EPA 8270m	PSJ0657-13RE1	SS-411-101909-1	20x	10230919.D	10/23/09 22:43	5970



**Form 1**  
**METHOD BLANK DATA SHEET**  
**EPA 8270m**

Laboratory: TestAmerica Portland SDG: PSJ0657  
 Client: CH2M-Hill Project: NW Pipe Project  
 Matrix: Soil Laboratory ID: 9100711-BLK1 File ID: 10210904.D  
 Prepared: 10/20/09 16:00 Preparation: EPA 3550 Initial/Final: 30.02 g / 2 ml  
 Analyzed: 10/21/09 20:47 Instrument: 5970  
 Batch: 9100711 Sequence: 9J21020 Calibration: 9102702

CAS NO.	COMPOUND	CONC. (ug/kg wet)	Q
117-81-7	Bis(2-ethylhexyl)phthalate	26.8	U
85-68-7	Butyl benzyl phthalate	26.8	U
84-66-2	Diethyl phthalate	26.8	U
131-11-3	Dimethyl phthalate	26.8	U
84-74-2	Di-n-butyl phthalate	26.8	U
117-84-0	Di-n-octyl phthalate	26.8	U

SYSTEM MONITORING COMPOUND	ADDED (ug/kg wet)	CONC (ug/kg wet)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	167	183	110	10 - 150	
p-Terphenyl-d14	167	168	101	10 - 150	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Acenaphthene-d10	67374	12.03	63503	12.03	
Chrysene-d12	102553	18.81	87324	18.81	
Perylene-d12	105337	21.35	68879	21.35	
Phenanthrene-d10	108604	14.45	96802	14.45	

**Form 3**  
**LCS / LCS DUPLICATE RECOVERY**  
**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Matrix: Soil

Spike standard: 9080007 9080162

Batch: 9100711

Laboratory ID: 9100711-BS1

Preparation: EPA 3550

Initial/Final: 30.02 g / 2 ml

COMPOUND	SPIKE ADDED (ug/kg wet)	LCS CONCENTRATION (ug/kg wet)	LCS % REC. #	QC LIMITS REC.
Bis(2-ethylhexyl)phthalate	133	148	111	20 - 150
Butyl benzyl phthalate	133	149	112	20 - 150
Diethyl phthalate	133	133	99.6	20 - 150
Dimethyl phthalate	133	122	91.5	20 - 150
Di-n-butyl phthalate	133	145	109	20 - 150
Di-n-octyl phthalate	133	143	107	20 - 150

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SS-405-101909-2

EPA 8270m

Laboratory: TestAmerica PortlandSDG: PSJ0657Client: CH2M-HillProject: NW Pipe ProjectMatrix: SoilSpike standard: 9080007 9080162Batch: 9100711Laboratory ID: 9100711-MS1Preparation: EPA 3550Initial/Final: 30.11 g / 2 mlSource Sample Name: SS-405-101909-2

COMPOUND	SPIKE ADDED (ug/kg dry)	SAMPLE CONCENTRATION (ug/kg dry)	MS CONCENTRATION (ug/kg dry)	MS % REC. #	QC LIMITS REC.
Bis(2-ethylhexyl)phthalate	147	95.2	307	144	10 - 150
Butyl benzyl phthalate	147	37.6	182	98.1	10 - 150
Diethyl phthalate	147	ND	155	106	10 - 150
Dimethyl phthalate	147	ND	152	103	10 - 150
Di-n-butyl phthalate	147	ND	162	110	10 - 150
Di-n-octyl phthalate	147	ND	141	95.5	10 - 150

COMPOUND	SPIKE ADDED (ug/kg dry)	MSD CONCENTRATION (ug/kg dry)	MSD % REC. #	% RPD #	QC LIMITS	
					RPD	REC.
Bis(2-ethylhexyl)phthalate	147	1330	841 *	125 *	50	10 - 150
Butyl benzyl phthalate	147	205	114	11.7	50	10 - 150
Diethyl phthalate	147	216	147	32.4	50	10 - 150
Dimethyl phthalate	147	149	101	1.92	50	10 - 150
Di-n-butyl phthalate	147	160	109	0.724	50	10 - 150
Di-n-octyl phthalate	147	269	183 *	62.5 *	50	10 - 150

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

**Form 5**

**MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK**

**EPA 8270m**

Laboratory:	<u>TestAmerica Portland</u>	SDG:	PSJ0657
Client:	<u>CH2M-Hill</u>	Project:	<u>NW Pipe Project</u>
Lab File ID:	<u>06250900.D</u>	Injection Date:	<u>06/25/09</u>
Instrument ID:	<u>5970</u>	Injection Time:	<u>13:22</u>
Sequence:	<u>9F25009</u>	Lab Sample ID:	<u>9F25009-TUN1</u>

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
m/z 51	30 - 60% of m/z 198	52.237	PASS
m/z 68	Less than 2% of m/z 69	0	PASS
m/z 69	Less than 100% of m/z 198	57.446	PASS
m/z 70	Less than 2% of m/z 69	0.64886	PASS
m/z 127	40 - 60% of m/z 198	41.166	PASS
m/z 197	Less than 1% of m/z 198	0	PASS
m/z 198	Base peak, 100% relative abundance	100	PASS
m/z 199	5 - 9% of m/z 198	7.4268	PASS
m/z 275	10 - 30% of m/z 198	27.504	PASS
m/z 365	1 - 100% of m/z 198	3.671	PASS
m/z 441	0.001 - 100% of m/z 443	85.011	PASS
m/z 442	40 - 100% of m/z 198	84.22	PASS
m/z 443	17 - 23% of m/z 442	20.587	PASS

**Form 5**

**MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK**

**EPA 8270m**

Laboratory:	<u>TestAmerica Portland</u>	SDG:	PSJ0657
Client:	<u>CH2M-Hill</u>	Project:	<u>NW Pipe Project</u>
Lab File ID:	<u>10210902.D</u>	Injection Date:	<u>10/21/09</u>
Instrument ID:	<u>5970</u>	Injection Time:	<u>19:42</u>
Sequence:	<u>9J21020</u>	Lab Sample ID:	<u>9J21020-TUN3</u>

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
m/z 51	30 - 60% of m/z 198	44.22	PASS
m/z 68	Less than 2% of m/z 69	0	PASS
m/z 69	Less than 100% of m/z 198	56.482	PASS
m/z 70	Less than 2% of m/z 69	0.078789	PASS
m/z 127	40 - 60% of m/z 198	46.66	PASS
m/z 197	Less than 1% of m/z 198	0	PASS
m/z 198	Base peak, 100% relative abundance	100	PASS
m/z 199	5 - 9% of m/z 198	7.463	PASS
m/z 275	10 - 30% of m/z 198	22.96	PASS
m/z 365	1 - 100% of m/z 198	3.0413	PASS
m/z 441	0.001 - 100% of m/z 443	85.798	PASS
m/z 442	40 - 100% of m/z 198	58.017	PASS
m/z 443	17 - 23% of m/z 442	20.513	PASS

**Form 5**

**MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK**

**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Lab File ID: 10220903.D

Injection Date: 10/22/09

Instrument ID: 5970

Injection Time: 18:17

Sequence: 9J22016

Lab Sample ID: 9J22016-TUN4

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
m/z 51	30 - 60% of m/z 198	45.009	PASS
m/z 68	Less than 2% of m/z 69	0	PASS
m/z 69	Less than 100% of m/z 198	56.007	PASS
m/z 70	Less than 2% of m/z 69	0.65957	PASS
m/z 127	40 - 60% of m/z 198	45.596	PASS
m/z 197	Less than 1% of m/z 198	0	PASS
m/z 198	Base peak, 100% relative abundance	100	PASS
m/z 199	5 - 9% of m/z 198	7.9279	PASS
m/z 275	10 - 30% of m/z 198	22.045	PASS
m/z 365	1 - 100% of m/z 198	2.5073	PASS
m/z 441	0.001 - 100% of m/z 443	86.67	PASS
m/z 442	40 - 100% of m/z 198	50.1	PASS
m/z 443	17 - 23% of m/z 442	20.199	PASS

**Form 5**

**MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK**

**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Lab File ID: 10230902.D

Injection Date: 10/23/09

Instrument ID: 5970

Injection Time: 12:37

Sequence: 9J23013

Lab Sample ID: 9J23013-TUN3

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
m/z 51	30 - 60% of m/z 198	46.563	PASS
m/z 68	Less than 2% of m/z 69	0	PASS
m/z 69	Less than 100% of m/z 198	55.134	PASS
m/z 70	Less than 2% of m/z 69	0.13293	PASS
m/z 127	40 - 60% of m/z 198	41.669	PASS
m/z 197	Less than 1% of m/z 198	0	PASS
m/z 198	Base peak, 100% relative abundance	100	PASS
m/z 199	5 - 9% of m/z 198	7.4157	PASS
m/z 275	10 - 30% of m/z 198	25.617	PASS
m/z 365	1 - 100% of m/z 198	3.2918	PASS
m/z 441	0.001 - 100% of m/z 443	83.308	PASS
m/z 442	40 - 100% of m/z 198	65.606	PASS
m/z 443	17 - 23% of m/z 442	20.766	PASS

**Form 6**  
**INITIAL CALIBRATION DATA**  
**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Calibration: 9102702

Instrument: 5970

Calibration Date: 06/25/09 11:54

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF	ng/ml	RF
2-Fluorobiphenyl	200	1.615479	500	1.448295	1000	1.373829	2000	1.316287	5000	1.255748	10000	1.151353
Bis(2-ethylhexyl)phthalate	200	0.7333522	500	0.7543382	1000	0.9470556	2000	1.023052	5000	0.9709567	10000	0.932603
Butyl benzyl phthalate	200	0.6107493	500	0.6179499	1000	0.7084109	2000	0.7424799	5000	0.7141114	10000	0.6698015
Diethyl phthalate	200	1.455097	500	1.394121	1000	1.338771	2000	1.316841	5000	1.266669	10000	1.184377
Dimethyl phthalate	200	1.353846	500	1.275201	1000	1.188103	2000	1.160045	5000	1.127392	10000	1.040686
Di-n-butyl phthalate	200	1.296024	500	1.28447	1000	1.379909	2000	1.418517	5000	1.32538	10000	1.255707
Di-n-octyl phthalate	200	1.254547	500	1.358659	1000	1.644301	2000	1.83682	5000	1.923756	10000	1.839021
p-Terphenyl-d14	200	0.9685654	500	0.814597	1000	0.8500098	2000	0.815588	5000	0.7336196	10000	0.7125595

**Form 6**  
**INITIAL CALIBRATION DATA (Continued)**  
**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Calibration: 9102702

Instrument: 5970

Calibration Date: 06/25/09 11:54

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
2-Fluorobiphenyl	1.360165	11.83518	11.16333	4.251391E-02				*
Bis(2-ethylhexyl)phthalate	0.8935596	13.4475	19.03	1.157318E-02				*
Butyl benzyl phthalate	0.6772505	7.973147	18.12	2.070075E-02				*
Diethyl phthalate	1.325979	7.164973	13	0				*
Dimethyl phthalate	1.190879	9.291319	11.855	4.917379E-02				*
Di-n-butyl phthalate	1.326668	4.649908	15.65	1.151955E-02				*
Di-n-octyl phthalate	1.642851	16.9249	20	0				*
p-Terphenyl-d14	0.8158232	11.22371	17.33	1.939679E-02				*

# SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8270m

**Laboratory:** TestAmerica Portland

**SDG:** PSJ0657

**Client:** CH2M-Hill

**Project:** NW Pipe Project

**Calibration:** 9102702

**Laboratory ID:** 9F25009-SCV1

**Sequence:** 9F25009

**Standard ID:** 9060186

ANALYTE	EXPECTED (ng/ml)	FOUND (ng/ml)	% DRIFT	QC LIMIT
Bis(2-ethylhexyl)phthalate	2000	2210	10.7	30.00
Butyl benzyl phthalate	2000	2210	10.5	30.00
Diethyl phthalate	2000	2260	12.9	30.00
Dimethyl phthalate	2000	1680	-16.2	30.00
Di-n-butyl phthalate	2000	2320	16.2	30.00
Di-n-octyl phthalate	2000	2100	5.1	30.00

\* Values outside of QC limits

**Form 7**  
**CONTINUING CALIBRATION CHECK**  
**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Instrument ID: 5970

Calibration: 9102702

Lab File ID: 10210903.D

Calibration Date: 06/25/09 11:54

Sequence: 9J21020

Injection Date: 10/21/09

Lab Sample ID: 9J21020-CCV1

Injection Time: 20:11

COMPOUND	TYPE	CONC. (ng/ml)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Bis(2-ethylhexyl)phthalate	A	1000	797	0.8935596	0.7119372		-20.3	30
Butyl benzyl phthalate	A	1000	784	0.6772505	0.5306949		-21.6	30
Diethyl phthalate	A	1000	1090	1.325979	1.451283		9.4	30
Dimethyl phthalate	A	1000	1130	1.190879	1.351004		13.4	30
Di-n-butyl phthalate	A	1000	987	1.326668	1.30958		-1.3	30
Di-n-octyl phthalate	A	1000	769	1.642851	1.263392		-23.1	30

# Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

\* Values outside of QC limits

**Form 7**  
**CONTINUING CALIBRATION CHECK**  
**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Instrument ID: 5970

Calibration: 9102702

Lab File ID: 10220904.D

Calibration Date: 06/25/09 11:54

Sequence: 9J22016

Injection Date: 10/22/09

Lab Sample ID: 9J22016-CCV1

Injection Time: 18:45

COMPOUND	TYPE	CONC. (ng/ml)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Bis(2-ethylhexyl)phthalate	A	1000	983	0.8935596	0.8785116		-1.7	30
Butyl benzyl phthalate	A	1000	961	0.6772505	0.6508116		-3.9	30
Diethyl phthalate	A	1000	1150	1.325979	1.527658		15.2	30
Dimethyl phthalate	A	1000	1220	1.190879	1.458664		22.5	30
Di-n-butyl phthalate	A	1000	1050	1.326668	1.391468		4.9	30
Di-n-octyl phthalate	A	1000	922	1.642851	1.514354		-7.8	30

# Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

\* Values outside of QC limits

**Form 7**  
**CONTINUING CALIBRATION CHECK**  
**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Instrument ID: 5970

Calibration: 9102702

Lab File ID: 10230903.D

Calibration Date: 06/25/09 11:54

Sequence: 9J23013

Injection Date: 10/23/09

Lab Sample ID: 9J23013-CCV1

Injection Time: 13:05

COMPOUND	TYPE	CONC. (ng/ml)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Bis(2-ethylhexyl)phthalate	A	1000	1090	0.8935596	0.9725188		8.8	30
Butyl benzyl phthalate	A	1000	1050	0.6772505	0.7140264		5.4	30
Diethyl phthalate	A	1000	1140	1.325979	1.517985		14.5	30
Dimethyl phthalate	A	1000	1130	1.190879	1.345051		12.9	30
Di-n-butyl phthalate	A	1000	1130	1.326668	1.505023		13.4	30
Di-n-octyl phthalate	A	1000	922	1.642851	1.51433		-7.8	30

# Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

\* Values outside of QC limits

**Form 8**  
**INTERNAL STANDARD AREA AND RT SUMMARY**  
**EPA 8270m**

Laboratory: TestAmerica Portland  
 Client: CH2M-Hill  
 Sequence: 9F25009  
 Matrix: Water

SDG: PSJ0657  
 Project: NW Pipe Project  
 Instrument: 5970  
 Calibration: 9102702

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
<b>Cal Standard (9F25009-CAL4)</b> Lab File ID: 06250901.D Analyzed: 06/25/09 13:51									
Acenaphthene-d10	76891	12.31	74471	12.31	103	50 - 200	0.0000	+/-0.50	
Chrysene-d12	113369	19.11	106659	19.11	106	50 - 200	0.0000	+/-0.50	
Perylene-d12	103221	21.79	95123	21.79	109	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	124082	14.73	119972	14.73	103	50 - 200	0.0000	+/-0.50	
<b>Cal Standard (9F25009-CAL3)</b> Lab File ID: 06250902.D Analyzed: 06/25/09 14:27									
Acenaphthene-d10	74471	12.31	74471	12.31	100	50 - 200	0.0000	+/-0.50	
Chrysene-d12	106659	19.11	106659	19.11	100	50 - 200	0.0000	+/-0.50	
Perylene-d12	95123	21.79	95123	21.79	100	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	119972	14.73	119972	14.73	100	50 - 200	0.0000	+/-0.50	
<b>Cal Standard (9F25009-CAL6)</b> Lab File ID: 06250903.D Analyzed: 06/25/09 15:04									
Acenaphthene-d10	77222	12.31	74471	12.31	104	50 - 200	0.0000	+/-0.50	
Chrysene-d12	115036	19.11	106659	19.11	108	50 - 200	0.0000	+/-0.50	
Perylene-d12	98454	21.79	95123	21.79	104	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	124012	14.73	119972	14.73	103	50 - 200	0.0000	+/-0.50	
<b>Cal Standard (9F25009-CAL1)</b> Lab File ID: 06250904.D Analyzed: 06/25/09 15:40									
Acenaphthene-d10	74784	12.31	74471	12.31	100	50 - 200	0.0000	+/-0.50	
Chrysene-d12	98872	19.11	106659	19.11	93	50 - 200	0.0000	+/-0.50	
Perylene-d12	84456	21.79	95123	21.79	89	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	116896	14.73	119972	14.73	97	50 - 200	0.0000	+/-0.50	
<b>Cal Standard (9F25009-CAL5)</b> Lab File ID: 06250905.D Analyzed: 06/25/09 16:16									
Acenaphthene-d10	89562	12.31	74471	12.31	120	50 - 200	0.0000	+/-0.50	
Chrysene-d12	126753	19.11	106659	19.11	119	50 - 200	0.0000	+/-0.50	
Perylene-d12	139623	21.79	95123	21.79	147	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	143905	14.73	119972	14.73	120	50 - 200	0.0000	+/-0.50	
<b>Cal Standard (9F25009-CAL2)</b> Lab File ID: 06250906.D Analyzed: 06/25/09 16:52									
Acenaphthene-d10	65079	12.31	74471	12.31	87	50 - 200	0.0000	+/-0.50	
Chrysene-d12	91087	19.11	106659	19.11	85	50 - 200	0.0000	+/-0.50	
Perylene-d12	96219	21.79	95123	21.79	101	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	106627	14.73	119972	14.73	89	50 - 200	0.0000	+/-0.50	
<b>Secondary Cal Check (9F25009-SCV1)</b> Lab File ID: 06250907.D Analyzed: 06/25/09 17:28									
Acenaphthene-d10	91944	12.31	74471	12.31	123	50 - 200	0.0000	+/-0.50	
Chrysene-d12	131936	19.11	106659	19.11	124	50 - 200	0.0000	+/-0.50	
Perylene-d12	114397	21.79	95123	21.79	120	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	142016	14.73	119972	14.73	118	50 - 200	0.0000	+/-0.50	

**Form 8**  
**INTERNAL STANDARD AREA AND RT SUMMARY**  
**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9J21020

Instrument: 5970

Matrix: Water

Calibration: 9102702

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
<b>Calibration Check (9J21020-CCV1 )</b>			Lab File ID: 10210903.D			Analyzed: 10/21/09 20:11			
Acenaphthene-d10	63503	12.03				50 - 200		+/-0.50	
Chrysene-d12	87324	18.81				50 - 200		+/-0.50	
Perylene-d12	68879	21.35				50 - 200		+/-0.50	
Phenanthrene-d10	96802	14.45				50 - 200		+/-0.50	
<b>Blank (9100711-BLK1 )</b>			Lab File ID: 10210904.D			Analyzed: 10/21/09 20:47			
Acenaphthene-d10	67374	12.03	63503	12.03	106	50 - 200	0.0000	+/-0.50	
Chrysene-d12	102553	18.81	87324	18.81	117	50 - 200	0.0000	+/-0.50	
Perylene-d12	105337	21.35	68879	21.35	153	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	108604	14.45	96802	14.45	112	50 - 200	0.0000	+/-0.50	
<b>LCS (9100711-BS1 )</b>			Lab File ID: 10210905.D			Analyzed: 10/21/09 21:24			
Acenaphthene-d10	74618	12.03	63503	12.03	118	50 - 200	0.0000	+/-0.50	
Chrysene-d12	120658	18.81	87324	18.81	138	50 - 200	0.0000	+/-0.50	
Perylene-d12	113163	21.35	68879	21.35	164	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	122329	14.45	96802	14.45	126	50 - 200	0.0000	+/-0.50	
<b>SS-402-101909-0 (PSJ0657-02 )</b>			Lab File ID: 10210908.D			Analyzed: 10/21/09 23:11			
Acenaphthene-d10	81387	12.03	63503	12.03	128	50 - 200	0.0000	+/-0.50	
Chrysene-d12	125647	18.81	87324	18.81	144	50 - 200	0.0000	+/-0.50	
Perylene-d12	101581	21.35	68879	21.35	147	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	139863	14.44	96802	14.45	144	50 - 200	-0.0100	+/-0.50	
<b>SS-403-101909-0 (PSJ0657-03 )</b>			Lab File ID: 10210909.D			Analyzed: 10/21/09 23:48			
Acenaphthene-d10	75590	12.03	63503	12.03	119	50 - 200	0.0000	+/-0.50	
Chrysene-d12	117171	18.81	87324	18.81	134	50 - 200	0.0000	+/-0.50	
Perylene-d12	96221	21.34	68879	21.35	140	50 - 200	-0.0100	+/-0.50	
Phenanthrene-d10	125733	14.44	96802	14.45	130	50 - 200	-0.0100	+/-0.50	
<b>SS-405-101909-0 (PSJ0657-05 )</b>			Lab File ID: 10210910.D			Analyzed: 10/22/09 00:24			
Acenaphthene-d10	75115	12.02	63503	12.03	118	50 - 200	-0.0100	+/-0.50	
Chrysene-d12	123657	18.81	87324	18.81	142	50 - 200	0.0000	+/-0.50	
Perylene-d12	104527	21.35	68879	21.35	152	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	126675	14.44	96802	14.45	131	50 - 200	-0.0100	+/-0.50	
<b>SS-406-101909-0 (PSJ0657-07 )</b>			Lab File ID: 10210911.D			Analyzed: 10/22/09 01:00			
Acenaphthene-d10	74083	12.03	63503	12.03	117	50 - 200	0.0000	+/-0.50	
Chrysene-d12	84956	18.81	87324	18.81	97	50 - 200	0.0000	+/-0.50	
Perylene-d12	47725	21.35	68879	21.35	69	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	128983	14.44	96802	14.45	133	50 - 200	-0.0100	+/-0.50	

**Form 8**  
**INTERNAL STANDARD AREA AND RT SUMMARY**  
**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9J21020

Instrument: 5970

Matrix: Water

Calibration: 9102702

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
<b>SS-407-101909-0 (PSJ0657-08)</b>			Lab File ID: 10210912.D			Analyzed: 10/22/09 01:35			
Acenaphthene-d10	71513	12.03	63503	12.03	113	50 - 200	0.0000	+/-0.50	
Chrysene-d12	113197	18.81	87324	18.81	130	50 - 200	0.0000	+/-0.50	
Perylene-d12	89886	21.34	68879	21.35	130	50 - 200	-0.0100	+/-0.50	
Phenanthrene-d10	121367	14.44	96802	14.45	125	50 - 200	-0.0100	+/-0.50	
<b>SS-408-101909-0 (PSJ0657-09)</b>			Lab File ID: 10210913.D			Analyzed: 10/22/09 02:11			
Acenaphthene-d10	68924	12.03	63503	12.03	109	50 - 200	0.0000	+/-0.50	
Chrysene-d12	105542	18.81	87324	18.81	121	50 - 200	0.0000	+/-0.50	
Perylene-d12	81261	21.34	68879	21.35	118	50 - 200	-0.0100	+/-0.50	
Phenanthrene-d10	114480	14.44	96802	14.45	118	50 - 200	-0.0100	+/-0.50	
<b>SS-409-101909-0 (PSJ0657-10)</b>			Lab File ID: 10210914.D			Analyzed: 10/22/09 02:47			
Acenaphthene-d10	70279	12.03	63503	12.03	111	50 - 200	0.0000	+/-0.50	
Chrysene-d12	114771	18.82	87324	18.81	131	50 - 200	0.0100	+/-0.50	
Perylene-d12	78168	21.35	68879	21.35	113	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	122298	14.44	96802	14.45	126	50 - 200	-0.0100	+/-0.50	
<b>SS-410-101909-0 (PSJ0657-11)</b>			Lab File ID: 10210915.D			Analyzed: 10/22/09 03:23			
Acenaphthene-d10	70684	12.03	63503	12.03	111	50 - 200	0.0000	+/-0.50	
Chrysene-d12	114365	18.81	87324	18.81	131	50 - 200	0.0000	+/-0.50	
Perylene-d12	83541	21.34	68879	21.35	121	50 - 200	-0.0100	+/-0.50	
Phenanthrene-d10	121152	14.44	96802	14.45	125	50 - 200	-0.0100	+/-0.50	
<b>SS-411-101909-0 (PSJ0657-12)</b>			Lab File ID: 10210916.D			Analyzed: 10/22/09 03:59			
Acenaphthene-d10	70173	12.03	63503	12.03	111	50 - 200	0.0000	+/-0.50	
Chrysene-d12	115321	18.81	87324	18.81	132	50 - 200	0.0000	+/-0.50	
Perylene-d12	64957	21.35	68879	21.35	94	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	126837	14.44	96802	14.45	131	50 - 200	-0.0100	+/-0.50	
<b>SS-411-101909-1 (PSJ0657-13)</b>			Lab File ID: 10210917.D			Analyzed: 10/22/09 04:35			
Acenaphthene-d10	70477	12.03	63503	12.03	111	50 - 200	0.0000	+/-0.50	
Chrysene-d12	113333	18.81	87324	18.81	130	50 - 200	0.0000	+/-0.50	
Perylene-d12	66847	21.35	68879	21.35	97	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	124677	14.44	96802	14.45	129	50 - 200	-0.0100	+/-0.50	
<b>SS-404-101909-0 (PSJ0657-04)</b>			Lab File ID: 10210920.D			Analyzed: 10/22/09 06:23			
Acenaphthene-d10	70462	12.02	63503	12.03	111	50 - 200	-0.0100	+/-0.50	
Chrysene-d12	116725	18.81	87324	18.81	134	50 - 200	0.0000	+/-0.50	
Perylene-d12	77909	21.34	68879	21.35	113	50 - 200	-0.0100	+/-0.50	
Phenanthrene-d10	124608	14.44	96802	14.45	129	50 - 200	-0.0100	+/-0.50	

**Form 8**  
**INTERNAL STANDARD AREA AND RT SUMMARY**  
**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9J22016

Instrument: 5970

Matrix: Water

Calibration: 9102702

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
<b>Calibration Check (9J22016-CCV1)</b>			Lab File ID: 10220904.D			Analyzed: 10/22/09 18:45			
Acenaphthene-d10	66661	12				50 - 200		+/-0.50	
Chrysene-d12	90621	18.79				50 - 200		+/-0.50	
Perylene-d12	74012	21.31				50 - 200		+/-0.50	
Phenanthrene-d10	100121	14.42				50 - 200		+/-0.50	
<b>Matrix Spike (9100711-MS1)</b>			Lab File ID: 10220910.D			Analyzed: 10/22/09 22:21			
Acenaphthene-d10	78777	12	66661	12	118	50 - 200	0.0000	+/-0.50	
Chrysene-d12	124385	18.79	90621	18.79	137	50 - 200	0.0000	+/-0.50	
Perylene-d12	119770	21.31	74012	21.31	162	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	130718	14.42	100121	14.42	131	50 - 200	0.0000	+/-0.50	
<b>Matrix Spike Dup (9100711-MSD1)</b>			Lab File ID: 10220911.D			Analyzed: 10/22/09 22:57			
Acenaphthene-d10	78593	12.01	66661	12	118	50 - 200	0.0100	+/-0.50	
Chrysene-d12	124172	18.79	90621	18.79	137	50 - 200	0.0000	+/-0.50	
Perylene-d12	94296	21.31	74012	21.31	127	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	135284	14.42	100121	14.42	135	50 - 200	0.0000	+/-0.50	
<b>SS-405-101909-2 (PSJ0657-06)</b>			Lab File ID: 10220912.D			Analyzed: 10/22/09 23:33			
Acenaphthene-d10	82252	12	66661	12	123	50 - 200	0.0000	+/-0.50	
Chrysene-d12	107171	18.79	90621	18.79	118	50 - 200	0.0000	+/-0.50	
Perylene-d12	51772	21.31	74012	21.31	70	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	140315	14.42	100121	14.42	140	50 - 200	0.0000	+/-0.50	
<b>SS-401-101909-0 (PSJ0657-01)</b>			Lab File ID: 10220913.D			Analyzed: 10/23/09 00:09			
Acenaphthene-d10	77671	12.01	66661	12	117	50 - 200	0.0100	+/-0.50	
Chrysene-d12	109760	18.79	90621	18.79	121	50 - 200	0.0000	+/-0.50	
Perylene-d12	51810	21.31	74012	21.31	70	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	135265	14.42	100121	14.42	135	50 - 200	0.0000	+/-0.50	
<b>SS-403-101909-0 (PSJ0657-03RE1)</b>			Lab File ID: 10220914.D			Analyzed: 10/23/09 00:45			
Acenaphthene-d10	80143	12.01	66661	12	120	50 - 200	0.0100	+/-0.50	
Chrysene-d12	79002	18.79	90621	18.79	87	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	133252	14.42	100121	14.42	133	50 - 200	0.0000	+/-0.50	
<b>SS-407-101909-0 (PSJ0657-08RE1)</b>			Lab File ID: 10220915.D			Analyzed: 10/23/09 01:21			
Acenaphthene-d10	82547	12.01	66661	12	124	50 - 200	0.0100	+/-0.50	
Chrysene-d12	82195	18.79	90621	18.79	91	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	140929	14.42	100121	14.42	141	50 - 200	0.0000	+/-0.50	

**Form 8**  
**INTERNAL STANDARD AREA AND RT SUMMARY**  
**EPA 8270m**

Laboratory: TestAmerica Portland  
 Client: CH2M-Hill  
 Sequence: 9J22016  
 Matrix: Water

SDG: PSJ0657  
 Project: NW Pipe Project  
 Instrument: 5970  
 Calibration: 9102702

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
<b>SS-408-101909-0 (PSJ0657-09RE1)</b>			Lab File ID: 10220916.D			Analyzed: 10/23/09 01:57			
Acenaphthene-d10	82441	12.01	66661	12	124	50 - 200	0.0100	+/-0.50	
Chrysene-d12	89200	18.79	90621	18.79	98	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	140777	14.42	100121	14.42	141	50 - 200	0.0000	+/-0.50	
<b>SS-410-101909-0 (PSJ0657-11RE1)</b>			Lab File ID: 10220917.D			Analyzed: 10/23/09 02:33			
Acenaphthene-d10	88612	12.01	66661	12	133	50 - 200	0.0100	+/-0.50	
Chrysene-d12	82939	18.79	90621	18.79	92	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	152760	14.42	100121	14.42	153	50 - 200	0.0000	+/-0.50	
<b>SS-404-101909-0 (PSJ0657-04RE1)</b>			Lab File ID: 10220918.D			Analyzed: 10/23/09 03:09			
Acenaphthene-d10	83235	12.01	66661	12	125	50 - 200	0.0100	+/-0.50	
Chrysene-d12	81283	18.79	90621	18.79	90	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	144817	14.42	100121	14.42	145	50 - 200	0.0000	+/-0.50	

**Form 8**  
**INTERNAL STANDARD AREA AND RT SUMMARY**  
**EPA 8270m**

Laboratory: TestAmerica Portland  
 Client: CH2M-Hill  
 Sequence: 9J23013  
 Matrix: Water

SDG: PSJ0657  
 Project: NW Pipe Project  
 Instrument: 5970  
 Calibration: 9102702

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
<b>Calibration Check (9J23013-CCV1)</b>			Lab File ID: 10230903.D			Analyzed: 10/23/09 13:05			
Acenaphthene-d10	79332	12				50 - 200		+/-0.50	
Chrysene-d12	111960	18.77				50 - 200		+/-0.50	
Perylene-d12	99395	21.29				50 - 200		+/-0.50	
Phenanthrene-d10	123900	14.41				50 - 200		+/-0.50	
<b>SS-409-101909-0 (PSJ0657-10RE1)</b>			Lab File ID: 10230918.D			Analyzed: 10/23/09 22:07			
Acenaphthene-d10	91196	11.99	79332	12	115	50 - 200	-0.0100	+/-0.50	
Chrysene-d12	124415	18.78	111960	18.77	111	50 - 200	0.0100	+/-0.50	
Phenanthrene-d10	153669	14.4	123900	14.41	124	50 - 200	-0.0100	+/-0.50	
<b>SS-411-101909-1 (PSJ0657-13RE1)</b>			Lab File ID: 10230919.D			Analyzed: 10/23/09 22:43			
Acenaphthene-d10	90967	11.98	79332	12	115	50 - 200	-0.0200	+/-0.50	
Chrysene-d12	116675	18.77	111960	18.77	104	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	155024	14.4	123900	14.41	125	50 - 200	-0.0100	+/-0.50	
<b>SS-411-101909-0 (PSJ0657-12RE1)</b>			Lab File ID: 10230920.D			Analyzed: 10/23/09 23:19			
Acenaphthene-d10	91844	11.98	79332	12	116	50 - 200	-0.0200	+/-0.50	
Chrysene-d12	97087	18.78	111960	18.77	87	50 - 200	0.0100	+/-0.50	
Phenanthrene-d10	152869	14.4	123900	14.41	123	50 - 200	-0.0100	+/-0.50	
<b>SS-405-101909-0 (PSJ0657-05RE1)</b>			Lab File ID: 10230921.D			Analyzed: 10/23/09 23:55			
Acenaphthene-d10	90424	11.98	79332	12	114	50 - 200	-0.0200	+/-0.50	
Chrysene-d12	99526	18.77	111960	18.77	89	50 - 200	0.0000	+/-0.50	
Phenanthrene-d10	151693	14.39	123900	14.41	122	50 - 200	-0.0200	+/-0.50	
<b>SS-402-101909-0 (PSJ0657-02RE1)</b>			Lab File ID: 10230922.D			Analyzed: 10/24/09 00:31			
Acenaphthene-d10	81871	11.98	79332	12	103	50 - 200	-0.0200	+/-0.50	
Chrysene-d12	82079	18.76	111960	18.77	73	50 - 200	-0.0100	+/-0.50	
Phenanthrene-d10	138220	14.4	123900	14.41	112	50 - 200	-0.0100	+/-0.50	

# INITIAL CALIBRATION STANDARDS

## EPA 8270m

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9F25009

Instrument: 5970

Calibration: 9102702

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
9050069	50ppm DFTPP Soln	9F25009-TUN1	06250900.D	06/25/09 13:22
9060183	2000 ppb SIM Phthalate	9F25009-CAL4	06250901.D	06/25/09 13:51
9060182	1000 ppb SIM Phthalate	9F25009-CAL3	06250902.D	06/25/09 14:27
9060185	10000 ppb SIM Phthalate	9F25009-CAL6	06250903.D	06/25/09 15:04
9060180	200 ppb SIM Phthalate	9F25009-CAL1	06250904.D	06/25/09 15:40
9060184	5000 ppb SIM Phthalate	9F25009-CAL5	06250905.D	06/25/09 16:16
9060181	500 ppb SIM Phthalate	9F25009-CAL2	06250906.D	06/25/09 16:52
9060186	2,000 ppb SIM PAH/PCP/Phthalate SCV	9F25009-SCV1	06250907.D	06/25/09 17:28

**Form 5**  
**ANALYSIS BATCH (SEQUENCE) SUMMARY**  
**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9F25009

Instrument: 5970

Calibration: 9102702

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	9F25009-TUN1	06250900.D	06/25/09 13:22
Cal Standard	9F25009-CAL4	06250901.D	06/25/09 13:51
Cal Standard	9F25009-CAL3	06250902.D	06/25/09 14:27
Cal Standard	9F25009-CAL6	06250903.D	06/25/09 15:04
Cal Standard	9F25009-CAL1	06250904.D	06/25/09 15:40
Cal Standard	9F25009-CAL5	06250905.D	06/25/09 16:16
Cal Standard	9F25009-CAL2	06250906.D	06/25/09 16:52
Secondary Cal Check	9F25009-SCV1	06250907.D	06/25/09 17:28

**Form 5**  
**ANALYSIS BATCH (SEQUENCE) SUMMARY**  
**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9J21020

Instrument: 5970

Calibration: 9102702

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	9J21020-TUN3	10210902.D	10/21/09 19:42
Calibration Check	9J21020-CCV1	10210903.D	10/21/09 20:11
Blank	9100711-BLK1	10210904.D	10/21/09 20:47
LCS	9100711-BS1	10210905.D	10/21/09 21:24
SS-402-101909-0	PSJ0657-02	10210908.D	10/21/09 23:11
SS-403-101909-0	PSJ0657-03	10210909.D	10/21/09 23:48
SS-405-101909-0	PSJ0657-05	10210910.D	10/22/09 00:24
SS-406-101909-0	PSJ0657-07	10210911.D	10/22/09 01:00
SS-407-101909-0	PSJ0657-08	10210912.D	10/22/09 01:35
SS-408-101909-0	PSJ0657-09	10210913.D	10/22/09 02:11
SS-409-101909-0	PSJ0657-10	10210914.D	10/22/09 02:47
SS-410-101909-0	PSJ0657-11	10210915.D	10/22/09 03:23
SS-411-101909-0	PSJ0657-12	10210916.D	10/22/09 03:59
SS-411-101909-1	PSJ0657-13	10210917.D	10/22/09 04:35
SS-404-101909-0	PSJ0657-04	10210920.D	10/22/09 06:23

**Form 5**  
**ANALYSIS BATCH (SEQUENCE) SUMMARY**  
**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9J22016

Instrument: 5970

Calibration: 9102702

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	9J22016-TUN4	10220903.D	10/22/09 18:17
Calibration Check	9J22016-CCV1	10220904.D	10/22/09 18:45
SS-405-101909-2	9100711-MS1	10220910.D	10/22/09 22:21
SS-405-101909-2	9100711-MSD1	10220911.D	10/22/09 22:57
SS-405-101909-2	PSJ0657-06	10220912.D	10/22/09 23:33
SS-401-101909-0	PSJ0657-01	10220913.D	10/23/09 00:09
SS-403-101909-0	PSJ0657-03RE1	10220914.D	10/23/09 00:45
SS-407-101909-0	PSJ0657-08RE1	10220915.D	10/23/09 01:21
SS-408-101909-0	PSJ0657-09RE1	10220916.D	10/23/09 01:57
SS-410-101909-0	PSJ0657-11RE1	10220917.D	10/23/09 02:33
SS-404-101909-0	PSJ0657-04RE1	10220918.D	10/23/09 03:09

**Form 5**  
**ANALYSIS BATCH (SEQUENCE) SUMMARY**  
**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9J23013

Instrument: 5970

Calibration: 9102702

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	9J23013-TUN3	10230902.D	10/23/09 12:37
Calibration Check	9J23013-CCV1	10230903.D	10/23/09 13:05
SS-409-101909-0	PSJ0657-10RE1	10230918.D	10/23/09 22:07
SS-411-101909-1	PSJ0657-13RE1	10230919.D	10/23/09 22:43
SS-411-101909-0	PSJ0657-12RE1	10230920.D	10/23/09 23:19
SS-405-101909-0	PSJ0657-05RE1	10230921.D	10/23/09 23:55
SS-402-101909-0	PSJ0657-02RE1	10230922.D	10/24/09 00:31

## Semi-Volatile GCMS Analysis QCAR

Work Order #: PSJ0657 Batch #: 9100711 Test Code: 827051m Phthalates

Primary Review Date/Initial: Secondary Review Date/Initial:

DH 10/29/09

10 10/29/9

Check here if data package is needed

Level 3 plg

### Sample Integrity

Samples extracted within hold time  
 All work is completed according to work order  
 Special instructions are checked

### Data Analysis

Proper daily calibration file used for quantitation  
 Proper dilution factors/multipliers are used  
 Daily calibration and tuning criteria are within acceptable limits  
 Internal standard areas and retention time are within limits  
 Surrogates are within limits (or properly flagged if out)  
 All prep and analysis bench sheets are fully completed  
 Concentrations are within calibration range  
 All chromatograms are included and labeled  
 Reported results are within 12 hours of valid DFTPP tune

See CAR 2933

### Reporting

Method blank is non-detected and reported from same prep batch  
 Reporting limits are correct  
 Proper units and significant figures are correct  
 Percent solids are included (if applicable)  
 Extraction, analysis (and TCLP if applicable) dates and times are correct  
 Control limits are met for spike recoveries, proper comments included  
 Proper QC reports are included  
 Necessary comments are included  
 Analytes and QC are updated to "analyzed" and locked  
 Analytes and QC are updated to "reviewed"

Comments:

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## **GC/MS Semivolatile Organic Compounds**

Phthalates EPA 8270m SIM  
Preparation Logs

**Form 4**  
**PREPARATION BATCH SUMMARY**  
**EPA 8270m**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Batch: 9100711      Batch Matrix: Soil

Preparation: EPA 3550

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	9100711-BLK1	10210904.D	10/20/09 16:00	
LCS	9100711-BS1	10210905.D	10/20/09 16:00	
SS-405-101909-2	9100711-MS1	10220910.D	10/20/09 16:00	
SS-405-101909-2	9100711-MSD1	10220911.D	10/20/09 16:00	
SS-401-101909-0	PSJ0657-01	10220913.D	10/20/09 16:00	level 3 dp.
SS-402-101909-0	PSJ0657-02	10210908.D	10/20/09 16:00	level 3 dp.
SS-402-101909-0	PSJ0657-02RE1	10230922.D	10/20/09 16:00	Added 10/28/2009 by DTH
SS-403-101909-0	PSJ0657-03	10210909.D	10/20/09 16:00	level 3 dp.
SS-403-101909-0	PSJ0657-03RE1	10220914.D	10/20/09 16:00	Added 10/28/2009 by DTH
SS-404-101909-0	PSJ0657-04	10210920.D	10/20/09 16:00	level 3 dp.
SS-404-101909-0	PSJ0657-04RE1	10220918.D	10/20/09 16:00	Added 10/28/2009 by DTH
SS-405-101909-0	PSJ0657-05	10210910.D	10/20/09 16:00	level 3 dp.
SS-405-101909-0	PSJ0657-05RE1	10230921.D	10/20/09 16:00	Added 10/28/2009 by DTH
SS-405-101909-2	PSJ0657-06	10220912.D	10/20/09 16:00	level 3 dp, MS/ MSD, or appropriate QC
SS-406-101909-0	PSJ0657-07	10210911.D	10/20/09 16:00	level 3 dp.
SS-407-101909-0	PSJ0657-08	10210912.D	10/20/09 16:00	level 3 dp.
SS-407-101909-0	PSJ0657-08RE1	10220915.D	10/20/09 16:00	Added 10/28/2009 by DTH
SS-408-101909-0	PSJ0657-09	10210913.D	10/20/09 16:00	level 3 dp.
SS-408-101909-0	PSJ0657-09RE1	10220916.D	10/20/09 16:00	Added 10/28/2009 by DTH
SS-409-101909-0	PSJ0657-10	10210914.D	10/20/09 16:00	level 3 dp.
SS-409-101909-0	PSJ0657-10RE1	10230918.D	10/20/09 16:00	Added 10/28/2009 by DTH
SS-410-101909-0	PSJ0657-11	10210915.D	10/20/09 16:00	level 3 dp.
SS-410-101909-0	PSJ0657-11RE1	10220917.D	10/20/09 16:00	Added 10/28/2009 by DTH
SS-411-101909-0	PSJ0657-12	10210916.D	10/20/09 16:00	level 3 dp.
SS-411-101909-0	PSJ0657-12RE1	10230920.D	10/20/09 16:00	Added 10/28/2009 by DTH
SS-411-101909-1	PSJ0657-13	10210917.D	10/20/09 16:00	level 3 dp.
SS-411-101909-1	PSJ0657-13RE1	10230919.D	10/20/09 16:00	Added 10/28/2009 by DTH

QCAR - Organic Prep, Semi-Volatiles

Batch# 9100711 Prep Method/Analysis 3SSD/6270 SIMPAH Matrix Soil  
Phthalates

Sample Integrity Date/Initials 10/20/09 AG

- Is the method appropriate for the sample? Yes  No
- Is there adequate amount of sample? Yes  No
- Are the sample containers appropriate? Yes  No
- Are the samples within hold time? If not fill out a CAR. Yes  No
- Do sample ID's match the work order? Yes  No
- Is sample available for MS/MSD? Yes  No

Extraction Date/Initials 10/20/09 AG

- Was all glassware triple rinsed with solvent? Yes  No
- Was the "whole bottle extraction procedure" used if water? Yes  No

Concentration Final Solvent: DCM

Samples transferred into KDs (date/init.) NA

Macro conc. (date/init./temp.) 10/20/09 AG <sup>75<sup>th</sup> 2<sup>o</sup></sup> Micro conc. (date/init.) 10/20/09 AG

If applicable:

GPC

OPP Soil: poured over Na<sub>2</sub>SO<sub>4</sub> (date/init.) \_\_\_\_\_

transferred into KDs (date/init.) \_\_\_\_\_

Macro conc. (date/init./temp.) \_\_\_\_\_ Micro conc. (date/init.) \_\_\_\_\_

Sample Vialing Date/Initials 10/21/09 AG

- Are the samples being brought to their normal final volume? Yes  No
- Is the solvent level indicated on the ALS vials? Yes  No
- Was the SOP followed with no deviation? If no, explain below. Yes  No
- Is the GPC or TCLP log attached (if applicable)? Yes  No
- Is the paperwork complete, correct and undated in the computer? Yes  No

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**PREPARATION BENCH SHEET**

**Batch 9100711**

TestAmerica Portland

Printed: 10/20/2009 12:36:15PM

Prep method: EPA 3550

Matrix: Soil

7080945

Surrogate 1-9040142 Surrogate 2-9060195-7080267

Lab Number	Analysis	Prepared	Initial (g)	Final (ml)	Spike ID	Spike Amt (uL)	Source ID	Surr 1 (uL)	Surr 2 (uL)	pH	Extraction Comments
9100711-BLKI	QC	10/20/09 11:09	30.02	2		20		50	5		
9100711-BSI	QC	10/20/09 11:09	30.02	2	9080007	20		50	5		
"	(Second Spike)	"	"	"	9080162	500		"	"		
9100711-BS2	QC	10/20/09 11:09	30.01	2	9080007	1		50	5		
9100711-MS1	QC	10/20/09 11:09	30.11	2	9080007	20	PSJ0657-06	50	5		rocks
"	(Second Spike)	"	"	"	9080162	500	PSJ0657-06	"	"		
9100711-MSDI	QC	10/20/09 11:09	30.25	2	9080007	20	PSJ0657-06	50	5		
"	(Second Spike)	"	"	"	9080162	500	PSJ0657-06	"	"		
PSJ0242-07	8270SIM Phthalates	10/20/09 11:09	30.29	2				50	5		wet pyrogenics
PSJ0417-02	8270 SIM PAH	10/20/09 11:09	30.30	2				50	5		MDL report added 10/19, clay, rocks
PSJ0505-02	8270 SIM PAH	10/20/09 11:09	30.07	2				50	5		No Naphthalene, report in mg/kg and clay, rocks
PSJ0657-01	8270 SIM PAH	10/20/09 11:09	30.08	2				50	5		level 3 dp. sand
PSJ0657-01	8270SIM Phthalates	10/20/09 11:09	30.06	2				50	5		level 3 dp.
PSJ0657-02	8270SIM Phthalates	10/20/09 11:09	30.34	2				50	5		level 3 dp. clay/rocks
PSJ0657-03	8270 SIM PAH	10/20/09 11:09	30.03	2				50	5		level 3 dp. rocks
PSJ0657-03	8270SIM Phthalates	10/20/09 11:09	30.02	2				50	5		level 3 dp.
PSJ0657-04	8270 SIM PAH	10/20/09 11:09	30.14	2				50	5		level 3 dp. wet rocks
PSJ0657-04	8270SIM Phthalates	10/20/09 11:09	30.14	2				50	5		level 3 dp.
PSJ0657-05	8270 SIM PAH	10/20/09 11:09	30.08	2				50	5		level 3 dp. rocks, soil, pyrogenics
PSJ0657-05	8270SIM Phthalates	10/20/09 11:09	30.08	2				50	5		level 3 dp.
PSJ0657-06	8270 SIM PAH	10/20/09 11:09	30.08	2				50	5		level 3 dp. MS/MSD, or appropriate QC
PSJ0657-06	8270SIM Phthalates	10/20/09 11:09	30.08	2				50	5		level 3 dp. MS/MSD, or appropriate QC
PSJ0657-07	8270 SIM PAH	10/20/09 11:09	30.27	2				50	5		level 3 dp. rd. clay, rocks
PSJ0657-07	8270SIM Phthalates	10/20/09 11:09	30.27	2				50	5		level 3 dp.
PSJ0657-08	8270 SIM PAH	10/20/09 11:09	30.33	2				50	5		level 3 dp. wet rocks, soil
PSJ0657-08	8270SIM Phthalates	10/20/09 11:09	30.33	2				50	5		level 3 dp.
PSJ0657-09	8270 SIM PAH	10/20/09 11:09	30.11	2				50	5		level 3 dp. wet rocks, soil
PSJ0657-09	8270SIM Phthalates	10/20/09 11:09	30.11	2				50	5		level 3 dp.
PSJ0657-10	8270SIM Phthalates	10/20/09 11:09	30.17	2				50	5		level 3 dp. clay

304  
 Spiking Witnessed By: *[Signature]* Date: 10/20/09  
 Preparation Reviewed By: *[Signature]* Date: 10/21/09

**Batch 9100711**

**PREPARATION BENCH SHEET**

Printed: 10/20/2009 12:36:15PM

TestAmerica Portland

Prep method: EPA 3550

Surrogate 1: 9040142 Surrogate 2: 9060195

Matrix: Soil

Lab Number	Analysis	Prepared	Initial (g)	Final (ml)	Spike ID	Spike Amt (uL)	Source ID	Surr 1 (uL)	Surr 2 (uL)	pH	Extraction Comments
PSJ0657-11B	8270SIM Phthalates	10/20/09 11:09	30.32	2				50	5		level 3 dp. wet soil rods
PSJ0657-12	8270 SIM PAH	10/20/09 11:09	30.06	2				50	5		level 3 dp. soil, DIESELIES
PSJ0657-12	8270SIM Phthalates	10/20/09 11:09	30.66	2				50	5		level 3 dp.
PSJ0657-13	8270 SIM PAH	10/20/09 11:09	30.15	2				50	5		level 3 dp. soil, DIESELIES
PSJ0657-13	8270SIM Phthalates	10/20/09 11:09	30.15	2				50	5		level 3 dp.
PSJ0675-01	8270 SIM PAH	10/20/09 11:09	30.23	2				50	5		rods, clay, chunks of far low 10/20/09

1600 10/20/09 AB

Batch Comments:  
 DCM# 9100013  
 ACETONE# 9020156  
 GLASSWOOL# 00509001  
 Na2SO4# 085139  
 FILTER PAPER# WHATMAN 41  
 BALANCE ID# NCAP-0087

## Metals

# ANALYSES DATA PACKAGE COVER PAGE

## EPA 6010B

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

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### Client Sample Id:

SS-401-101909-0  
SS-402-101909-0  
SS-403-101909-0  
SS-404-101909-0  
SS-405-101909-0  
SS-405-101909-2  
SS-406-101909-0  
SS-407-101909-0  
SS-408-101909-0  
SS-409-101909-0  
SS-410-101909-0  
SS-411-101909-0  
SS-411-101909-1

### Lab Sample Id:

PSJ0657-01  
PSJ0657-02  
PSJ0657-03  
PSJ0657-04  
PSJ0657-05  
PSJ0657-06  
PSJ0657-07  
PSJ0657-08  
PSJ0657-09  
PSJ0657-10  
PSJ0657-11  
PSJ0657-12  
PSJ0657-13

## **ICP Metals**

### Quality Control Summaries

**CH2M-Hill**2020 SW 4th Suite 300  
Portland, OR 97201Project Name: **NW Pipe Project**

Project Number: NW Pipe Project

Project Manager: Pat Heins

Report Date:

11/17/09 15:44

**Laboratory Blank Report****Total Metals per EPA 6000/7000 Series Methods - Laboratory Quality Control Results**

TestAmerica Portland

**Batch 9100713**

Matrix	Lab Number	Sample Name	Dilution	File ID	Analyzed	Instrument	
Soil	EPA 6010B	9100713-BLK1	Blank	1x	102109-01-099	10/22/09 00:40	ICP
Soil	EPA 6010B	9100713-BS1	LCS	1x	102109-01-100	10/22/09 00:47	ICP
Soil	EPA 6010B	9100713-MS1	Matrix Spike	1x	102109-01-112	10/22/09 02:02	ICP
Soil	EPA 6010B	9100713-MS1	Matrix Spike	10x	102209-01-042	10/22/09 20:02	ICP
Soil	EPA 6010B	9100713-MSD1	Matrix Spike Dup	1x	102109-01-113	10/22/09 02:08	ICP
Soil	EPA 6010B	9100713-MSD1	Matrix Spike Dup	10x	102209-01-043	10/22/09 20:08	ICP
Soil	EPA 6010B	PSJ0657-01	SS-401-101909-0	1x	102109-01-104	10/22/09 01:12	ICP
Soil	EPA 6010B	PSJ0657-01	SS-401-101909-0	10x	102209-01-054	10/22/09 21:17	ICP
Soil	EPA 6010B	PSJ0657-02	SS-402-101909-0	1x	102109-01-105	10/22/09 01:18	ICP
Soil	EPA 6010B	PSJ0657-03	SS-403-101909-0	1x	102109-01-106	10/22/09 01:24	ICP
Soil	EPA 6010B	PSJ0657-03	SS-403-101909-0	10x	102209-01-055	10/22/09 21:24	ICP
Soil	EPA 6010B	PSJ0657-04	SS-404-101909-0	1x	102109-01-107	10/22/09 01:31	ICP
Soil	EPA 6010B	PSJ0657-05	SS-405-101909-0	1x	102109-01-110	10/22/09 01:49	ICP
Soil	EPA 6010B	PSJ0657-05	SS-405-101909-0	10x	102209-01-056	10/22/09 21:30	ICP
Soil	EPA 6010B	PSJ0657-06	SS-405-101909-2	1x	102109-01-111	10/22/09 01:56	ICP
Soil	EPA 6010B	PSJ0657-06	SS-405-101909-2	10x	102209-01-051	10/22/09 20:59	ICP
Soil	EPA 6010B	PSJ0657-07	SS-406-101909-0	1x	102109-01-114	10/22/09 02:15	ICP
Soil	EPA 6010B	PSJ0657-07	SS-406-101909-0	10x	102309-01-018	10/23/09 13:44	ICP
Soil	EPA 6010B	PSJ0657-08	SS-407-101909-0	1x	102109-01-115	10/22/09 02:21	ICP
Soil	EPA 6010B	PSJ0657-08	SS-407-101909-0	10x	102309-01-019	10/23/09 13:53	ICP
Soil	EPA 6010B	PSJ0657-09	SS-408-101909-0	10x	102309-01-020	10/23/09 13:59	ICP
Soil	EPA 6010B	PSJ0657-09	SS-408-101909-0	1x	102109-01-116	10/22/09 02:27	ICP
Soil	EPA 6010B	PSJ0657-10	SS-409-101909-0	10x	102309-01-021	10/23/09 14:06	ICP
Soil	EPA 6010B	PSJ0657-10	SS-409-101909-0	1x	102109-01-117	10/22/09 02:34	ICP
Soil	EPA 6010B	PSJ0657-11	SS-410-101909-0	10x	102309-01-022	10/23/09 14:12	ICP
Soil	EPA 6010B	PSJ0657-11	SS-410-101909-0	1x	102109-01-118	10/22/09 02:40	ICP
Soil	EPA 6010B	PSJ0657-12	SS-411-101909-0	1x	102109-01-119	10/22/09 02:46	ICP
Soil	EPA 6010B	PSJ0657-12	SS-411-101909-0	10x	102309-01-023	10/23/09 14:18	ICP
Soil	EPA 6010B	PSJ0657-13	SS-411-101909-1	10x	102309-01-026	10/23/09 14:52	ICP
Soil	EPA 6010B	PSJ0657-13	SS-411-101909-1	1x	102109-01-122	10/22/09 03:05	ICP



**Form 3**  
**LCS / LCS DUPLICATE RECOVERY**  
**EPA 6010B**

Laboratory: TestAmerica Portland  
 Client: CH2M-Hill  
 Matrix: Soil  
 Batch: 9100713  
 Preparation: EPA 3050

SDG: PSJ0657  
 Project: NW Pipe Project  
 Spike standard: 9080037 9080038  
 Laboratory ID: 9100713-BS1  
 Initial/Final: 1.01 g / 50 ml

COMPOUND	SPIKE ADDED (mg/kg wet)	LCS CONCENTRATION (mg/kg wet)	LCS % REC. #	QC LIMITS REC.
Aluminum	248	257	104	80 - 120
Antimony	49.5	50.3	102	80 - 120
Arsenic	49.5	48.5	97.9	80 - 120
Cadmium	24.8	25.7	104	80 - 120
Chromium	49.5	50.5	102	80 - 120
Copper	49.5	51.0	103	80 - 120
Lead	49.5	51.3	104	80 - 120
Nickel	49.5	50.3	102	80 - 120
Selenium	49.5	50.7	102	80 - 120
Silver	24.8	25.1	102	80 - 120
Zinc	49.5	50.5	102	80 - 120

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

# MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

## EPA 6010B

SS-405-101909-2

Laboratory: TestAmerica PortlandSDG: PSJ0657Client: CH2M-HillProject: NW Pipe ProjectMatrix: SoilSpike standard: 9080037 9080038Batch: 9100713Laboratory ID: 9100713-MS1Preparation: EPA 3050Initial/Final: 1.04 g / 50 mlSource Sample Name: SS-405-101909-2

COMPOUND	SPIKE ADDED (mg/kg dry)	SAMPLE CONCENTRATION (mg/kg dry)	MS CONCENTRATION (mg/kg dry)	MS % REC. #	QC LIMITS REC.
Aluminum	267	14200	16600	918 *	75 - 125
Antimony	53.3	4.08	40.4	68.2 *	75 - 125
Arsenic	53.3	3.68	50.1	87.0	75 - 125
Cadmium	26.7	4.92	26.4	80.7	75 - 125
Chromium	53.3	1920	2190	488 *	75 - 125
Copper	53.3	92.7	143	94.2	75 - 125
Lead	53.3	24.1	68.4	83.1	75 - 125
Nickel	53.3	38.5	99.5	114	75 - 125
Selenium	53.3	ND	40.0	75.0	75 - 125
Silver	26.7	2.58	27.8	94.7	75 - 125
Zinc	53.3	116	174	108	75 - 125

COMPOUND	SPIKE ADDED (mg/kg dry)	MSD CONCENTRATION (mg/kg dry)	MSD % REC. #	% RPD #	QC LIMITS	
					RPD	REC.
Aluminum	274	13700	-163 *	19.1	40	75 - 125
Antimony	54.9	45.0	74.5 *	10.6	40	75 - 125
Arsenic	54.9	54.6	92.7	8.65	40	75 - 125
Cadmium	27.4	27.8	83.4	5.11	40	75 - 125
Chromium	54.9	2210	526 *	1.31	40	75 - 125
Copper	54.9	153	110	6.71	40	75 - 125
Lead	54.9	73.0	89.1	6.53	40	75 - 125
Nickel	54.9	100	113	0.933	40	75 - 125
Selenium	54.9	41.5	75.6	3.77	40	75 - 125
Silver	27.4	28.0	92.8	0.808	40	75 - 125
Zinc	54.9	173	104	0.395	40	75 - 125

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

# METHOD DETECTION AND REPORTING LIMITS

## EPA 6010B

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Matrix: Soil

Instrument: ICP

Analyte	MDL	MRL	Units
Aluminum	0.455	5.00	mg/kg
Antimony	0.560	2.00	mg/kg
Arsenic	0.130	25.0	mg/kg
Cadmium	0.00600	3.00	mg/kg
Chromium	0.0350	1.50	mg/kg
Copper	0.0850	1.50	mg/kg
Lead	0.150	10.0	mg/kg
Nickel	0.0600	1.25	mg/kg
Selenium	0.450	25.0	mg/kg
Silver	0.0350	3.00	mg/kg
Zinc	0.0500	2.50	mg/kg

**Total Metals Per EPA Method 6010B  
Continuing Calibration Verification Summary**

Work Order: PSJ0657

Sequence: 102109

ICV2			
10/21/2009 14:44			
Analyte	Result	Expected	Percent Recovery
Ag 328.068	0.501	0.5	100
Al 237.312	9.923	10	99.2
As 188.980	2.031	2	102
Cd 214.439	2.036	2	102
Cr 267.716	4.107	4	103
Cu 327.395	4.177	4	104
Ni 231.604	4.209	4	105
Pb 220.353	2.115	2	106
Sb 217.582	0.978	1	97.8
Se 196.026	2.066	2	103
Zn 206.200	4.185	4	105

CCV			
10/21/2009 23:06			
Analyte	Result	Expected	Percent Recovery
Ag 328.068	0.537	0.5	107
Al 237.312	10.51	10	105
As 188.980	2.096	2	105
Cd 214.439	0.546	0.5	109
Cr 267.716	1.063	1	106
Cu 327.395	1.066	1	107
Ni 231.604	1.088	1	109
Pb 220.353	0.548	0.5	110
Sb 217.582	1.07	1	107
Se 196.026	0.54	0.5	108
Zn 206.200	1.082	1	108

**Total Metals Per EPA Method 6010B  
Continuing Calibration Verification Summary**

Work Order: PSJ0657

Sequence: 102109

CCV			
10/22/2009 0:21			
Analyte	Result	Expected	Percent Recovery
Ag 328.068	0.533	0.5	107
Al 237.312	10.33	10	103
As 188.980	2.042	2	102
Cd 214.439	0.535	0.5	107
Cr 267.716	1.037	1	104
Cu 327.395	1.05	1	105
Ni 231.604	1.064	1	106
Pb 220.353	0.542	0.5	108
Sb 217.582	1.059	1	106
Se 196.026	0.534	0.5	107
Zn 206.200	1.056	1	106

CCV			
10/22/2009 1:37			
Analyte	Result	Expected	Percent Recovery
Ag 328.068	0.54	0.5	108
Al 237.312	10.38	10	104
As 188.980	2.063	2	103
Cd 214.439	0.541	0.5	108
Cr 267.716	1.049	1	105
Cu 327.395	1.055	1	106
Ni 231.604	1.061	1	106
Pb 220.353	0.544	0.5	109
Sb 217.582	1.069	1	107
Se 196.026	0.53	0.5	106
Zn 206.200	1.06	1	106

**Total Metals Per EPA Method 6010B  
Continuing Calibration Verification Summary**

Work Order: PSJ0657

Sequence: 102109

CCV			
10/22/2009 2:52			
Analyte	Result	Expected	Percent Recovery
Ag 328.068	0.549	0.5	110
Al 237.312	10.5	10	105
As 188.980	2.071	2	104
Cd 214.439	0.548	0.5	110
Cr 267.716	1.056	1	106
Cu 327.395	1.067	1	107
Ni 231.604	1.073	1	107
Pb 220.353	0.542	0.5	108
Sb 217.582	1.094	1	109
Se 196.026	0.549	0.5	110
Zn 206.200	1.086	1	109

CCV			
10/22/2009 4:08			
Analyte	Result	Expected	Percent Recovery
Ag 328.068	0.536	0.5	107
Al 237.312	10.18	10	102
As 188.980	2.01	2	100
Cd 214.439	0.533	0.5	107
Cr 267.716	1.026	1	103
Cu 327.395	1.038	1	104
Ni 231.604	1.035	1	103
Pb 220.353	0.52	0.5	104
Sb 217.582	1.059	1	106
Se 196.026	0.529	0.5	106
Zn 206.200	1.051	1	105

**Total Metals Per EPA Method 6010B  
Continuing Calibration Verification Summary**

Work Order: PSJ0657

Sequence: 102209

ICV2			
10/22/2009 10:29			
Analyte	Result	Expected	Percent Recovery
Al 237.312	10.15	10	102
Cr 267.716	4.136	4	103

CCV			
10/22/2009 17:38			
Analyte	Result	Expected	Percent Recovery
Al 237.312	10.52	10	105
Cr 267.716	1.053	1	105

CCV			
10/22/2009 19:06			
Analyte	Result	Expected	Percent Recovery
Al 237.312	10.28	10	103
Cr 267.716	1.027	1	103

CCV			
10/22/2009 20:21			
Analyte	Result	Expected	Percent Recovery
Al 237.312	9.993	10	99.9
Cr 267.716	1.01	1	101

CCV			
10/22/2009 21:36			
Analyte	Result	Expected	Percent Recovery
Al 237.312	10.1	10	101
Cr 267.716	1.022	1	102

**Total Metals Per EPA Method 6010B  
Continuing Calibration Verification Summary**

Work Order: PSJ0657

Sequence: 102309

ICV2			
10/23/2009 12:37			
Analyte	Result	Expected	Percent Recovery
Al 237.312	10.29	10	103
Cr 267.716	4.119	4	103
Zn 206.200	4.14	4	103

CCV			
10/23/2009 14:39			
Analyte	Result	Expected	Percent Recovery
Al 237.312	10.16	10	102
Cr 267.716	0.996	1	99.6
Zn 206.200	1.032	1	103

CCV			
10/23/2009 15:54			
Analyte	Result	Expected	Percent Recovery
Al 237.312	9.984	10	99.8
Cr 267.716	0.966	1	96.6
Zn 206.200	1.014	1	101

**Total Metals Per EPA Method 6010B**  
**Continuing Calibration Blank Summary**

Work Order: PSJ0657

Sequence: 102109

CCB			
10/21/2009 14:50			
Analyte	Result	MRL	Percent Recovery
Ag 328.068	0.00029063	3	ND
Al 237.312	-0.0022329	5	ND
As 188.980	0.00320020	25	ND
Cd 214.439	-2.705E-05	3	ND
Cr 267.716	0.00045467	1.5	ND
Cu 327.395	-0.0002141	1.5	ND
Ni 231.604	7.4341E-05	1.25	ND
Pb 220.353	0.00467756	10	ND
Sb 217.582	-0.0012129	2	ND
Se 196.026	0.00571550	25	ND
Zn 206.200	-0.0001041	2.5	ND

CCB			
10/21/2009 23:12			
Analyte	Result	MRL	Percent Recovery
Ag 328.068	0.00066646	3	ND
Al 237.312	0.00798547	5	ND
As 188.980	0.00614924	25	ND
Cd 214.439	9.0398E-06	3	ND
Cr 267.716	0.00019416	1.5	ND
Cu 327.395	0.00275881	1.5	ND
Ni 231.604	-0.0005816	1.25	ND
Pb 220.353	0.00463613	10	ND
Sb 217.582	-0.0010107	2	ND
Se 196.026	0.00296182	25	ND
Zn 206.200	-0.0020351	2.5	ND

**Total Metals Per EPA Method 6010B**  
**Continuing Calibration Blank Summary**

Work Order: PSJ0657

Sequence: 102109

CCB			
10/22/2009 0:28			
Analyte	Result	MRL	Percent Recovery
Ag 328.068	0.00090785	3	ND
Al 237.312	0.00145762	5	ND
As 188.980	-0.0008696	25	ND
Cd 214.439	4.2292E-05	3	ND
Cr 267.716	0.00021288	1.5	ND
Cu 327.395	0.00323867	1.5	ND
Ni 231.604	0.00075648	1.25	ND
Pb 220.353	0.00367259	10	ND
Sb 217.582	-0.0014697	2	ND
Se 196.026	0.00063913	25	ND
Zn 206.200	-0.0023674	2.5	ND

CCB			
10/22/2009 1:43			
Analyte	Result	MRL	Percent Recovery
Ag 328.068	0.0007932	3	ND
Al 237.312	-0.0017241	5	ND
As 188.980	0.00157298	25	ND
Cd 214.439	-9.5E-06	3	ND
Cr 267.716	0.00038506	1.5	ND
Cu 327.395	0.00217173	1.5	ND
Ni 231.604	0.0008696	1.25	ND
Pb 220.353	0.00949714	10	ND
Sb 217.582	0.00315656	2	ND
Se 196.026	0.00763097	25	ND
Zn 206.200	-0.0024628	2.5	ND

**Total Metals Per EPA Method 6010B**  
**Continuing Calibration Blank Summary**

Work Order: PSJ0657

Sequence: 102109

CCB			
10/22/2009 2:59			
Analyte	Result	MRL	Percent Recovery
Ag 328.068	0.00115045	3	ND
Al 237.312	0.00368391	5	ND
As 188.980	0.00085462	25	ND
Cd 214.439	-8.576E-05	3	ND
Cr 267.716	0.00043573	1.5	ND
Cu 327.395	0.00269662	1.5	ND
Ni 231.604	0.00043970	1.25	ND
Pb 220.353	0.00381270	10	ND
Sb 217.582	-0.0003362	2	ND
Se 196.026	0.00092571	25	ND
Zn 206.200	-0.0029160	2.5	ND

CCB			
10/22/2009 4:14			
Analyte	Result	MRL	Percent Recovery
Ag 328.068	0.00063657	3	ND
Al 237.312	0.00055178	5	ND
As 188.980	0.00568610	25	ND
Cd 214.439	4.4195E-05	3	ND
Cr 267.716	0.0004707	1.5	ND
Cu 327.395	0.0036266	1.5	ND
Ni 231.604	0.00093456	1.25	ND
Pb 220.353	0.00214592	10	ND
Sb 217.582	0.00103191	2	ND
Se 196.026	0.01009625	25	ND
Zn 206.200	-0.0027181	2.5	ND

**Total Metals Per EPA Method 6010B**  
**Continuing Calibration Blank Summary**

Work Order: PSJ0657

Sequence: 102209

CCB			
10/22/2009 10:35			
Analyte	Result	MRL	Percent Recovery
Al 237.312	0.00020921	5	ND
Cr 267.716	0.00075652	1.5	ND

CCB			
10/22/2009 17:47			
Analyte	Result	MRL	Percent Recovery
Al 237.312	-0.0014457	5	ND
Cr 267.716	3.1266E-06	1.5	ND

CCB			
10/22/2009 19:12			
Analyte	Result	MRL	Percent Recovery
Al 237.312	-5.688E-05	5	ND
Cr 267.716	0.00038691	1.5	ND

CCB			
10/22/2009 20:27			
Analyte	Result	MRL	Percent Recovery
Al 237.312	-0.0007243	5	ND
Cr 267.716	0.00037469	1.5	ND

CCB			
10/22/2009 21:42			
Analyte	Result	MRL	Percent Recovery
Al 237.312	-0.000273	5	ND
Cr 267.716	0.00041947	1.5	ND

**Total Metals Per EPA Method 6010B**  
**Continuing Calibration Blank Summary**

**Work Order:** PSJ0657

**Sequence:** 102309

CCB			
10/23/2009 12:52			
<b>Analyte</b>	<b>Result</b>	<b>MRL</b>	<b>Percent Recovery</b>
Al 237.312	-0.0019733	5	ND
Cr 267.716	0.00027228	1.5	ND
Zn 206.200	-0.0013889	2.5	ND

CCB			
10/23/2009 14:45			
<b>Analyte</b>	<b>Result</b>	<b>MRL</b>	<b>Percent Recovery</b>
Al 237.312	-0.0018561	5	ND
Cr 267.716	4.8305E-05	1.5	ND
Zn 206.200	-0.0012819	2.5	ND

CCB			
10/23/2009 16:01			
<b>Analyte</b>	<b>Result</b>	<b>MRL</b>	<b>Percent Recovery</b>
Al 237.312	-0.0007648	5	ND
Cr 267.716	0.00061985	1.5	ND
Zn 206.200	-0.0012727	2.5	ND

**Total Metals Per EPA Method 6010B  
Interference Check Standard**

Work Order: PSJ0657

Sequence: 102109

ICS A			
10/21/2009 14:57			
Analyte	Result	Expected	Percent Recovery
Ag 328.068	0	NA	NA
Al 226.346	530.2	500	106
Al 237.312	539.1	500	108
As 188.980	0.004	NA	NA
B 182.577	0.129	NA	NA
B 249.678	0.117	NA	NA
Ca 210.324	500.2	500	100
Ca 315.887	452.4	500	90.5
Cd 214.439	0.006	NA	NA
Cr 267.716	0	NA	NA
Cu 327.395	0.003	NA	NA
Fe 238.204	188.4	200	94.2
Fe 259.940	180.3	200	90.2
Fe 273.358	219	200	110
Mg 202.582	516.4	500	103
Mg 279.800	508.3	500	102
Mg 293.651	510	500	102
Mn 191.446	0.008	NA	NA
Mn 294.921	0.141	NA	NA
Ni 231.604	0	NA	NA
Pb 220.353	-0.001	NA	NA
Sb 217.582	-0.004	NA	NA
Se 196.026	-0.01	NA	NA
Zn 206.200	0.02	NA	NA

**Total Metals Per EPA Method 6010B  
Interference Check Standard**

Work Order: PSJ0657

Sequence: 102109

ICS AB			
10/21/2009 15:03			
Analyte	Result	Expected	Percent Recovery
Ag 328.068	1.023	1	102
Al 226.346	519.6	500	104
Al 237.312	520.5	500	104
As 188.980	-0.002	NA	NA
B 182.577	0.096	NA	NA
B 249.678	0.085	NA	NA
Ca 210.324	488.5	500	97.7
Ca 315.887	444.5	500	88.9
Cd 214.439	0.937	1	93.7
Cr 267.716	0.473	0.5	94.6
Cu 327.395	0.484	0.5	96.8
Fe 238.204	184.8	200	92.4
Fe 259.940	177.1	200	88.6
Fe 273.358	213.5	200	107
Mg 202.582	504.6	500	101
Mg 279.800	497.1	500	99.4
Mg 293.651	499.9	500	100
Mn 191.446	0.475	0.5	95
Mn 294.921	0.609	0.5	122
Ni 231.604	0.946	1	94.6
Pb 220.353	0.94	1	94
Sb 217.582	-0.006	NA	NA
Se 196.026	-0.009	NA	NA
Zn 206.200	0.951	1	95.1

**Total Metals Per EPA Method 6010B  
Interference Check Standard**

Work Order: PSJ0657

Sequence: 102209

ICS A			
10/22/2009 10:46			
Analyte	Result	Expected	Percent Recovery
Al 226.346	495.5	500	99.1
Al 237.312	501.8	500	100
B 182.577	0.077	NA	NA
B 249.678	0.116	NA	NA
Ca 210.324	464.2	500	92.8
Ca 315.887	427.9	500	85.6
Cr 267.716	0	NA	NA
Fe 238.204	179.1	200	89.6
Fe 259.940	168.3	200	84.2
Fe 273.358	201.7	200	101
Mg 202.582	469.1	500	93.8
Mg 279.800	466.5	500	93.3
Mg 293.651	471.9	500	94.4
Mn 191.446	0.002	NA	NA
Mn 294.921	0.13	NA	NA

ICS AB			
10/22/2009 10:52			
Analyte	Result	Expected	Percent Recovery
Al 226.346	505	500	101
Al 237.312	512	500	102
B 182.577	0.056	NA	NA
B 249.678	0.095	NA	NA
Ca 210.324	473.6	500	94.7
Ca 315.887	438.1	500	87.6
Cr 267.716	0.466	0.5	93.2
Fe 238.204	183	200	91.5
Fe 259.940	171.6	200	85.8
Fe 273.358	206.2	200	103
Mg 202.582	476.2	500	95.2
Mg 279.800	478.3	500	95.7
Mg 293.651	482.3	500	96.5
Mn 191.446	0.436	0.5	87.2
Mn 294.921	0.597	0.5	119

**Total Metals Per EPA Method 6010B**  
**Interference Check Standard**

Work Order: PSJ0657

Sequence: 102309

ICS A			
10/23/2009 12:59			
Analyte	Result	Expected	Percent Recovery
Al 237.312	516.4	500	103
B 182.577	0.108	NA	NA
B 249.678	0.105	NA	NA
Ca 210.324	467.3	500	93.5
Ca 315.887	422.8	500	84.6
Cr 267.716	0	NA	NA
Fe 238.204	179	200	89.5
Fe 259.940	168.5	200	84.2
Fe 273.358	203.8	200	102
Mg 202.582	468.5	500	93.7
Mg 279.800	471.4	500	94.3
Mg 293.651	471.1	500	94.2
Mn 191.446	0.006	NA	NA
Mn 294.921	0.132	NA	NA
Zn 206.200	0.008	NA	NA

ICS AB			
10/23/2009 13:05			
Analyte	Result	Expected	Percent Recovery
Al 237.312	511.2	500	102
B 182.577	0.094	NA	NA
B 249.678	0.081	NA	NA
Ca 210.324	465.6	500	93.1
Ca 315.887	421	500	84.2
Cr 267.716	0.457	0.5	91.4
Fe 238.204	178	200	89
Fe 259.940	167.8	200	83.9
Fe 273.358	202.8	200	101
Mg 202.582	465	500	93
Mg 279.800	471.6	500	94.3
Mg 293.651	470.4	500	94.1
Mn 191.446	0.421	0.5	84.2
Mn 294.921	0.584	0.5	117
Zn 206.200	0.889	1	88.9

Acceptance Criteria: < 120% for ICS  
 Prepared 11/12/2009 5:26:38 PM

Workorder: PSJ0657  
Instrument: ICP  
Sequence: 102109

No Linear Range Standards were analyzed with this sequence.

Analyte concentrations which are greater than the high point of the calibration curve are not reported.

Workorder: PSJ0657  
Instrument: ICP  
Sequence: 102209

No Linear Range Standards were analyzed with this sequence.

Analyte concentrations which are greater than the high point of the calibration curve are not reported.

Workorder: PSJ0657  
Instrument: ICP  
Sequence: 102309

No Linear Range Standards were analyzed with this sequence.

Analyte concentrations which are greater than the high point of the calibration curve are not reported.

Workorder: PSJ0657  
Instrument: ICP  
Sequence: 102109

The ICP Interelement Correction Factor Summary for the specified sequence is not available due to the instrumental software package

Workorder: PSJ0657  
Instrument: ICP  
Sequence: 102209

The ICP Interelement Correction Factor Summary for the specified sequence is not available due to the instrumental software package

Workorder: PSJ0657  
Instrument: ICP  
Sequence: 102309

The ICP Interelement Correction Factor Summary for the specified sequence is not available due to the instrumental software package



10/21/2009 4:20:51 PM **Measured Sequence-CCV**  
QCP test failed.  
10/21/2009 4:22:43 PM QCP test failure action is to flag and continue.  
10/21/2009 4:22:43 PM Immediate stop of worksheet run requested.  
10/21/2009 4:26:20 PM Analysis stopped by user.  
10/21/2009 4:26:22 PM Analysis started.  
10/21/2009 4:28:10 PM **Measured Sequence-CCV**  
QCP test failed.  
10/21/2009 4:32:36 PM QCP test failure action is to flag and continue.  
10/21/2009 4:34:28 PM **Measured Sequence-CCB**  
QCP test failed.  
10/21/2009 4:34:28 PM QCP test failure action is to flag and continue.  
10/21/2009 4:38:56 PM **Measured Sample 11**  
10/21/2009 4:40:48 PM Request to stop the worksheet run after completing this solution.  
10/21/2009 4:40:48 PM **Measured Sample 12**  
10/21/2009 4:45:13 PM Analysis started.  
10/21/2009 4:51:38 PM **Measured Sample 13**  
10/21/2009 4:51:29 PM **Measured Sample 14**  
10/21/2009 5:11:02 PM **Measured Sample 15**  
10/21/2009 5:15:27 PM **Measured Sample 16**  
10/21/2009 5:21:43 PM **Measured Sample 17**  
10/21/2009 5:27:58 PM **Measured Sample 18**  
10/21/2009 5:34:13 PM **Measured Sample 19**  
10/21/2009 5:40:28 PM **Measured Sample 20**  
10/21/2009 5:46:44 PM **Measured Sequence-CCV**  
10/21/2009 5:53:00 PM QCP test failed.  
10/21/2009 5:59:15 PM QCP test failure action is to flag and continue.  
10/21/2009 6:05:32 PM **Measured Sequence-CCB**  
10/21/2009 6:07:23 PM QCP test failed.  
10/21/2009 6:07:23 PM QCP test failure action is to flag and continue.  
10/21/2009 6:11:48 PM **Measured Sample 21**  
10/21/2009 6:13:39 PM **Measured Sample 22**  
10/21/2009 6:13:39 PM **Measured Sample 23**  
10/21/2009 6:18:04 PM **Measured Sample 24**  
10/21/2009 6:24:19 PM **Measured Sample 25**  
10/21/2009 6:30:34 PM **Measured Sample 26**  
10/21/2009 6:36:50 PM **Measured Sample 27**  
10/21/2009 6:43:05 PM **Measured Sample 28**  
10/21/2009 6:49:20 PM **Measured Sample 29**  
10/21/2009 6:55:36 PM **Measured Sample 30**  
10/21/2009 7:01:52 PM **Measured Sequence-CCV**  
10/21/2009 7:08:08 PM QCP test failed.  
10/21/2009 7:14:23 PM QCP test failure action is to flag and continue.  
10/21/2009 7:20:40 PM **Measured Sequence-CCB**  
10/21/2009 7:22:31 PM QCP test failed.  
10/21/2009 7:22:31 PM QCP test failure action is to flag and continue.  
10/21/2009 7:26:56 PM **Measured Sample 31**  
10/21/2009 7:28:48 PM **Measured Sample 32**  
10/21/2009 7:28:48 PM **Measured Sample 33**  
10/21/2009 7:33:12 PM **Measured Sample 34**  
10/21/2009 7:39:27 PM **Measured Sample 35**  
10/21/2009 7:45:42 PM **Measured Sample 36**  
10/21/2009 7:51:58 PM **Measured Sample 37**  
10/21/2009 7:58:14 PM **Measured Sample 38**  
10/21/2009 8:04:29 PM **Measured Sample 39**  
10/21/2009 8:10:46 PM **Measured Sample 40**  
10/21/2009 8:17:01 PM **Measured Sequence-CCV**  
10/21/2009 8:23:17 PM QCP test failed.  
10/21/2009 8:29:32 PM QCP test failure action is to flag and continue.  
10/21/2009 8:35:48 PM **Measured Sequence-CCB**  
10/21/2009 8:37:40 PM QCP test failed.  
10/21/2009 8:37:40 PM QCP test failure action is to flag and continue.  
10/21/2009 8:42:05 PM **Measured Sample 41**  
10/21/2009 8:43:56 PM **Measured Sample 42**  
10/21/2009 8:43:56 PM **Measured Sample 43**  
10/21/2009 8:48:21 PM **Measured Sample 44**  
10/21/2009 8:54:37 PM **Measured Sample 45**  
10/21/2009 9:00:53 PM **Measured Sample 46**  
10/21/2009 9:07:10 PM **Measured Sample 47**  
10/21/2009 9:13:25 PM **Measured Sample 48**  
10/21/2009 9:19:41 PM **Measured Sample 49**  
10/21/2009 9:25:57 PM **Measured Sample 50**  
10/21/2009 9:32:12 PM **Measured Sequence-CCV**  
10/21/2009 9:38:28 PM QCP test failed.  
10/21/2009 9:44:44 PM QCP test failure action is to flag and continue.  
10/21/2009 9:51:01 PM **Measured Sequence-CCB**  
10/21/2009 9:52:52 PM QCP test failed.  
10/21/2009 9:52:52 PM QCP test failure action is to flag and continue.  
10/21/2009 9:57:18 PM **Measured Sample 51**  
10/21/2009 9:59:09 PM **Measured Sample 52**  
10/21/2009 9:59:09 PM **Measured Sample 53**  
10/21/2009 10:03:34 PM **Measured Sample 54**  
10/21/2009 10:09:51 PM **Measured Sample 55**  
10/21/2009 10:16:06 PM **Measured Sample 56**  
10/21/2009 10:22:22 PM **Measured Sample 57**  
10/21/2009 10:28:39 PM **Measured Sample 58**  
10/21/2009 10:34:55 PM **Measured Sample 59**  
10/21/2009 10:41:11 PM **Measured Sample 60**  
10/21/2009 10:47:28 PM  
10/21/2009 10:53:44 PM  
10/21/2009 11:00:02 PM

10/21/2009 11:06:19 PM  
10/21/2009 11:08:10 PM  
10/21/2009 11:08:10 PM  
10/21/2009 11:12:35 PM  
10/21/2009 11:14:25 PM  
10/21/2009 11:14:25 PM  
10/21/2009 11:18:51 PM  
10/21/2009 11:25:09 PM  
10/21/2009 11:31:28 PM  
10/21/2009 11:37:46 PM  
10/21/2009 11:44:04 PM  
10/21/2009 11:50:22 PM  
10/21/2009 11:56:40 PM  
10/22/2009 12:02:58 AM  
10/22/2009 12:09:16 AM  
10/22/2009 12:15:34 AM  
10/22/2009 12:21:51 AM  
10/22/2009 12:23:42 AM  
10/22/2009 12:23:42 AM  
10/22/2009 12:28:07 AM  
10/22/2009 12:29:58 AM  
10/22/2009 12:29:58 AM  
10/22/2009 12:34:24 AM  
10/22/2009 12:40:43 AM  
10/22/2009 12:47:01 AM  
10/22/2009 12:53:19 AM  
10/22/2009 12:59:36 AM  
10/22/2009 1:05:55 AM  
10/22/2009 1:12:13 AM  
10/22/2009 1:18:30 AM  
10/22/2009 1:24:48 AM  
10/22/2009 1:31:06 AM  
10/22/2009 1:37:23 AM  
10/22/2009 1:39:15 AM  
10/22/2009 1:39:15 AM  
10/22/2009 1:43:40 AM  
10/22/2009 1:45:31 AM  
10/22/2009 1:45:31 AM  
10/22/2009 1:49:57 AM  
10/22/2009 1:56:15 AM  
10/22/2009 2:02:33 AM  
10/22/2009 2:08:51 AM  
10/22/2009 2:15:09 AM  
10/22/2009 2:21:27 AM  
10/22/2009 2:27:46 AM  
10/22/2009 2:34:04 AM  
10/22/2009 2:40:22 AM  
10/22/2009 2:46:40 AM  
10/22/2009 2:52:57 AM  
10/22/2009 2:54:49 AM  
10/22/2009 2:54:49 AM  
10/22/2009 2:59:16 AM  
10/22/2009 3:01:06 AM  
10/22/2009 3:01:06 AM  
10/22/2009 3:05:34 AM  
10/22/2009 3:11:52 AM  
10/22/2009 3:18:10 AM  
10/22/2009 3:24:29 AM  
10/22/2009 3:30:47 AM  
10/22/2009 3:37:05 AM  
10/22/2009 3:43:23 AM  
10/22/2009 3:49:41 AM  
10/22/2009 3:55:59 AM  
10/22/2009 4:02:17 AM  
10/22/2009 4:08:34 AM  
10/22/2009 4:10:25 AM  
10/22/2009 4:10:25 AM  
10/22/2009 4:14:51 AM  
10/22/2009 4:16:42 AM  
10/22/2009 4:16:42 AM  
10/22/2009 4:21:09 AM  
10/22/2009 4:27:27 AM  
10/22/2009 4:33:46 AM  
10/22/2009 4:40:05 AM  
10/22/2009 4:46:23 AM  
10/22/2009 4:52:41 AM  
10/22/2009 4:58:59 AM  
10/22/2009 5:05:16 AM  
10/22/2009 5:07:07 AM  
10/22/2009 5:07:07 AM  
10/22/2009 5:11:33 AM  
10/22/2009 5:13:23 AM  
10/22/2009 5:13:23 AM  
10/22/2009 5:13:29 AM  
10/22/2009 9:28:56 AM  
10/22/2009 9:28:56 AM  
10/22/2009 9:28:56 AM  
10/22/2009 9:28:56 AM

**Measured Sequence-CCV**  
QCP test failed.  
QCP test failure action is to flag and continue.  
**Measured Sequence-CCB**  
QCP test failed.  
QCP test failure action is to flag and continue.  
**Measured Sample 61**  
**Measured Sample 62**  
**Measured Sample 63**  
**Measured Sample 64**  
**Measured Sample 65**  
**Measured Sample 66**  
**Measured Sample 67**  
**Measured Sample 68**  
**Measured Sample 69**  
**Measured Sample 70**  
**Measured Sequence-CCV**  
QCP test failed.  
QCP test failure action is to flag and continue.  
**Measured Sequence-CCB**  
QCP test failed.  
QCP test failure action is to flag and continue.  
**Measured Sample 71**  
**Measured Sample 72**  
**Measured Sample 73**  
**Measured Sample 74**  
**Measured Sample 75**  
**Measured Sample 76**  
**Measured Sample 77**  
**Measured Sample 78**  
**Measured Sample 79**  
**Measured Sample 80**  
**Measured Sequence-CCV**  
QCP test failed.  
QCP test failure action is to flag and continue.  
**Measured Sequence-CCB**  
QCP test failed.  
QCP test failure action is to flag and continue.  
**Measured Sample 81**  
**Measured Sample 82**  
**Measured Sample 83**  
**Measured Sample 84**  
**Measured Sample 85**  
**Measured Sample 86**  
**Measured Sample 87**  
**Measured Sample 88**  
**Measured Sample 89**  
**Measured Sample 90**  
**Measured Sequence-CCV**  
QCP test failed.  
QCP test failure action is to flag and continue.  
**Measured Sequence-CCB**  
QCP test failed.  
QCP test failure action is to flag and continue.  
**Measured Sample 91**  
**Measured Sample 92**  
**Measured Sample 93**  
**Measured Sample 94**  
**Measured Sample 95**  
**Measured Sample 96**  
**Measured Sample 97**  
**Measured Sample 98**  
**Measured Sample 99**  
**Measured Sample 100**  
**Measured Sequence-CCV**  
QCP test failed.  
QCP test failure action is to flag and continue.  
**Measured Sequence-CCB**  
QCP test failed.  
QCP test failure action is to flag and continue.  
**Measured Sample 101**  
**Measured Sample 102**  
**Measured Sample 103**  
**Measured Sample 104**  
**Measured Sample 105**  
**Measured Sample 106**  
**Measured Sample 107**  
**Measured Sequence-CCV**  
QCP test failed.  
QCP test failure action is to flag and continue.  
**Measured Sequence-CCB**  
QCP test failed.  
QCP test failure action is to flag and continue.  
Analysis completed.  
QCP test failed.  
QCP test failed.  
QCP test failed.  
QCP test failed.  
QCP test passed.

**Instrument: ICP**  
**Sequence: 102109**





102209

Instrument: ICP  
Sequence: 102209.b

10/22/2009 5:49:39 PM  
10/22/2009 5:52:25 PM  
10/22/2009 5:57:50 PM  
10/22/2009 5:56:49 PM  
10/22/2009 6:00:16 PM  
10/22/2009 6:04:15 PM  
10/22/2009 6:04:27 PM  
10/22/2009 6:05:37 PM  
10/22/2009 6:10:03 PM  
10/22/2009 6:16:18 PM  
10/22/2009 6:22:33 PM  
10/22/2009 6:28:49 PM  
10/22/2009 6:35:04 PM  
10/22/2009 6:41:19 PM  
10/22/2009 6:47:35 PM  
10/22/2009 6:53:51 PM  
10/22/2009 7:00:07 PM  
10/22/2009 7:06:23 PM  
10/22/2009 7:08:14 PM  
10/22/2009 7:08:14 PM  
10/22/2009 7:12:39 PM  
10/22/2009 7:14:31 PM  
10/22/2009 7:14:31 PM  
10/22/2009 7:18:55 PM  
10/22/2009 7:25:10 PM  
10/22/2009 7:31:26 PM  
10/22/2009 7:37:40 PM  
10/22/2009 7:43:56 PM  
10/22/2009 7:50:11 PM  
10/22/2009 7:56:27 PM  
10/22/2009 8:02:42 PM  
10/22/2009 8:08:58 PM  
10/22/2009 8:15:13 PM  
10/22/2009 8:21:29 PM  
10/22/2009 8:23:21 PM  
10/22/2009 8:23:21 PM  
10/22/2009 8:27:46 PM  
10/22/2009 8:29:37 PM  
10/22/2009 8:29:37 PM  
10/22/2009 8:34:01 PM  
10/22/2009 8:40:16 PM  
10/22/2009 8:46:30 PM  
10/22/2009 8:52:46 PM  
10/22/2009 8:59:01 PM  
10/22/2009 9:05:17 PM  
10/22/2009 9:11:33 PM  
10/22/2009 9:17:48 PM  
10/22/2009 9:24:04 PM  
10/22/2009 9:30:19 PM  
10/22/2009 9:36:35 PM  
10/22/2009 9:38:27 PM  
10/22/2009 9:38:27 PM  
10/22/2009 9:42:51 PM  
10/22/2009 9:44:43 PM  
10/22/2009 9:44:43 PM  
10/22/2009 9:49:07 PM  
10/22/2009 9:55:23 PM  
10/22/2009 10:01:40 PM  
10/22/2009 10:07:56 PM  
10/22/2009 10:14:12 PM  
10/22/2009 10:20:27 PM  
10/22/2009 10:26:43 PM  
10/22/2009 10:32:59 PM  
10/22/2009 10:39:14 PM  
10/22/2009 10:45:30 PM  
10/22/2009 10:51:46 PM  
10/22/2009 10:53:38 PM  
10/22/2009 10:53:38 PM  
10/22/2009 10:58:03 PM  
10/22/2009 10:59:55 PM  
10/22/2009 10:59:55 PM  
10/22/2009 11:04:19 PM  
10/22/2009 11:10:35 PM  
10/22/2009 11:16:50 PM  
10/22/2009 11:23:06 PM  
10/22/2009 11:29:22 PM  
10/22/2009 11:35:38 PM  
10/22/2009 11:41:53 PM  
10/22/2009 11:48:10 PM  
10/22/2009 11:50:01 PM  
10/22/2009 11:50:01 PM  
10/22/2009 11:54:26 PM  
10/22/2009 11:56:18 PM  
10/22/2009 11:56:18 PM  
10/22/2009 11:56:20 PM

Immediate stop of worksheet run requested.  
Analysis started.  
Request to stop the worksheet run after completing this solution.  
Measured Sample 11  
Analysis started.  
Immediate stop of worksheet run requested.  
Analysis stopped by user.  
Analysis started.  
Measured Sample 12  
Measured Sample 13  
Measured Sample 14  
Measured Sample 15  
Measured Sample 16  
Measured Sample 17  
Measured Sample 18  
Measured Sample 19  
Measured Sample 20  
Measured Sequence-CCV  
QCP test failed.  
QCP test failure action is to flag and continue.  
Measured Sequence-CCB  
QCP test failed.  
QCP test failure action is to flag and continue.  
Measured Sample 21  
Measured Sample 22  
Measured Sample 23  
Measured Sample 24  
Measured Sample 25  
Measured Sample 26  
Measured Sample 27  
Measured Sample 28  
Measured Sample 29  
Measured Sample 30  
Measured Sequence-CCV  
QCP test failed.  
QCP test failure action is to flag and continue.  
Measured Sequence-CCB  
QCP test failed.  
QCP test failure action is to flag and continue.  
Measured Sample 31  
Measured Sample 32  
Measured Sample 33  
Measured Sample 34  
Measured Sample 35  
Measured Sample 36  
Measured Sample 37  
Measured Sample 38  
Measured Sample 39  
Measured Sample 40  
Measured Sequence-CCV  
QCP test failed.  
QCP test failure action is to flag and continue.  
Measured Sequence-CCB  
QCP test failed.  
QCP test failure action is to flag and continue.  
Measured Sample 41  
Measured Sample 42  
Measured Sample 43  
Measured Sample 44  
Measured Sample 45  
Measured Sample 46  
Measured Sample 47  
Measured Sample 48  
Measured Sample 49  
Measured Sample 50  
Measured Sequence-CCV  
QCP test failed.  
QCP test failure action is to flag and continue.  
Measured Sequence-CCB  
QCP test failed.  
QCP test failure action is to flag and continue.  
Measured Sample 51  
Measured Sample 52  
Measured Sample 53  
Measured Sample 54  
Measured Sample 55  
Measured Sample 56  
Measured Sample 57  
Measured Sequence-CCV  
QCP test failed.  
QCP test failure action is to flag and continue.  
Measured Sequence-CCB  
QCP test failed.  
QCP test failure action is to flag and continue.  
Analysis completed.





10/23/2009 2:33:07 PM QCP test failed.  
10/23/2009 2:33:07 PM QCP test failed.  
10/23/2009 2:33:07 PM QCP test failed.  
10/23/2009 2:33:07 PM QCP test failed.  
10/23/2009 2:33:34 PM QCP test failed.  
10/23/2009 2:33:34 PM QCP test failed.  
10/23/2009 2:33:34 PM QCP test failed.  
10/23/2009 2:33:34 PM QCP test failed.  
10/23/2009 2:33:34 PM QCP test failed.  
10/23/2009 2:33:46 PM QCP test failed.  
10/23/2009 2:33:46 PM QCP test failed.  
10/23/2009 2:33:46 PM QCP test failed.  
10/23/2009 2:33:46 PM QCP test failed.  
10/23/2009 2:33:46 PM QCP test failed.  
10/23/2009 2:33:46 PM QCP test failed.  
10/23/2009 2:33:50 PM QCP test failed.  
10/23/2009 2:33:50 PM QCP test failed.  
10/23/2009 2:33:50 PM QCP test failed.  
10/23/2009 2:33:50 PM QCP test failed.  
10/23/2009 2:33:50 PM QCP test failed.  
10/23/2009 2:33:55 PM QCP test failed.  
10/23/2009 2:33:55 PM QCP test failed.  
10/23/2009 2:33:55 PM QCP test failed.  
10/23/2009 2:33:55 PM QCP test failed.  
10/23/2009 2:33:55 PM QCP test failed.  
10/23/2009 2:34:10 PM QCP test failed.  
10/23/2009 2:34:10 PM QCP test failed.  
10/23/2009 2:34:10 PM QCP test failed.  
10/23/2009 2:34:10 PM QCP test failed.  
10/23/2009 2:34:10 PM QCP test failed.  
10/23/2009 2:34:24 PM QCP test failed.  
10/23/2009 2:34:24 PM QCP test failed.  
10/23/2009 2:34:24 PM QCP test failed.  
10/23/2009 2:34:24 PM QCP test failed.  
10/23/2009 2:34:24 PM QCP test failed.  
10/23/2009 2:34:24 PM QCP test failed.  
10/23/2009 2:34:44 PM QCP test failed.  
10/23/2009 2:34:44 PM QCP test failed.  
10/23/2009 2:34:44 PM QCP test failed.  
10/23/2009 2:34:44 PM QCP test failed.  
10/23/2009 2:34:44 PM QCP test failed.  
10/23/2009 2:35:13 PM Analysis started.  
10/23/2009 2:39:40 PM **Measured Sequence-CCV**  
10/23/2009 2:41:32 PM QCP test failed.  
10/23/2009 2:41:32 PM QCP test failure action is to flag and continue.  
10/23/2009 2:45:57 PM **Measured Sequence-CCB**  
10/23/2009 2:47:49 PM QCP test failed.  
10/23/2009 2:47:49 PM QCP test failure action is to flag and continue.  
10/23/2009 2:52:14 PM **Measured Sample 11**  
10/23/2009 2:58:30 PM **Measured Sample 12**  
10/23/2009 3:04:46 PM **Measured Sample 13**  
10/23/2009 3:11:02 PM **Measured Sample 14**  
10/23/2009 3:17:17 PM **Measured Sample 15**  
10/23/2009 3:23:32 PM **Measured Sample 16**  
10/23/2009 3:29:47 PM **Measured Sample 17**  
10/23/2009 3:36:03 PM **Measured Sample 18**  
10/23/2009 3:42:18 PM **Measured Sample 19**  
10/23/2009 3:48:34 PM **Measured Sample 20**  
10/23/2009 3:54:50 PM **Measured Sequence-CCV**  
10/23/2009 3:56:42 PM QCP test failed.  
10/23/2009 3:56:42 PM QCP test failure action is to flag and continue.  
10/23/2009 4:01:07 PM **Measured Sequence-CCB**  
10/23/2009 4:02:58 PM QCP test failed.  
10/23/2009 4:02:58 PM QCP test failure action is to flag and continue.  
10/23/2009 4:03:17 PM Request to stop the worksheet run after completing this solution.  
10/23/2009 4:07:22 PM **Measured Sample 21**  
10/23/2009 4:10:21 PM Analysis started.  
10/23/2009 4:14:46 PM **Measured Sample 22**  
10/23/2009 4:21:01 PM **Measured Sample 23**  
10/23/2009 4:27:17 PM **Measured Sample 24**  
10/23/2009 4:33:31 PM **Measured Sample 25**  
10/23/2009 4:39:46 PM **Measured Sample 26**  
10/23/2009 4:46:02 PM **Measured Sample 27**  
10/23/2009 4:52:18 PM **Measured Sample 28**  
10/23/2009 4:58:34 PM **Measured Sample 29**  
10/23/2009 5:04:48 PM **Measured Sample 30**  
10/23/2009 5:11:04 PM **Measured Sequence-CCV**  
10/23/2009 5:12:56 PM QCP test failed.  
10/23/2009 5:12:56 PM QCP test failure action is to flag and continue.  
10/23/2009 5:17:20 PM **Measured Sequence-CCB**  
10/23/2009 5:19:12 PM QCP test failed.  
10/23/2009 5:19:12 PM QCP test failure action is to flag and continue.  
10/23/2009 5:23:36 PM **Measured Sample 31**

10/23/2009 5:29:50 PM Measured Sample 30  
10/23/2009 5:36:05 PM Measured Sample 33  
10/23/2009 5:42:20 PM Measured Sample 34  
10/23/2009 5:48:35 PM Measured Sample 35  
10/23/2009 5:54:51 PM Measured Sample 36  
10/23/2009 6:01:07 PM Measured Sample 37  
10/23/2009 6:07:22 PM Measured Sample 38  
10/23/2009 6:13:38 PM Measured Sample 39  
10/23/2009 6:19:53 PM Measured Sample 40  
10/23/2009 6:26:10 PM Measured Sequence-CCV  
10/23/2009 6:28:01 PM QCP test failed.  
10/23/2009 6:28:01 PM QCP test failure action is to flag and continue.  
10/23/2009 6:32:26 PM Measured Sequence-CCB  
10/23/2009 6:34:18 PM QCP test failed.  
10/23/2009 6:34:18 PM QCP test failure action is to flag and continue.  
10/23/2009 6:38:42 PM Measured Sample 41  
10/23/2009 6:44:58 PM Measured Sample 42  
10/23/2009 6:51:14 PM Measured Sample 43  
10/23/2009 6:57:30 PM Measured Sample 44  
10/23/2009 7:03:45 PM Measured Sample 45  
10/23/2009 7:10:01 PM Measured Sample 46  
10/23/2009 7:16:16 PM Measured Sample 47  
10/23/2009 7:22:31 PM Measured Sample 48  
10/23/2009 7:28:47 PM Measured Sample 49  
10/23/2009 7:35:02 PM Measured Sample 50  
10/23/2009 7:41:18 PM Measured Sequence-CCV  
10/23/2009 7:43:10 PM QCP test failed.  
10/23/2009 7:43:10 PM QCP test failure action is to flag and continue.  
10/23/2009 7:47:34 PM Measured Sequence-CCB  
10/23/2009 7:49:26 PM QCP test failed.  
10/23/2009 7:49:26 PM QCP test failure action is to flag and continue.  
10/23/2009 7:53:50 PM Measured Sample 51  
10/23/2009 8:00:06 PM Measured Sample 52  
10/23/2009 8:06:22 PM Measured Sample 53  
10/23/2009 8:12:37 PM Measured Sample 54  
10/23/2009 8:18:53 PM Measured Sample 55  
10/23/2009 8:25:09 PM Measured Sample 56  
10/23/2009 8:31:24 PM Measured Sample 57  
10/23/2009 8:37:40 PM Measured Sample 58  
10/23/2009 8:43:56 PM Measured Sample 59  
10/23/2009 8:50:13 PM Measured Sample 60  
10/23/2009 8:56:29 PM Measured Sequence-CCV  
10/23/2009 8:58:20 PM QCP test failed.  
10/23/2009 8:58:20 PM QCP test failure action is to flag and continue.  
10/23/2009 9:02:45 PM Measured Sequence-CCB  
10/23/2009 9:04:36 PM QCP test failed.  
10/23/2009 9:04:36 PM QCP test failure action is to flag and continue.  
10/23/2009 9:09:01 PM Measured Sample 61  
10/23/2009 9:15:19 PM Measured Sample 62  
10/23/2009 9:21:37 PM Measured Sample 63  
10/23/2009 9:27:54 PM Measured Sample 64  
10/23/2009 9:34:12 PM Measured Sample 65  
10/23/2009 9:40:29 PM Measured Sample 66  
10/23/2009 9:46:47 PM Measured Sample 67  
10/23/2009 9:53:04 PM Measured Sample 68  
10/23/2009 9:59:22 PM Measured Sample 69  
10/23/2009 10:05:40 PM Measured Sample 70  
10/23/2009 10:11:57 PM Measured Sequence-CCV  
10/23/2009 10:13:48 PM QCP test failed.  
10/23/2009 10:13:48 PM QCP test failure action is to flag and continue.  
10/23/2009 10:18:13 PM Measured Sequence-CCB  
10/23/2009 10:20:03 PM QCP test failed.  
10/23/2009 10:20:03 PM QCP test failure action is to flag and continue.  
10/23/2009 10:24:29 PM Measured Sample 71  
10/23/2009 10:30:46 PM Measured Sample 72  
10/23/2009 10:37:04 PM Measured Sample 73  
10/23/2009 10:43:21 PM Measured Sample 74  
10/23/2009 10:49:38 PM Measured Sample 75  
10/23/2009 10:55:56 PM Measured Sample 76  
10/23/2009 11:02:13 PM Measured Sample 77  
10/23/2009 11:08:31 PM Measured Sample 78  
10/23/2009 11:14:48 PM Measured Sample 79  
10/23/2009 11:21:07 PM Measured Sample 80  
10/23/2009 11:27:24 PM Measured Sequence-CCV  
10/23/2009 11:29:15 PM QCP test failed.  
10/23/2009 11:29:15 PM QCP test failure action is to flag and continue.  
10/23/2009 11:33:39 PM Measured Sequence-CCB  
10/23/2009 11:35:30 PM QCP test failed.  
10/23/2009 11:35:30 PM QCP test failure action is to flag and continue.  
10/23/2009 11:39:56 PM Measured Sample 81  
10/23/2009 11:46:13 PM Measured Sample 82  
10/23/2009 11:52:31 PM Measured Sample 83  
10/23/2009 11:58:48 PM Measured Sequence-CCV  
10/24/2009 12:00:39 AM QCP test failed.  
10/24/2009 12:00:39 AM QCP test failure action is to flag and continue.  
10/24/2009 12:05:03 AM Measured Sequence-CCB  
10/24/2009 12:06:54 AM QCP test failed.  
10/24/2009 12:06:54 AM QCP test failure action is to flag and continue.

Instrument: ICP  
Sequence: 102309

# Quality Control Approval Report

*Scanned*  
*10/11/09*

Prep Sheet for metals digestions for ICP Totals  
by EPA Method 200.7 total / 3050 / 3010 / 3060A Cr+6 / 3052 Microwave

level 3 DP

## Batch 9100713 (Soil)

S09-263

NCA #'s	PM's	DUE
PSJ0508	Vanessa Frahs West Linn Paper Company	10/28/09
PSJ0561	Brian Cone Veolia Water NA - West Mill Plain	10/29/09
PSJ0657	Darrell Auvil CH2M-Hill	11/2/09

### Sample Integrity

Initial/Date 10/20/09 BLE

- Special Instruction Checked
- Sample ID's Checked / Correct
- Sample hold times checked, (Cr+6 w-24hrs, s-28 days) Hg 28 days
- Sample preservation checked
- Digestion batch sheet fully completed
- Batch Matrix matches Sample Matrix (If not, are percent solids required?)
- All samples requested digested / analyzed

### Instrument Performance

Initial/Date 10/27/09

- Daily calibration and all acceptance criteria met

### Data Analysis

Initial/Date 10/27/09

- All reported results bracketed by valid CCV & CCB
- Method blank (MB) met acceptance criteria and project objectives
- LCS (BS) values within control limits and/or appropriately qualified
- DUP,MS1,MS2,MSD values w/in control limits and/or approp. qualified
- Comments, dilution factors noted correctly in data
- NCR filled out

*Date*

### Final Report Form

Initial/Date 10/27/09

- MRL's correct for preparation and project objectives
- Special instructions checked
- QCAR complete

\*\*\*\*\* This Package contains all necessary  
copies for Data Deliverable Package

Initial/Date \_\_\_\_\_

### Comments / Explanations:

*102109, 102209, 102309, 102409*

*scan + export*

## **ICP Metals**

### Target Analyte Results Summaries

**Form 1**  
**INORGANIC ANALYSIS DATA SHEET**  
**EPA 6010B**

SS-401-101909-0

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Matrix: Soil

Laboratory ID: PSJ0657-01

File ID: 102209-01-054

Sampled: 10/19/09 11:30

Prepared: 10/20/09 11:18

Analyzed: 10/22/09 21:17

Solids: 90.80

Preparation: EPA 3050

Initial/Final: 1.01 g / 50 ml

Batch: 9100713

Sequence:

Calibration:

Instrument: ICP

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	Q	Method
7429-90-5	Aluminum	7040	10	D	EPA 6010B
7440-36-0	Antimony	2.18	1	U	EPA 6010B
7440-38-2	Arsenic	2.65	1	J	EPA 6010B
7440-43-9	Cadmium	1.00	1	J	EPA 6010B
7440-47-3	Chromium	35.6	1		EPA 6010B
7440-50-8	Copper	46.9	1		EPA 6010B
7439-92-1	Lead	6.48	1	J	EPA 6010B
7440-02-0	Nickel	22.0	1		EPA 6010B
7782-49-2	Selenium	27.3	1	U	EPA 6010B
7440-22-4	Silver	0.132	1	J	EPA 6010B
7440-66-6	Zinc	91.9	1		EPA 6010B

**Form 1**  
**INORGANIC ANALYSIS DATA SHEET**  
**EPA 6010B**

SS-402-101909-0

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Matrix: Soil

Laboratory ID: PSJ0657-02

File ID: 102109-01-105

Sampled: 10/19/09 11:40

Prepared: 10/20/09 11:18

Analyzed: 10/22/09 01:18

Solids: 93.70

Preparation: EPA 3050

Initial/Final: 1.05 g / 50 ml

Batch: 9100713

Sequence:

Calibration:

Instrument: ICP

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	Q	Method
7429-90-5	Aluminum	4720	1		EPA 6010B
7440-36-0	Antimony	2.03	1	U	EPA 6010B
7440-38-2	Arsenic	2.28	1	J	EPA 6010B
7440-43-9	Cadmium	1.08	1	J	EPA 6010B
7440-47-3	Chromium	33.6	1		EPA 6010B
7440-50-8	Copper	40.5	1		EPA 6010B
7439-92-1	Lead	16.7	1		EPA 6010B
7440-02-0	Nickel	17.1	1		EPA 6010B
7782-49-2	Selenium	25.4	1	U	EPA 6010B
7440-22-4	Silver	0.182	1	J	EPA 6010B
7440-66-6	Zinc	152	1		EPA 6010B

**Form 1**  
**INORGANIC ANALYSIS DATA SHEET**  
**EPA 6010B**

SS-403-101909-0

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Matrix: Soil

Laboratory ID: PSJ0657-03

File ID: 102209-01-055

Sampled: 10/19/09 11:50

Prepared: 10/20/09 11:18

Analyzed: 10/22/09 21:24

Solids: 92.80

Preparation: EPA 3050

Initial/Final: 1.02 g / 50 ml

Batch: 9100713

Sequence:

Calibration:

Instrument: ICP

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	Q	Method
7429-90-5	Aluminum	5450	10	D	EPA 6010B
7440-36-0	Antimony	2.11	1	U	EPA 6010B
7440-38-2	Arsenic	2.92	1	J	EPA 6010B
7440-43-9	Cadmium	1.11	1	J	EPA 6010B
7440-47-3	Chromium	30.0	1		EPA 6010B
7440-50-8	Copper	27.6	1		EPA 6010B
7439-92-1	Lead	9.99	1	J	EPA 6010B
7440-02-0	Nickel	14.5	1		EPA 6010B
7782-49-2	Selenium	26.4	1	U	EPA 6010B
7440-22-4	Silver	0.185	1	J	EPA 6010B
7440-66-6	Zinc	98.8	1		EPA 6010B

**Form 1**  
**INORGANIC ANALYSIS DATA SHEET**  
**EPA 6010B**

SS-404-101909-0

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Matrix: Soil

Laboratory ID: PSJ0657-04

File ID: 102109-01-107

Sampled: 10/19/09 11:20

Prepared: 10/20/09 11:18

Analyzed: 10/22/09 01:31

Solids: 85.00

Preparation: EPA 3050

Initial/Final: 1.05 g / 50 ml

Batch: 9100713

Sequence:

Calibration:

Instrument: ICP

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	Q	Method
7429-90-5	Aluminum	3730	1		EPA 6010B
7440-36-0	Antimony	2.24	1	U	EPA 6010B
7440-38-2	Arsenic	1.88	1	J	EPA 6010B
7440-43-9	Cadmium	0.916	1	J	EPA 6010B
7440-47-3	Chromium	50.5	1		EPA 6010B
7440-50-8	Copper	31.5	1		EPA 6010B
7439-92-1	Lead	53.1	1		EPA 6010B
7440-02-0	Nickel	16.7	1		EPA 6010B
7782-49-2	Selenium	28.0	1	U	EPA 6010B
7440-22-4	Silver	0.117	1	J	EPA 6010B
7440-66-6	Zinc	87.0	1		EPA 6010B

**Form 1**  
**INORGANIC ANALYSIS DATA SHEET**  
**EPA 6010B**

SS-405-101909-0

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Matrix: Soil

Laboratory ID: PSJ0657-05

File ID: 102209-01-056

Sampled: 10/19/09 11:00

Prepared: 10/20/09 11:18

Analyzed: 10/22/09 21:30

Solids: 87.30

Preparation: EPA 3050

Initial/Final: 1.05 g / 50 ml

Batch: 9100713

Sequence:

Calibration:

Instrument: ICP

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	Q	Method
7429-90-5	Aluminum	15800	10	D	EPA 6010B
7440-36-0	Antimony	3.96	1		EPA 6010B
7440-38-2	Arsenic	3.57	1	J	EPA 6010B
7440-43-9	Cadmium	5.73	1		EPA 6010B
7440-47-3	Chromium	2360	10	D	EPA 6010B
7440-50-8	Copper	114	1		EPA 6010B
7439-92-1	Lead	22.1	1		EPA 6010B
7440-02-0	Nickel	35.4	1		EPA 6010B
7782-49-2	Selenium	27.3	1	U	EPA 6010B
7440-22-4	Silver	2.54	1	J	EPA 6010B
7440-66-6	Zinc	126	1		EPA 6010B

**Form 1**  
**INORGANIC ANALYSIS DATA SHEET**  
**EPA 6010B**

SS-405-101909-2

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Matrix: Soil

Laboratory ID: PSJ0657-06

File ID: 102209-01-051

Sampled: 10/19/09 11:00

Prepared: 10/20/09 11:18

Analyzed: 10/22/09 20:59

Solids: 90.20

Preparation: EPA 3050

Initial/Final: 1.01 g / 50 ml

Batch: 9100713

Sequence:

Calibration:

Instrument: ICP

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	Q	Method
7429-90-5	Aluminum	14200	10	D	EPA 6010B
7440-36-0	Antimony	4.08	1		EPA 6010B
7440-38-2	Arsenic	3.68	1	J	EPA 6010B
7440-43-9	Cadmium	4.92	1		EPA 6010B
7440-47-3	Chromium	1920	10	D	EPA 6010B
7440-50-8	Copper	92.7	1		EPA 6010B
7439-92-1	Lead	24.1	1		EPA 6010B
7440-02-0	Nickel	38.5	1		EPA 6010B
7782-49-2	Selenium	27.4	1	U	EPA 6010B
7440-22-4	Silver	2.58	1	J	EPA 6010B
7440-66-6	Zinc	116	1		EPA 6010B

**Form 1**  
**INORGANIC ANALYSIS DATA SHEET**  
**EPA 6010B**

SS-406-101909-0

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Matrix: Soil

Laboratory ID: PSJ0657-07

File ID: 102109-01-114

Sampled: 10/19/09 12:05

Prepared: 10/20/09 11:18

Analyzed: 10/22/09 02:15

Solids: 89.70

Preparation: EPA 3050

Initial/Final: 1.03 g / 50 ml

Batch: 9100713

Sequence:

Calibration:

Instrument: ICP

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	Q	Method
7429-90-5	Aluminum	3160	1		EPA 6010B
7440-36-0	Antimony	2.16	1	U	EPA 6010B
7440-38-2	Arsenic	7.80	1	J	EPA 6010B
7440-43-9	Cadmium	7.31	1		EPA 6010B
7440-47-3	Chromium	970	10	D	EPA 6010B
7440-50-8	Copper	240	1		EPA 6010B
7439-92-1	Lead	14.1	1		EPA 6010B
7440-02-0	Nickel	519	1		EPA 6010B
7782-49-2	Selenium	27.1	1	U	EPA 6010B
7440-22-4	Silver	0.665	1	J	EPA 6010B
7440-66-6	Zinc	144	1		EPA 6010B

**Form 1**  
**INORGANIC ANALYSIS DATA SHEET**  
**EPA 6010B**

SS-407-101909-0

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Matrix: Soil

Laboratory ID: PSJ0657-08

File ID: 102309-01-019

Sampled: 10/19/09 10:55

Prepared: 10/20/09 11:18

Analyzed: 10/23/09 13:53

Solids: 87.50

Preparation: EPA 3050

Initial/Final: 1.05 g / 50 ml

Batch: 9100713

Sequence:

Calibration:

Instrument: ICP

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	Q	Method
7429-90-5	Aluminum	24200	10	D	EPA 6010B
7440-36-0	Antimony	2.46	1		EPA 6010B
7440-38-2	Arsenic	4.59	1	J	EPA 6010B
7440-43-9	Cadmium	6.26	1		EPA 6010B
7440-47-3	Chromium	3620	10	D	EPA 6010B
7440-50-8	Copper	137	1		EPA 6010B
7439-92-1	Lead	20.9	1		EPA 6010B
7440-02-0	Nickel	36.7	1		EPA 6010B
7782-49-2	Selenium	1.94	1	J	EPA 6010B
7440-22-4	Silver	3.55	1		EPA 6010B
7440-66-6	Zinc	97.8	1		EPA 6010B

**Form 1**  
**INORGANIC ANALYSIS DATA SHEET**  
**EPA 6010B**

SS-408-101909-0

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Matrix: Soil

Laboratory ID: PSJ0657-09

File ID: 102309-01-020

Sampled: 10/19/09 10:45

Prepared: 10/20/09 11:18

Analyzed: 10/23/09 13:59

Solids: 92.90

Preparation: EPA 3050

Initial/Final: 1.05 g / 50 ml

Batch: 9100713

Sequence:

Calibration:

Instrument: ICP

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	Q	Method
7429-90-5	Aluminum	13000	10	D	EPA 6010B
7440-36-0	Antimony	2.48	1		EPA 6010B
7440-38-2	Arsenic	1.57	1	J	EPA 6010B
7440-43-9	Cadmium	4.53	1		EPA 6010B
7440-47-3	Chromium	2020	10	D	EPA 6010B
7440-50-8	Copper	75.4	1		EPA 6010B
7439-92-1	Lead	10.6	1		EPA 6010B
7440-02-0	Nickel	12.4	1		EPA 6010B
7782-49-2	Selenium	0.696	1	J	EPA 6010B
7440-22-4	Silver	2.05	1	J	EPA 6010B
7440-66-6	Zinc	74.6	1		EPA 6010B

**Form 1**  
**INORGANIC ANALYSIS DATA SHEET**  
**EPA 6010B**

SS-409-101909-0

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Matrix: Soil

Laboratory ID: PSJ0657-10

File ID: 102309-01-021

Sampled: 10/19/09 12:15

Prepared: 10/20/09 11:18

Analyzed: 10/23/09 14:06

Solids: 81.60

Preparation: EPA 3050

Initial/Final: 1.05 g / 50 ml

Batch: 9100713

Sequence:

Calibration:

Instrument: ICP

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	Q	Method
7429-90-5	Aluminum	10600	10	D	EPA 6010B
7440-36-0	Antimony	2.33	1	U	EPA 6010B
7440-38-2	Arsenic	7.21	1	J	EPA 6010B
7440-43-9	Cadmium	8.97	1		EPA 6010B
7440-47-3	Chromium	121	1		EPA 6010B
7440-50-8	Copper	152	1		EPA 6010B
7439-92-1	Lead	160	1		EPA 6010B
7440-02-0	Nickel	52.5	1		EPA 6010B
7782-49-2	Selenium	29.2	1	U	EPA 6010B
7440-22-4	Silver	0.922	1	J	EPA 6010B
7440-66-6	Zinc	753	10	D	EPA 6010B

**Form 1**  
**INORGANIC ANALYSIS DATA SHEET**  
**EPA 6010B**

SS-410-101909-0

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Matrix: Soil

Laboratory ID: PSJ0657-11

File ID: 102309-01-022

Sampled: 10/19/09 10:15

Prepared: 10/20/09 11:18

Analyzed: 10/23/09 14:12

Solids: 86.90

Preparation: EPA 3050

Initial/Final: 1.03 g / 50 ml

Batch: 9100713

Sequence:

Calibration:

Instrument: ICP

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	Q	Method
7429-90-5	Aluminum	27000	10	D	EPA 6010B
7440-36-0	Antimony	2.23	1	U	EPA 6010B
7440-38-2	Arsenic	31.5	1		EPA 6010B
7440-43-9	Cadmium	1.73	1	J	EPA 6010B
7440-47-3	Chromium	45.6	1		EPA 6010B
7440-50-8	Copper	34.7	1		EPA 6010B
7439-92-1	Lead	35.3	1		EPA 6010B
7440-02-0	Nickel	29.2	1		EPA 6010B
7782-49-2	Selenium	12.1	1	J	EPA 6010B
7440-22-4	Silver	4.01	1		EPA 6010B
7440-66-6	Zinc	163	1		EPA 6010B

**Form 1**  
**INORGANIC ANALYSIS DATA SHEET**  
**EPA 6010B**

SS-411-101909-0

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Matrix: Soil

Laboratory ID: PSJ0657-12

File ID: 102109-01-119

Sampled: 10/19/09 10:30

Prepared: 10/20/09 11:18

Analyzed: 10/22/09 02:46

Solids: 85.40

Preparation: EPA 3050

Initial/Final: 1.02 g / 50 ml

Batch: 9100713

Sequence:

Calibration:

Instrument: ICP

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	Q	Method
7429-90-5	Aluminum	5430	1		EPA 6010B
7440-36-0	Antimony	1.49	1	J	EPA 6010B
7440-38-2	Arsenic	10.6	1	J	EPA 6010B
7440-43-9	Cadmium	9.01	1		EPA 6010B
7440-47-3	Chromium	261	1		EPA 6010B
7440-50-8	Copper	255	1		EPA 6010B
7439-92-1	Lead	195	1		EPA 6010B
7440-02-0	Nickel	61.6	1		EPA 6010B
7782-49-2	Selenium	28.7	1	U	EPA 6010B
7440-22-4	Silver	1.50	1	J	EPA 6010B
7440-66-6	Zinc	737	10	D	EPA 6010B

**Form 1**  
**INORGANIC ANALYSIS DATA SHEET**  
**EPA 6010B**

SS-411-101909-1

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Matrix: Soil

Laboratory ID: PSJ0657-13

File ID: 102309-01-026

Sampled: 10/19/09 10:30

Prepared: 10/20/09 11:18

Analyzed: 10/23/09 14:52

Solids: 87.70

Preparation: EPA 3050

Initial/Final: 1.04 g / 50 ml

Batch: 9100713

Sequence:

Calibration:

Instrument: ICP

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	Q	Method
7429-90-5	Aluminum	6310	10	D	EPA 6010B
7440-36-0	Antimony	1.03	1	J	EPA 6010B
7440-38-2	Arsenic	10.1	1	J	EPA 6010B
7440-43-9	Cadmium	8.05	1		EPA 6010B
7440-47-3	Chromium	268	1		EPA 6010B
7440-50-8	Copper	139	1		EPA 6010B
7439-92-1	Lead	167	1		EPA 6010B
7440-02-0	Nickel	54.6	1		EPA 6010B
7782-49-2	Selenium	27.4	1	U	EPA 6010B
7440-22-4	Silver	1.35	1	J	EPA 6010B
7440-66-6	Zinc	756	10	D	EPA 6010B

## **ICP Metals**

### Preparation Logs

**Form 4**  
**PREPARATION BATCH SUMMARY**  
**EPA 6010B**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Batch: 9100713      Batch Matrix: Soil

Preparation: EPA 3050

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	9100713-BLK1	102109-01-099	10/20/09 11:18	
LCS	9100713-BS1	102109-01-100	10/20/09 11:18	
SS-405-101909-2	9100713-MS1	102109-01-112	10/20/09 11:18	
SS-405-101909-2	9100713-MS1	102209-01-042	10/20/09 11:18	
SS-405-101909-2	9100713-MSD1	102109-01-113	10/20/09 11:18	
SS-405-101909-2	9100713-MSD1	102209-01-043	10/20/09 11:18	
SS-401-101909-0	PSJ0657-01	102109-01-104	10/20/09 11:18	level 3 dp.
SS-401-101909-0	PSJ0657-01	102209-01-054	10/20/09 11:18	level 3 dp.
SS-402-101909-0	PSJ0657-02	102109-01-105	10/20/09 11:18	level 3 dp.
SS-403-101909-0	PSJ0657-03	102109-01-106	10/20/09 11:18	level 3 dp.
SS-403-101909-0	PSJ0657-03	102209-01-055	10/20/09 11:18	level 3 dp.
SS-404-101909-0	PSJ0657-04	102109-01-107	10/20/09 11:18	level 3 dp.
SS-405-101909-0	PSJ0657-05	102109-01-110	10/20/09 11:18	level 3 dp.
SS-405-101909-0	PSJ0657-05	102209-01-056	10/20/09 11:18	level 3 dp.
SS-405-101909-2	PSJ0657-06	102109-01-111	10/20/09 11:18	level 3 dp, MS/ MSD, or appropriate QC
SS-405-101909-2	PSJ0657-06	102209-01-051	10/20/09 11:18	level 3 dp, MS/ MSD, or appropriate QC
SS-406-101909-0	PSJ0657-07	102109-01-114	10/20/09 11:18	level 3 dp.
SS-406-101909-0	PSJ0657-07	102309-01-018	10/20/09 11:18	level 3 dp.
SS-407-101909-0	PSJ0657-08	102109-01-115	10/20/09 11:18	level 3 dp.
SS-407-101909-0	PSJ0657-08	102309-01-019	10/20/09 11:18	level 3 dp.
SS-408-101909-0	PSJ0657-09	102109-01-116	10/20/09 11:18	level 3 dp.
SS-408-101909-0	PSJ0657-09	102309-01-020	10/20/09 11:18	level 3 dp.
SS-409-101909-0	PSJ0657-10	102109-01-117	10/20/09 11:18	level 3 dp.
SS-409-101909-0	PSJ0657-10	102309-01-021	10/20/09 11:18	level 3 dp.
SS-410-101909-0	PSJ0657-11	102109-01-118	10/20/09 11:18	level 3 dp.
SS-410-101909-0	PSJ0657-11	102309-01-022	10/20/09 11:18	level 3 dp.
SS-411-101909-0	PSJ0657-12	102109-01-119	10/20/09 11:18	level 3 dp.
SS-411-101909-0	PSJ0657-12	102309-01-023	10/20/09 11:18	level 3 dp.
SS-411-101909-1	PSJ0657-13	102109-01-122	10/20/09 11:18	level 3 dp.
SS-411-101909-1	PSJ0657-13	102309-01-026	10/20/09 11:18	level 3 dp.

**PREPARATION BENCH SHEET**  
TestAmerica Portland

**BATCH: 9100713**  
Matrix: Soil

Prepared using: Metals - EPA 3050  
No Surrogate used

Lab Number	Client ID	Analysis	Sample pH	Initial (g)	Final (ml)	Spike ID	Source ID	Spike (uL)	Due	Comments: Extraction (Log)
9100713-BLK1	Blank	QC	1.05	1.01	50					
9100713-BS1	LCS	QC	1.01	1.01	50	9080037		500		
"	"	(Second Spike)	"	"	"	9080038		500		
9100713-MS1	Matrix Spike	QC	1.04	1.04	50	9080037	PSJ0657-06	500		
"	"	(Second Spike)	"	"	"	9080038	PSJ0657-06	500		
9100713-MSD1	Matrix Spike Dup	QC	1.05	1.05	50	9080037	PSJ0657-06	500		
"	"	(Second Spike)	"	"	"	9080038	PSJ0657-06	500		
PSJ0508-01	5750 - PAINT CHIPS	Pb Total ICP 6010B		1.01	50				10/28/09 08:00	
PSJ0561-09	WESTSIDE SLUDGE	Al Total ICP 6010B		1.02	50				10/29/09 08:00	
PSJ0561-09	WESTSIDE SLUDGE	B Total ICP 6010B			50				10/29/09 08:00	
PSJ0561-09	WESTSIDE SLUDGE	Fe Total ICP 6010B			50				10/29/09 08:00	
PSJ0561-10	MARINE PARK SLUDGE	Al Total ICP 6010B		2.22	50				10/29/09 08:00	5mls digested BUE in 10/20/09
PSJ0561-10	MARINE PARK SLUDGE	B Total ICP 6010B			50				10/29/09 08:00	
PSJ0561-10	MARINE PARK SLUDGE	Fe Total ICP 6010B			50				10/29/09 08:00	
PSJ0657-01	SS-401-101909-0	Ag Total ICP 6010B		1.01	50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-01	SS-401-101909-0	Al Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-01	SS-401-101909-0	As Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-01	SS-401-101909-0	Cd Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-01	SS-401-101909-0	Cr Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-01	SS-401-101909-0	Cu Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-01	SS-401-101909-0	Ni Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-01	SS-401-101909-0	Pb Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-01	SS-401-101909-0	Sb Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-01	SS-401-101909-0	Se Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-01	SS-401-101909-0	Zn Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)

Printed: 10/20/2009 11:23:49AM

Preparation By: GBUE Date: 10/20/09  
 Reviewed By: PJH Date: 10/20/09

PSJ0657-02	SS-402-101909-0	Ag Total ICP 6010B	1.05	50			11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-02	SS-402-101909-0	Al Total ICP 6010B		50			11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-02	SS-402-101909-0	As Total ICP 6010B		50			11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-02	SS-402-101909-0	Cd Total ICP 6010B		50			11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-02	SS-402-101909-0	Cr Total ICP 6010B		50			11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-02	SS-402-101909-0	Cu Total ICP 6010B		50			11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-02	SS-402-101909-0	Ni Total ICP 6010B		50			11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-02	SS-402-101909-0	Pb Total ICP 6010B		50			11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-02	SS-402-101909-0	Sb Total ICP 6010B		50			11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-02	SS-402-101909-0	Se Total ICP 6010B		50			11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-02	SS-402-101909-0	Zn Total ICP 6010B		50			11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-03	SS-403-101909-0	Ag Total ICP 6010B	1.02	50			11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-03	SS-403-101909-0	Al Total ICP 6010B		50			11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-03	SS-403-101909-0	As Total ICP 6010B		50			11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-03	SS-403-101909-0	Cd Total ICP 6010B		50			11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-03	SS-403-101909-0	Cr Total ICP 6010B		50			11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-03	SS-403-101909-0	Cu Total ICP 6010B		50			11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-03	SS-403-101909-0	Ni Total ICP 6010B		50			11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-03	SS-403-101909-0	Pb Total ICP 6010B		50			11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-03	SS-403-101909-0	Sb Total ICP 6010B		50			11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-03	SS-403-101909-0	Se Total ICP 6010B		50			11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-03	SS-403-101909-0	Zn Total ICP 6010B		50			11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-04	SS-404-101909-0	Ag Total ICP 6010B	1.05	50			11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-04	SS-404-101909-0	Al Total ICP 6010B		50			11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-04	SS-404-101909-0	As Total ICP 6010B		50			11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-04	SS-404-101909-0	Cd Total ICP 6010B		50			11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-04	SS-404-101909-0	Cr Total ICP 6010B		50			11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-04	SS-404-101909-0	Cu Total ICP 6010B		50			11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-04	SS-404-101909-0	Ni Total ICP 6010B		50			11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-04	SS-404-101909-0	Pb Total ICP 6010B		50			11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-04	SS-404-101909-0	Sb Total ICP 6010B		50			11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-04	SS-404-101909-0	Se Total ICP 6010B		50			11/02/09 08:00	level 3 dp. (level 3 dp.)

Printed: 10/20/2009 11:23:49AM

Preparation By

Date

Reviewed By

Date

PSJ0657-04	SS-404-101909-0	Zn Total ICP 6010B							11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-05	SS-405-101909-0	Ag Total ICP 6010B	1.05	50					11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-05	SS-405-101909-0	Al Total ICP 6010B		50					11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-05	SS-405-101909-0	As Total ICP 6010B		50					11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-05	SS-405-101909-0	Cd Total ICP 6010B		50					11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-05	SS-405-101909-0	Cr Total ICP 6010B		50					11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-05	SS-405-101909-0	Cu Total ICP 6010B		50					11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-05	SS-405-101909-0	Ni Total ICP 6010B		50					11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-05	SS-405-101909-0	Pb Total ICP 6010B		50					11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-05	SS-405-101909-0	Sb Total ICP 6010B		50					11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-05	SS-405-101909-0	Se Total ICP 6010B		50					11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-05	SS-405-101909-0	Zn Total ICP 6010B		50					11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-06	SS-405-101909-2	Ag Total ICP 6010B	1.01	50					11/02/09 08:00	level 3 dp, MS/ MSD, or appropriate QC (level 3 dp, MS/ MSD, or appropriate QC)
PSJ0657-06	SS-405-101909-2	Al Total ICP 6010B		50					11/02/09 08:00	level 3 dp, MS/ MSD, or appropriate QC (level 3 dp, MS/ MSD, or appropriate QC)
PSJ0657-06	SS-405-101909-2	As Total ICP 6010B		50					11/02/09 08:00	level 3 dp, MS/ MSD, or appropriate QC (level 3 dp, MS/ MSD, or appropriate QC)
PSJ0657-06	SS-405-101909-2	B Total ICP 6010B		50					11/02/09 08:00	Added for BatchQC in: 9100713 (BatchQC)
PSJ0657-06	SS-405-101909-2	Cd Total ICP 6010B		50					11/02/09 08:00	level 3 dp, MS/ MSD, or appropriate QC (level 3 dp, MS/ MSD, or appropriate QC)
PSJ0657-06	SS-405-101909-2	Cr Total ICP 6010B		50					11/02/09 08:00	level 3 dp, MS/ MSD, or appropriate QC (level 3 dp, MS/ MSD, or appropriate QC)
PSJ0657-06	SS-405-101909-2	Cu Total ICP 6010B		50					11/02/09 08:00	level 3 dp, MS/ MSD, or appropriate QC (level 3 dp, MS/ MSD, or appropriate QC)
PSJ0657-06	SS-405-101909-2	Fe Total ICP 6010B		50					11/02/09 08:00	Added for BatchQC in: 9100713 (BatchQC)
PSJ0657-06	SS-405-101909-2	Ni Total ICP 6010B		50					11/02/09 08:00	level 3 dp, MS/ MSD, or appropriate QC (level 3 dp, MS/ MSD, or appropriate QC)
PSJ0657-06	SS-405-101909-2	Pb Total ICP 6010B		50					11/02/09 08:00	level 3 dp, MS/ MSD, or appropriate QC (level 3 dp, MS/ MSD, or appropriate QC)
PSJ0657-06	SS-405-101909-2	Sb Total ICP 6010B		50					11/02/09 08:00	level 3 dp, MS/ MSD, or appropriate QC (level 3 dp, MS/ MSD, or appropriate QC)
PSJ0657-06	SS-405-101909-2	Se Total ICP 6010B		50					11/02/09 08:00	level 3 dp, MS/ MSD, or appropriate QC (level 3 dp, MS/ MSD, or appropriate QC)
PSJ0657-06	SS-405-101909-2	Zn Total ICP 6010B		50					11/02/09 08:00	level 3 dp, MS/ MSD, or appropriate QC (level 3 dp, MS/ MSD, or appropriate QC)
PSJ0657-07	SS-406-101909-0	Ag Total ICP 6010B	1.03	50					11/02/09 08:00	level 3 dp. (level 3 dp.)

Preparation By \_\_\_\_\_

Date \_\_\_\_\_

Reviewed By \_\_\_\_\_

Date \_\_\_\_\_

PSJ0657-07	SS-406-101909-0	Al Total ICP 6010B							11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-07	SS-406-101909-0	As Total ICP 6010B							11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-07	SS-406-101909-0	Cd Total ICP 6010B							11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-07	SS-406-101909-0	Cr Total ICP 6010B							11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-07	SS-406-101909-0	Cu Total ICP 6010B							11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-07	SS-406-101909-0	Ni Total ICP 6010B							11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-07	SS-406-101909-0	Pb Total ICP 6010B							11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-07	SS-406-101909-0	Sb Total ICP 6010B							11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-07	SS-406-101909-0	Se Total ICP 6010B							11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-07	SS-406-101909-0	Zn Total ICP 6010B							11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-08	SS-407-101909-0	Ag Total ICP 6010B							11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-08	SS-407-101909-0	Al Total ICP 6010B							11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-08	SS-407-101909-0	As Total ICP 6010B							11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-08	SS-407-101909-0	Cd Total ICP 6010B							11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-08	SS-407-101909-0	Cr Total ICP 6010B							11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-08	SS-407-101909-0	Cu Total ICP 6010B							11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-08	SS-407-101909-0	Ni Total ICP 6010B							11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-08	SS-407-101909-0	Pb Total ICP 6010B							11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-08	SS-407-101909-0	Sb Total ICP 6010B							11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-08	SS-407-101909-0	Se Total ICP 6010B							11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-08	SS-407-101909-0	Zn Total ICP 6010B							11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-09	SS-408-101909-0	Ag Total ICP 6010B							11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-09	SS-408-101909-0	Al Total ICP 6010B							11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-09	SS-408-101909-0	As Total ICP 6010B							11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-09	SS-408-101909-0	Cd Total ICP 6010B							11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-09	SS-408-101909-0	Cr Total ICP 6010B							11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-09	SS-408-101909-0	Cu Total ICP 6010B							11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-09	SS-408-101909-0	Ni Total ICP 6010B							11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-09	SS-408-101909-0	Pb Total ICP 6010B							11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-09	SS-408-101909-0	Sb Total ICP 6010B							11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-09	SS-408-101909-0	Se Total ICP 6010B							11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-09	SS-408-101909-0	Zn Total ICP 6010B							11/02/09 08:00	level 3 dp. (level 3 dp.)

**PREPARATION BENCH SHEET**  
TestAmerica Portland

BATCH: 9100713  
Matrix: Soil

Prepared using: Metals - EPA 3050  
No Surrogate used

Lab Number	Client ID	Analysis	Sample pH	Initial (g)	Final (ml)	Spike ID	Source ID	Spike (uL)	Due	Comments: Extraction (Log)
PSJ0657-10	SS-409-101909-0	Ag Total ICP 6010B		1.00	50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-10	SS-409-101909-0	Al Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-10	SS-409-101909-0	As Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-10	SS-409-101909-0	Cd Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-10	SS-409-101909-0	Cr Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-10	SS-409-101909-0	Cu Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-10	SS-409-101909-0	Ni Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-10	SS-409-101909-0	Pb Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-10	SS-409-101909-0	Sb Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-10	SS-409-101909-0	Se Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-10	SS-409-101909-0	Zn Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-11	SS-410-101909-0	Ag Total ICP 6010B		1.00	50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-11	SS-410-101909-0	Al Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-11	SS-410-101909-0	As Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-11	SS-410-101909-0	Cd Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-11	SS-410-101909-0	Cr Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-11	SS-410-101909-0	Cu Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-11	SS-410-101909-0	Ni Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-11	SS-410-101909-0	Pb Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-11	SS-410-101909-0	Sb Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-11	SS-410-101909-0	Se Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-11	SS-410-101909-0	Zn Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-12	SS-411-101909-0	Ag Total ICP 6010B		1.00	50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-12	SS-411-101909-0	Al Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-12	SS-411-101909-0	As Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-12	SS-411-101909-0	Cd Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-12	SS-411-101909-0	Cr Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-12	SS-411-101909-0	Cu Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)

Printed: 10/20/2009 11:23:49AM

**PREPARATION BENCH SHEET**

TestAmerica Portland

BATCH: 9100713

Matrix: Soil

Prepared using: Metals - EPA 3050

No Surrogate used

Lab Number	Client ID	Analysis	Sample pH	Initial (g)	Final (ml)	Spike ID	Source ID	Spike (uL)	Due	Comments: Extraction (Log)
PSJ0657-12	SS-411-101909-0	Ni Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-12	SS-411-101909-0	Pb Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-12	SS-411-101909-0	Sb Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-12	SS-411-101909-0	Se Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-12	SS-411-101909-0	Zn Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-13	SS-411-101909-1	Ag Total ICP 6010B		1.04	50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-13	SS-411-101909-1	Al Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-13	SS-411-101909-1	As Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-13	SS-411-101909-1	Cd Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-13	SS-411-101909-1	Cr Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-13	SS-411-101909-1	Cu Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-13	SS-411-101909-1	Ni Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-13	SS-411-101909-1	Pb Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-13	SS-411-101909-1	Sb Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-13	SS-411-101909-1	Se Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)
PSJ0657-13	SS-411-101909-1	Zn Total ICP 6010B			50				11/02/09 08:00	level 3 dp. (level 3 dp.)

Reagent/Description/Expires Date

9090011 Hydrogen Peroxide 8/31/2010

9100160 Nitric Acid - AR Select ACS 2.5L Lot # H10040 10/31/2010

9100161 Hydrochloric Acid - AR Select H19A04 10/31/2010

Batch Comments: S09-263

Temp of Joe: 93C

C Tubes: A905TP037 A905LS209

B/E 10/20/09

Pipets:

S/N 4957516 500-5000uL

S/N 2062016 100-1000uL

S/N 3144763 100-1000uL

PSD0606-01 > added to batch 10/20/09 B/E 10/20/09

PSD0683-01

366 of 4

1 ml (g) Fixed (g) B/E 10/20/09  
 0.51 (g) 50  
 4.33g 50  
 5mls digested (4.33g) B/E 10/20/09

Preparation By

Date

Reviewed By

Date

## Mercury

# ANALYSES DATA PACKAGE COVER PAGE

EPA 7471A

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

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**Client Sample Id:**

SS-401-101909-0  
SS-402-101909-0  
SS-403-101909-0  
SS-404-101909-0  
SS-405-101909-0  
SS-405-101909-2  
SS-406-101909-0  
SS-407-101909-0  
SS-408-101909-0  
SS-409-101909-0  
SS-410-101909-0  
SS-411-101909-0  
SS-411-101909-1

**Lab Sample Id:**

PSJ0657-01  
PSJ0657-02  
PSJ0657-03  
PSJ0657-04  
PSJ0657-05  
PSJ0657-06  
PSJ0657-07  
PSJ0657-08  
PSJ0657-09  
PSJ0657-10  
PSJ0657-11  
PSJ0657-12  
PSJ0657-13

## **Mercury**

### Quality Control Summaries

**CH2M-Hill**2020 SW 4th Suite 300  
Portland, OR 97201Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat HeinsReport Date:  
11/17/09 15:44**Laboratory Blank Report****Total Mercury per EPA Method 7471A - Laboratory Quality Control Results**  
**TestAmerica Portland****Batch 9100923**

Matrix	Lab Number	Sample Name	Dilution	File ID	Analyzed	Instrument
Other wet EPA 7471A	9100923-BLK1	Blank	1x	S102809A1-015	10/28/09 11:35	CVAA
Other wet EPA 7471A	9100923-BS1	LCS	1x	S102809A1-016	10/28/09 11:37	CVAA
Other wet EPA 7471A	9100923-BSD1	LCS Dup	1x	S102809A1-017	10/28/09 12:00	CVAA
Other wet EPA 7471A	9100923-DUP1	Duplicate	1x	S102809A1-018	10/28/09 12:06	CVAA
Other wet EPA 7471A	9100923-MS1	Matrix Spike	1x	S102809A1-019	10/28/09 12:32	CVAA
Other wet EPA 7471A	9100923-MSD1	Matrix Spike Dup	1x	S102809A1-020	10/28/09 12:35	CVAA
Other wet EPA 7471A	PSJ0657-01	SS-401-101909-0	1x	S102809A1-022	10/28/09 12:43	CVAA
Other wet EPA 7471A	PSJ0657-02	SS-402-101909-0	1x	S102809A1-025	10/28/09 12:56	CVAA
Other wet EPA 7471A	PSJ0657-03	SS-403-101909-0	1x	S102809A1-026	10/28/09 12:58	CVAA
Other wet EPA 7471A	PSJ0657-04	SS-404-101909-0	1x	S102809A1-027	10/28/09 13:01	CVAA
Other wet EPA 7471A	PSJ0657-05	SS-405-101909-0	1x	S102809A1-028	10/28/09 13:03	CVAA
Other wet EPA 7471A	PSJ0657-06	SS-405-101909-2	1x	S102809A1-029	10/28/09 13:32	CVAA
Other wet EPA 7471A	PSJ0657-07	SS-406-101909-0	1x	S102809A1-030	10/28/09 13:42	CVAA
Other wet EPA 7471A	PSJ0657-08	SS-407-101909-0	1x	S102809A1-031	10/28/09 13:44	CVAA
Other wet EPA 7471A	PSJ0657-09	SS-408-101909-0	1x	S102809A1-034	10/28/09 13:55	CVAA
Other wet EPA 7471A	PSJ0657-10	SS-409-101909-0	1x	S102809A1-035	10/28/09 13:57	CVAA
Other wet EPA 7471A	PSJ0657-11	SS-410-101909-0	1x	S102809A1-036	10/28/09 14:00	CVAA
Other wet EPA 7471A	PSJ0657-12	SS-411-101909-0	1x	S102809A1-037	10/28/09 14:03	CVAA
Other wet EPA 7471A	PSJ0657-13	SS-411-101909-1	1x	S102809A1-038	10/28/09 14:06	CVAA



**Form 3**  
**LCS / LCS DUPLICATE RECOVERY**  
**EPA 7471A**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Matrix: Other wet

Spike standard: 9070368

Batch: 9100923

Laboratory ID: 9100923-BS1

Preparation: EPA 7471A

Initial/Final: 0.496 g / 50 ml

COMPOUND	SPIKE ADDED (mg/kg)	LCS CONCENTRATION (mg/kg)	LCS % REC. #	QC LIMITS REC.
Mercury	0.504	0.510	101	80 - 120

COMPOUND	SPIKE ADDED (mg/kg)	LCSD CONCENTRATION (mg/kg)	LCSD % REC. #	% RPD #	QC LIMITS	
					RPD	REC.
Mercury	0.551	0.532	96.6	4.18	20	80 - 120

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

# DUPLICATES

**SS-405-101909-2**

## EPA 7471A

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Matrix: Other wet

Laboratory ID: 9100923-DUP1

Batch: 9100923

Lab Source ID: PSJ0657-06

Preparation: EPA 7471A

Initial/Final: 0.539 g / 50 ml

Source Sample Name: SS-405-101909-2

% Solids: 90.20

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/kg)	C	DUPLICATE CONCENTRATION (mg/kg)	C	RPD %	Q	METHOD
Mercury	40	0.00846		0.0155		58.9	*	EPA 7471A

\* Values outside of QC limits

**Form 3**

**MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY**

**SS-405-101909-2**

**EPA 7471A**

Laboratory:	<u>TestAmerica Portland</u>	SDG:	<u>PSJ0657</u>
Client:	<u>CH2M-Hill</u>	Project:	<u>NW Pipe Project</u>
Matrix:	<u>Other wet</u>	Spike standard:	<u>9070368</u>
Batch:	<u>9100923</u>	Laboratory ID:	<u>9100923-MS1</u>
Preparation:	<u>EPA 7471A</u>	Initial/Final:	<u>0.544 g / 50 ml</u>
Source Sample Name:	<u>SS-405-101909-2</u>		

COMPOUND	SPIKE ADDED (mg/kg)	SAMPLE CONCENTRATION (mg/kg)	MS CONCENTRATION (mg/kg)	MS % REC. #	QC LIMITS REC.
Mercury	0.460	0.00846	0.378	80.4	75 - 125

COMPOUND	SPIKE ADDED (mg/kg)	MSD CONCENTRATION (mg/kg)	MSD % REC. #	% RPD #	QC LIMITS	
					RPD	REC.
Mercury	0.502	0.484	94.8	24.7	40	75 - 125

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

# METHOD DETECTION AND REPORTING LIMITS

## EPA 7471A

**Laboratory:** TestAmerica Portland

**SDG:** PSJ0657

**Client:** CH2M-Hill

**Project:** NW Pipe Project

**Matrix:** Other wet

**Instrument:** CVAA

Analyte	MDL	MRL	Units
Mercury	0.00700	0.100	mg/kg

# INITIAL AND CONTINUING CALIBRATION CHECK

## EPA 7471A

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Instrument ID: CVAA

Calibration: 9110901

Control Limit: +/- %

Sequence: 9J28009

Lab Sample ID	Analyte	True	Found	%R	Limit	Units	Method	Analyzed
9J28009-ICV1	Mercury	5.00	5.29	106	0 - 200	ug/l	EPA 7471A	10/28/09 10:59
9J28009-CCV1	Mercury	5.00	5.17	103	0 - 200	ug/l	EPA 7471A	10/28/09 11:23
9J28009-CCV2	Mercury	5.00	4.75	94.9	0 - 200	ug/l	EPA 7471A	10/28/09 12:48
9J28009-CCV3	Mercury	5.00	4.88	97.6	0 - 200	ug/l	EPA 7471A	10/28/09 13:47
9J28009-CCV4	Mercury	5.00	4.66	93.2	0 - 200	ug/l	EPA 7471A	10/28/09 14:19

\* Values outside of QC limits

**BLANKS**  
**EPA 7471A**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Instrument ID: CVAA

Project: NW Pipe Project

Sequence: 9J28009

Calibration: 9110901

Lab Sample ID	Analyte	Found	MRL	Units	C	Method	Analyzed
9J28009-ICB1	Mercury	-0.0753	2.00	ug/l		EPA 7471A	10/28/09 11:2
9J28009-CCB1	Mercury	-0.0673	2.00	ug/l		EPA 7471A	10/28/09 11:3
9100923-BLK1	Mercury	ND	0.0941	mg/kg		EPA 7471A	10/28/09 11:3
9J28009-CCB2	Mercury	-0.0889	2.00	ug/l		EPA 7471A	10/28/09 12:5
9J28009-CCB3	Mercury	-0.0842	2.00	ug/l		EPA 7471A	10/28/09 13:5
9J28009-CCB4	Mercury	-0.0982	2.00	ug/l		EPA 7471A	10/28/09 14:2

**Form 5**  
**ANALYSIS BATCH (SEQUENCE) SUMMARY**  
**EPA 7471A**

Laboratory: TestAmerica Portland  
 Client: CH2M-Hill  
 Sequence: 9J28009

SDG: PSJ0657  
 Project: NW Pipe Project  
 Instrument: CVAA  
 Calibration: 9110901

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	9J28009-CAL1	S102809A1-006	10/28/09 10:38
Cal Standard	9J28009-CAL2	S102809A1-007	10/28/09 10:40
Cal Standard	9J28009-CAL3	S102809A1-008	10/28/09 10:43
Cal Standard	9J28009-CAL4	S102809A1-009	10/28/09 10:46
Cal Standard	9J28009-CAL5	S102809A1-010	10/28/09 10:52
Initial Cal Check	9J28009-ICV1	S102809A1-011	10/28/09 10:59
Initial Cal Blank	9J28009-ICB1	S102809A1-012	10/28/09 11:21
Calibration Check	9J28009-CCV1	S102809A1-013	10/28/09 11:23
Calibration Blank	9J28009-CCB1	S102809A1-014	10/28/09 11:33
Blank	9100923-BLK1	S102809A1-015	10/28/09 11:35
LCS	9100923-BS1	S102809A1-016	10/28/09 11:37
LCS Dup	9100923-BSD1	S102809A1-017	10/28/09 12:00
SS-405-101909-2	9100923-DUP1	S102809A1-018	10/28/09 12:06
SS-405-101909-2	9100923-MS1	S102809A1-019	10/28/09 12:32
SS-405-101909-2	9100923-MSD1	S102809A1-020	10/28/09 12:35
SS-401-101909-0	PSJ0657-01	S102809A1-022	10/28/09 12:43
Calibration Check	9J28009-CCV2	S102809A1-023	10/28/09 12:48
Calibration Blank	9J28009-CCB2	S102809A1-024	10/28/09 12:53
SS-402-101909-0	PSJ0657-02	S102809A1-025	10/28/09 12:56
SS-403-101909-0	PSJ0657-03	S102809A1-026	10/28/09 12:58
SS-404-101909-0	PSJ0657-04	S102809A1-027	10/28/09 13:01
SS-405-101909-0	PSJ0657-05	S102809A1-028	10/28/09 13:03
SS-405-101909-2	PSJ0657-06	S102809A1-029	10/28/09 13:32
SS-406-101909-0	PSJ0657-07	S102809A1-030	10/28/09 13:42
SS-407-101909-0	PSJ0657-08	S102809A1-031	10/28/09 13:44
Calibration Check	9J28009-CCV3	S102809A1-032	10/28/09 13:47
Calibration Blank	9J28009-CCB3	S102809A1-033	10/28/09 13:52
SS-408-101909-0	PSJ0657-09	S102809A1-034	10/28/09 13:55
SS-409-101909-0	PSJ0657-10	S102809A1-035	10/28/09 13:57
SS-410-101909-0	PSJ0657-11	S102809A1-036	10/28/09 14:00
SS-411-101909-0	PSJ0657-12	S102809A1-037	10/28/09 14:03

**Form 5**  
**ANALYSIS BATCH (SEQUENCE) SUMMARY**  
**EPA 7471A**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Sequence: 9J28009

Instrument: CVAA

Calibration: 9110901

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
SS-411-101909-1	PSJ0657-13	S102809A1-038	10/28/09 14:06
Calibration Check	9J28009-CCV4	S102809A1-042	10/28/09 14:19
Calibration Blank	9J28009-CCB4	S102809A1-043	10/28/09 14:24

Quality Control Approval Report

**MERCURY**

CVAA 30335 7471A

Batch 9100923 (Other wet)

#NAME?

WO #s	PM's	DUE
PSJ0610 UPRR-McLoughlin	Darrell Auvil	10/30/09
PSJ0657 CH2M-Hill	Darrell Auvil	11/2/09
PSJ0752 Pacific Way Inc	Brian Cone	11/4/09
PSJ0824 TestAmerica Anchorage	Estella Rieben	10/29/09

**Sample Integrity**

Initial/Date kah 10/28/09

- Special Instruction Checked
- Sample ID's Checked / Correct
- Sample hold times checked, Hg 28 days
- Sample preservation checked
- Digestion batch sheet fully completed
- Batch Matrix matches Sample Matrix (If not, are percent solids required?)
- All samples requested digested / analyzed

**Instrument Performance**

Initial/Date kah 10/28/09

- Daily calibration and all acceptance criteria met

**Data Analysis**

Initial/Date kah 10/28/09

- All reported results bracketed by valid CCV & CCB
- Method blank (MB) met acceptance criteria and project objectives
- LCS (BS) values within control limits and/or appropriately qualified
- DUP, MS1, MS2, MSD values w/in control limits and/or approp. qualified
- Comments, dilution factors noted correctly in data
- NA NCR filled out

**Final Report Form**

Initial/Date DAH 10-28-09

- MRL's correct for preparation and project objectives
- Special instructions checked
- QCAR complete

\*\*\*\*\* This Package contains all necessary  
copies for Data Deliverable Package

Initial/Date \_\_\_\_\_

**Comments / Explanations:**

## **Mercury**

### Target Analyte Results Summaries

**Form 1**  
**INORGANIC ANALYSIS DATA SHEET**  
**EPA 7471A**

SS-401-101909-0

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Matrix: Soil

Laboratory ID: PSJ0657-01

File ID: S102809A1-022

Sampled: 10/19/09 11:30

Prepared: 10/26/09 11:36

Analyzed: 10/28/09 12:43

Solids: 90.80

Preparation: EPA 7471A

Initial/Final: 0.5 g / 50 ml

Batch: 9100923

Sequence: 9J28009

Calibration: 9110901

Instrument: CVAA

<b>CAS NO.</b>	<b>Analyte</b>	<b>Concentration (mg/kg)</b>	<b>Dilution Factor</b>	<b>Q</b>	<b>Method</b>
7439-97-6	Mercury	0.0140	1	J	EPA 7471A

**Form 1**  
**INORGANIC ANALYSIS DATA SHEET**  
**EPA 7471A**

SS-402-101909-0

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Matrix: Soil

Laboratory ID: PSJ0657-02

File ID: S102809A1-025

Sampled: 10/19/09 11:40

Prepared: 10/26/09 11:36

Analyzed: 10/28/09 12:56

Solids: 93.70

Preparation: EPA 7471A

Initial/Final: 0.513 g / 50 ml

Batch: 9100923

Sequence: 9J28009

Calibration: 9110901

Instrument: CVAA

CAS NO.	Analyte	Concentration (mg/kg)	Dilution Factor	Q	Method
7439-97-6	Mercury	0.0104	1	J	EPA 7471A

**Form 1**  
**INORGANIC ANALYSIS DATA SHEET**  
**EPA 7471A**

SS-403-101909-0

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Matrix: Soil

Laboratory ID: PSJ0657-03

File ID: S102809A1-026

Sampled: 10/19/09 11:50

Prepared: 10/26/09 11:36

Analyzed: 10/28/09 12:58

Solids: 92.80

Preparation: EPA 7471A

Initial/Final: 0.5 g / 50 ml

Batch: 9100923

Sequence: 9J28009

Calibration: 9110901

Instrument: CVAA

CAS NO.	Analyte	Concentration (mg/kg)	Dilution Factor	Q	Method
7439-97-6	Mercury	0.00633	1	J	EPA 7471A

## INORGANIC ANALYSIS DATA SHEET

SS-404-101909-0

## EPA 7471A

Laboratory: TestAmerica PortlandSDG: PSJ0657Client: CH2M-HillProject: NW Pipe ProjectMatrix: SoilLaboratory ID: PSJ0657-04File ID: S102809A1-027Sampled: 10/19/09 11:20Prepared: 10/26/09 11:36Analyzed: 10/28/09 13:01Solids: 85.00Preparation: EPA 7471AInitial/Final: 0.463 g / 50 mlBatch: 9100923Sequence: 9J28009Calibration: 9110901Instrument: CVAA

CAS NO.	Analyte	Concentration (mg/kg)	Dilution Factor	Q	Method
7439-97-6	Mercury	0.0864	1	U	EPA 7471A

**Form 1**  
**INORGANIC ANALYSIS DATA SHEET**  
**EPA 7471A**

SS-405-101909-0

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Matrix: Soil

Laboratory ID: PSJ0657-05

File ID: S102809A1-028

Sampled: 10/19/09 11:00

Prepared: 10/26/09 11:36

Analyzed: 10/28/09 13:03

Solids: 87.30

Preparation: EPA 7471A

Initial/Final: 0.522 g / 50 ml

Batch: 9100923

Sequence: 9J28009

Calibration: 9110901

Instrument: CVAA

CAS NO.	Analyte	Concentration (mg/kg)	Dilution Factor	Q	Method
7439-97-6	Mercury	0.00647	1	J	EPA 7471A



**Form 1**  
**INORGANIC ANALYSIS DATA SHEET**  
**EPA 7471A**

SS-406-101909-0

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Matrix: Soil

Laboratory ID: PSJ0657-07

File ID: S102809A1-030

Sampled: 10/19/09 12:05

Prepared: 10/26/09 11:36

Analyzed: 10/28/09 13:42

Solids: 89.70

Preparation: EPA 7471A

Initial/Final: 0.456 g / 50 ml

Batch: 9100923

Sequence: 9J28009

Calibration: 9110901

Instrument: CVAA

CAS NO.	Analyte	Concentration (mg/kg)	Dilution Factor	Q	Method
7439-97-6	Mercury	0.0877	1	U	EPA 7471A

**Form 1**  
**INORGANIC ANALYSIS DATA SHEET**  
**EPA 7471A**

SS-407-101909-0

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Matrix: Soil

Laboratory ID: PSJ0657-08

File ID: S102809A1-031

Sampled: 10/19/09 10:55

Prepared: 10/26/09 11:36

Analyzed: 10/28/09 13:44

Solids: 87.50

Preparation: EPA 7471A

Initial/Final: 0.568 g / 50 ml

Batch: 9100923

Sequence: 9J28009

Calibration: 9110901

Instrument: CVAA

CAS NO.	Analyte	Concentration (mg/kg)	Dilution Factor	Q	Method
7439-97-6	Mercury	0.0105	1	J	EPA 7471A

**Form 1**  
**INORGANIC ANALYSIS DATA SHEET**  
**EPA 7471A**

SS-408-101909-0

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Matrix: Soil

Laboratory ID: PSJ0657-09

File ID: S102809A1-034

Sampled: 10/19/09 10:45

Prepared: 10/26/09 11:36

Analyzed: 10/28/09 13:55

Solids: 92.90

Preparation: EPA 7471A

Initial/Final: 0.574 g / 50 ml

Batch: 9100923

Sequence: 9J28009

Calibration: 9110901

Instrument: CVAA

CAS NO.	Analyte	Concentration (mg/kg)	Dilution Factor	Q	Method
7439-97-6	Mercury	0.0697	1	U	EPA 7471A

**Form 1**  
**INORGANIC ANALYSIS DATA SHEET**  
**EPA 7471A**

SS-409-101909-0

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Matrix: Soil

Laboratory ID: PSJ0657-10

File ID: S102809A1-035

Sampled: 10/19/09 12:15

Prepared: 10/26/09 11:36

Analyzed: 10/28/09 13:57

Solids: 81.60

Preparation: EPA 7471A

Initial/Final: 0.504 g / 50 ml

Batch: 9100923

Sequence: 9J28009

Calibration: 9110901

Instrument: CVAA

CAS NO.	Analyte	Concentration (mg/kg)	Dilution Factor	Q	Method
7439-97-6	Mercury	0.0897	1		EPA 7471A

**Form 1**  
**INORGANIC ANALYSIS DATA SHEET**  
**EPA 7471A**

SS-410-101909-0

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Matrix: Soil

Laboratory ID: PSJ0657-11

File ID: S102809A1-036

Sampled: 10/19/09 10:15

Prepared: 10/26/09 11:36

Analyzed: 10/28/09 14:00

Solids: 86.90

Preparation: EPA 7471A

Initial/Final: 0.515 g / 50 ml

Batch: 9100923

Sequence: 9J28009

Calibration: 9110901

Instrument: CVAA

CAS NO.	Analyte	Concentration (mg/kg)	Dilution Factor	Q	Method
7439-97-6	Mercury	0.0218	1	J	EPA 7471A

**Form 1**  
**INORGANIC ANALYSIS DATA SHEET**  
**EPA 7471A**

SS-411-101909-0

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Matrix: Soil

Laboratory ID: PSJ0657-12

File ID: S102809A1-037

Sampled: 10/19/09 10:30

Prepared: 10/26/09 11:36

Analyzed: 10/28/09 14:03

Solids: 85.40

Preparation: EPA 7471A

Initial/Final: 0.461 g / 50 ml

Batch: 9100923

Sequence: 9J28009

Calibration: 9110901

Instrument: CVAA

CAS NO.	Analyte	Concentration (mg/kg)	Dilution Factor	Q	Method
7439-97-6	Mercury	0.0944	1		EPA 7471A

**Form 1**  
**INORGANIC ANALYSIS DATA SHEET**  
**EPA 7471A**

SS-411-101909-1

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Matrix: Soil

Laboratory ID: PSJ0657-13

File ID: S102809A1-038

Sampled: 10/19/09 10:30

Prepared: 10/26/09 11:36

Analyzed: 10/28/09 14:06

Solids: 87.70

Preparation: EPA 7471A

Initial/Final: 0.587 g / 50 ml

Batch: 9100923

Sequence: 9J28009

Calibration: 9110901

Instrument: CVAA

CAS NO.	Analyte	Concentration (mg/kg)	Dilution Factor	Q	Method
7439-97-6	Mercury	0.203	1		EPA 7471A

**Mercury**  
Preparation Logs

**Form 4**  
**PREPARATION BATCH SUMMARY**  
**EPA 7471A**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Batch: 9100923

Batch Matrix: Other wet

Preparation: EPA 7471A

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	9100923-BLK1	S102809A1-015	10/26/09 11:36	
LCS	9100923-BS1	S102809A1-016	10/26/09 11:36	
LCS Dup	9100923-BSD1	S102809A1-017	10/26/09 11:36	
SS-405-101909-2	9100923-DUP1	S102809A1-018	10/26/09 11:36	
SS-405-101909-2	9100923-MS1	S102809A1-019	10/26/09 11:36	
SS-405-101909-2	9100923-MSD1	S102809A1-020	10/26/09 11:36	
SS-401-101909-0	PSJ0657-01	S102809A1-022	10/26/09 11:36	level 3 dp.
SS-402-101909-0	PSJ0657-02	S102809A1-025	10/26/09 11:36	level 3 dp.
SS-403-101909-0	PSJ0657-03	S102809A1-026	10/26/09 11:36	level 3 dp.
SS-404-101909-0	PSJ0657-04	S102809A1-027	10/26/09 11:36	level 3 dp.
SS-405-101909-0	PSJ0657-05	S102809A1-028	10/26/09 11:36	level 3 dp.
SS-405-101909-2	PSJ0657-06	S102809A1-029	10/26/09 11:36	level 3 dp, MS/ MSD, or appropriate QC
SS-406-101909-0	PSJ0657-07	S102809A1-030	10/26/09 11:36	level 3 dp.
SS-407-101909-0	PSJ0657-08	S102809A1-031	10/26/09 11:36	level 3 dp.
SS-408-101909-0	PSJ0657-09	S102809A1-034	10/26/09 11:36	level 3 dp.
SS-409-101909-0	PSJ0657-10	S102809A1-035	10/26/09 11:36	level 3 dp.
SS-410-101909-0	PSJ0657-11	S102809A1-036	10/26/09 11:36	level 3 dp.
SS-411-101909-0	PSJ0657-12	S102809A1-037	10/26/09 11:36	level 3 dp.
SS-411-101909-1	PSJ0657-13	S102809A1-038	10/26/09 11:36	level 3 dp.

**PREPARATION BENCH SHEET**

TestAmerica Portland

BATCH: 9100923

Matrix: Other wet

Prepared using: Metals - EPA 7471A

No Surrogate used

Lab Number	Client ID	Analysis	Prepared	Initial (g)	Final (ml)	Spike ID	Source ID	Spike (uL)	pH	Comments: Extraction (Log)
9100923-BLKI	Blank	QC	10/26/09 11:36	0.485	50					
9100923-BS1	LCS	QC	10/26/09 11:36	0.476	50	9070368		2500		
9100923-BSD1	LCS Dup	QC	10/26/09 11:36	0.474	50	9070368		2500		
9100923-DUP1	Duplicate	QC	10/26/09 11:36	0.539	50		PSJ0657-06			
9100923-MS1	Matrix Spike	QC	10/26/09 11:36	0.574	50	9070368		2500		
9100923-MSD1	Matrix Spike Dup	QC	10/26/09 11:36	0.498	50	9070368		2500		
PSJ0610-01	PW-1	Hg Total 7471A	10/26/09 11:36	0.582	50					parts washer solvent. (parts washer solvent) <i>city!</i>
PSJ0657-01	SS-401-101909-0	Hg Total 7471A	10/26/09 11:36	0.520	50					level 3 dp. (level 3 dp.)
PSJ0657-02	SS-402-101909-0	Hg Total 7471A	10/26/09 11:36	0.512	50					level 3 dp. (level 3 dp.)
PSJ0657-03	SS-403-101909-0	Hg Total 7471A	10/26/09 11:36	0.584	50					level 3 dp. (level 3 dp.)
PSJ0657-04	SS-404-101909-0	Hg Total 7471A	10/26/09 11:36	0.463	50					level 3 dp. (level 3 dp.)
PSJ0657-05	SS-405-101909-0	Hg Total 7471A	10/26/09 11:36	0.584	50					level 3 dp. (level 3 dp.)
PSJ0657-06	SS-405-101909-2	Hg Total 7471A	10/26/09 11:36	0.495	50					level 3 dp. MS/MSD, or appropriate QC (level 3 dp. MS/MSD, or appropriate QC)
PSJ0657-07	SS-406-101909-0	Hg Total 7471A	10/26/09 11:36	0.456	50					level 3 dp. (level 3 dp.)
PSJ0657-08	SS-407-101909-0	Hg Total 7471A	10/26/09 11:36	0.563	50					level 3 dp. (level 3 dp.)
PSJ0657-09	SS-408-101909-0	Hg Total 7471A	10/26/09 11:36	0.584	50					level 3 dp. (level 3 dp.)
PSJ0657-10	SS-409-101909-0	Hg Total 7471A	10/26/09 11:36	0.504	50					level 3 dp. (level 3 dp.)
PSJ0657-11	SS-410-101909-0	Hg Total 7471A	10/26/09 11:36	0.515	50					level 3 dp. (level 3 dp.)
PSJ0657-12	SS-411-101909-0	Hg Total 7471A	10/26/09 11:36	0.461	50					level 3 dp. (level 3 dp.)
PSJ0657-13	SS-411-101909-1	Hg Total 7471A	10/26/09 11:36	0.587	50					level 3 dp. (level 3 dp.)
PSJ0657-14	Biosolids-4	Hg Total 7471A	10/26/09 11:36	0.4	50					
PSJ0752-01	Pigment Yellow 74	Hg Total 7471A	10/26/09 11:36	0.467	50					Limited volume (Limited volume)
PSJ0824-01	AS10096-01 (WWSB-1-1021)	Hg Total 7471A	10/26/09 11:36	0.4	50					Limited volume (Limited volume)
PSJ0824-02	AS10096-02 (DWSB2-1021)	Hg Total 7471A	10/26/09 11:36	0.414	50					Limited volume (Limited volume)

10/28/09

Prepared By

Date

Reviewed By

Date

**PREPARATION BENCH SHEET**

TestAmerica Portland

**BATCH: 9100923**

Matrix: Other wet

Prepared using: Metals - EPA 7471A

No Surrogate used

Lab Number	Client ID	Analysis	Prepared	Initial (g)	Final (ml)	Spike ID	Source ID	Spike (uL)	pH	Comments: Extraction (Log)
9100923-BLKI	Blank	QC	10/26/09 11:36	0.425	50					
9100923-BS1	LCS	QC	10/26/09 11:36	0.496	50	9070368		2500		
9100923-BSDI	LCS Dup	QC	10/26/09 11:36	0.454	50	9070368		2500		
9100923-DUP1	Duplicate	QC	10/26/09 11:36	0.539	50		PSJ0657-06			
9100923-MS1	Matrix Spike	QC	10/26/09 11:36	0.544	50	9070368	PSJ0657-06	2500		
9100923-MSDI	Matrix Spike Dup	QC	10/26/09 11:36	0.498	50	9070368	PSJ0657-06	2500		
PSJ0610-01	PW-1	Hg Total 7471A	10/26/09 11:36	0.565	50					parts washer solvent. (parts washer solvent.)
PSJ0657-01	SS-401-101909-0	Hg Total 7471A	10/26/09 11:36	0.5	50					level 3 dp. (level 3 dp.)
PSJ0657-02	SS-402-101909-0	Hg Total 7471A	10/26/09 11:36	0.513	50					level 3 dp. (level 3 dp.)
PSJ0657-03	SS-403-101909-0	Hg Total 7471A	10/26/09 11:36	0.5	50					level 3 dp. (level 3 dp.)
PSJ0657-04	SS-404-101909-0	Hg Total 7471A	10/26/09 11:36	0.463	50					level 3 dp. (level 3 dp.)
PSJ0657-05	SS-405-101909-0	Hg Total 7471A	10/26/09 11:36	0.522	50					level 3 dp. (level 3 dp.)
PSJ0657-06	SS-405-101909-2	Hg Total 7471A	10/26/09 11:36	0.495	50					level 3 dp, MS/MSD, or appropriate QC (level 3 dp, MS/MSD, or appropriate QC)
PSJ0657-07	SS-406-101909-0	Hg Total 7471A	10/26/09 11:36	0.456	50					level 3 dp. (level 3 dp.)
PSJ0657-08	SS-407-101909-0	Hg Total 7471A	10/26/09 11:36	0.568	50					level 3 dp. (level 3 dp.)
PSJ0657-09	SS-408-101909-0	Hg Total 7471A	10/26/09 11:36	0.574	50					level 3 dp. (level 3 dp.)
PSJ0657-10	SS-409-101909-0	Hg Total 7471A	10/26/09 11:36	0.504	50					level 3 dp. (level 3 dp.)
PSJ0657-11	SS-410-101909-0	Hg Total 7471A	10/26/09 11:36	0.515	50					level 3 dp. (level 3 dp.)
PSJ0657-12	SS-411-101909-0	Hg Total 7471A	10/26/09 11:36	0.461	50					level 3 dp. (level 3 dp.)
PSJ0657-13	SS-411-101909-1	Hg Total 7471A	10/26/09 11:36	0.587	50					level 3 dp. (level 3 dp.)
PSJ0752-01	Pigment Yellow 74	Hg Total 7471A	10/26/09 11:36	0.467	50					
PSJ0824-01	ASJ0096-01 (WWSB-1-1021)	Hg Total 7471A	10/26/09 11:36	0.525	50					Limited volume (Limited volume)
PSJ0824-02	ASJ0096-02 (DWSB2-1021)	Hg Total 7471A	10/26/09 11:36	0.714	50					Limited volume (Limited volume)

Prepared By: John Date: 10/28/09  
 Reviewed By: John Date: 10/28/09

Reagent/Description/Expires Date

9090136	12% (m/v) Hydroxylamine Hydrochloride NaCl	3/18/2010
9100124	CVAA Blank Solution	4/9/2010
9090079	Nitric Acid - Trace 2.5L Lot # G17026	3/15/2013

9100112	Potassium Permanganate	4/8/2010
9100229	Centrifuge Tubes (Env Xprs) Lot A905LS269	4/22/2010

9100123	2% Stannous Chloride CVAA	4/9/2010
9090249	Hydrochloric Acid - AR Select H19A04	9/29/2010

Batch Comments: AutoBlock\_1  
 Mettler AE100  
 10/26/09  
 95C (HgWb)

*Wah* 10/23/09

Prepared By

Date

Reviewed By

Date

## General Chemistry

**ANALYSES DATA PACKAGE COVER PAGE**  
**NCA SOP**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

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**Client Sample Id:**

SS-401-101909-0  
SS-402-101909-0  
SS-403-101909-0  
SS-404-101909-0  
SS-405-101909-0  
SS-405-101909-2  
SS-406-101909-0  
SS-407-101909-0  
SS-408-101909-0  
SS-409-101909-0  
SS-410-101909-0  
SS-411-101909-0  
SS-411-101909-1

**Lab Sample Id:**

PSJ0657-01  
PSJ0657-02  
PSJ0657-03  
PSJ0657-04  
PSJ0657-05  
PSJ0657-06  
PSJ0657-07  
PSJ0657-08  
PSJ0657-09  
PSJ0657-10  
PSJ0657-11  
PSJ0657-12  
PSJ0657-13

**General Chemistry**  
Quality Control Summaries

**CH2M-Hill**2020 SW 4th Suite 300  
Portland, OR 97201Project Name: **NW Pipe Project**  
Project Number: NW Pipe Project  
Project Manager: Pat HeinsReport Date:  
11/17/09 15:44**Laboratory Blank Report****Percent Dry Weight (Solids) per ASTM D2216-80 - Laboratory Quality Control Results**  
**TestAmerica Portland****Batch 9100689**

Matrix	Lab Number	Sample Name	Dilution	File ID	Analyzed	Instrument
Soil	NCA SOP	9100689-DUP1	Duplicate	1x NA	10/20/09 07:49	Inst
Soil	NCA SOP	9100689-DUP2	Duplicate	1x NA	10/20/09 07:49	Inst
Soil	NCA SOP	PSJ0657-01	SS-401-101909-0	1x NA	10/20/09 07:49	Inst
Soil	NCA SOP	PSJ0657-02	SS-402-101909-0	1x NA	10/20/09 07:49	Inst
Soil	NCA SOP	PSJ0657-03	SS-403-101909-0	1x NA	10/20/09 07:49	Inst
Soil	NCA SOP	PSJ0657-04	SS-404-101909-0	1x NA	10/20/09 07:49	Inst
Soil	NCA SOP	PSJ0657-05	SS-405-101909-0	1x NA	10/20/09 07:49	Inst
Soil	NCA SOP	PSJ0657-06	SS-405-101909-2	1x NA	10/20/09 07:49	Inst
Soil	NCA SOP	PSJ0657-07	SS-406-101909-0	1x NA	10/20/09 07:49	Inst
Soil	NCA SOP	PSJ0657-08	SS-407-101909-0	1x NA	10/20/09 07:49	Inst
Soil	NCA SOP	PSJ0657-09	SS-408-101909-0	1x NA	10/20/09 07:49	Inst
Soil	NCA SOP	PSJ0657-10	SS-409-101909-0	1x NA	10/20/09 07:49	Inst
Soil	NCA SOP	PSJ0657-11	SS-410-101909-0	1x NA	10/20/09 07:49	Inst
Soil	NCA SOP	PSJ0657-12	SS-411-101909-0	1x NA	10/20/09 07:49	Inst
Soil	NCA SOP	PSJ0657-13	SS-411-101909-1	1x NA	10/20/09 07:49	Inst



**DUPLICATES**  
**NCA SOP**

<b>Duplicate</b>
------------------

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Matrix: Soil

Laboratory ID: 9100689-DUP1

Batch: 9100689

Lab Source ID: PSJ0660-01

Preparation: Dry Weight

Initial/Final: 10 g / 10 g

Source Sample Name: Duplicate

% Solids: 83.60

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (% by Weight)	C	DUPLICATE CONCENTRATION (% by Weight)	C	RPD %	Q	METHOD
% Solids	20	83.6		83.5		0.120		NCA SOP

\* Values outside of QC limits

**DUPLICATES**  
**NCA SOP**

<b>Duplicate</b>
------------------

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Matrix: Soil

Laboratory ID: 9100689-DUP2

Batch: 9100689

Lab Source ID: PSJ0660-02

Preparation: Dry Weight

Initial/Final: 10 g / 10 g

Source Sample Name: Duplicate

% Solids: 81.50

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (% by Weight)	C	DUPLICATE CONCENTRATION (% by Weight)	C	RPD %	Q	METHOD
% Solids	20	81.5		80.7		0.986		NCA SOP

\* Values outside of QC limits

## **General Chemistry**

### Target Analyte Results Summaries













**Form 1**  
**INORGANIC ANALYSIS DATA SHEET**  
**NCA SOP**

SS-406-101909-0

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Matrix: Soil

Laboratory ID: PSJ0657-07

File ID:

Sampled: 10/19/09 12:05

Prepared: 10/20/09 07:49

Analyzed: 10/20/09 07:49

Solids: 89.70

Preparation: Dry Weight

Initial/Final: 10 g / 10 g

Batch: 9100689

Sequence:

Calibration:

Instrument: Inst

CAS NO.	Analyte	Concentration (% by Weight)	Dilution Factor	Q	Method
%SOLIDS	% Solids	89.7	1		NCA SOP





**Form 1**  
**INORGANIC ANALYSIS DATA SHEET**  
**NCA SOP**

SS-409-101909-0

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Matrix: Soil

Laboratory ID: PSJ0657-10

File ID:

Sampled: 10/19/09 12:15

Prepared: 10/20/09 07:49

Analyzed: 10/20/09 07:49

Solids: 81.60

Preparation: Dry Weight

Initial/Final: 10 g / 10 g

Batch: 9100689

Sequence:

Calibration:

Instrument: Inst

CAS NO.	Analyte	Concentration (% by Weight)	Dilution Factor	Q	Method
%SOLIDS	% Solids	81.6	1		NCA SOP



**Form 1**  
**INORGANIC ANALYSIS DATA SHEET**  
**NCA SOP**

SS-411-101909-0

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Matrix: Soil

Laboratory ID: PSJ0657-12

File ID:

Sampled: 10/19/09 10:30

Prepared: 10/20/09 07:49

Analyzed: 10/20/09 07:49

Solids: 85.40

Preparation: Dry Weight

Initial/Final: 10 g / 10 g

Batch: 9100689

Sequence:

Calibration:

Instrument: Inst

CAS NO.	Analyte	Concentration (% by Weight)	Dilution Factor	Q	Method
%SOLIDS	% Solids	85.4	1		NCA SOP



## **General Chemistry**

### Preparation Logs

**Form 4**  
**PREPARATION BATCH SUMMARY**  
**NCA SOP**

Laboratory: TestAmerica Portland

SDG: PSJ0657

Client: CH2M-Hill

Project: NW Pipe Project

Batch: 9100689      Batch Matrix: Soil

Preparation: Dry Weight

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Duplicate	9100689-DUP1		10/20/09 07:49	
Duplicate	9100689-DUP2		10/20/09 07:49	
SS-401-101909-0	PSJ0657-01		10/20/09 07:49	
SS-402-101909-0	PSJ0657-02		10/20/09 07:49	
SS-403-101909-0	PSJ0657-03		10/20/09 07:49	
SS-404-101909-0	PSJ0657-04		10/20/09 07:49	
SS-405-101909-0	PSJ0657-05		10/20/09 07:49	
SS-405-101909-2	PSJ0657-06		10/20/09 07:49	
SS-406-101909-0	PSJ0657-07		10/20/09 07:49	
SS-407-101909-0	PSJ0657-08		10/20/09 07:49	
SS-408-101909-0	PSJ0657-09		10/20/09 07:49	
SS-409-101909-0	PSJ0657-10		10/20/09 07:49	
SS-410-101909-0	PSJ0657-11		10/20/09 07:49	
SS-411-101909-0	PSJ0657-12		10/20/09 07:49	
SS-411-101909-1	PSJ0657-13		10/20/09 07:49	

PREPARATION BENCH SHEET (Custom Equation)

9100689

TestAmerica Portland

Printed: 10/20/2009 10:04:20AM

Matrix: Soil Prepared using: Dry Weight

Lab Number	Analysis	Prepared	Source ID	Tare Wt (g)	Initial Weight + Tare (g/mL)	Final Amount + Tare (g)	Dry Weight (%)	Due Date
9100689-DUP1	QC	10/20/09 07:49	PS10000-01	1.02	7.32	6.28		
9100689-DUP2	QC	10/20/09 07:49	PS10000-02	0.94	6.94	5.80		
PS10645-01	Solids, Dry Weight	10/20/09 07:49		0.98	6.47	6.09		10/23/09 16:00
PS10645-02	Solids, Dry Weight	10/20/09 07:49		0.98	7.12	6.79		10/23/09 16:00
PS10645-03	Solids, Dry Weight	10/20/09 07:49		0.96	7.38	7.10		10/23/09 16:00
PS10647-01	Solids, Dry Weight	10/20/09 07:49		0.98	8.17	7.83		10/23/09 16:00
PS10647-02	Solids, Dry Weight	10/20/09 07:49		0.94	11.08	10.53		10/23/09 16:00
PS10647-03	Solids, Dry Weight	10/20/09 07:49		1.00	9.29	8.72		10/23/09 16:00
PS10647-04	Solids, Dry Weight	10/20/09 07:49		0.94	9.13	8.25		10/23/09 16:00
PS10657-01	Solids, Dry Weight	10/20/09 07:49		0.97	8.26	7.59		10/26/09 16:00
PS10657-02	Solids, Dry Weight	10/20/09 07:49		0.97	12.95	12.20		10/26/09 16:00
PS10657-03	Solids, Dry Weight	10/20/09 07:49		1.00	8.50	7.96		10/26/09 16:00
PS10657-04	Solids, Dry Weight	10/20/09 07:49		1.00	8.59	7.45		10/26/09 16:00
PS10657-05	Solids, Dry Weight	10/20/09 07:49		0.99	9.15	8.11		10/26/09 16:00
PS10657-06	Solids, Dry Weight	10/20/09 07:49		1.02	6.14	5.64		10/26/09 16:00
PS10657-07	Solids, Dry Weight	10/20/09 07:49		1.02	11.50	10.42		10/26/09 16:00
PS10657-08	Solids, Dry Weight	10/20/09 07:49		0.99	8.65	7.69		10/26/09 16:00
PS10657-09	Solids, Dry Weight	10/20/09 07:49		0.97	8.89	8.33		10/26/09 16:00
PS10657-10	Solids, Dry Weight	10/20/09 07:49		0.98	9.84	8.21		10/26/09 16:00
PS10657-11	Solids, Dry Weight	10/20/09 07:49		0.98	8.40	7.43		10/26/09 16:00
PS10657-12	Solids, Dry Weight	10/20/09 07:49		0.99	9.15	7.96		10/26/09 16:00
PS10657-13	Solids, Dry Weight	10/20/09 07:49		0.97	9.64	8.57		10/26/09 16:00
PS10658-01	Solids, Dry Weight	10/20/09 07:49		0.94	7.21	6.27		10/27/09 16:00

Prepared By: *Amin* Date: 10/20/09  
 Analyzed By: *Amin* Date: 10/21/09  
 Reviewed By: *K* Date: 10/21/09

PREPARATION BENCH SHEET (Custom Equation)

9100689

TestAmerica Portland

Printed: 10/20/2009 10:04:20AM

Prepared using: Dry Weight

Matrix: Soil

Lab Number	Analysis	Prepared	Source ID	Tare Wt (g.)	Initial Weight + Tare (g/mL)	Final Amount + Tare (g)	Dry Weight (%)	Due Date
PSJ0660-01	Solids, Dry Weight	10/20/09 07:49		0.97	7.26	6.23		10/22/09 16:00
PSJ0660-02	Solids, Dry Weight	10/20/09 07:49		1.01	7.05	5.93		10/22/09 16:00
PSJ0660-03	Solids, Dry Weight	10/20/09 07:49		0.99	7.49	6.39		10/22/09 16:00

Balance ID: Sartorius CP 2202S 16450223

Prepared By Jessica Nye 10/20/09 Date

Analyzed By Jessica Nye 10/21/09 Date

Reviewed By [Signature] 10-21-09 Date

## **Appendix A**

TestAmerica – Tacoma, WA

## ANALYTICAL REPORT

Job Number: 580-16156-1

Job Description: PSJ0657

For:

TestAmerica Laboratories, Inc  
9405 SW Nimbus Ave.  
Beaverton, OR 97008

Attention: Mr. Darrell Auvil



Approved for release.  
Heather Curbow  
Project Manager I  
11/3/2009 3:12 PM

---

Heather Curbow  
Project Manager I  
heather.curbow@testamericainc.com  
11/03/2009

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The results included in this report have been reviewed for compliance with the laboratory QA/QC plan and meet all requirements of NELAC. All data have been found to be compliant with laboratory protocol, with the exception of any items noted in the case narrative.

**TestAmerica Laboratories, Inc.**

TestAmerica Tacoma 5755 8th Street East, Tacoma, WA 98424  
Tel (253) 922-2310 Fax (253) 922-5047 [www.testamericainc.com](http://www.testamericainc.com)



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**Job Narrative**  
**580-16156-1**

**Comments**

No additional comments.

**Receipt**

All samples were received in good condition within temperature requirements.

**General Chemistry**

No analytical or quality issues were noted.

## SAMPLE SUMMARY

Client: TestAmerica Laboratories, Inc

Job Number: 580-16156-1

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Client Matrix</b>	<b>Date/Time Sampled</b>	<b>Date/Time Received</b>
580-16156-1	PSJ0657-01	Solid	10/19/2009 1130	10/21/2009 0945
580-16156-2	PSJ0657-02	Solid	10/19/2009 1140	10/21/2009 0945
580-16156-3	PSJ0657-03	Solid	10/19/2009 1150	10/21/2009 0945
580-16156-4	PSJ0657-04	Solid	10/19/2009 1120	10/21/2009 0945
580-16156-5	PSJ0657-05	Solid	10/19/2009 1100	10/21/2009 0945
580-16156-6	PSJ0657-06	Solid	10/19/2009 1100	10/21/2009 0945
580-16156-7	PSJ0657-07	Solid	10/19/2009 1205	10/21/2009 0945
580-16156-8	PSJ0657-08	Solid	10/19/2009 1055	10/21/2009 0945
580-16156-9	PSJ0657-09	Solid	10/19/2009 1045	10/21/2009 0945
580-16156-10	PSJ0657-10	Solid	10/19/2009 1215	10/21/2009 0945
580-16156-11	PSJ0657-11	Solid	10/19/2009 1015	10/21/2009 0945
580-16156-12	PSJ0657-12	Solid	10/19/2009 1030	10/21/2009 0945
580-16156-13	PSJ0657-13	Solid	10/19/2009 1030	10/21/2009 0945

## METHOD SUMMARY

Client: TestAmerica Laboratories, Inc

Job Number: 580-16156-1

<b>Description</b>	<b>Lab Location</b>	<b>Method</b>	<b>Preparation Method</b>
<b>Matrix: Solid</b>			
Organic Carbon, Total (TOC)	TAL TAC	SW846 9060	
Percent Moisture	TAL TAC	EPA Moisture	

### Lab References:

TAL TAC = TestAmerica Tacoma

### Method References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

# Analytical Data

Client: TestAmerica Laboratories, Inc

Job Number: 580-16156-1

---

## General Chemistry

**Client Sample ID: PSJ0657-01**

Lab Sample ID: 580-16156-1

Client Matrix: Solid

Date Sampled: 10/19/2009 1130

Date Received: 10/21/2009 0945

Analyte	Result	Qual	Units	RL	Dil	Method
Total Organic Carbon	4300		mg/Kg	2000	1.0	9060
Analysis Batch: 580-53275		Date Analyzed: 11/02/2009 1344				DryWt Corrected: N

Analyte	Result	Qual	Units	RL	Dil	Method
Percent Solids	85		%	0.10	1.0	Moisture
Analysis Batch: 580-53091		Date Analyzed: 10/30/2009 1211				DryWt Corrected: N
Percent Moisture	15		%	0.10	1.0	Moisture
Analysis Batch: 580-53091		Date Analyzed: 10/30/2009 1211				DryWt Corrected: N

# Analytical Data

Client: TestAmerica Laboratories, Inc

Job Number: 580-16156-1

---

## General Chemistry

**Client Sample ID: PSJ0657-02**

Lab Sample ID: 580-16156-2

Client Matrix: Solid

Date Sampled: 10/19/2009 1140

Date Received: 10/21/2009 0945

Analyte	Result	Qual	Units	RL	Dil	Method
Total Organic Carbon	6000		mg/Kg	2000	1.0	9060
Analysis Batch: 580-53275		Date Analyzed: 11/02/2009 1344		DryWt Corrected: N		

Analyte	Result	Qual	Units	RL	Dil	Method
Percent Solids	88		%	0.10	1.0	Moisture
Analysis Batch: 580-53091		Date Analyzed: 10/30/2009 1211		DryWt Corrected: N		
Percent Moisture	12		%	0.10	1.0	Moisture
Analysis Batch: 580-53091		Date Analyzed: 10/30/2009 1211		DryWt Corrected: N		

# Analytical Data

Client: TestAmerica Laboratories, Inc

Job Number: 580-16156-1

---

## General Chemistry

**Client Sample ID: PSJ0657-03**

Lab Sample ID: 580-16156-3

Client Matrix: Solid

Date Sampled: 10/19/2009 1150

Date Received: 10/21/2009 0945

Analyte	Result	Qual	Units	RL	Dil	Method
Total Organic Carbon	5300		mg/Kg	2000	1.0	9060
Analysis Batch: 580-53275		Date Analyzed: 11/02/2009 1344		DryWt Corrected: N		

Analyte	Result	Qual	Units	RL	Dil	Method
Percent Solids	90		%	0.10	1.0	Moisture
Analysis Batch: 580-53091		Date Analyzed: 10/30/2009 1211		DryWt Corrected: N		
Percent Moisture	9.8		%	0.10	1.0	Moisture
Analysis Batch: 580-53091		Date Analyzed: 10/30/2009 1211		DryWt Corrected: N		

# Analytical Data

Client: TestAmerica Laboratories, Inc

Job Number: 580-16156-1

---

## General Chemistry

**Client Sample ID: PSJ0657-04**

Lab Sample ID: 580-16156-4

Client Matrix: Solid

Date Sampled: 10/19/2009 1120

Date Received: 10/21/2009 0945

Analyte	Result	Qual	Units	RL	Dil	Method
Total Organic Carbon	74000		mg/Kg	2000	1.0	9060
Analysis Batch: 580-53275		Date Analyzed: 11/02/2009 1344				DryWt Corrected: N

Analyte	Result	Qual	Units	RL	Dil	Method
Percent Solids	81		%	0.10	1.0	Moisture
Analysis Batch: 580-53091		Date Analyzed: 10/30/2009 1211				DryWt Corrected: N
Percent Moisture	19		%	0.10	1.0	Moisture
Analysis Batch: 580-53091		Date Analyzed: 10/30/2009 1211				DryWt Corrected: N

Client: TestAmerica Laboratories, Inc

Job Number: 580-16156-1

**General Chemistry**

**Client Sample ID: PSJ0657-05**

Lab Sample ID: 580-16156-5

Date Sampled: 10/19/2009 1100

Client Matrix: Solid

Date Received: 10/21/2009 0945

Analyte	Result	Qual	Units	RL	Dil	Method
Total Organic Carbon	62000		mg/Kg	2000	1.0	9060
Analysis Batch: 580-53275		Date Analyzed: 11/02/2009 1344				DryWt Corrected: N

Analyte	Result	Qual	Units	RL	Dil	Method
Percent Solids	87		%	0.10	1.0	Moisture
Analysis Batch: 580-53091		Date Analyzed: 10/30/2009 1211				DryWt Corrected: N
Percent Moisture	13		%	0.10	1.0	Moisture
Analysis Batch: 580-53091		Date Analyzed: 10/30/2009 1211				DryWt Corrected: N

# Analytical Data

Client: TestAmerica Laboratories, Inc

Job Number: 580-16156-1

---

## General Chemistry

**Client Sample ID: PSJ0657-06**

Lab Sample ID: 580-16156-6

Client Matrix: Solid

Date Sampled: 10/19/2009 1100

Date Received: 10/21/2009 0945

Analyte	Result	Qual	Units	RL	Dil	Method
Total Organic Carbon	37000		mg/Kg	2000	1.0	9060
Analysis Batch: 580-53275		Date Analyzed: 11/02/2009 1344		DryWt Corrected: N		

Analyte	Result	Qual	Units	RL	Dil	Method
Percent Solids	87		%	0.10	1.0	Moisture
Analysis Batch: 580-53091		Date Analyzed: 10/30/2009 1211		DryWt Corrected: N		
Percent Moisture	13		%	0.10	1.0	Moisture
Analysis Batch: 580-53091		Date Analyzed: 10/30/2009 1211		DryWt Corrected: N		

# Analytical Data

Client: TestAmerica Laboratories, Inc

Job Number: 580-16156-1

---

## General Chemistry

**Client Sample ID: PSJ0657-07**

Lab Sample ID: 580-16156-7

Client Matrix: Solid

Date Sampled: 10/19/2009 1205

Date Received: 10/21/2009 0945

Analyte	Result	Qual	Units	RL	Dil	Method
Total Organic Carbon	18000		mg/Kg	2000	1.0	9060
Analysis Batch: 580-53275		Date Analyzed: 11/02/2009 1344				DryWt Corrected: N

Analyte	Result	Qual	Units	RL	Dil	Method
Percent Solids	86		%	0.10	1.0	Moisture
Analysis Batch: 580-53091		Date Analyzed: 10/30/2009 1211				DryWt Corrected: N
Percent Moisture	14		%	0.10	1.0	Moisture
Analysis Batch: 580-53091		Date Analyzed: 10/30/2009 1211				DryWt Corrected: N

Client: TestAmerica Laboratories, Inc

Job Number: 580-16156-1

**General Chemistry**

**Client Sample ID: PSJ0657-08**

Lab Sample ID: 580-16156-8

Client Matrix: Solid

Date Sampled: 10/19/2009 1055

Date Received: 10/21/2009 0945

Analyte	Result	Qual	Units	RL	Dil	Method
Total Organic Carbon	70000		mg/Kg	2000	1.0	9060
Analysis Batch: 580-53275		Date Analyzed: 11/02/2009 1344				DryWt Corrected: N

Analyte	Result	Qual	Units	RL	Dil	Method
Percent Solids	85		%	0.10	1.0	Moisture
Analysis Batch: 580-53091		Date Analyzed: 10/30/2009 1211				DryWt Corrected: N
Percent Moisture	15		%	0.10	1.0	Moisture
Analysis Batch: 580-53091		Date Analyzed: 10/30/2009 1211				DryWt Corrected: N

## Analytical Data

Client: TestAmerica Laboratories, Inc

Job Number: 580-16156-1

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### General Chemistry

**Client Sample ID: PSJ0657-09**

Lab Sample ID: 580-16156-9

Client Matrix: Solid

Date Sampled: 10/19/2009 1045

Date Received: 10/21/2009 0945

Analyte	Result	Qual	Units	RL	Dil	Method
Total Organic Carbon	9300		mg/Kg	2000	1.0	9060
Analysis Batch: 580-53275		Date Analyzed: 11/02/2009 1344		DryWt Corrected: N		

Analyte	Result	Qual	Units	RL	Dil	Method
Percent Solids	94		%	0.10	1.0	Moisture
Analysis Batch: 580-53091		Date Analyzed: 10/30/2009 1211		DryWt Corrected: N		
Percent Moisture	6.0		%	0.10	1.0	Moisture
Analysis Batch: 580-53091		Date Analyzed: 10/30/2009 1211		DryWt Corrected: N		

Client: TestAmerica Laboratories, Inc

Job Number: 580-16156-1

**General Chemistry**

**Client Sample ID: PSJ0657-10**

Lab Sample ID: 580-16156-10

Date Sampled: 10/19/2009 1215

Client Matrix: Solid

Date Received: 10/21/2009 0945

Analyte	Result	Qual	Units	RL	Dil	Method
Total Organic Carbon	28000		mg/Kg	2000	1.0	9060
Analysis Batch: 580-53275		Date Analyzed: 11/02/2009 1344				DryWt Corrected: N

Analyte	Result	Qual	Units	RL	Dil	Method
Percent Solids	82		%	0.10	1.0	Moisture
Analysis Batch: 580-53091		Date Analyzed: 10/30/2009 1211				DryWt Corrected: N
Percent Moisture	18		%	0.10	1.0	Moisture
Analysis Batch: 580-53091		Date Analyzed: 10/30/2009 1211				DryWt Corrected: N

Client: TestAmerica Laboratories, Inc

Job Number: 580-16156-1

**General Chemistry**

**Client Sample ID: PSJ0657-11**

Lab Sample ID: 580-16156-11

Date Sampled: 10/19/2009 1015

Client Matrix: Solid

Date Received: 10/21/2009 0945

Analyte	Result	Qual	Units	RL	Dil	Method
Total Organic Carbon	16000		mg/Kg	2000	1.0	9060
Analysis Batch: 580-53275		Date Analyzed: 11/02/2009 1344				DryWt Corrected: N

Analyte	Result	Qual	Units	RL	Dil	Method
Percent Solids	88		%	0.10	1.0	Moisture
Analysis Batch: 580-53091		Date Analyzed: 10/30/2009 1211				DryWt Corrected: N
Percent Moisture	12		%	0.10	1.0	Moisture
Analysis Batch: 580-53091		Date Analyzed: 10/30/2009 1211				DryWt Corrected: N

# Analytical Data

Client: TestAmerica Laboratories, Inc

Job Number: 580-16156-1

---

## General Chemistry

**Client Sample ID: PSJ0657-12**

Lab Sample ID: 580-16156-12

Client Matrix: Solid

Date Sampled: 10/19/2009 1030

Date Received: 10/21/2009 0945

Analyte	Result	Qual	Units	RL	Dil	Method
Total Organic Carbon	42000		mg/Kg	2000	1.0	9060
Analysis Batch: 580-53275		Date Analyzed: 11/02/2009 1344				DryWt Corrected: N

Analyte	Result	Qual	Units	RL	Dil	Method
Percent Solids	76		%	0.10	1.0	Moisture
Analysis Batch: 580-53091		Date Analyzed: 10/30/2009 1211				DryWt Corrected: N
Percent Moisture	24		%	0.10	1.0	Moisture
Analysis Batch: 580-53091		Date Analyzed: 10/30/2009 1211				DryWt Corrected: N

# Analytical Data

Client: TestAmerica Laboratories, Inc

Job Number: 580-16156-1

---

## General Chemistry

**Client Sample ID: PSJ0657-13**

Lab Sample ID: 580-16156-13

Client Matrix: Solid

Date Sampled: 10/19/2009 1030

Date Received: 10/21/2009 0945

Analyte	Result	Qual	Units	RL	Dil	Method
Total Organic Carbon	35000		mg/Kg	2000	1.0	9060
Analysis Batch: 580-53275		Date Analyzed: 11/02/2009 1344				DryWt Corrected: N

Analyte	Result	Qual	Units	RL	Dil	Method
Percent Solids	84		%	0.10	1.0	Moisture
Analysis Batch: 580-53091		Date Analyzed: 10/30/2009 1211				DryWt Corrected: N
Percent Moisture	16		%	0.10	1.0	Moisture
Analysis Batch: 580-53091		Date Analyzed: 10/30/2009 1211				DryWt Corrected: N

## Quality Control Results

Client: TestAmerica Laboratories, Inc

Job Number: 580-16156-1

**Method Blank - Batch: 580-53275**

**Method: 9060**  
**Preparation: N/A**

Lab Sample ID: MB 580-53275/1  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 11/02/2009 1344  
Date Prepared: N/A

Analysis Batch: 580-53275  
Prep Batch: N/A  
Units: mg/Kg

Instrument ID: No Equipment Assigned  
Lab File ID: N/A  
Initial Weight/Volume: 1.0 mL  
Final Weight/Volume: 1.0 mL

Analyte	Result	Qual	RL
Total Organic Carbon	ND		2000

**Lab Control Sample - Batch: 580-53275**

**Method: 9060**  
**Preparation: N/A**

Lab Sample ID: LCS 580-53275/2  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 11/02/2009 1344  
Date Prepared: N/A

Analysis Batch: 580-53275  
Prep Batch: N/A  
Units: mg/Kg

Instrument ID: No Equipment Assigned  
Lab File ID: N/A  
Initial Weight/Volume: 1.0 mL  
Final Weight/Volume: 1.0 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Total Organic Carbon	3400	4800	141	13 - 187	

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 580-53275**

**Method: 9060**  
**Preparation: N/A**

MS Lab Sample ID: 580-16156-1  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 11/02/2009 1344  
Date Prepared: N/A

Analysis Batch: 580-53275  
Prep Batch: N/A

Instrument ID: No Equipment Assigned  
Lab File ID: N/A  
Initial Weight/Volume: 51.8 mg  
Final Weight/Volume: 51.8 mg

MSD Lab Sample ID: 580-16156-1  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 11/02/2009 1344  
Date Prepared: N/A

Analysis Batch: 580-53275  
Prep Batch: N/A

Instrument ID: No Equipment Assigned  
Lab File ID: N/A  
Initial Weight/Volume: 54.2 mg  
Final Weight/Volume: 54.2 mg

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Total Organic Carbon	94	91	76 - 128	7	28		

Calculations are performed before rounding to avoid round-off errors in calculated results.



## Quality Control Results

Client: TestAmerica Laboratories, Inc

Job Number: 580-16156-1

### Duplicate - Batch: 580-53091

**Method: Moisture**  
**Preparation: N/A**

Lab Sample ID: 580-16156-13  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 10/30/2009 1211  
Date Prepared: N/A

Analysis Batch: 580-53091  
Prep Batch: N/A  
Units: %

Instrument ID: No Equipment Assigned  
Lab File ID: N/A  
Initial Weight/Volume:  
Final Weight/Volume:

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Percent Solids	84	85	1	20	
Percent Moisture	16	15	7	20	

Calculations are performed before rounding to avoid round-off errors in calculated results.

## Quality Control Results

Client: TestAmerica Laboratories, Inc

Job Number: 580-16156-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:580-53091</b>					
580-16156-1	PSJ0657-01	T	Solid	Moisture	
580-16156-2	PSJ0657-02	T	Solid	Moisture	
580-16156-3	PSJ0657-03	T	Solid	Moisture	
580-16156-4	PSJ0657-04	T	Solid	Moisture	
580-16156-5	PSJ0657-05	T	Solid	Moisture	
580-16156-6	PSJ0657-06	T	Solid	Moisture	
580-16156-7	PSJ0657-07	T	Solid	Moisture	
580-16156-8	PSJ0657-08	T	Solid	Moisture	
580-16156-9	PSJ0657-09	T	Solid	Moisture	
580-16156-10	PSJ0657-10	T	Solid	Moisture	
580-16156-11	PSJ0657-11	T	Solid	Moisture	
580-16156-12	PSJ0657-12	T	Solid	Moisture	
580-16156-13	PSJ0657-13	T	Solid	Moisture	
580-16156-13DU	Duplicate	T	Solid	Moisture	
<b>Analysis Batch:580-53275</b>					
LCS 580-53275/2	Lab Control Sample	T	Solid	9060	
MB 580-53275/1	Method Blank	T	Solid	9060	
580-16156-1	PSJ0657-01	T	Solid	9060	
580-16156-1DU	Duplicate	T	Solid	9060	
580-16156-1MS	Matrix Spike	T	Solid	9060	
580-16156-1MSD	Matrix Spike Duplicate	T	Solid	9060	
580-16156-2	PSJ0657-02	T	Solid	9060	
580-16156-3	PSJ0657-03	T	Solid	9060	
580-16156-4	PSJ0657-04	T	Solid	9060	
580-16156-5	PSJ0657-05	T	Solid	9060	
580-16156-6	PSJ0657-06	T	Solid	9060	
580-16156-7	PSJ0657-07	T	Solid	9060	
580-16156-8	PSJ0657-08	T	Solid	9060	
580-16156-9	PSJ0657-09	T	Solid	9060	
580-16156-10	PSJ0657-10	T	Solid	9060	
580-16156-11	PSJ0657-11	T	Solid	9060	
580-16156-12	PSJ0657-12	T	Solid	9060	
580-16156-13	PSJ0657-13	T	Solid	9060	

**Report Basis**

T = Total

# GENERAL CHEMISTRY

COVER PAGE  
GENERAL CHEMISTRY

Lab Name: TestAmerica Tacoma

Job Number: 580-16156-1

SDG No.: \_\_\_\_\_

Project: PSJ0657

Client Sample ID	Lab Sample ID
<u>PSJ0657-01</u>	<u>580-16156-1</u>
<u>PSJ0657-02</u>	<u>580-16156-2</u>
<u>PSJ0657-03</u>	<u>580-16156-3</u>
<u>PSJ0657-04</u>	<u>580-16156-4</u>
<u>PSJ0657-05</u>	<u>580-16156-5</u>
<u>PSJ0657-06</u>	<u>580-16156-6</u>
<u>PSJ0657-07</u>	<u>580-16156-7</u>
<u>PSJ0657-08</u>	<u>580-16156-8</u>
<u>PSJ0657-09</u>	<u>580-16156-9</u>
<u>PSJ0657-10</u>	<u>580-16156-10</u>
<u>PSJ0657-11</u>	<u>580-16156-11</u>
<u>PSJ0657-12</u>	<u>580-16156-12</u>
<u>PSJ0657-13</u>	<u>580-16156-13</u>

Comments:

\_\_\_\_\_

1B-IN  
 INORGANIC ANALYSIS DATA SHEET  
 GENERAL CHEMISTRY

Client Sample ID: PSJ0657-01

Lab Sample ID: 580-16156-1

Lab Name: TestAmerica Tacoma

Job No.: 580-16156-1

SDG ID.: \_\_\_\_\_

Matrix: Solid

Date Sampled: 10/19/2009 11:30

Reporting Basis: WET

Date Received: 10/21/2009 09:45

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	4300	2000	610	mg/Kg			1	9060

1B-IN  
 INORGANIC ANALYSIS DATA SHEET  
 GENERAL CHEMISTRY

Client Sample ID: PSJ0657-02

Lab Sample ID: 580-16156-2

Lab Name: TestAmerica Tacoma

Job No.: 580-16156-1

SDG ID.: \_\_\_\_\_

Matrix: Solid

Date Sampled: 10/19/2009 11:40

Reporting Basis: WET

Date Received: 10/21/2009 09:45

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	6000	2000	610	mg/Kg			1	9060

1B-IN  
 INORGANIC ANALYSIS DATA SHEET  
 GENERAL CHEMISTRY

Client Sample ID: PSJ0657-03

Lab Sample ID: 580-16156-3

Lab Name: TestAmerica Tacoma

Job No.: 580-16156-1

SDG ID.: \_\_\_\_\_

Matrix: Solid

Date Sampled: 10/19/2009 11:50

Reporting Basis: WET

Date Received: 10/21/2009 09:45

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	5300	2000	610	mg/Kg			1	9060

1B-IN  
 INORGANIC ANALYSIS DATA SHEET  
 GENERAL CHEMISTRY

Client Sample ID: PSJ0657-04

Lab Sample ID: 580-16156-4

Lab Name: TestAmerica Tacoma

Job No.: 580-16156-1

SDG ID.: \_\_\_\_\_

Matrix: Solid

Date Sampled: 10/19/2009 11:20

Reporting Basis: WET

Date Received: 10/21/2009 09:45

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	74000	2000	610	mg/Kg			1	9060

1B-IN  
 INORGANIC ANALYSIS DATA SHEET  
 GENERAL CHEMISTRY

Client Sample ID: PSJ0657-05

Lab Sample ID: 580-16156-5

Lab Name: TestAmerica Tacoma

Job No.: 580-16156-1

SDG ID.: \_\_\_\_\_

Matrix: Solid

Date Sampled: 10/19/2009 11:00

Reporting Basis: WET

Date Received: 10/21/2009 09:45

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	62000	2000	610	mg/Kg			1	9060

1B-IN  
 INORGANIC ANALYSIS DATA SHEET  
 GENERAL CHEMISTRY

Client Sample ID: PSJ0657-06

Lab Sample ID: 580-16156-6

Lab Name: TestAmerica Tacoma

Job No.: 580-16156-1

SDG ID.: \_\_\_\_\_

Matrix: Solid

Date Sampled: 10/19/2009 11:00

Reporting Basis: WET

Date Received: 10/21/2009 09:45

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	37000	2000	610	mg/Kg			1	9060

1B-IN  
 INORGANIC ANALYSIS DATA SHEET  
 GENERAL CHEMISTRY

Client Sample ID: PSJ0657-07

Lab Sample ID: 580-16156-7

Lab Name: TestAmerica Tacoma

Job No.: 580-16156-1

SDG ID.: \_\_\_\_\_

Matrix: Solid

Date Sampled: 10/19/2009 12:05

Reporting Basis: WET

Date Received: 10/21/2009 09:45

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	18000	2000	610	mg/Kg			1	9060

1B-IN  
 INORGANIC ANALYSIS DATA SHEET  
 GENERAL CHEMISTRY

Client Sample ID: PSJ0657-08

Lab Sample ID: 580-16156-8

Lab Name: TestAmerica Tacoma

Job No.: 580-16156-1

SDG ID.: \_\_\_\_\_

Matrix: Solid

Date Sampled: 10/19/2009 10:55

Reporting Basis: WET

Date Received: 10/21/2009 09:45

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	70000	2000	610	mg/Kg			1	9060

1B-IN  
 INORGANIC ANALYSIS DATA SHEET  
 GENERAL CHEMISTRY

Client Sample ID: PSJ0657-09

Lab Sample ID: 580-16156-9

Lab Name: TestAmerica Tacoma

Job No.: 580-16156-1

SDG ID.: \_\_\_\_\_

Matrix: Solid

Date Sampled: 10/19/2009 10:45

Reporting Basis: WET

Date Received: 10/21/2009 09:45

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	9300	2000	610	mg/Kg			1	9060

1B-IN  
 INORGANIC ANALYSIS DATA SHEET  
 GENERAL CHEMISTRY

Client Sample ID: PSJ0657-10

Lab Sample ID: 580-16156-10

Lab Name: TestAmerica Tacoma

Job No.: 580-16156-1

SDG ID.: \_\_\_\_\_

Matrix: Solid

Date Sampled: 10/19/2009 12:15

Reporting Basis: WET

Date Received: 10/21/2009 09:45

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	28000	2000	610	mg/Kg			1	9060

1B-IN  
 INORGANIC ANALYSIS DATA SHEET  
 GENERAL CHEMISTRY

Client Sample ID: PSJ0657-11

Lab Sample ID: 580-16156-11

Lab Name: TestAmerica Tacoma

Job No.: 580-16156-1

SDG ID.: \_\_\_\_\_

Matrix: Solid

Date Sampled: 10/19/2009 10:15

Reporting Basis: WET

Date Received: 10/21/2009 09:45

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	16000	2000	610	mg/Kg			1	9060

1B-IN  
 INORGANIC ANALYSIS DATA SHEET  
 GENERAL CHEMISTRY

Client Sample ID: PSJ0657-12

Lab Sample ID: 580-16156-12

Lab Name: TestAmerica Tacoma

Job No.: 580-16156-1

SDG ID.: \_\_\_\_\_

Matrix: Solid

Date Sampled: 10/19/2009 10:30

Reporting Basis: WET

Date Received: 10/21/2009 09:45

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	42000	2000	610	mg/Kg			1	9060

1B-IN  
 INORGANIC ANALYSIS DATA SHEET  
 GENERAL CHEMISTRY

Client Sample ID: PSJ0657-13

Lab Sample ID: 580-16156-13

Lab Name: TestAmerica Tacoma

Job No.: 580-16156-1

SDG ID.: \_\_\_\_\_

Matrix: Solid

Date Sampled: 10/19/2009 10:30

Reporting Basis: WET

Date Received: 10/21/2009 09:45

CAS No.	Analyte	Conc.	RL	MDL	Units	C	Q	DIL	Method
7440-44-0	Total Organic Carbon	35000	2000	610	mg/Kg			1	9060

3-IN  
METHOD BLANK  
GENERAL CHEMISTRY

Lab Name: TestAmerica Tacoma

Job No.: 580-16156-1

SDG No.: \_\_\_\_\_

Method	Lab Sample ID	Analyte	Result	Qual	Units	RL	Dil
Batch ID: 53275      Date: 11/02/2009 13:44							
9060	MB 580-53275/1	Total Organic Carbon	ND		mg/Kg	2000	1

5-IN  
 MATRIX SPIKE SAMPLE RECOVERY  
 GENERAL CHEMISTRY

Lab Name: TestAmerica Tacoma Job No.: 580-16156-1  
 SDG No.: \_\_\_\_\_  
 Matrix: Solid

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 53275 Date: 11/02/2009 13:44											
9060	580-16156-1	Total Organic Carbon	4300		mg/Kg						
9060	580-16156-1	Total Organic Carbon	22500		mg/Kg	19300	94	76-128			
	MS										

Calculations are performed before rounding to avoid round-off errors in calculated results.

5-IN  
 MATRIX SPIKE DUPLICATE SAMPLE RECOVERY  
 GENERAL CHEMISTRY

Lab Name: TestAmerica Tacoma Job No.: 580-16156-1  
 SDG No.: \_\_\_\_\_  
 Matrix: Solid

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 53275 Date: 11/02/2009 13:44											
9060	580-16156-1	Total Organic Carbon	21000		mg/Kg	18500	91	76-128	7	28	
	MSD										

Calculations are performed before rounding to avoid round-off errors in calculated results.

6-IN  
DUPLICATE  
GENERAL CHEMISTRY

Lab Name: TestAmerica Tacoma Job No.: 580-16156-1

SDG No.: \_\_\_\_\_

Matrix: Solid

Method	Client Sample ID	Lab Sample ID	Analyte	Result	Unit	RPD	RPD Limit	Qual
Batch ID: 53275 Date: 11/02/2009 13:44								
9060	PSJ0657-01	580-16156-1	Total Organic Carbon	4300	mg/Kg			
9060	PSJ0657-01	580-16156-1 DU	Total Organic Carbon	4200	mg/Kg	2	50	
Batch ID: 53275 Date: 11/02/2009 13:44								
9060	PSJ0657-01	580-16156-1	Total Organic Carbon	4300	mg/Kg			
9060	PSJ0657-01	580-16156-1 DU	Total Organic Carbon	5000	mg/Kg	15	50	

Calculations are performed before rounding to avoid round-off errors in calculated results.

7A-IN  
LAB CONTROL SAMPLE  
GENERAL CHEMISTRY

Lab Name: TestAmerica Tacoma Job No.: 580-16156-1

SDG No.: \_\_\_\_\_

Matrix: Solid

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 53275		Date: 11/02/2009 13:44									
		LCS Source: CTOCLCS_00006									
9060	LCS 580-53275/2	Total Organic Carbon	4800		mg/Kg	3400	141	13-187			

Calculations are performed before rounding to avoid round-off errors in calculated results.

9-IN  
DETECTION LIMITS  
GENERAL CHEMISTRY

Lab Name: TestAmerica Tacoma Job Number: 580-16156-1  
SDG Number: \_\_\_\_\_  
Matrix: Solid Instrument ID: NOEQUIP  
Analysis Method: 9060 MDL Date: 04/24/2008 14:41  
Prep Method: \_\_\_\_\_  
Leach Method: \_\_\_\_\_

Analyte	Wavelength/ Mass	RL (mg/Kg)	MDL (mg/Kg)
Total Organic Carbon		2000	608

9-IN  
DETECTION LIMITS  
GENERAL CHEMISTRY

Lab Name: TestAmerica Tacoma Job Number: 580-16156-1  
SDG Number: \_\_\_\_\_  
Matrix: Solid Instrument ID: NOEQUIP  
Analysis Method: Moisture RL Date: 01/01/2005 13:13  
Prep Method: \_\_\_\_\_  
Leach Method: \_\_\_\_\_

Analyte	Wavelength/ Mass	RL (%)	
Percent Moisture		0.1	
Percent Solids		0.1	

13-IN  
ANALYSIS RUN LOG  
GENERAL CHEMISTRY

Lab Name: TestAmerica Tacoma Job No.: 580-16156-1

SDG No.: \_\_\_\_\_

Instrument ID: NOEQUIP Method: 9060

Start Date: 11/02/2009 13:44 End Date: 11/02/2009 13:44

Lab Sample ID	D / F	T y p e	Time	Analytes																			
				T	O	C																	
MB 580-53275/1	1	T	13:44	X																			
LCS 580-53275/2	1	T	13:44	X																			
580-16156-1	1	T	13:44	X																			
580-16156-1 DU	1	T	13:44	X																			
580-16156-1 DU	1	T	13:44	X																			
580-16156-1 MS	1	T	13:44	X																			
580-16156-1 MSD	1	T	13:44	X																			
580-16156-2	1	T	13:44	X																			
580-16156-3	1	T	13:44	X																			
580-16156-4	1	T	13:44	X																			
580-16156-5	1	T	13:44	X																			
580-16156-6	1	T	13:44	X																			
580-16156-7	1	T	13:44	X																			
580-16156-8	1	T	13:44	X																			
580-16156-9	1	T	13:44	X																			
580-16156-10	1	T	13:44	X																			
580-16156-11	1	T	13:44	X																			
580-16156-12	1	T	13:44	X																			
580-16156-13	1	T	13:44	X																			

Prep Types  
T = Total/NA



# General Chemistry Worksheet

Batch Number: 580-53091

Date Open: Oct 30 2009 12:11PM

Method: Moisture

Batch End: Nov 02 2009 8:56AM

Analyst: Johnson, Kara K

Lab ID	Client ID	Method Chain	Basis	Empty Dish Weight	Mass of wet Sample	Mass of Dry Sample
580-16237-A-12	SP3-12-102609		T	0.7656 g	8.2132 g	7.1034 g
580-16237-A-13	SP3-13-102609		T	0.7822 g	12.1706 g	10.0423 g
580-16237-A-14	SP3-14-102609		T	0.8050 g	6.5222 g	5.9192 g
580-16237-A-15	SP3-15-102609		T	0.7655 g	15.1073 g	12.4694 g
580-16301-A-1	10th ST NW-1-8ft		T	0.7806 g	7.7323 g	6.3987 g
580-16301-A-2	10th ST EF-2-12.5ft		T	0.7692 g	5.7165 g	4.5803 g
580-16301-A-3	10th ST EW-2-6ft		T	0.7758 g	7.9021 g	6.9371 g
580-16156-A-1	PSJ0657-01	Moisture	T	0.7888 g	9.0968 g	7.8693 g
580-16156-A-2	PSJ0657-02	Moisture	T	0.7742 g	10.0532 g	8.9499 g
580-16156-A-3	PSJ0657-03	Moisture	T	0.7881 g	6.4926 g	5.9358 g
580-16156-A-4	PSJ0657-04	Moisture	T	0.7968 g	9.1366 g	7.5212 g
580-16156-A-5	PSJ0657-05	Moisture	T	0.7963 g	11.3855 g	10.0227 g
580-16156-A-6	PSJ0657-06	Moisture	T	0.7772 g	11.5555 g	10.1638 g
580-16156-A-7	PSJ0657-07	Moisture	T	0.7729 g	12.0151 g	10.4905 g
580-16156-A-8	PSJ0657-08	Moisture	T	0.7849 g	9.5481 g	8.2418 g
580-16156-A-9	PSJ0657-09	Moisture	T	0.7868 g	9.4298 g	8.9113 g
580-16156-A-10	PSJ0657-10	Moisture	T	0.7660 g	10.1598 g	8.4352 g
580-16156-A-11	PSJ0657-11	Moisture	T	0.7945 g	11.8915 g	10.5185 g
580-16156-A-12	PSJ0657-12	Moisture	T	0.7752 g	5.6933 g	4.5099 g
580-16156-A-13	PSJ0657-13	Moisture	T	0.7814 g	5.1068 g	4.4009 g
580-16156-A-13~DU		Moisture	T	0.8153 g	6.6482 g	5.7569 g

Balance ID: SEA202 No Unit  
 Date samples were place in the oven: 10-30-09  
 Time samples were place in the oven: 13:49  
 Oven Temp when samples are put in oven: 103 Degrees C  
 Date samples were removed from oven: 11-2-09  
 Time Samples were removed from oven: 8:28  
 Oven Temp when samples removed from oven: 102 Degrees C  
 Oven ID: TAC306  
 ID number of the thermometer: 3A4823

# General Chemistry Worksheet

Batch Number: 580-53275

Date Open: Nov 02 2009 1:44PM

Method: 9060

Batch End: Nov 02 2009 8:06PM

Analyst: Teffeau, Kristine

Lab ID	Client ID	Method Chain	Basis	Initial weight/volume of sample	Final weight/volume of sample	CTOCLCS_00006	TOCS_CC/MS_00003
MB~580-53275/1		9060					
LCS~580-53275/2		9060				54.2 mg	
580-16156-A-1	PSJ0657-01	9060	T				
580-16156-A-1~DU		9060	T				
580-16156-A-1~DU		9060	T				
580-16156-A-1~MS		9060	T	51.8 mg	51.8 mg		50 uL
580-16156-A-1~MSD		9060	T	54.2 mg	54.2 mg		50 uL
580-16156-A-2	PSJ0657-02	9060	T				
580-16156-A-3	PSJ0657-03	9060	T				
580-16156-A-4	PSJ0657-04	9060	T				
580-16156-A-5	PSJ0657-05	9060	T				
580-16156-A-6	PSJ0657-06	9060	T				
580-16156-A-7	PSJ0657-07	9060	T				
580-16156-A-8	PSJ0657-08	9060	T				
580-16156-A-9	PSJ0657-09	9060	T				
580-16156-A-10	PSJ0657-10	9060	T				
580-16156-A-11	PSJ0657-11	9060	T				
580-16156-A-12	PSJ0657-12	9060	T				
580-16156-A-13	PSJ0657-13	9060	T				

HCl Vendor: NA

Lot # of hydrochloric acid: NA

# Shipping and Receiving Documents

SUBCONTRACT ORDER

TestAmerica Portland

PSJ0657

16156

SENDING LABORATORY:

TestAmerica Portland
9405 SW Nimbus Ave.
Beaverton, OR 97008
Phone: (503) 906-9200
Fax: (503) 906-9210
Project Manager: Darrell Auvil
Client: CH2M-Hill

RECEIVING LABORATORY:

TestAmerica Tacoma
5755 8th Street East
Tacoma, WA 98424
Phone : (253) 922-2310
Fax: 253-922-5047
Project Location: OR - OREGON
Receipt Temperature: °C Ice: Y / N

No EMF; 10%off CPI or Element pricing; revised bid 10-12-09 cmw; Level III DP required for soil and water.

Analysis Units Due Expires Interlab Price Surch Comments

Sample ID: PSJ0657-01 Soil Sampled: 10/19/09 11:30 -1
TOC-9060-SUB mg/kg 11/02/09 11/16/09 11:30 \$40.00 0% Sub to Tacoma, level 3 data package

Containers Supplied:
2 oz. jar (C)

Sample ID: PSJ0657-02 Soil Sampled: 10/19/09 11:40 -2
TOC-9060-SUB mg/kg 11/02/09 11/16/09 11:40 \$40.00 0% Sub to Tacoma, level 3 data package

Containers Supplied:
2 oz. jar (C)

Sample ID: PSJ0657-03 Soil Sampled: 10/19/09 11:50 -3
TOC-9060-SUB mg/kg 11/02/09 11/16/09 11:50 \$40.00 0% Sub to Tacoma, level 3 data package

Containers Supplied:
2 oz. jar (C)

Sample ID: PSJ0657-04 Soil Sampled: 10/19/09 11:20 -4
TOC-9060-SUB mg/kg 11/02/09 11/16/09 11:20 \$40.00 0% Sub to Tacoma, level 3 data package

Containers Supplied:
2 oz. jar (C)

Sample ID: PSJ0657-05 Soil Sampled: 10/19/09 11:00 -5
TOC-9060-SUB mg/kg 11/02/09 11/16/09 11:00 \$40.00 0% Sub to Tacoma, level 3 data package

Containers Supplied:
2 oz. jar (C)

Sample ID: PSJ0657-06 Soil Sampled: 10/19/09 11:00 -6
TOC-9060-SUB mg/kg 11/02/09 11/16/09 11:00 \$40.00 0% Sub to Tacoma, level 3 data package

Containers Supplied:
2 oz. jar (E)

Released By [Signature] 10/20/09

Received By [Signature] 10/21/09 9:45

SUBCONTRACT ORDER

TestAmerica Portland

PSJ0657

16156

Analysis	Units	Due	Expires	Interlab	Price Surch	Comments
<b>Sample ID: PSJ0657-07</b>						
TOC-9060-SUB	mg/kg	11/02/09	11/16/09 12:05	\$40.00	0%	Sub to Tacoma, level 3 data package
Containers Supplied: 2 oz. jar (C)						
<b>Sample ID: PSJ0657-08</b>						
TOC-9060-SUB	mg/kg	11/02/09	11/16/09 10:55	\$40.00	0%	Sub to Tacoma, level 3 data package
Containers Supplied: 2 oz. jar (C)						
<b>Sample ID: PSJ0657-09</b>						
TOC-9060-SUB	mg/kg	11/02/09	11/16/09 10:45	\$40.00	0%	Sub to Tacoma, level 3 data package
Containers Supplied: 2 oz. jar (C)						
<b>Sample ID: PSJ0657-10</b>						
TOC-9060-SUB	mg/kg	11/02/09	11/16/09 12:15	\$40.00	0%	Sub to Tacoma, level 3 data package
Containers Supplied: 2 oz. jar (C)						
<b>Sample ID: PSJ0657-11</b>						
TOC-9060-SUB	mg/kg	11/02/09	11/16/09 10:15	\$40.00	0%	Sub to Tacoma, level 3 data package
Containers Supplied: 2 oz. jar (C)						
<b>Sample ID: PSJ0657-12</b>						
TOC-9060-SUB	mg/kg	11/02/09	11/16/09 10:30	\$40.00	0%	Sub to Tacoma, level 3 data package
Containers Supplied: 2 oz. jar (C)						
<b>Sample ID: PSJ0657-13</b>						
TOC-9060-SUB	mg/kg	11/02/09	11/16/09 10:30	\$40.00	0%	Sub to Tacoma, level 3 data package
Containers Supplied: 2 oz. jar (C)						

@ Lab Temp. 0 TB 0.2  
 Cooler Dsc on pad Wet/Packs  
 Packing Bubble bag  
 w/ Co. Filler P.O.

# Login Sample Receipt Check List

Client: TestAmerica Laboratories, Inc

Job Number: 580-16156-1

**Login Number: 16156**  
**Creator: Gamble, Cathy**  
**List Number: 1**

**List Source: TestAmerica Tacoma**

Question	T / F / NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified	N/A	