

KING COUNTY ENVIRONMENTAL LABORATORY  
QUALITY ASSURANCE REVIEW

For

ESTUARINE SEDIMENT ANALYTICAL DATA

DUWAMISH/DIAGONAL SEDIMENT REMEDIATION PROJECT  
YEAR ONE, ENR CAP SEDIMENT CHARACTERIZATION  
MARCH 2006 SAMPLING EVENT

Prepared by:

Fritz Grothkopp 3/7/07  
Fritz Grothkopp  
Laboratory Project Manager

Reviewed by:

Colin Elliott 3/7/07  
Colin Elliott  
Quality Assurance Officer

November 2006

King County Environmental Laboratory  
322 West Ewing Street  
Seattle, Washington 98119-1507  
(206) 684-2300

## INTRODUCTION

This quality assurance (QA) narrative is intended to document the QA review conducted on the chemistry analyses performed for the Duwamish/Diagonal Sediment Remediation Project Year One, ENR Cap Sediment Characterization, March 2006 Sampling Event. The QA narrative is organized into the five sections listed below.

- General Comments
- Sample Collection
- Conventional Analyses
- Metal Chemistry
- Organic Chemistry

An overview of the approach used for the QA review is detailed in the *General Comments* section. Additional information specific to each analysis is included in the appropriate analytical section.

This QA review and narrative (specifically defined as QA1) have been conducted in accordance with guidelines established through the Puget Sound Dredged Disposal Analysis (PSDDA) program, Sediment Management Standards (WAC 173-204-610) and the Sediment Sampling and Analysis Appendix (SAPA), WDOE 2003. Other approaches incorporated in the QA review have been established through collaboration between the King County Environmental Laboratory (KC Laboratory) and the Washington State Department of Ecology (Ecology) Sediment Management Unit.

## GENERAL COMMENTS

### Scope of Samples Submitted

This QA review is associated with marine sediment samples collected on March 10, 2006 as part of the Duwamish/Diagonal Sediment Remediation Project Year One, ENR Cap Sediment Characterization, March 2006 Sampling Event.

Except where noted in the subcontracting sections of this QA review, all analyses have been conducted by the King County Environmental Laboratory (KCEL). Sediment analytical data are reported with associated data qualifiers and have undergone QA1 review, as summarized in this narrative report.

### Completeness

Completeness has been evaluated for this data submission and QA review by considering the following criteria:

- Comparing reported data to the planned project analyses summarized in Table 1.
- Compliance with storage conditions and holding times.
- Frequency of analysis of the complete set of quality control (QC) samples outlined in Table 2.

### Subcontracted Analyses

Analyses that have been subcontracted and the issues associated with these subcontracted analyses are noted in this narrative.

### Methods

Analytical methods are noted in the applicable analytical sections of this QA review.

### Target Lists

The reported target lists have been compared to the target analytes listed in *Table 1 - Marine Sediment Quality Standards Chemical Criteria* and *Table 3 - Puget Sound Marine Sediment Cleanup Screening Levels Chemical Criteria* contained in Chapter 173-204 WAC.

### Detection Limits

As part of the QA1 review, the detection limits reported for each parameter have been reviewed against the detection limit requirements defined in the SAP. When sample results have been reported as less than the Method Detection Limit (<MDL) and the associated detection limits are higher than those defined in the SAP, the particular samples and parameters have been identified and the circumstances explained. These summaries are included with each analytical section of this QA review.

The KC Laboratory reports include both the reporting detection limit (RDL) and the method detection limit (MDL) for each sample and parameter, where applicable. The RDL is defined as *the minimum concentration of a chemical constituent that can be reliably quantified* while the MDL is defined as *the minimum concentration of a chemical constituent that can be detected*. Some subcontracted laboratory data are available with an MDL only, in accordance with the subcontracting laboratory policies. For some methods the detection limits reported may vary from sample to sample depending on the amount of sample analyzed and any additional dilutions required.

### Storage Conditions and Holding Times

Storage conditions and holding times have been evaluated using guidelines defined in the 2003 SAPA. Preparation and analysis holding times for each method are summarized in each analytical section.

### **Method Blanks**

Method blank results have been used to evaluate the possible laboratory contamination of samples. Method blank results have been reviewed for the presence of analytes detected at or greater than the MDL. For analytes where the method blank response was at or above the MDL all associated sample results have been qualified with a B flag.

### **Standard Reference Materials**

Standard reference material (SRM) recoveries have been used to evaluate possible low or high analytical bias on a batch-specific basis. SRM analysis is included with metals and selected organic and conventional parameters (see Table 2). SRMs are purchased from outside agencies (NIST or NRCC) and must have a certified analyte value in order for a particular parameter to be evaluated. All associated sample results for the certified analytes are flagged if the SRM recoveries are unacceptable. Associated sample results are flagged with an L whenever recoveries are measured above the acceptance limits and are flagged with a G when recoveries are measured below the acceptance limits.

### **Matrix Spikes**

Matrix spike recoveries have been used to evaluate possible low or high analytical bias on a matrix and batch-specific basis. Matrix spikes are analyzed with metals, organics and selected conventional parameters (see Table 2). Associated sample results are flagged with an L whenever recoveries are measured above the acceptance limits and are flagged with a G when recoveries are measured below the acceptance limits (but at or above 10%). Associated results are flagged with an X whenever recoveries are less than 10%.

For Metals only, matrix spike recovery results are used to qualify sample data only when the sample levels in the spiked sample are less than 4 times the spiked concentration. High sample levels relative to the spiked concentration can compromise the measurement of accurate spike recoveries.

### **Laboratory Replicate Samples**

Replicate analysis (laboratory duplicates or triplicates) is used as an indicator of method precision and is used to qualify data on an analyte and batch-specific basis. Not all replicate data are used, however, as an indicator for data qualification. Only sets of replicate results which include at least one result greater than the RDL are considered for data qualification. These guidelines have been used to account for the fact that precision obtained near the detection limit is not representative of precision obtained throughout the entire analytical range. Associated results are flagged with an E whenever the measured precision is unacceptable (greater than the acceptance limit).

### **Surrogates**

Surrogate recoveries have been used to evaluate possible low or high analytical bias on a sample-specific basis. Surrogates are only analyzed for organic parameters. Individual sample results are flagged with an L whenever recoveries are measured above the acceptance limits and are flagged with a G when recoveries are measured below the acceptance limits (but at or above 10%). Associated results are flagged with an X whenever recoveries are less than 10%.

### **Data Qualifiers**

The data qualification guidelines described above has been summarized in Table 3. This table conforms to the guidelines in the current SAPA and also shows the data qualifiers used for the Sedqual electronic data format.

### **Units and Significant Figures**

Units and the reporting basis vary, depending on the parameter and are explained in the analytical sections below. Data generally have been reported to three significant figures if above the RDL and two significant figures if equal to or below the RDL.



## SAMPLE COLLECTION

This section describes sampling activities associated with the collection of eight grab marine sediment samples in March 10, 2006. These samples were collected for the Duwamish/Diagonal Sediment Remediation Program.

### **Sampling Locations and Station Positioning**

Sampling locations (stations) were selected and the prescribed coordinates determined prior to field activities. The prescribed station coordinates are presented in the following table. The actual sampling coordinates could not be established during sampling activities (see below). All station coordinates are recorded in both latitude/longitude and state plane coordinate system North American Datum 1983 (NAD83). Only the state plane coordinate data is presented in the following table.

**Duwamish/Diagonal Sediment Sampling  
Actual and Prescribed Sample Coordinates, March 2005**

Lab Number	Station	Prescribed Northing	Easting	Actual Northing	Easting
L38327-1	DUD_3C	208144	1267146	NA	NA
L38327-2	DUD_4C, AREP	208239	1267116	NA	NA
L38327-3	DUD_4C, FREP	208239	1267116	NA	NA
L38327-4	DUD_5C	208263	1267025	NA	NA
L38327-5	DUD_6C	208501	1266950	NA	NA
L38327-6	DUD_7C	208486	1266902	NA	NA
L38327-7	DUD_14C	208002	1267193	NA	NA
L38327-8	DUD_15C	207968	1267057	NA	NA

**Sample Description Table**

Lab Number	Station	Sample Collection	Sediment Sampling Depth	Sampling Notes
L38327-1	DUD_3C	Surface Grabs	10 cm	Diver Hand Core
L38327-2	DUD_4C	Surface Grabs	10 cm	Diver Hand Core
L38327-3	DUD_4C	Surface Grabs (field replicate)	10 cm	Diver Hand Core
L38327-4	DUD_5C	Surface Grabs	10 cm	Diver Hand Core
L38327-5	DUD_6C	Surface Grabs	10 cm	Diver Hand Core
L38327-6	DUD_7C	Surface Grabs	10 cm	Diver Hand Core
L38327-7	DUD_14C	Surface Grabs	10 cm	Diver Hand Core
L38327-8	DUD_15C	Surface Grabs	10 cm	Diver Hand Core

Sediment grab samples were collected by divers from Anchor Environmental, a contractor to the county for Duwamish Diagonal Sediment Remediation activities. Each sample was collected using a custom hand-held coring device. The boat was maintained on-station while the diver

collected the core sample immediately below the boat. It would be expected that the cores were collected within 6 meters of the prescribed coordinates.

For the chemistry analyses, single diver collected core samples were obtained from each station. Coordinates for each grab were not included in the previous table because it was not possible to ascertain the exact location of the diver-collected grab sample.

#### **Sample Collection and Handling**

A total of eight marine sediment grab samples were collected on March 10, 2006 from the Duwamish/Diagonal Sediment Remediation Program site. The samples were collected from the top 10 cm (see table above) for the chemistry aliquot. The top 10 cm of sediment was collected using stainless steel diver-actuated coring devices. The circular core sampler is 6" in diameter and nominally collects 10 cm of sediment. Water depth at the seven subtidal cap sample stations ranged between 3 to 9 meters (not corrected for tide). Ten cm of sediment was recovered in each grab.

Samples consisted of sediment aliquots collected from one individual grab at each station. The entire contents of the diver-collected sample were placed into a stainless-steel bowl. After collecting the grab, the sediment sample was thoroughly homogenized and sample aliquots split out into pre-labeled containers. Sample containers were supplied by the King County Environmental Laboratory and were pre-cleaned according to analytical specifications.

Samples were stored in ice-filled coolers from the time of collection until delivery to the King County Environmental Laboratory. Samples were delivered under chain-of-custody and were maintained as such throughout the analytical process. Samples were stored frozen (-18°C) by the laboratory until analysis with the exception of samples for particle size distribution (PSD) analysis. PSD samples were stored refrigerated at approximately 4°C. A more complete description of sample handling and storage can be found in each analytical chemistry section of this narrative.

Copies of chain-of-custody forms and field notes are included as an appendix to this QA review narrative.

## CONVENTIONAL ANALYSES

### Completeness

Conventional data are reported for all samples and parameters summarized in Table 1. These samples were analyzed in association with the complete set of QC samples outlined in Table 2.

### Subcontracted Analyses

All analyses were performed at the King County Environmental Laboratory.

### Methods

PSD analysis was performed in accordance with ASTM and Puget Sound Protocols methodologies (*Recommended Protocols for Measuring Conventional Sediment Variables in Puget Sound* - page 9 - PSEP, 1986). TOC analysis was performed in accordance with SM5310-B and EPA 9060. Total solids analyses were performed in accordance with SM2540-G.

### Detection Limits

The detection limits (MDLs) reported for Conventional parameters are all within the requirements defined in the SAP, except for the following:

Parameter	Sample ID	SAP MDL	Reported MDL	Reason for higher MDL Value
p+5.00	L38327-all	0.1	0.5	MDL was updated after the SAP was completed.
p+6.00	L38327-all	0.1	0.5	MDL was updated after the SAP was completed.
p+7.00	L38327-all	0.1	0.5	MDL was updated after the SAP was completed.
p+8.00	L38327-all	0.1	0.5	MDL was updated after the SAP was completed.
p+9.00	L38327-all	0.1	0.5	MDL was updated after the SAP was completed.
p+10.00 (equal or more than)	L38327-all	0.1	0.5	MDL was updated after the SAP was completed.

### Reporting Requirements (significant figures, units, basis and qualifiers)

For analyses performed at the KC Laboratory, data are reported in accordance with laboratory policy at the time the data were generated. Data are reported to three significant figures for results greater than the RDL and two significant figures for results equal to or less than the RDL. For results reported with less than two or three significant figures, significant zeroes are implied. This may not apply to subcontracted data.

In the Comprehensive Report attached, Conventional parameters are reported in mg/Kg, dry weight basis, for TOC. Particle Size Distribution (PSD) and Total Solids are reported in percent, wet weight basis. For all parameters, the MDL and RDL values for each individual sample are reported in the same units and basis as the sample result. Any result measured at less than the MDL or less than the RDL, a <MDL or <RDL qualifier is added, respectively. Other qualifiers added are based on QA/QC failures and are individually explained in this narrative.

### Storage Conditions and Holding Times

Sample storage conditions and holding times have been evaluated using guidelines established in the SAPA (WDOE, 2003). The dates and holding time criteria for the actual storage conditions used for conventional analyses are listed in the table below.

Parameter	Lab ID#	Date Collected	Prep Date	Date Analyzed	Sample Holding Time	Extract Holding Time
Particle Size Distribution	L38327-1 to 8	10-Mar-2006	17-Apr-2006	18-Apr-2006	6 Months at 4°C	NA
Total Organic Carbon	L38327-1 to 8	10-Mar-2006	11-Apr-2006	20-Apr-2006	6 months at -18°C	6 months at -18°C
Total Solids	L38327-1 to 8	10-Mar-2006	11-Apr-2006	11-Apr-2006	6 months at -18°C	NA

Sample storage conditions and holding times were met for all samples in this data submission.

#### **Method Blanks**

Method blanks were analyzed in connection with total solids/total organic carbon analyses. All method blanks results were less than the MDL.

#### **Standard Reference Materials**

An SRM (Buffalo River Sediment) was analyzed in connection with TOC analysis. The percent recovery for the SRM analysis was within the 80 to 120% QC limits.

#### **Matrix Spikes**

The matrix spike recovery for TOC was within the 75 to 125% acceptance limits. The acceptance limits are not applicable when the unspiked sample level is 4 times or greater than the spiked concentration.

#### **Laboratory Replicate Samples**

A set of laboratory triplicates was analyzed for each of the conventional parameters. The percent relative standard deviation (%RSD) for each triplicate set was less than or equal to the 20% acceptance limit, except for the following: Sample L38327-1 was analyzed in triplicate for PSD. The clay category had a %RSD of 33%, outside the control limit of 20%. As a result, for samples L38327-1 to -8, the clay category was 'E' qualified to indicate estimate values were reported. No further corrective action was taken for these samples since the clay category represented less than 10% of the total PSD of L38327-1. In our opinion, the quality of the data is not affected since the clay category represents a small fraction of the QC sample's PSD. Inherent variability in this method at low levels resulting in high %RSD values can be expected and does not necessarily indicate poor precision or poor method performance. However, the high %RSD does suggest that the clay category represented too small a fraction of the sample's total PSD to be considered appropriate for evaluation against a 20% control limit.

## METALS CHEMISTRY

### Completeness

Metal chemistry data are reported for samples listed in Table 1 below. These samples were analyzed for mercury and other metals in association with the complete set of QC samples outlined in Table 2.

### Subcontracted Analyses

All analyses were performed at the King County Environmental Laboratory.

### Methods

Mercury analysis was performed in accordance with EPA Method 7471A. Analysis for other metals was performed in accordance with EPA method 3050/6010.

### Target List

The reported target list includes all metals specified in Table 1. Additional metals have been reported as available.

### Detection Limits

The detection limits (MDLs) reported for Metals parameters are all within the requirements defined in the SAP.

### Reporting Requirements (significant figures, units, basis and qualifiers)

For analyses performed at the KC Laboratory, data are reported in accordance with laboratory policy at the time the data were generated. Data are reported to three significant figures for results greater than the RDL and two significant figures for results equal to or less than the RDL. For results reported with less than two or three significant figures, significant zeroes are implied.

In the Comprehensive Report attached, Metals parameters are reported in mg/Kg, dry weight basis, for all elements. The MDL and RDL values for each individual sample are reported in the same units and basis as the sample result. Any result measured at less than the MDL or less than the RDL, a <MDL or <RDL qualifier is added, respectively. Other qualifiers added are based on QA/QC failures and are individually explained in this narrative.

### Storage Conditions and Holding Times

Sample storage conditions and holding times have been evaluated using guidelines established in the SAPA (WDOE 2003). The dates and holding time criteria for the actual storage conditions used for metals analyses are listed in the table below.

Parameter	Lab ID#	Date Collected	Date Digested/Extracted	Date Analyzed	Sample Holding Time	Digestate/Extract Holding Time
Total Metals	L38327-1 through 8	03/10/06	3/14/06	3/15/06	2 Years at -18°C	6 months
Total Mercury	L38327-1 through 8	03/10/06	3/13/06	3/16/06	28 days at -18°C	NA

Sample storage conditions and holding times were met for all samples in this data submission.

### Method Blanks

Method blanks were analyzed for all metals parameters and all method blank results were less than the MDL.

### Standard Reference Materials

The SRM analyzed in association with samples included in this data submission is PACS-2. This SRM is not certified for Silver, Aluminum, Beryllium, Iron or Thallium. Acceptance limits for the certified elements that are above the MDL have been developed using historical lab data since the certified SRM values and limits were determined with different analysis techniques. SRM recoveries outside these lab-defined limits indicate the method has not performed as expected and the sample data have been flagged to indicate the expected bias.

All metals SRM recoveries were within the lab-defined limits.

Note: the acceptance limits of <120% in the SAP are no longer applicable.

#### **Matrix Spikes**

Matrix Spike recoveries were within the acceptance limits of 75% to 125% for all applicable metals parameters except for the following. The acceptance limits are not applicable for Iron and aluminum since the unspiked sample level is 4 times or greater than the spiked concentration. The reported matrix spike recovery of 44% for antimony is less than the 75% QC limit. Antimony results for all samples in this data submission have been qualified with the *G* flag.

#### **Laboratory Replicate Samples**

A laboratory duplicate sample(s) was analyzed for each metals parameter. The relative percent differences (RPDs) for the laboratory duplicate for all metals at or above the RDL were less than or equal to the acceptance limit of 20%, except for the following: The reported RPD recovery of for silver of 123% is greater than the 20% QC limit. Silver results for all samples in this data submission have been qualified with the *E* flag.

## ORGANIC CHEMISTRY

### Completeness

Organics data are reported for all samples and parameters summarized in Table 1. These samples were analyzed in association with the complete set of QC samples outlined in Table 2.

### Methods

BNA analysis was performed in accordance with EPA method 8270. PCB and chlorinated pesticides analysis was performed in accordance with EPA methods 8082 and 8081A.

### Target List

The reported BNA target list includes all compounds specified in *Table 1 - Marine Sediment Quality Standards Chemical Criteria* and *Table 3 - Puget Sound Marine Sediment Cleanup Screening Levels Chemical Criteria* contained in Chapter 173-204 WAC with the exception of benzo(j)fluoranthene. The KC Laboratory has verified that analytical conditions are sufficient to calculate a total benzofluoranthene result using the reported *b* and *k* isomers.

Reported PCB data include Aroclors 1016, 1221, 1232, 1242, 1248, 1254, and 1260.

### Detection Limits, Units and Significant Figures

The detection limits (MDLs) reported for Organics parameters are all within the requirements defined in the SAP, except for the following:

Parameter (in ug/Kg)	Sample ID	SAP MDL	Reported MDL	Reason for higher MDL Value
1,4-Dichlorobenzene	L38327-1 to 8	0.26	0.31 to 0.34	Elevated MDL due to matrix interferences
Benzoic Acid	L38327- 1 to 8	12	15 to 16	Elevated MDL due to matrix interferences
Coprostanol	L38327- 1 to 8	28	61 to 67	Elevated MDL due to matrix interferences
Pentachlorophenol	L38327- 1 to 8	10	15 to 16	Elevated MDL due to matrix interferences
4,4'-DDD	L38327- 1 to 8	0.67	1.2 to 1.3	Prep method was altered for this set of samples
4,4'-DDE	L38327- 1 to 8	0.67	1.2 to 1.3	Prep method was altered for this set of samples
4,4'-DDT	L38327- 1 to 8	0.67	1.2 to 1.3	Prep method was altered for this set of samples
Aldrin	L38327- 1 to 8	0.67	1.2 to 1.3	Prep method was altered for this set of samples
Aroclor 1016	L38327-1,3,5	4	4.7, 4.1, 4.3	See "Additional QA issues" sub-section at the end of the organic section.
Aroclor 1232	L38327-1,3	8	9.6, 12	See "Additional QA issues" sub-section at the end of the organic section.
Aroclor 1242	L38327-1,2,3,4,5,7	4	7.0 to 13	See "Additional QA issues" sub-section at the end of the organic section.
Dieldrin	L38327- 1 to 8	0.67	1.2 to 1.3	Prep method was altered for this set of samples
Endosulfan I	L38327- 1 to 8	0.67	1.2 to 1.3	Prep method was altered for this set of samples

Endosulfan II	L38327- 1 to 8	0.67	1.2 to 1.3	Prep method was altered for this set of samples
Endosulfan Sulfate	L38327- 1 to 8	0.67	1.2 to 1.3	Prep method was altered for this set of samples
Endrin	L38327- 1 to 8	0.67	1.2 to 1.3	Prep method was altered for this set of samples
Endrin Aldehyde	L38327- 1 to 8	0.67	2.3 to 2.4	Prep method was altered for this set of samples
Methoxychlor	L38327- 1 to 8	3.3	5.8 to 6.2	Prep method was altered for this set of samples
Toxaphene	L38327- 1 to 8	6.7	12 to 13	Prep method was altered for this set of samples

For Non-ionizable Organic parameters, all parameters meet the SAP requirements, when converted to mg/Kg TOC.

#### **Reporting Requirements (significant figures, units, basis and qualifiers)**

For analyses performed at the KC Laboratory, data are reported in accordance with laboratory policy at the time the data were generated. Data are reported to three significant figures for results greater than the RDL and two significant figures for results equal to or less than the RDL. For results reported with less than two or three significant figures, significant zeroes are implied. This may not apply to subcontracted data.

In the Comprehensive Report attached, Organics parameters are reported in ug/Kg, dry weight basis. In this report format, non-ionizable organic parameters have not been converted to mg/Kg TOC. For all parameters, the MDL and RDL values for each individual sample are reported in the same units and basis as the sample result. Any result measured at less than the MDL or less than the RDL, a <MDL or <RDL qualifier is added, respectively. Other qualifiers added are based on QA/QC failures and are individually explained in this narrative.

#### **Storage Conditions and Holding Times**

Sample storage conditions and holding times have been evaluated using guidelines established in the SAPA (WDOE, 2003). The dates and holding time criteria for the actual storage conditions used for organics analyses are listed in the table below.

Parameter	Lab ID	Date Collected	Date Extracted	Date Analyzed	Sample Holding Time	Extract Holding Time
BNAs	L38327-1 to 8	10-Mar-06	28-Mar-06	13, 26-Apr-06	1 year at -18°C	40 days at 4°C
Chlorinated Pesticides	L38327-1 to 8	10-Mar-06	31-Mar-06	10, 11, 17-Apr-06	1 year at -18°C	40 days at 4°C
PCB	L38327-1 to 8	10-Mar-06	31-Mar-06	12-Apr-06	1 year at -18°C	40 days at 4°C

Sample storage conditions and holding times were met for all samples in this data submission.

#### **Method Blanks**

Method blanks were analyzed for all Organics parameters and all method blank results were less than the MDL, except as noted below:

##### **1. BNAs**

The method blank analyzed with BNAs for L38327 had a result above the MDL for Di-n-Butyl Phthalate (6 ug/Kg, wet weight). Sample results for Di-n-Butyl Phthalate for that batch (L38327) have been qualified with the B flag. All Di-n-Butyl Phthalate results for these samples must be treated as estimated values.



### **Surrogate Recoveries**

Surrogate recovery acceptance limits for sediment samples have been developed based on historical lab performance using the current analytical methods. The exceptions to this are the TPH methods (NWTPH-Dx, -Gx and -HCID) where method-defined surrogate acceptance limits must be applied. Recoveries measured above the acceptance limits are flagged with an L. Recoveries measured below the acceptance limits (but at or above 10%) are flagged with a G. Recoveries below 10% are flagged with an X. Surrogate recovery summaries for each method are shown below.

#### **1. BNAs**

For BNA sample data, surrogate recoveries are evaluated separately for the acid and base/neutral fractions. Within each fraction, 2 or more surrogates must be outside the acceptance limits in order to qualify the associated sample data. All BNA surrogates for L38327 were within acceptable limits.

#### **2. PCBs**

Sample data are qualified when individual surrogate recoveries are outside lab-specific acceptance limits. For each set of analyses, all surrogate recoveries were within the lab-specific acceptance limits for all samples in this data submission.

#### **3. Chlorinated Pesticides**

Sample data are qualified when individual surrogate recoveries are outside lab-specific acceptance limits. For each set of analyses, all surrogate recoveries were within the lab-specific acceptance limits for all samples in this data submission.

### **Standard Reference Materials (SRMs)**

The SRM results associated with these samples are summarized below, according to the analysis method. Acceptance limits for the certified parameters reported in this data set have been developed using historical lab data. SRM recoveries outside these lab-defined limits indicate the method has not performed as expected and the associated sample data have been flagged.

#### **1. BNAs**

The sediment SRM analyzed in association with the reported BNA results is 1944, certified by the National Institute of Standards and Technology (NIST). The certified organics parameters in SRM 1944 are only a partial list of all the BNA compounds reported in this analysis. All measured recoveries for this SRM were within acceptance limits.

#### **2. PCBs and Chlorinated Pesticides**

The sediment SRM analyzed in association with the reported Chlorinated Pesticides results is 1944, certified by the NIST. SRM 1944 contains certified levels of DDT and alpha-Chlordane. The sediment SRM analyzed in association with the reported PCB results is HS-2, certified by the National Research Council of Canada. SRM HS-2 contains Aroclor 1254. All measured recoveries for these SRMs were within acceptance limits except as shown in the table below:

Compound	L38327	
	% Recovery	Flag
DDT	263	L

### **Matrix Spikes**

Matrix Spikes have been analyzed for each method. Recovery acceptance limits for each parameter in sediment have been developed based on historical lab performance using the current analytical methods. The acceptance limits are not applicable when the unspiked sample level was 4 times or greater than the spiked concentration. When applicable, matrix spike

recoveries outside these lab-defined limits indicate the method has not performed as expected and the associated sample data have been flagged.

**1. BNAs**

Each of the reported BNA compounds was included in the matrix spike and measured recoveries for each were within their acceptance limits.

**2. PCBs and Chlorinated Pesticides**

Each of the reported Pesticide compounds was included in the Chlorinated Pesticide matrix spike. Aroclor 1260 and 1016 only are used as the spiking parameters for PCB matrix spike. The measured recovery for each spiked parameter was within their acceptance limits.

**Laboratory Replicate Samples**

A laboratory duplicate sample(s) was analyzed for each Organics parameter. The relative percent differences (RPDs) for laboratory duplicate for all parameters at or above the RDL were less than or equal to the acceptance limit of 35%.

**Additional QA Issues:**

**PCB Analysis:**

PCB data reported for this set of samples include numeric values for only those Aroclors that could be positively identified in each sample and were measured above the detection limit. Identification of Aroclors 1016, 1232 and 1242 was not possible for samples L38327-1 to -5, -7, -8 due to the overlap of the components from Aroclors 1248, 1254 and 1260. For those Aroclors where this overlap has occurred, the result is reported as <MDL with elevated MDL and RDL values. The elevated MDL represents the maximum amount that would have been reported for that Aroclor had it been positively identified. The RDL value has also been elevated by the same proportion.

The table below lists the samples and affected Aroclors.

Lab Sample Number	PCB 1016	PCB 1232	PCB 1242
L38327-1	x	x	x
L38327-2	x		x
L38327-3	x	x	x
L38327-4	x	x	x
L38327-5	x	x	x
L38327-7	x	x	x
L38327-8			x

TABLE 1  
SEDIMENT SAMPLE INVENTORY

Sample	Locator / Description (see SAP)	PSD	Solids	TOC	Metals <sup>1</sup>	BNAs <sup>2</sup>	Pest/ PCBs	Comments
L38327-1	DUD_3C	X	X	X	X	X	X	
L38327-2	DUD_4C	X	X	X	X	X	X	
L38327-3	DUD_4C	X	X	X	X	X	X	L38327-3 is a field replicate
L38327-4	DUD_5C	X	X	X	X	X	X	
L38327-5	DUD_6C	X	X	X	X	X	X	
L38327-6	DUD_7C	X	X	X	X	X	X	
L38327-7	DUD_14C	X	X	X	X	X	X	
L38327-8	DUD_15C	X	X	X	X	X	X	

<sup>1</sup> Metals = Hg, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, Tl, Zn, Fe, Al,

<sup>2</sup> BNAs = includes Chlorobenzenes

**TABLE 2**  
**QC SAMPLE FREQUENCY FOR SEDIMENT CHEMICAL AND PHYSICAL PARAMETERS**

<b>Parameter</b>	<b>Method Blank</b>	<b>Duplicate</b>	<b>Triplicate</b>	<b>Matrix Spike</b>	<b>SRM</b>	<b>Surrogates</b>
PSD	No	See Triplicate	5% minimum, 1 per QC batch	No	No	No
Total Solids	1 per QC batch	See Triplicate	5% minimum, 1 per QC batch	No	No	No
TOC	1 per QC batch	See Triplicate	5% minimum, 1 per QC batch	5% minimum, 1 per QC batch	1 per QC batch	No
Metals	1 per QC batch	5% minimum, 1 per QC batch	No	5% minimum, 1 per QC batch	1 per QC batch	No
BNAs	1 per QC batch	5% minimum, 1 per QC batch	No	5% minimum, 1 per QC batch	1 per QC batch	Yes
PCBs/Chlorinated Pesticides	1 per QC batch	5% minimum, 1 per QC batch	No	5% minimum, 1 per QC batch	1 per QC batch	Yes

**TABLE 3 - SUMMARY OF SEDIMENT DATA QUALIFIERS**

Condition to Qualify	King County Data Qualifier	Sedqual Data Qualifier	Organic QC Limits	Metal QC Limits	Conventional QC Limits	Comment
very low matrix spike recovery	X	X	< 10 %	< 10 %	< 10 %	
low matrix spike recovery	G	G	Compound specific	< 75%	< 75% *	
high matrix spike recovery	L	L	Compound specific	>125%	>125% *	
low standard reference material recovery	G	G	Compound and SRM specific	Element and SRM specific	< 80%	
high standard reference material recovery	L	L	Compound and SRM specific	Element and SRM specific	>120%	
high duplicate relative percent difference	E	E	>35 %	>20%	NA	for organics and metals
high triplicate relative standard deviation	E	E	NA	NA	> 20%	for conventionals
less than the reporting detection limit	<RDL**	T	NA	NA	NA	
less than the method detection limit	<MDL	U	NA	NA	NA	
contamination detected in method blank	B	B	>=MDL	>=MDL	>=MDL	
biased data based on very low surrogate recoveries	X	X	any surrogate <10%	NA	NA	
biased data based on low surrogate recoveries	G	G	Surrogate specific	NA	NA	At least 2 surrogates < limit for BNAs
biased data based on high surrogate recoveries	L	L	Surrogate specific	NA	NA	At least 2 surrogates > limit for BNAs
rejected - unusable for all purposes	R	J or Q	NA	NA	NA	
a sample handling criteria has not been met	H	H	NA	NA	NA	container, hold time, preservation

- 65% to 135% for Total Sulfides.
- \*\* For Sedqual files, <MDL uses a "U" flag, <RDL is not flagged since the RDL value is not included in the Sedqual templates generated by King County.

# King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

Locator: DUD\_3C  
 Descrip: CLEANUP AREA PERIM  
 Sampled: Mar 10, 2006  
 Lab ID: L38327-1  
 Matrix: SALTWTTRSED  
 % Solids: 86.8

Locator: DUD\_4C  
 Descrip: CLEANUP AREA PERIM  
 Sampled: Mar 10, 2006  
 Lab ID: L38327-2  
 Matrix: SALTWTTRSED  
 % Solids: 82

Locator: DUD\_4C  
 Descrip: CLEANUP AREA PERIM  
 Sampled: Mar 10, 2006  
 Lab ID: L38327-3  
 Matrix: SALTWTTRSED  
 % Solids: 81.1

Locator: DUD\_5C  
 Descrip: CLEANUP AREA PERIM  
 Sampled: Mar 10, 2006  
 Lab ID: L38327-4  
 Matrix: SALTWTTRSED  
 % Solids: 86.1

## Parameters

### COMBINED LABS

M=CV ASTM D422(03-02-005-001)

Value	Qual	MDL	RDL	Units
2.5	E	0.5	1	%
6.3		0.5	1	%
54.1		0.1	1	%
4.4		0.1	1	%
6.2		0.1	1	%
1.3		0.5	1	%
18.3		0.1	1	%
11		0.1	1	%
1.9		0.1	1	%
1.9		0.5	1	%
0.6	<RDL	0.5	1	%
1.3		0.5	1	%
	<MDL	0.5	1	%
1.3		0.5	1	%
23.1		0.1	1	%
17.3		0.1	1	%
13.7		0.1	1	%
41.9		0.1	1	%
3.8		0.5	1	%

M=CV EPA8060-PSEP6 (03-04-002-003)

Total Organic Carbon	3150	670	1320	mg/Kg
M=CV SM2540-G (03-01-007-002)				
Total Solids *	86.8	0.005	0.01	%
M=ES NONE				

Field Personnel	Eric Parker, Anchor			none
Sample Function				
Sample Start Time *	930			hr
Sampling Method *	30010			none
Sediment Sampling Depth *	10			cm
Sediment Sampling Range *	0 - 10			cm
Sediment Type	23N40			none

M=MT EPA 7471A (06-01-004-003)

Mercury, Total, CVAA	0.035	<RDL	0.023	0.234	mg/Kg
Aluminum, Total, ICP	7780		5.8	28.6	mg/Kg
Antimony, Total, ICP		<MDL	1.7	8.57	mg/Kg
Arsenic, Total, ICP	2.9	<RDL	2.9	14.3	mg/Kg
Beryllium, Total, ICP	0.098	<RDL	0.058	0.286	mg/Kg
Cadmium, Total, ICP		<MDL	0.17	0.857	mg/Kg
Chromium, Total, ICP	12.2		0.29	1.43	mg/Kg
Copper, Total, ICP	27.9		0.23	1.14	mg/Kg

Value	Qual	MDL	RDL	Units
2.3	E	0.5	1	%
4		0.5	1	%
31.1		0.1	1	%
4.5		0.1	1	%
7.8		0.1	1	%
1.2		0.5	1	%
28.8		0.1	1	%
19.1		0.1	1	%
2.7		0.1	1	%
0.6	<RDL	0.5	1	%
0.6	<RDL	0.5	1	%
0.6	<RDL	0.5	1	%
	<MDL	0.5	1	%
1.2		0.5	1	%
13.1		0.1	1	%
8.8		0.1	1	%
9.2		0.1	1	%
62.8		0.1	1	%
1.7		0.5	1	%

Total Organic Carbon	1940	500	989	mg/Kg
M=CV SM2540-G (03-01-007-002)				
Total Solids *	82	0.005	0.01	%
M=ES NONE				

Field Personnel	Eric Parker, Anchor			none
Sample Function				
Sample Start Time *	1020			hr
Sampling Method *	30010			none
Sediment Sampling Depth *	10			cm
Sediment Sampling Range *	0 - 10			cm
Sediment Type	23N40			none

Mercury, Total, CVAA	0.035	<RDL	0.024	0.239	mg/Kg
Aluminum, Total, ICP	9440		5.9	29.4	mg/Kg
Antimony, Total, ICP		<MDL	1.7	8.82	mg/Kg
Arsenic, Total, ICP	0.12	<RDL	0.059	0.294	mg/Kg
Beryllium, Total, ICP		<MDL	0.17	0.882	mg/Kg
Cadmium, Total, ICP	14.3		0.29	1.48	mg/Kg
Chromium, Total, ICP	31.1		0.23	1.18	mg/Kg

Value	Qual	MDL	RDL	Units
4.7	E	0.5	1	%
4.7		0.5	1	%
28.6		0.1	1	%
4.2		0.1	1	%
7.6		0.1	1	%
1.8		0.5	1	%
31.3		0.1	1	%
20.2		0.1	1	%
2.7		0.1	1	%
	<MDL	0.5	1	%
	<MDL	0.5	1	%
	<MDL	0.5	1	%
	<MDL	0.5	1	%
2.9		0.5	1	%
14.1		0.1	1	%
8		0.1	1	%
6.4		0.1	1	%
66		0.1	1	%
	<MDL	0.5	1	%

Total Organic Carbon	1620	510	1000	mg/Kg
M=CV SM2540-G (03-01-007-002)				
Total Solids *	81.1	0.005	0.01	%
M=ES NONE				

Field Personnel	Eric Parker, Anchor			none
Sample Function				
Sample Start Time *	1020			hr
Sampling Method *	30010			none
Sediment Sampling Depth *	10			cm
Sediment Sampling Range *	0 - 10			cm
Sediment Type	23N40			none

Mercury, Total, CVAA	0.028	<RDL	0.025	0.242	mg/Kg
Aluminum, Total, ICP	7470		6	30.2	mg/Kg
Antimony, Total, ICP		<MDL	1.8	9.05	mg/Kg
Arsenic, Total, ICP		<MDL	3	15	mg/Kg
Beryllium, Total, ICP	0.08	<RDL	0.06	0.302	mg/Kg
Cadmium, Total, ICP		<MDL	0.18	0.905	mg/Kg
Chromium, Total, ICP	13.1		0.3	1.5	mg/Kg
Copper, Total, ICP	27.3		0.25	1.21	mg/Kg

Value	Qual	MDL	RDL	Units
5.2	E	0.5	1	%
11.7		0.5	1	%
56.3		0.1	1	%
3.7		0.1	1	%
4.9		0.1	1	%
2.6		0.5	1	%
13.2		0.1	1	%
8.8		0.1	1	%
2.3		0.1	1	%
4.6		0.5	1	%
1.3		0.5	1	%
0.7	<RDL	0.5	1	%
	<MDL	0.5	1	%
2.6		0.5	1	%
17.4		0.1	1	%
14.2		0.1	1	%
24.7		0.1	1	%
32.8		0.1	1	%
6.5		0.5	1	%

Total Organic Carbon	5900	780	1560	mg/Kg
M=CV SM2540-G (03-01-007-002)				
Total Solids *	86.1	0.005	0.01	%
M=ES NONE				

Field Personnel	Eric Parker, Anchor			none
Sample Function				
Sample Start Time *	1120			hr
Sampling Method *	30010			none
Sediment Sampling Depth *	10			cm
Sediment Sampling Range *	0 - 10			cm
Sediment Type	23N40			none

Mercury, Total, CVAA	0.336		0.022	0.224	mg/Kg
Aluminum, Total, ICP	8840		5.7	28.6	mg/Kg
Antimony, Total, ICP		<MDL	1.7	8.56	mg/Kg
Arsenic, Total, ICP	3.5	<RDL	2.9	14.3	mg/Kg
Beryllium, Total, ICP	0.11	<RDL	0.057	0.286	mg/Kg
Cadmium, Total, ICP		<MDL	0.17	0.856	mg/Kg
Chromium, Total, ICP	14.3		0.29	1.43	mg/Kg
Copper, Total, ICP	29.5		0.23	1.14	mg/Kg

# King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

**Locator:** DUD\_3C  
**Descrip:** CLEANUP AREA PERIM  
**Sampled:** Mar 10, 2006  
**Lab ID:** L38327-1  
**Matrix:** SALTWTRSED  
**% Solids:** 86.8

**Locator:** DUD\_4C  
**Descrip:** CLEANUP AREA PERIM  
**Sampled:** Mar 10, 2006  
**Lab ID:** L38327-2  
**Matrix:** SALTWTRSED  
**% Solids:** 82

**Locator:** DUD\_4C  
**Descrip:** CLEANUP AREA PERIM  
**Sampled:** Mar 10, 2006  
**Lab ID:** L38327-3  
**Matrix:** SALTWTRSED  
**% Solids:** 81.1

**Locator:** DUD\_5C  
**Descrip:** CLEANUP AREA PERIM  
**Sampled:** Mar 10, 2006  
**Lab ID:** L38327-4  
**Matrix:** SALTWTRSED  
**% Solids:** 86.1

## Parameters

### COMBINED LABS

Parameters	DUD_3C				DUD_4C				DUD_4C				DUD_5C			
	Value	Qual	MDL	RD L	Units	Value	Qual	MDL	RD L	Units	Value	Qual	MDL	RD L	Units	Value
Iron, Total, ICP	13600		2.9	14.3 mg/Kg		16600		2.9	14.8 mg/Kg		13600		3	15 mg/Kg		15600
Lead, Total, ICP	6.7	<RDL	1.7	8.57 mg/Kg		4.5	<RDL	1.7	8.82 mg/Kg		3.8	<RDL	1.8	9.05 mg/Kg		7.1
Manganese, Total, ICP	177		0.11	0.571 mg/Kg		255		0.12	0.588 mg/Kg		178		0.12	0.603 mg/Kg		210
Nickel, Total, ICP	10.6		1.1	5.71 mg/Kg		12.3		1.2	5.88 mg/Kg		12.2		1.2	6.03 mg/Kg		12.9
Selenium, Total, ICP		<MDL	2.9	14.3 mg/Kg			<MDL	2.9	14.8 mg/Kg			<MDL	3	15 mg/Kg		
Silver, Total, ICP	0.24	<RDL	0.23	1.14 mg/Kg			<MDL	0.23	1.18 mg/Kg			<MDL	0.25	1.21 mg/Kg		0.24
Thallium, Total, ICP		<MDL	11	57.1 mg/Kg			<MDL	12	58.8 mg/Kg			<MDL	12	60.3 mg/Kg		
Zinc, Total, ICP	31.1		0.29	1.43 mg/Kg		34.6		0.29	1.48 mg/Kg		26.1		0.3	1.5 mg/Kg		36
M-OR EPA 3550B/6270C (7-3-01-004)																
1,2,4-Trichlorobenzene		<MDL	0.31	0.614 ug/Kg			<MDL	0.33	0.65 ug/Kg			<MDL	0.33	0.657 ug/Kg		
1,2-Dichlorobenzene		<MDL	0.31	0.614 ug/Kg			<MDL	0.33	0.65 ug/Kg			<MDL	0.33	0.657 ug/Kg		
1,3-Dichlorobenzene		<MDL	0.31	0.614 ug/Kg			<MDL	0.33	0.65 ug/Kg			<MDL	0.33	0.657 ug/Kg		
1,4-Dichlorobenzene		<MDL	0.31	0.614 ug/Kg			<MDL	0.33	0.65 ug/Kg			<MDL	0.33	0.657 ug/Kg		
2,4-Dimethylphenol		<MDL	3.1	6.14 ug/Kg			<MDL	3.3	6.5 ug/Kg			<MDL	3.3	6.57 ug/Kg		
2-Methylnaphthalene		<MDL	3.1	6.14 ug/Kg			<MDL	3.3	6.5 ug/Kg			<MDL	3.3	6.57 ug/Kg		
2-Methylphenol		<MDL	6.1	12.3 ug/Kg			<MDL	6.5	13 ug/Kg			<MDL	6.5	13.2 ug/Kg		
4-Methylphenol		<MDL	6.1	12.3 ug/Kg			<MDL	6.5	13 ug/Kg			<MDL	6.5	13.2 ug/Kg		
Acenaphthene		<MDL	3.1	6.14 ug/Kg			<MDL	3.3	6.5 ug/Kg			<MDL	3.3	6.57 ug/Kg		
Acenaphthylene		<MDL	3.1	6.14 ug/Kg			<MDL	3.3	6.5 ug/Kg			<MDL	3.3	6.57 ug/Kg		
Anthracene	17.5		3.1	6.14 ug/Kg		9.71		3.3	6.5 ug/Kg		6.65		3.3	6.57 ug/Kg		11.8
Benzo(a)anthracene	38		3.1	6.14 ug/Kg		32.8		3.3	6.5 ug/Kg		26		3.3	6.57 ug/Kg		31.6
Benzo(a)pyrene	39.4		3.1	6.14 ug/Kg		34		3.3	6.5 ug/Kg		29.8		3.3	6.57 ug/Kg		32.4
Benzo(b)fluoranthene	43.2		3.1	6.14 ug/Kg		37.7		3.3	6.5 ug/Kg		34.2		3.3	6.57 ug/Kg		37.2
Benzo(g,h,i)perylene	24		3.1	6.14 ug/Kg		20.2		3.3	6.5 ug/Kg		17.3		3.3	6.57 ug/Kg		19.3
Benzo(k)fluoranthene	42.3		3.1	6.14 ug/Kg		36.6		3.3	6.5 ug/Kg		32.3		3.3	6.57 ug/Kg		33
Benzoic Acid	73.5		15	30.8 ug/Kg		66.5		16	32.6 ug/Kg		56		16	32.9 ug/Kg		71.5
Benzyl Alcohol		<MDL	6.1	12.3 ug/Kg			<MDL	6.5	13 ug/Kg			<MDL	6.5	13.2 ug/Kg		
Benzyl Butyl Phthalate	18.9		6.1	12.3 ug/Kg		13.4		6.5	13 ug/Kg		14.1		6.5	13.2 ug/Kg		17.8
Bis(2-Ethylhexyl)Phthalate	81.8		6.1	12.3 ug/Kg		70.6		6.5	13 ug/Kg		56.7		6.5	13.2 ug/Kg		105
Caffeine		<MDL	6.1	12.3 ug/Kg			<MDL	6.5	13 ug/Kg			<MDL	6.5	13.2 ug/Kg		
Carbazole		<MDL	3.1	6.14 ug/Kg		4.4	<RDL	3.3	6.5 ug/Kg		3.8	<RDL	3.3	6.57 ug/Kg		
Chrysene	59.8		3.1	6.14 ug/Kg		44.5		3.3	6.5 ug/Kg		35.8		3.3	6.57 ug/Kg		50.8
Coprostanol		<MDL	61	123 ug/Kg			<MDL	65	130 ug/Kg			<MDL	65	132 ug/Kg		
Dibenz(o,a,h)anthracene	7.74		3.1	6.14 ug/Kg		6.56		3.3	6.5 ug/Kg		6	<RDL	3.3	6.57 ug/Kg		6
Dibenzofuran		<MDL	3.1	6.14 ug/Kg			<MDL	3.3	6.5 ug/Kg			<MDL	3.3	6.57 ug/Kg		
Diethyl Phthalate		<MDL	6.1	12.3 ug/Kg			<MDL	6.5	13 ug/Kg			<MDL	6.5	13.2 ug/Kg		
Dimethyl Phthalate		<MDL	6.1	12.3 ug/Kg			<MDL	6.5	13 ug/Kg			<MDL	6.5	13.2 ug/Kg		
Di-N-Butyl Phthalate	16.4	B	6.1	12.3 ug/Kg		15.5	B	6.5	13 ug/Kg		12	<RDL	6.5	13.2 ug/Kg		16.5
Di-N-Octyl Phthalate		<MDL	6.1	12.3 ug/Kg			<MDL	6.5	13 ug/Kg			<MDL	6.5	13.2 ug/Kg		
Fluoranthene	76		6.1	12.3 ug/Kg		67.2		3.3	6.5 ug/Kg		52.9		3.3	6.57 ug/Kg		64.8
Fluorene	4.6	<RDL	3.1	6.14 ug/Kg		3.7	<RDL	3.3	6.5 ug/Kg			<MDL	3.3	6.57 ug/Kg		3.8
Hexachlorobenzene		<MDL	0.61	1.23 ug/Kg		1.2	<RDL	0.65	1.3 ug/Kg			<MDL	0.65	1.32 ug/Kg		

# King County Environmental Lab Analytical Report

Locator: DUD\_3C  
 Descrip: CLEANUP AREA PERIM  
 Sampled: Mar 10, 2006  
 Lab ID: L38327-1  
 Matrix: SALTWTRSED  
 % Solids: 86.8

Locator: DUD\_4C  
 Descrip: CLEANUP AREA PERIM  
 Sampled: Mar 10, 2006  
 Lab ID: L38327-2  
 Matrix: SALTWTRSED  
 % Solids: 82

Locator: DUD\_4C  
 Descrip: CLEANUP AREA PERIM  
 Sampled: Mar 10, 2006  
 Lab ID: L38327-3  
 Matrix: SALTWTRSED  
 % Solids: 81.1

Locator: DUD\_5C  
 Descrip: CLEANUP AREA PERIM  
 Sampled: Mar 10, 2006  
 Lab ID: L38327-4  
 Matrix: SALTWTRSED  
 % Solids: 86.1

## Parameters

### COMBINED LABS

	Value	Qual	MDL	RDL	Units
Hexachlorobutadiene		<MDL	1.5	3.08	ug/Kg
Hexachloroethane		<MDL			
Indeno(1,2,3-Cd)Pyrene	22.2		3.1	6.14	ug/Kg
Naphthalene		<MDL	3.1	6.14	ug/Kg
N-Nitrosodiphenylamine		<MDL	6.1	12.3	ug/Kg
Pentachlorophenol		<MDL	15	30.8	ug/Kg
Phenanthrene	28		3.1	6.14	ug/Kg
Phenol		<MDL	6.1	12.3	ug/Kg
Pyrene	63.1		3.1	6.14	ug/Kg
Total HPAHS	416		3.1	6.14	ug/Kg
Total LPAHs	52.4		3.1	6.14	ug/Kg
M=OR EPA 8081A/8082 (7-3-03-002)					
4,4'-DDD		<MDL	1.2	2.3	ug/Kg
4,4'-DDE		<MDL	1.2	2.3	ug/Kg
4,4'-DDT		<MDL	1.2	2.3	ug/Kg
Aldrin		<MDL	1.2	2.3	ug/Kg
Alpha-BHC		<MDL	0.58	1.15	ug/Kg
Alpha-Chlordane		<MDL	0.58	1.15	ug/Kg
Aroclor 1016		<MDL,TA	4.7	9.45	ug/Kg
Aroclor 1221		<MDL	2.9	5.76	ug/Kg
Aroclor 1232		<MDL,TA	9.6	19	ug/Kg
Aroclor 1242		<MDL,TA	13	24.7	ug/Kg
Aroclor 1248	7.98		1.5	2.88	ug/Kg
Aroclor 1254	11.9		1.5	2.88	ug/Kg
Aroclor 1260	8.92		1.5	2.88	ug/Kg
Beta-BHC		<MDL	0.58	1.15	ug/Kg
Delta-BHC		<MDL	0.58	1.15	ug/Kg
Dieldrin		<MDL	1.2	2.3	ug/Kg
Endosulfan I		<MDL	1.2	2.3	ug/Kg
Endosulfan II		<MDL	1.2	2.3	ug/Kg
Endosulfan Sulfate		<MDL	1.2	2.3	ug/Kg
Endrin		<MDL	1.2	2.3	ug/Kg
Endrin Aldehyde		<MDL	2.3	4.61	ug/Kg
Gamma-BHC (Lindane)		<MDL	0.58	1.15	ug/Kg
Gamma-Chlordane		<MDL	0.58	1.15	ug/Kg
Heptachlor		<MDL	0.58	1.15	ug/Kg
Heptachlor Epoxide		<MDL	0.58	1.15	ug/Kg
Methoxychlor		<MDL	5.8	11.5	ug/Kg
Toxaphene		<MDL	12	23	ug/Kg

\* Not converted to dry weight basis for this parameter

	Value	Qual	MDL	RDL	Units
Hexachlorobutadiene		<MDL	1.6	3.26	ug/Kg
Hexachloroethane		<MDL	1.6	3.26	ug/Kg
Indeno(1,2,3-Cd)Pyrene	17.9		3.3	6.5	ug/Kg
Naphthalene		<MDL	3.3	6.5	ug/Kg
N-Nitrosodiphenylamine		<MDL	6.5	13	ug/Kg
Pentachlorophenol		<MDL	16	32.6	ug/Kg
Phenanthrene	27		3.3	6.5	ug/Kg
Phenol		<MDL	6.5	13	ug/Kg
Pyrene	60.1		3.3	6.5	ug/Kg
Total HPAHS	357		3.3	6.5	ug/Kg
Total LPAHs	46.2		3.3	6.5	ug/Kg
4,4'-DDD		<MDL	1.2	2.44	ug/Kg
4,4'-DDE		<MDL	1.2	2.44	ug/Kg
4,4'-DDT		<MDL	1.2	2.44	ug/Kg
Aldrin		<MDL	1.2	2.44	ug/Kg
Alpha-BHC		<MDL	0.61	1.22	ug/Kg
Alpha-Chlordane		<MDL	0.61	1.22	ug/Kg
Aroclor 1016		<MDL,TA	2.9	5.85	ug/Kg
Aroclor 1221		<MDL	3	6.1	ug/Kg
Aroclor 1232		<MDL	3	6.1	ug/Kg
Aroclor 1242		<MDL,TA	11	22.4	ug/Kg
Aroclor 1248	6.01		1.6	3.05	ug/Kg
Aroclor 1254	8.93		1.6	3.05	ug/Kg
Aroclor 1260	6.45		1.6	3.05	ug/Kg
Beta-BHC		<MDL	0.61	1.22	ug/Kg
Delta-BHC		<MDL	0.61	1.22	ug/Kg
Dieldrin		<MDL	1.2	2.44	ug/Kg
Endosulfan I		<MDL	1.2	2.44	ug/Kg
Endosulfan II		<MDL	1.2	2.44	ug/Kg
Endosulfan Sulfate		<MDL	1.2	2.44	ug/Kg
Endrin		<MDL	1.2	2.44	ug/Kg
Endrin Aldehyde		<MDL	2.4	4.88	ug/Kg
Gamma-BHC (Lindane)		<MDL	0.61	1.22	ug/Kg
Gamma-Chlordane		<MDL	0.61	1.22	ug/Kg
Heptachlor		<MDL	0.61	1.22	ug/Kg
Heptachlor Epoxide		<MDL	0.61	1.22	ug/Kg
Methoxychlor		<MDL	6.1	12.2	ug/Kg
Toxaphene		<MDL	12	24.4	ug/Kg

	Value	Qual	MDL	RDL	Units
Hexachlorobutadiene		<MDL	1.6	3.29	ug/Kg
Hexachloroethane		<MDL	1.6	3.29	ug/Kg
Indeno(1,2,3-Cd)Pyrene	15.8		3.3	6.57	ug/Kg
Naphthalene		<MDL	3.3	6.57	ug/Kg
N-Nitrosodiphenylamine		<MDL	6.5	13.2	ug/Kg
Pentachlorophenol		<MDL	16	32.9	ug/Kg
Phenanthrene	16.2		3.3	6.57	ug/Kg
Phenol		<MDL	6.5	13.2	ug/Kg
Pyrene	46.9		3.3	6.57	ug/Kg
Total HPAHS	297		3.3	6.57	ug/Kg
Total LPAHs	28.6		3.3	6.57	ug/Kg
4,4'-DDD		<MDL	1.2	2.47	ug/Kg
4,4'-DDE		<MDL	1.2	2.47	ug/Kg
4,4'-DDT		<MDL	1.2	2.47	ug/Kg
Aldrin		<MDL	1.2	2.47	ug/Kg
Alpha-BHC		<MDL	0.62	1.23	ug/Kg
Alpha-Chlordane		<MDL	0.62	1.23	ug/Kg
Aroclor 1016		<MDL,TA	4.1	8.14	ug/Kg
Aroclor 1221		<MDL	3.1	6.17	ug/Kg
Aroclor 1232		<MDL,TA	12	23.6	ug/Kg
Aroclor 1242		<MDL,TA	10	20.3	ug/Kg
Aroclor 1248	7.42		1.6	3.08	ug/Kg
Aroclor 1254	10.4		1.6	3.08	ug/Kg
Aroclor 1260	7.4		1.6	3.08	ug/Kg
Beta-BHC		<MDL	0.62	1.23	ug/Kg
Delta-BHC		<MDL	0.62	1.23	ug/Kg
Dieldrin		<MDL	1.2	2.47	ug/Kg
Endosulfan I		<MDL	1.2	2.47	ug/Kg
Endosulfan II		<MDL	1.2	2.47	ug/Kg
Endosulfan Sulfate		<MDL	1.2	2.47	ug/Kg
Endrin		<MDL	1.2	2.47	ug/Kg
Endrin Aldehyde		<MDL	2.5	4.93	ug/Kg
Gamma-BHC (Lindane)		<MDL	0.62	1.23	ug/Kg
Gamma-Chlordane		<MDL	0.62	1.23	ug/Kg
Heptachlor		<MDL	0.62	1.23	ug/Kg
Heptachlor Epoxide		<MDL	0.62	1.23	ug/Kg
Methoxychlor		<MDL	6.2	12.3	ug/Kg
Toxaphene		<MDL	12	24.7	ug/Kg

	Value	Qual	MDL	RDL	Units
Hexachlorobutadiene		<MDL	1.5	3.1	ug/Kg
Hexachloroethane		<MDL	1.5	3.1	ug/Kg
Indeno(1,2,3-Cd)Pyrene	17.4		3.1	6.19	ug/Kg
Naphthalene		<MDL	3.1	6.19	ug/Kg
N-Nitrosodiphenylamine		<MDL	6.2	12.4	ug/Kg
Pentachlorophenol		<MDL	15	31	ug/Kg
Phenanthrene	26.5		3.1	6.19	ug/Kg
Phenol		<MDL	6.2	12.4	ug/Kg
Pyrene	53		3.1	6.19	ug/Kg
Total HPAHS	345		3.1	6.19	ug/Kg
Total LPAHs	46.1		3.1	6.19	ug/Kg
4,4'-DDD		<MDL	1.2	2.32	ug/Kg
4,4'-DDE		<MDL	1.2	2.32	ug/Kg
4,4'-DDT		<MDL	1.2	2.32	ug/Kg
Aldrin		<MDL	1.2	2.32	ug/Kg
Alpha-BHC		<MDL	0.58	1.16	ug/Kg
Alpha-Chlordane		<MDL	0.58	1.16	ug/Kg
Aroclor 1016		<MDL,TA	3.4	6.74	ug/Kg
Aroclor 1221		<MDL	2.9	5.81	ug/Kg
Aroclor 1232		<MDL,TA	7.9	15.8	ug/Kg
Aroclor 1242		<MDL,TA	7	13.8	ug/Kg
Aroclor 1248	7.21		1.5	2.9	ug/Kg
Aroclor 1254	11.5		1.5	2.9	ug/Kg
Aroclor 1260	7.02		1.5	2.9	ug/Kg
Beta-BHC		<MDL	0.58	1.16	ug/Kg
Delta-BHC		<MDL	0.58	1.16	ug/Kg
Dieldrin		<MDL	1.2	2.32	ug/Kg
Endosulfan I		<MDL	1.2	2.32	ug/Kg
Endosulfan II		<MDL	1.2	2.32	ug/Kg
Endosulfan Sulfate		<MDL	1.2	2.32	ug/Kg
Endrin		<MDL	1.2	2.32	ug/Kg
Endrin Aldehyde		<MDL	2.3	4.65	ug/Kg
Gamma-BHC (Lindane)		<MDL	0.58	1.16	ug/Kg
Gamma-Chlordane		<MDL	0.58	1.16	ug/Kg
Heptachlor		<MDL	0.58	1.16	ug/Kg
Heptachlor Epoxide		<MDL	0.58	1.16	ug/Kg
Methoxychlor		<MDL	5.8	11.6	ug/Kg
Toxaphene		<MDL	12	23.2	ug/Kg



# King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

Locator: DUD\_6C  
 Descrip: CLEANUP AREA PERIM  
 Sampled: Mar 10, 2006  
 Lab ID: L38327-5  
 Matrix: SALTWTRSED  
 % Solids: 79.3

Locator: DUD\_7C  
 Descrip: CLEANUP AREA PERIM  
 Sampled: Mar 10, 2006  
 Lab ID: L38327-6  
 Matrix: SALTWTRSED  
 % Solids: 85.8

Locator: DUD\_14C  
 Descrip: PERIMETER LOCATION  
 Sampled: Mar 10, 2006  
 Lab ID: L38327-7  
 Matrix: SALTWTRSED  
 % Solids: 86.9

Locator: DUD\_15C  
 Descrip: DUDI PERIMETER LOC  
 Sampled: Mar 10, 2006  
 Lab ID: L38327-8  
 Matrix: SALTWTRSED  
 % Solids: 86.2

## Parameters

### COMBINED LABS

M=CV ASTM D422(03-02-005-001)

Value Qual MDL RDL Units  
 - Dry Weight Basis

Value Qual MDL RDL Units  
 - Dry Weight Basis

Value Qual MDL RDL Units  
 - Dry Weight Basis

Value Qual MDL RDL Units  
 - Dry Weight Basis

Clay *	4.5	E	0.5	1	%
Fines *	5.6		0.5	1	%
Gravel *	28.1		0.1	1	%
p+0.00 *	4.2		0.1	1	%
p+1.00 *	8.1		0.1	1	%
p+10.0(equal/more than) *	1.1		0.5	1	%
p+2.00 *	30.2		0.1	1	%
p+3.00 *	20.3		0.1	1	%
p+4.00 *	2.8		0.1	1	%
p+5.00 *	1.1		0.5	1	%
p+6.00 *		<MDL	0.5	1	%
p+7.00 *		<MDL	0.5	1	%
p+8.00 *		<MDL	0.5	1	%
p+9.00 *	3.4		0.5	1	%
p-1.00 *	13.7		0.1	1	%
p-2.00 *	7.6		0.1	1	%
p-2.00(less than) *	6.9		0.1	1	%
Sand *	65.5		0.1	1	%
Silt *	1.1		0.5	1	%
M=CV EPA9060-PSEP96 (03-04-002-003)					
Total Organic Carbon	2240		580	1160	mg/Kg
M=CV SM2540-G (03-01-007-002)					
Total Solids *	79.3		0.005	0.01	%
M=ES NONE					
Field Personnel					none
Sample Function					none
Sample Start Time *	1230				hr
Sampling Method *	30010				none
Sediment Sampling Depth *	10				cm
Sediment Sampling Range *	0 - 10				cm
Sediment Type	23N40				none
M=MT EPA 7471A (06-01-004-003)					
Mercury, Total, CVAA	0.052	<RDL	0.024	0.241	mg/Kg
M=MT EPA3050A/6010B (06-02-004-002)					
Aluminum, Total, ICP	8550		6.3	31.8	mg/Kg
Antimony, Total, ICP		<MDL,G	1.9	9.53	mg/Kg
Arsenic, Total, ICP	3.3	<RDL	3.2	15.9	mg/Kg
Beryllium, Total, ICP	0.1	<RDL	0.063	0.318	mg/Kg
Cadmium, Total, ICP		<MDL	0.19	0.953	mg/Kg
Chromium, Total, ICP	14.5		0.32	1.59	mg/Kg
Copper, Total, ICP	32		0.25	1.27	mg/Kg

1.1	<MDL,E	0.5	1	%
54.1		0.5	1	%
5		0.1	1	%
7.8		0.1	1	%
	<MDL	0.5	1	%
20.1		0.1	1	%
11.2		0.1	1	%
1.1		0.1	1	%
0.5	<RDL	0.5	1	%
0.5	<RDL	0.5	1	%
	<MDL	0.5	1	%
	<MDL	0.5	1	%
22.2		0.1	1	%
12.2		0.1	1	%
19.7		0.1	1	%
45.1		0.1	1	%
1.1		0.5	1	%
1240		500	991	mg/kg
85.8		0.005	0.01	%
Eric Parker, Anchor				none
1300				hr
30010				none
10				cm
0 - 10				cm
23N30				none
	<MDL	0.023	0.228	mg/kg
8960		5.6	28.1	mg/kg
	<MDL,G	1.6	8.44	mg/kg
	<MDL	2.8	14.1	mg/kg
0.092	<RDL	0.056	0.281	mg/kg
	<MDL	0.16	0.844	mg/kg
15.2		0.28	1.41	mg/kg
30.2		0.22	1.13	mg/kg

2.1	E	0.5	1	%
6.3		0.5	1	%
60.2		0.1	1	%
4.7		0.1	1	%
5.8		0.1	1	%
1.6		0.5	1	%
13.2		0.1	1	%
8.1		0.1	1	%
1.6		0.1	1	%
1.6		0.5	1	%
0.5	<RDL	0.5	1	%
	<MDL	0.5	1	%
2.1		0.5	1	%
0.5	<RDL	0.5	1	%
22.3		0.1	1	%
17.7		0.1	1	%
20.1		0.1	1	%
33.2		0.1	1	%
4.2		0.5	1	%
3710		490	995	mg/Kg
86.9		0.005	0.01	%
Eric Parker, Anchor				
none				
1320			hr	
30010			none	
10			cm	
0 - 10			cm	
23N40			none	
0.048	<RDL	0.023	0.235	mg/Kg
8400		5.5	27.8	mg/Kg
	<MDL,G	1.7	8.34	mg/Kg
3.5	<RDL	2.8	13.9	mg/Kg
0.1	<RDL	0.055	0.278	mg/Kg
	<MDL	0.17	0.834	mg/Kg
13.9		0.28	1.39	mg/Kg
29		0.22	1.11	mg/Kg

2.3	E	0.5	1	%
6.2		0.5	1	%
45.7		0.1	1	%
5.2		0.1	1	%
7.1		0.1	1	%
1.1		0.5	1	%
19.4		0.1	1	%
14.5		0.1	1	%
2.5		0.1	1	%
1.7		0.5	1	%
	<MDL	0.5	1	%
	<MDL	0.5	1	%
2.3		0.5	1	%
1.1		0.5	1	%
19.1		0.1	1	%
12.9		0.1	1	%
13.8		0.1	1	%
48.6		0.1	1	%
3.9		0.5	1	%
2440		500	988	mg/kg
86.2		0.005	0.01	%
Eric Parker, Anchor				none
1355				hr
30010				none
10				cm
0 - 10				cm
33N30				none
0.023	<RDL	0.022	0.224	mg/kg
8910		5.8	29	mg/kg
	<MDL,G	1.7	8.69	mg/kg
3	<RDL	2.9	14.5	mg/kg
0.1	<RDL	0.058	0.29	mg/kg
	<MDL	0.17	0.869	mg/kg
14.2		0.29	1.45	mg/kg
29		0.23	1.16	mg/kg

# King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

Locator: DUD\_6C  
 Descrip: CLEANUP AREA PERIM  
 Sampled: Mar 10, 2006  
 Lab ID: L38327-5  
 Matrix: SALTWTRSED  
 % Solids: 79.3

Locator: DUD\_7C  
 Descrip: CLEANUP AREA PERIM  
 Sampled: Mar 10, 2006  
 Lab ID: L38327-6  
 Matrix: SALTWTRSED  
 % Solids: 85.8

Locator: DUD\_14C  
 Descrip: PERIMETER LOCATION  
 Sampled: Mar 10, 2006  
 Lab ID: L38327-7  
 Matrix: SALTWTRSED  
 % Solids: 86.9

Locator: DUD\_15C  
 Descrip: DUDI PERIMETER LOC  
 Sampled: Mar 10, 2006  
 Lab ID: L38327-8  
 Matrix: SALTWTRSED  
 % Solids: 86.2

Parameters	- Dry Weight Basis					- Dry Weight Basis					- Dry Weight Basis										
	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	
COMBINED LABS																					
Iron, Total, ICP	15500		3.2	15.9	mg/Kg	16000		2.8	14.1	mg/Kg	14500		2.8	13.9	mg/Kg	15800		2.9	14.5	mg/Kg	
Lead, Total, ICP	4.8	<RDL	1.9	9.53	mg/Kg	2.4	<RDL	1.6	8.44	mg/Kg	7.9	<RDL	1.7	8.34	mg/Kg	4.1	<RDL	1.7	8.69	mg/Kg	
Manganese, Total, ICP	230		0.13	0.636	mg/Kg	241		0.11	0.563	mg/Kg	174		0.11	0.557	mg/Kg	206		0.12	0.579	mg/Kg	
Nickel, Total, ICP	13.1		1.3	6.36	mg/Kg	13.5		1.1	5.63	mg/Kg	13.8		1.1	5.57	mg/Kg	12.5		1.2	5.79	mg/Kg	
Selenium, Total, ICP		<MDL	3.2	15.9	mg/Kg		<MDL	2.8	14.1	mg/Kg		<MDL	2.8	13.9	mg/Kg		<MDL	2.9	14.5	mg/Kg	
Silver, Total, ICP	0.28	<RDL	0.25	1.27	mg/Kg	0.29	<RDL	0.22	1.13	mg/Kg	0.25	<RDL	0.22	1.11	mg/Kg	0.27	<RDL	0.23	1.16	mg/Kg	
Thallium, Total, ICP		<MDL	13	63.6	mg/Kg		<MDL	11	56.3	mg/Kg		<MDL	11	55.7	mg/Kg		<MDL	12	57.9	mg/Kg	
Zinc, Total, ICP	30.9		0.32	1.59	mg/Kg	27.6		0.28	1.41	mg/Kg	34.8		0.28	1.39	mg/Kg	31.4		0.29	1.45	mg/Kg	
M=OR EPA 3550B/8270C (7-3-01-004)																					
1,2,4-Trichlorobenzene		<MDL	0.34	0.672	ug/Kg		<MDL	0.31	0.621	ug/Kg		<MDL	0.31	0.613	ug/Kg		<MDL	0.31	0.618	ug/Kg	
1,2-Dichlorobenzene		<MDL	0.34	0.672	ug/Kg		<MDL	0.31	0.621	ug/Kg		<MDL	0.31	0.613	ug/Kg		<MDL	0.31	0.618	ug/Kg	
1,3-Dichlorobenzene		<MDL	0.34	0.672	ug/Kg		<MDL	0.31	0.621	ug/Kg		<MDL	0.31	0.613	ug/Kg		<MDL	0.31	0.618	ug/Kg	
1,4-Dichlorobenzene		<MDL	0.34	0.672	ug/Kg		<MDL	0.31	0.621	ug/Kg		<MDL	0.31	0.613	ug/Kg		<MDL	0.31	0.618	ug/Kg	
2,4-Dimethylphenol		<MDL	3.4	6.72	ug/Kg		<MDL	3.1	6.21	ug/Kg		<MDL	3.1	6.13	ug/Kg		<MDL	3.1	6.18	ug/Kg	
2-Methylnaphthalene		<MDL	3.4	6.72	ug/Kg		<MDL	3.1	6.21	ug/Kg		<MDL	3.1	6.13	ug/Kg		<MDL	3.1	6.18	ug/Kg	
2-Methylphenol		<MDL	6.7	13.5	ug/Kg		<MDL	6.2	12.5	ug/Kg		<MDL	6.1	12.3	ug/Kg		<MDL	6.1	12.4	ug/Kg	
4-Methylphenol		<MDL	6.7	13.5	ug/Kg		<MDL	6.2	12.5	ug/Kg		<MDL	6.1	12.3	ug/Kg		<MDL	6.1	12.4	ug/Kg	
Acenaphthene		<MDL	3.4	6.72	ug/Kg		<MDL	3.1	6.21	ug/Kg		<MDL	3.1	6.13	ug/Kg		<MDL	3.1	6.18	ug/Kg	
Acenaphthylene		<MDL	3.4	6.72	ug/Kg		<MDL	3.1	6.21	ug/Kg		<MDL	3.1	6.13	ug/Kg		<MDL	3.1	6.18	ug/Kg	
Anthracene	11.1		3.4	6.72	ug/Kg		<MDL	3.1	6.21	ug/Kg	10.6		3.1	6.13	ug/Kg	4.2	<RDL	3.1	6.18	ug/Kg	
Benzo(a)anthracene	37.5		3.4	6.72	ug/Kg	7.23		3.1	6.21	ug/Kg	32.3		3.1	6.13	ug/Kg	15.4		3.1	6.18	ug/Kg	
Benzo(a)pyrene	38.7		3.4	6.72	ug/Kg	10.8		3.1	6.21	ug/Kg	35.6		3.1	6.13	ug/Kg	18		3.1	6.18	ug/Kg	
Benzo(b)fluoranthene	41.4		3.4	6.72	ug/Kg	12		3.1	6.21	ug/Kg	33.4		3.1	6.13	ug/Kg	17.9		3.1	6.18	ug/Kg	
Benzo(g,h,i)perylene	21.3		3.4	6.72	ug/Kg	6.5		3.1	6.21	ug/Kg	19		3.1	6.13	ug/Kg	10.2		3.1	6.18	ug/Kg	
Benzo(k)fluoranthene	42.7		3.4	6.72	ug/Kg	10.7		3.1	6.21	ug/Kg	37.7		3.1	6.13	ug/Kg	19.7		3.1	6.18	ug/Kg	
Benzoic Acid	68.5		16	33.7	ug/Kg		<MDL	15	31.1	ug/Kg	66.2		15	30.7	ug/Kg	59.4		15	31	ug/Kg	
Benzyl Alcohol		<MDL	6.7	13.5	ug/Kg		<MDL	6.2	12.5	ug/Kg		<MDL	6.1	12.3	ug/Kg		<MDL	6.1	12.4	ug/Kg	
Benzyl Butyl Phthalate	15		6.7	13.5	ug/Kg	10	<RDL	6.2	12.5	ug/Kg	17.7		6.1	12.3	ug/Kg	11	<RDL	6.1	12.4	ug/Kg	
Bis(2-Ethylhexyl)Phthalate	93.4		6.7	13.5	ug/Kg	28.6		6.2	12.5	ug/Kg	81.6		6.1	12.3	ug/Kg	52.1		6.1	12.4	ug/Kg	
Caffeine		<MDL	6.7	13.5	ug/Kg		<MDL	6.2	12.5	ug/Kg		<MDL	6.1	12.3	ug/Kg		<MDL	6.1	12.4	ug/Kg	
Carbazole		<MDL	3.4	6.72	ug/Kg		<MDL	3.1	6.21	ug/Kg		<MDL	3.1	6.13	ug/Kg		<MDL	3.1	6.18	ug/Kg	
Chrysene	43		3.4	6.72	ug/Kg	11.3		3.1	6.21	ug/Kg	54.2		3.1	6.13	ug/Kg	21.9		3.1	6.18	ug/Kg	
Coprostanol		<MDL	67	135	ug/Kg		<MDL	62	125	ug/Kg		<MDL	61	123	ug/Kg		<MDL	61	124	ug/Kg	
Dibenzo(a,h)anthracene	6.3	<RDL	3.4	6.72	ug/Kg		<MDL	3.1	6.21	ug/Kg	5.9	<RDL	3.1	6.13	ug/Kg	3.6	<RDL	3.1	6.18	ug/Kg	
Dibenzofuran		<MDL	3.4	6.72	ug/Kg		<MDL	3.1	6.21	ug/Kg		<MDL	3.1	6.13	ug/Kg		<MDL	3.1	6.18	ug/Kg	
Diethyl Phthalate		<MDL	6.7	13.5	ug/Kg		<MDL	6.2	12.5	ug/Kg		<MDL	6.1	12.3	ug/Kg		<MDL	6.1	12.4	ug/Kg	
Dimethyl Phthalate		<MDL	6.7	13.5	ug/Kg		<MDL	6.2	12.5	ug/Kg		<MDL	6.1	12.3	ug/Kg		<MDL	6.1	12.4	ug/Kg	
Di-N-Butyl Phthalate	28.6	B	6.7	13.5	ug/Kg	18.6	B	6.2	12.5	ug/Kg	9.2	<RDL	B	6.1	12.3	ug/Kg	27	B	6.1	12.4	ug/Kg
Di-N-Octyl Phthalate		<MDL	6.7	13.5	ug/Kg		<MDL	6.2	12.5	ug/Kg		<MDL	6.1	12.3	ug/Kg		<MDL	6.1	12.4	ug/Kg	
Fluoranthene	66.8		3.4	6.72	ug/Kg	15.2		3.1	6.21	ug/Kg	56.4		3.1	6.13	ug/Kg	28		3.1	6.18	ug/Kg	
Fluorene		<MDL	3.4	6.72	ug/Kg		<MDL	3.1	6.21	ug/Kg		<MDL	3.1	6.13	ug/Kg		<MDL	3.1	6.18	ug/Kg	
Hexachlorobenzene		<MDL	0.67	1.35	ug/Kg		<MDL	0.62	1.25	ug/Kg		<MDL	0.61	1.23	ug/Kg		<MDL	0.61	1.24	ug/Kg	

# King County Environmental Lab Analytical Report

PROJECT: 423062-200-4

Locator: DUD\_6C  
 Descr: CLEANUP AREA PERIM  
 Sampled: Mar 10, 2006  
 Lab ID: L38327-5  
 Matrix: SALTWTRSED  
 % Solids: 79.3

Locator: DUD\_7C  
 Descr: CLEANUP AREA PERIM  
 Sampled: Mar 10, 2006  
 Lab ID: L38327-6  
 Matrix: SALTWTRSED  
 % Solids: 85.8

Locator: DUD\_14C  
 Descr: PERIMETER LOCATION  
 Sampled: Mar 10, 2006  
 Lab ID: L38327-7  
 Matrix: SALTWTRSED  
 % Solids: 86.9

Locator: DUD\_15C  
 Descr: DUDI PERIMETER LOC  
 Sampled: Mar 10, 2006  
 Lab ID: L38327-8  
 Matrix: SALTWTRSED  
 % Solids: 86.2

Parameters	- Dry Weight Basis				- Dry Weight Basis				- Dry Weight Basis						
	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
COMBINED LABS															
Hexachlorobutadiene		<MDL	1.6	3.37	ug/Kg		<MDL	1.5	3.11	ug/Kg		<MDL	1.5	3.07	ug/Kg
Hexachloroethane		<MDL	1.6	3.37	ug/Kg		<MDL	1.5	3.11	ug/Kg		<MDL	1.5	3.07	ug/Kg
Indeno(1,2,3-Cd)Pyrene	20.3		3.4	6.72	ug/Kg	5.8	<RDL	3.1	6.21	ug/Kg	17	<MDL	3.1	6.13	ug/Kg
Naphthalene		<MDL	3.4	6.72	ug/Kg		<MDL	3.1	6.21	ug/Kg		<MDL	3.1	6.13	ug/Kg
N-Nitrosodiphenylamine		<MDL	6.7	13.5	ug/Kg		<MDL	6.2	12.5	ug/Kg		<MDL	6.1	12.3	ug/Kg
Pentachlorophenol		<MDL	16	33.7	ug/Kg		<MDL	15	31.1	ug/Kg		<MDL	15	30.7	ug/Kg
Phenanthrene	23.3		3.4	6.72	ug/Kg	4.4	<RDL	3.1	6.21	ug/Kg	21.1	<MDL	3.1	6.13	ug/Kg
Phenol		<MDL	6.7	13.5	ug/Kg		<MDL	6.2	12.5	ug/Kg		<MDL	6.1	12.3	ug/Kg
Pyrene	55.5		3.4	6.72	ug/Kg	13.8	<MDL	3.1	6.21	ug/Kg	52.9	<MDL	3.1	6.13	ug/Kg
Total HPAHs	373		3.4	6.72	ug/Kg	96.3	<MDL	3.1	6.21	ug/Kg	344	<MDL	3.1	6.13	ug/Kg
Total LPAHs	40.5		3.4	6.72	ug/Kg	4.4	<RDL	3.1	6.21	ug/Kg	37.4	<MDL	3.1	6.13	ug/Kg
M=OR EPA 8081A0002 (7-3-03-002)															
4,4'-DDD		<MDL	1.3	2.52	ug/Kg		<MDL	1.2	2.33	ug/Kg		<MDL	1.2	2.3	ug/Kg
4,4'-DDE		<MDL	1.3	2.52	ug/Kg		<MDL	1.2	2.33	ug/Kg		<MDL	1.2	2.3	ug/Kg
4,4'-DDT		<MDL	1.3	2.52	ug/Kg		<MDL	1.2	2.33	ug/Kg		<MDL	1.2	2.3	ug/Kg
Aldrin		<MDL	1.3	2.52	ug/Kg		<MDL	1.2	2.33	ug/Kg		<MDL	1.2	2.3	ug/Kg
Alpha-BHC		<MDL	0.63	1.26	ug/Kg		<MDL	0.58	1.17	ug/Kg		<MDL	0.58	1.15	ug/Kg
Alpha-Chlordane		<MDL	0.63	1.26	ug/Kg		<MDL	0.58	1.17	ug/Kg		<MDL	0.58	1.15	ug/Kg
Aroclor 1016		<MDL	4.3	8.45	ug/Kg		<MDL	1.5	2.91	ug/Kg		<MDL	1.5	2.88	ug/Kg
Aroclor 1221		<MDL	3.2	6.31	ug/Kg		<MDL	2.9	5.83	ug/Kg		<MDL	2.9	5.75	ug/Kg
Aroclor 1232		<MDL	7.3	14.5	ug/Kg		<MDL	2.9	5.83	ug/Kg		<MDL	2.9	5.75	ug/Kg
Aroclor 1242		<MDL	9.2	18.4	ug/Kg		<MDL	1.5	2.91	ug/Kg		<MDL	1.5	2.88	ug/Kg
Aroclor 1248	9.07		1.6	3.15	ug/Kg	2.1	<RDL	1.5	2.91	ug/Kg	7.22	<MDL	1.5	2.88	ug/Kg
Aroclor 1254	13.4		1.6	3.15	ug/Kg	2.4	<RDL	1.5	2.91	ug/Kg	10.9	<MDL	1.5	2.88	ug/Kg
Aroclor 1260	12.5		1.6	3.15	ug/Kg	1.9	<RDL	1.5	2.91	ug/Kg	8.09	<MDL	1.5	2.88	ug/Kg
Beta-BHC		<MDL	0.63	1.26	ug/Kg		<MDL	0.58	1.17	ug/Kg		<MDL	0.58	1.15	ug/Kg
Delta-BHC		<MDL	0.63	1.26	ug/Kg		<MDL	0.58	1.17	ug/Kg		<MDL	0.58	1.15	ug/Kg
Dieldrin		<MDL	1.3	2.52	ug/Kg		<MDL	1.2	2.33	ug/Kg		<MDL	1.2	2.3	ug/Kg
Endosulfan I		<MDL	1.3	2.52	ug/Kg		<MDL	1.2	2.33	ug/Kg		<MDL	1.2	2.3	ug/Kg
Endosulfan II		<MDL	1.3	2.52	ug/Kg		<MDL	1.2	2.33	ug/Kg		<MDL	1.2	2.3	ug/Kg
Endosulfan Sulfate		<MDL	1.3	2.52	ug/Kg		<MDL	1.2	2.33	ug/Kg		<MDL	1.2	2.3	ug/Kg
Endrin		<MDL	1.3	2.52	ug/Kg		<MDL	1.2	2.33	ug/Kg		<MDL	1.2	2.3	ug/Kg
Endrin Alderhyde		<MDL	2.5	5.04	ug/Kg		<MDL	2.3	4.66	ug/Kg		<MDL	2.3	4.6	ug/Kg
Gamma-BHC (Lindane)		<MDL	0.63	1.26	ug/Kg		<MDL	0.58	1.17	ug/Kg		<MDL	0.58	1.15	ug/Kg
Gamma-Chlordane		<MDL	0.63	1.26	ug/Kg		<MDL	0.58	1.17	ug/Kg		<MDL	0.58	1.15	ug/Kg
Heptachlor		<MDL	0.63	1.26	ug/Kg		<MDL	0.58	1.17	ug/Kg		<MDL	0.58	1.15	ug/Kg
Heptachlor Epoxide		<MDL	0.63	1.26	ug/Kg		<MDL	0.58	1.17	ug/Kg		<MDL	0.58	1.15	ug/Kg
Methoxychlor		<MDL	6.3	12.6	ug/Kg		<MDL	5.8	11.7	ug/Kg		<MDL	5.8	11.5	ug/Kg
Toxaphene		<MDL	13	25.2	ug/Kg		<MDL	12	23.3	ug/Kg		<MDL	12	23	ug/Kg
* Not converted to dry weight basis for this parameter															

# King County Environmental Lab Matrix Report

PROJECT: 423062-200-4

COMBINED LABS-Solid

Locator	Sample		Lab ID																											
	Depth																													
DUD_3C			L38327-1	2.5	6.3	54.1	4.4	6.2	1.3	18.3	11	1.9	1.9	0.6	1.3		1.3	23.1	17.3	13.7	41.9	3.8	3150	86.8	7780	2.9	0.098	12.2	27.9	
DUD_4C			L38327-2	2.3	4	31.1	4.5	7.8	1.2	28.8	19.1	2.7	0.6	0.6	0.6		1.2	13.1	8.8	9.2	62.8	1.7	1940	82	9440		0.12	14.3	31.1	
DUD_4C			L38327-3	4.7	4.7	28.6	4.2	7.6	1.8	31.3	20.2	2.7					2.9	14.1	8	6.4	66		1620	81.1	7470		0.08	13.1	27.3	
DUD_5C			L38327-4	5.2	11.7	56.3	3.7	4.9	2.6	13.2	8.8	2.3	4.6	1.3	0.7		2.6	17.4	14.2	24.7	32.8	6.5	5900	86.1	8840	3.5	0.11	14.3	29.5	
DUD_6C			L38327-5	4.5	5.6	28.1	4.2	8.1	1.1	30.2	20.3	2.8	1.1				3.4	13.7	7.6	6.9	65.5	1.1	2240	79.3	8550	3.3	0.1	14.5	32	
DUD_7C			L38327-6		1.1	54.1	5	7.8		20.1	11.2	1.1	0.5	0.5				22.2	12.2	19.7	45.1	1.1	1240	85.8	8960		0.092	15.2	30.2	
DUD_14C			L38327-7	2.1	6.3	60.2	4.7	5.8	1.6	13.2	8.1	1.6	1.6	0.5		2.1	0.5	22.3	17.7	20.1	33.2	4.2	3710	86.9	8400	3.5	0.1	13.9	29	
DUD_15C			L38327-8	2.3	6.2	45.7	5.2	7.1	1.1	19.4	14.5	2.5	1.7			2.3	1.1	19.1	12.9	13.8	48.6	3.9	2440	86.2	8910	3	0.1	14.2	29	



# King County Environmental Lab Matrix Report

PROJECT: 423062-200-4

## COMBINED LABS-Solid

Locator		Sample		Chrysene	Di-N-Butyl Phthalate	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Hexachlorobenzene	Indeno(1,2,3-Cd)Pyrene	Phenanthrene	Pyrene	Total HPAHS	Total LPAHS	Sample Start Time *	Sampling Method *	Sediment Sampling Depth *
		Depth	Lab ID														
DUD_3C			L38327-1	59.8	16.4	7.74	76	4.6		22.2	28	63.1	416	52.4	930	none	10
DUD_4C			L38327-2	44.5	15.5	6.56	67.2	3.7	1.2	17.9	27	60.1	357	46.2	1020	30010	10
DUD_4C			L38327-3	35.8	12	6	52.9			15.8	16.2	46.9	297	28.6	1020	30010	10
DUD_5C			L38327-4	50.8	16.5	6	64.8	3.8		17.4	26.5	53	345	46.1	1120	30010	10
DUD_6C			L38327-5	43	28.6	6.3	66.8			20.3	23.3	55.5	373	40.5	1230	30010	10
DUD_7C			L38327-6	11.3	18.6		15.2			5.8	4.4	13.8	96.3	4.4	1300	30010	10
DUD_14C			L38327-7	54.2	9.2	5.9	56.4			17	21.1	52.9	344	37.4	1320	30010	10
DUD_15C			L38327-8	21.9	27	3.6	28			9.51	9.36	24.8	169	13.5	1355	30010	10

## SAP MDL Comparison Table

# SAP MDL Comparison

PROJECT: 423062-200-4

Locator: DUD\_3C DUD\_4C DUD\_4C DUD\_5C DUD\_6C DUD\_7C  
 Descrip: Cleanup area perim Cleanup area perim Cleanup area perim Cleanup area perim Cleanup area perim Cleanup area perim  
 Sampled: Mar 10, 2006 Mar 10, 2006 Mar 10, 2006 Mar 10, 2006 Mar 10, 2006 Mar 10, 2006  
 Lab ID: L38327-1 L38327-2 L38327-3 L38327-4 L38327-5 L38327-6  
 Matrix: SALTWTTRSED SALTWTTRSED SALTWTTRSED SALTWTTRSED SALTWTTRSED SALTWTTRSED  
 % Solids: 86.8 82 81.1 86.1 79.3 85.8

Exceeds SAP MDL

Parameters	Units	SAP MDL (@50% TS)	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis
<b>COMBINED LABS</b>								
M=CV ASTM D422(03-02-005-001)								
Fines *	%	NA	0.5	0.5	0.5	0.5	0.5	0.5
Clay *	%	NA	0.5	0.5	0.5	0.5	0.5	0.5
Silt *	%	NA	0.5	0.5	0.5	0.5	0.5	0.5
Sand *	%	NA	0.1	0.1	0.1	0.1	0.1	0.1
Gravel *	%	NA	0.1	0.1	0.1	0.1	0.1	0.1
p+0.00 *	%	0.1	0.1	0.1	0.1	0.1	0.1	0.1
p+1.00 *	%	0.1	0.1	0.1	0.1	0.1	0.1	0.1
p+10.0(equal/more than) *	%	0.1	0.5	0.5	0.5	0.5	0.5	0.5
p+2.00 *	%	0.1	0.1	0.1	0.1	0.1	0.1	0.1
p+3.00 *	%	0.1	0.1	0.1	0.1	0.1	0.1	0.1
p+4.00 *	%	0.1	0.1	0.1	0.1	0.1	0.1	0.1
p+5.00 *	%	0.1	0.5	0.5	0.5	0.5	0.5	0.5
p+6.00 *	%	0.1	0.5	0.5	0.5	0.5	0.5	0.5
p+7.00 *	%	0.1	0.5	0.5	0.5	0.5	0.5	0.5
p+8.00 *	%	0.1	0.5	0.5	0.5	0.5	0.5	0.5
p+9.00 *	%	0.1	0.5	0.5	0.5	0.5	0.5	0.5
p+1.00 *	%	0.1	0.1	0.1	0.1	0.1	0.1	0.1
p+2.00 *	%	0.1	0.1	0.1	0.1	0.1	0.1	0.1
p+2.00(less than) *	%	0.1	0.1	0.1	0.1	0.1	0.1	0.1
M=CV EPA9060-PSEP96 (03-04-002-003)								
Total Organic Carbon	mg/Kg	1000	670	500	510	780	580	500
M=CV SM2540-G (03-01-007-002)								
Total Solids *	%	0.005	0.005	0.005	0.005	0.005	0.005	0.005
M=MT EPA 7471A (06-01-004-003)								
Mercury, Total, CVAA	mg/Kg	0.04	0.023	0.024	0.025	0.022	0.024	0.023
M=MT EPA3050A/6010B (06-02-004-002)								
Aluminum, Total, ICP	mg/Kg	10	5.8	5.9	6	5.7	6.3	5.6
Antimony, Total, ICP	mg/Kg	3	1.7	1.7	1.8	1.7	1.9	1.6
Arsenic, Total, ICP	mg/Kg	5	2.9	2.9	3	2.9	3.2	2.8
Beryllium, Total, ICP	mg/Kg	0.1	0.058	0.059	0.06	0.057	0.063	0.056
Cadmium, Total, ICP	mg/Kg	0.3	0.17	0.17	0.18	0.17	0.19	0.16
Chromium, Total, ICP	mg/Kg	0.5	0.29	0.29	0.3	0.29	0.32	0.28
Copper, Total, ICP	mg/Kg	0.4	0.23	0.23	0.25	0.23	0.25	0.22
Iron, Total, ICP	mg/Kg	5	2.9	2.9	3	2.9	3.2	2.8



# SAP MDL Comparison

Locator:	DUD_3C	DUD_4C	DUD_4C	DUD_5C	DUD_6C	DUD_7C
Descrip:	Cleanup area perim	Cleanup area perim	Cleanup area perim	Cleanup area perim	Cleanup area perim	Cleanup area perim
Sampled:	Mar 10, 2006	Mar 10, 2006	Mar 10, 2006	Mar 10, 2006	Mar 10, 2006	Mar 10, 2006
Lab ID:	L38327-1	L38327-2	L38327-3	L38327-4	L38327-5	L38327-6
Matrix:	SALTWTTRSED	SALTWTTRSED	SALTWTTRSED	SALTWTTRSED	SALTWTTRSED	SALTWTTRSED
% Solids:	86.8	82	81.1	86.1	79.3	85.8

Exceeds SAP MDL

Parameters	Units	SAP MDL (@50% TS)	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis
Lead, Total, ICP	mg/Kg	3	1.7	1.7	1.8	1.7	1.9	1.6
Manganese, Total, ICP	mg/Kg	0.2	0.11	0.12	0.12	0.11	0.13	0.11
Nickel, Total, ICP	mg/Kg	2	1.1	1.2	1.2	1.1	1.3	1.1
Selenium, Total, ICP	mg/Kg	5	2.9	2.9	3	2.9	3.2	2.8
Silver, Total, ICP	mg/Kg	0.4	0.23	0.23	0.25	0.23	0.25	0.22
Thallium, Total, ICP	mg/Kg	20	11	12	12	11	13	11
Zinc, Total, ICP	mg/Kg	0.5	0.29	0.29	0.3	0.29	0.32	0.28
M=OR EPA 3550B/8270C (7-3-01-004)								
1,2,4-Trichlorobenzene	ug/Kg	0.52	0.31	0.33	0.33	0.31	0.34	0.31
1,2-Dichlorobenzene	ug/Kg	0.52	0.31	0.33	0.33	0.31	0.34	0.31
1,3-Dichlorobenzene	ug/Kg	0.52	0.31	0.33	0.33	0.31	0.34	0.31
1,4-Dichlorobenzene	ug/Kg	0.26	0.31	0.33	0.33	0.31	0.34	0.31
2,4-Dimethylphenol	ug/Kg	14	3.1	3.3	3.3	3.1	3.4	3.1
2-Methylnaphthalene	ug/Kg	28	3.1	3.3	3.3	3.1	3.4	3.1
2-Methylphenol	ug/Kg	38	6.1	6.5	6.5	6.2	6.7	6.2
4-Methylphenol	ug/Kg	32	6.1	6.5	6.5	6.2	6.7	6.2
Acenaphthene	ug/Kg	14	3.1	3.3	3.3	3.1	3.4	3.1
Acenaphthylene	ug/Kg	29	3.1	3.3	3.3	3.1	3.4	3.1
Anthracene	ug/Kg	7.9	3.1	3.3	3.3	3.1	3.4	3.1
Benzo(a)anthracene	ug/Kg	4	3.1	3.3	3.3	3.1	3.4	3.1
Benzo(a)pyrene	ug/Kg	6	3.1	3.3	3.3	3.1	3.4	3.1
Benzo(b)fluoranthene	ug/Kg	6	3.1	3.3	3.3	3.1	3.4	3.1
Benzo(g,h,i)perylene	ug/Kg	16	3.1	3.3	3.3	3.1	3.4	3.1
Benzo(k)fluoranthene	ug/Kg	6	3.1	3.3	3.3	3.1	3.4	3.1
Benzoic Acid	ug/Kg	12	15	16	16	15	16	15
Benzyl Alcohol	ug/Kg	12	6.1	6.5	6.5	6.2	6.7	6.2
Benzyl Butyl Phthalate	ug/Kg	12	6.1	6.5	6.5	6.2	6.7	6.2
Bis(2-Ethylhexyl)Phthalate	ug/Kg	13	6.1	6.5	6.5	6.2	6.7	6.2
Caffeine	ug/Kg	NA	6.1	6.5	6.5	6.2	6.7	6.2
Carbazole	ug/Kg	14	3.1	3.3	3.3	3.1	3.4	3.1
Chrysene	ug/Kg	7.9	3.1	3.3	3.3	3.1	3.4	3.1
Coprostanol	ug/Kg	28	61	65	65	62	67	62
Dibenzo(a,h)anthracene	ug/Kg	14	3.1	3.3	3.3	3.1	3.4	3.1
Dibenzofuran	ug/Kg	28	3.1	3.3	3.3	3.1	3.4	3.1
Diethyl Phthalate	ug/Kg	12	6.1	6.5	6.5	6.2	6.7	6.2
Dimethyl Phthalate	ug/Kg	22	6.1	6.5	6.5	6.2	6.7	6.2

# SAP MDL Comparison

Locator: DUD\_3C  
 Descrip: Cleanup area perim  
 Sampled: Mar 10, 2006  
 Lab ID: L38327-1  
 Matrix: SALTWTRSED  
 % Solids: 86.8

DUD\_4C Cleanup area perim Mar 10, 2006 L38327-2 SALTWTRSED 82  
 DUD\_4C Cleanup area perim Mar 10, 2006 L38327-3 SALTWTRSED 81.1  
 DUD\_5C Cleanup area perim Mar 10, 2006 L38327-4 SALTWTRSED 86.1  
 DUD\_6C Cleanup area perim Mar 10, 2006 L38327-5 SALTWTRSED 79.3  
 DUD\_7C Cleanup area perim Mar 10, 2006 L38327-6 SALTWTRSED 85.8

Exceeds SAP MDL

Parameters	Units	SAP MDL (@50% TS)	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis
Di-N-Butyl Phthalate	ug/Kg	10	6.1	6.5	6.5	6.2	6.7	6.2
Di-N-Octyl Phthalate	ug/Kg	16	6.1	6.5	6.5	6.2	6.7	6.2
Fluoranthene	ug/Kg	16	3.1	3.3	3.3	3.1	3.4	3.1
Fluorene	ug/Kg	26	3.1	3.3	3.3	3.1	3.4	3.1
Hexachlorobenzene	ug/Kg	1.3	0.61	0.65	0.65	0.62	0.67	0.62
Hexachlorobutadiene	ug/Kg	1.5	1.5	1.6	1.6	1.5	1.6	1.5
Hexachloroethane	ug/Kg	29	1.5	1.6	1.6	1.5	1.6	1.5
Indeno(1,2,3-Cd)Pyrene	ug/Kg	18	3.1	3.3	3.3	3.1	3.4	3.1
Naphthalene	ug/Kg	28	3.1	3.3	3.3	3.1	3.4	3.1
N-Nitrosodiphenylamine	ug/Kg	40	6.1	6.5	6.5	6.2	6.7	6.2
Pentachlorophenol	ug/Kg	10	15	16	16	15	16	15
Phenanthrene	ug/Kg	7.9	3.1	3.3	3.3	3.1	3.4	3.1
Phenol	ug/Kg	18	6.1	6.5	6.5	6.2	6.7	6.2
Pyrene	ug/Kg	7.9	3.1	3.3	3.3	3.1	3.4	3.1
Total HPAHs	ug/Kg	NA	3.1	3.3	3.3	3.1	3.4	3.1
Total LPAHs	ug/Kg	NA	3.1	3.3	3.3	3.1	3.4	3.1
M=OR EPA 8081 A/8082 (7-3-03-002)								
4,4'-DDD	ug/Kg	0.67	1.2	1.2	1.2	1.2	1.3	1.2
4,4'-DDE	ug/Kg	0.67	1.2	1.2	1.2	1.2	1.3	1.2
4,4'-DDT	ug/Kg	0.67	1.2	1.2	1.2	1.2	1.3	1.2
Aldrin	ug/Kg	0.67	1.2	1.2	1.2	1.2	1.3	1.2
Alpha-BHC	ug/Kg	0.67	0.58	0.61	0.62	0.58	0.63	0.58
Alpha-Chlordane	ug/Kg	0.67	0.58	0.61	0.62	0.58	0.63	0.58
Aroclor 1016	ug/Kg	4	4.7	2.9	4.1	3.4	4.3	1.5
Aroclor 1221	ug/Kg	8	2.9	3	3.1	2.9	3.2	2.9
Aroclor 1232	ug/Kg	8	9.6	3	12	7.9	7.3	2.9
Aroclor 1242	ug/Kg	4	13	11	10	7	9.2	1.5
Aroclor 1248	ug/Kg	4	1.5	1.6	1.6	1.5	1.6	1.5
Aroclor 1254	ug/Kg	4	1.5	1.6	1.6	1.5	1.6	1.5
Aroclor 1260	ug/Kg	4	1.5	1.6	1.6	1.5	1.6	1.5
Beta-BHC	ug/Kg	0.67	0.58	0.61	0.62	0.58	0.63	0.58
Delta-BHC	ug/Kg	0.67	0.58	0.61	0.62	0.58	0.63	0.58
Dieldrin	ug/Kg	0.67	1.2	1.2	1.2	1.2	1.3	1.2
Endosulfan I	ug/Kg	0.67	1.2	1.2	1.2	1.2	1.3	1.2
Endosulfan II	ug/Kg	0.67	1.2	1.2	1.2	1.2	1.3	1.2
Endosulfan Sulfate	ug/Kg	0.67	1.2	1.2	1.2	1.2	1.3	1.2

PROJECT: 423062-200-4

# SAP MDL Comparison

Locator: DUD\_3C DUD\_4C DUD\_4C DUD\_5C DUD\_6C DUD\_7C  
 Descrip: Cleanup area perim Cleanup area perim Cleanup area perim Cleanup area perim Cleanup area perim Cleanup area perim  
 Sampled: Mar 10, 2006 Mar 10, 2006 Mar 10, 2006 Mar 10, 2006 Mar 10, 2006 Mar 10, 2006  
 Lab ID: L38327-1 L38327-2 L38327-3 L38327-4 L38327-5 L38327-6  
 Matrix: SALTWTTRSED SALTWTTRSED SALTWTTRSED SALTWTTRSED SALTWTTRSED SALTWTTRSED  
 % Solids: 86.8 82 81.1 86.1 79.3 85.8

Exceeds SAP MDL

Parameters	Units	SAP MDL (@50% TS)	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis
Endrin	ug/Kg	0.67	1.2	2.3	2.4	1.2	1.2	1.2
Endrin Alddehyde	ug/Kg	0.67	2.3	2.3	2.4	2.5	2.3	2.3
Gamma-BHC (Lindane)	ug/Kg	0.67	0.58	0.58	0.61	0.62	0.58	0.58
Gamma-Chlordane	ug/Kg	2.7	0.58	0.58	0.61	0.62	0.58	0.58
Heptachlor	ug/Kg	0.67	0.58	0.58	0.61	0.62	0.58	0.58
Heptachlor Epoxide	ug/Kg	0.67	0.58	0.58	0.61	0.62	0.58	0.58
Methoxychlor	ug/Kg	3.3	5.8	5.8	6.1	6.2	5.8	5.8
Toxaphene	ug/Kg	6.7	12	12	12	12	13	12

\* Not converted to dry weight basis for this parameter

# SAP MDL Comparison

PROJECT: 423062-200-4

Locator: DUD\_14C DUD\_15C  
 Descrip: PERIMETER LOCATION DUDI PERIMETER LOC  
 Sampled: Mar 10, 2006 Mar 10, 2006  
 Lab ID: L38327-7 L38327-8  
 Matrix: SALTWTTRSED SALTWTTRSED  
 % Solids: 86.9 86.2

Exceeds SAP MDL

Parameters	Units	SAP MDL (@50% TS)	MDL - Dry Weight Basis	MDL - Dry Weight Basis
<b>COMBINED LABS</b>				
M=CV ASTM D422(03-02-005-001)				
Fines *	%	NA	0.5	0.5
Clay *	%	NA	0.5	0.5
Silt *	%	NA	0.5	0.5
Sand *	%	NA	0.1	0.1
Gravel *	%	NA	0.1	0.1
p+0.00 *	%	0.1	0.1	0.1
p+1.00 *	%	0.1	0.1	0.1
p+10.0(equal/more than) *	%	0.1	0.5	0.5
p+2.00 *	%	0.1	0.1	0.1
p+3.00 *	%	0.1	0.1	0.1
p+4.00 *	%	0.1	0.1	0.1
p+5.00 *	%	0.1	0.5	0.5
p+6.00 *	%	0.1	0.5	0.5
p+7.00 *	%	0.1	0.5	0.5
p+8.00 *	%	0.1	0.5	0.5
p+9.00 *	%	0.1	0.5	0.5
p-1.00 *	%	0.1	0.1	0.1
p-2.00 *	%	0.1	0.1	0.1
p-2.00(less than) *	%	0.1	0.1	0.1
M=CV EPA9060-PSEP96 (03-04-002-003)				
Total Organic Carbon	mg/Kg	1000	490	500
M=CV SM2540-G (03-01-007-002)				
Total Solids *	%	0.005	0.005	0.005
M=MT EPA 7471A (06-01-004-003)				
Mercury, Total, CVAA	mg/Kg	0.04	0.023	0.022
M=MT EPA3050A/6010B (06-02-004-002)				
Aluminum, Total, ICP	mg/Kg	10	5.5	5.8
Antimony, Total, ICP	mg/Kg	3	1.7	1.7
Arsenic, Total, ICP	mg/Kg	5	2.8	2.9
Beryllium, Total, ICP	mg/Kg	0.1	0.055	0.058
Cadmium, Total, ICP	mg/Kg	0.3	0.17	0.17
Chromium, Total, ICP	mg/Kg	0.5	0.28	0.29
Copper, Total, ICP	mg/Kg	0.4	0.22	0.23
Iron, Total, ICP	mg/Kg	5	2.8	2.9

PROJECT: 423062-200-4

# SAP MDL Comparison

Locator: DUD\_14C DUD\_15C  
 Descrip: PERIMETER LOCATION DUDI PERIMETER LOC  
 Sampled: Mar 10, 2006 Mar 10, 2006  
 Lab ID: L38327-7 L38327-8  
 Matrix: SALTWTRSED SALTWTRSED  
 % Solids: 86.9 86.2

Exceeds SAP MDL

Parameters	Units	SAP MDL (@50% TS)	MDL - Dry Weight Basis	MDL - Dry Weight Basis
Lead, Total, ICP	mg/Kg	3	1.7	1.7
Manganese, Total, ICP	mg/Kg	0.2	0.11	0.12
Nickel, Total, ICP	mg/Kg	2	1.1	1.2
Selenium, Total, ICP	mg/Kg	5	2.8	2.9
Silver, Total, ICP	mg/Kg	0.4	0.22	0.23
Thallium, Total, ICP	mg/Kg	20	11	12
Zinc, Total, ICP	mg/Kg	0.5	0.28	0.29
M=OR EPA 3550B/8270C (7-3-01-004)				
1,2,4-Trichlorobenzene	ug/Kg	0.52	0.31	0.31
1,2-Dichlorobenzene	ug/Kg	0.52	0.31	0.31
1,3-Dichlorobenzene	ug/Kg	0.52	0.31	0.31
1,4-Dichlorobenzene	ug/Kg	0.26	0.31	0.31
2,4-Dimethylphenol	ug/Kg	14	3.1	3.1
2-Methylnaphthalene	ug/Kg	28	3.1	3.1
2-Methylphenol	ug/Kg	38	6.1	6.1
4-Methylphenol	ug/Kg	32	6.1	6.1
Acenaphthene	ug/Kg	14	3.1	3.1
Acenaphthylene	ug/Kg	29	3.1	3.1
Anthracene	ug/Kg	7.9	3.1	3.1
Benzo(a)anthracene	ug/Kg	4	3.1	3.1
Benzo(a)pyrene	ug/Kg	6	3.1	3.1
Benzo(b)fluoranthene	ug/Kg	6	3.1	3.1
Benzo(g,h,i)perylene	ug/Kg	16	3.1	3.1
Benzo(k)fluoranthene	ug/Kg	6	3.1	3.1
Benzoic Acid	ug/Kg	12	15	15
Benzyl Alcohol	ug/Kg	12	6.1	6.1
Benzyl Butyl Phthalate	ug/Kg	12	6.1	6.1
Bis(2-Ethylhexyl)Phthalate	ug/Kg	13	6.1	6.1
Caffeine	ug/Kg	NA	6.1	6.1
Carbazole	ug/Kg	14	3.1	3.1
Chrysene	ug/Kg	7.9	3.1	3.1
Coprostanol	ug/Kg	28	61	61
Dibenzo(a,h)anthracene	ug/Kg	14	3.1	3.1
Dibenzofuran	ug/Kg	28	3.1	3.1
Diethyl Phthalate	ug/Kg	12	6.1	6.1
Dimethyl Phthalate	ug/Kg	22	6.1	6.1

# SAP MDL Comparison

PROJECT: 423062-200-4

Locator: DUD\_14C DUD\_15C  
 Descrip: PERIMETER LOCATION DUDI PERIMETER LOC  
 Sampled: Mar 10, 2006 Mar 10, 2006  
 Lab ID: L38327-7 L38327-8  
 Matrix: SALTWTTRSED SALTWTTRSED  
 % Solids: 86.9 86.2

Exceeds SAP MDL

Parameters	Units	SAP MDL (@50% TS)	MDL - Dry Weight Basis	MDL - Dry Weight Basis
Di-N-Butyl Phthalate	ug/Kg	10	6.1	6.1
Di-N-Octyl Phthalate	ug/Kg	16	6.1	6.1
Fluoranthene	ug/Kg	16	3.1	3.1
Fluorene	ug/Kg	26	3.1	3.1
Hexachlorobenzene	ug/Kg	1.3	0.61	0.61
Hexachlorobutadiene	ug/Kg	1.5	1.5	1.5
Hexachloroethane	ug/Kg	29	1.5	1.5
Indeno(1,2,3-Cd)Pyrene	ug/Kg	18	3.1	3.1
Naphthalene	ug/Kg	28	3.1	3.1
N-Nitrosodiphenylamine	ug/Kg	40	6.1	6.1
Pentachlorophenol	ug/Kg	10	15	15
Phenanthrene	ug/Kg	7.9	3.1	3.1
Phenol	ug/Kg	18	6.1	6.1
Pyrene	ug/Kg	7.9	3.1	3.1
Total HPAHS	ug/Kg	NA	3.1	3.1
Total LPAHS	ug/Kg	NA	3.1	3.1
M=OR EPA 8061A/8082 (7-3-03-002)				
4,4'-DDD	ug/Kg	0.67	1.2	1.2
4,4'-DDE	ug/Kg	0.67	1.2	1.2
4,4'-DDT	ug/Kg	0.67	1.2	1.2
Aldrin	ug/Kg	0.67	1.2	1.2
Alpha-BHC	ug/Kg	0.67	0.58	0.58
Alpha-Chlordane	ug/Kg	0.67	0.58	0.58
Aroclor 1016	ug/Kg	4	3.6	1.5
Aroclor 1221	ug/Kg	8	2.9	2.9
Aroclor 1232	ug/Kg	8	7.2	2.9
Aroclor 1242	ug/Kg	4	8.2	4.3
Aroclor 1248	ug/Kg	4	1.5	1.5
Aroclor 1254	ug/Kg	4	1.5	1.5
Aroclor 1260	ug/Kg	4	1.5	1.5
Beta-BHC	ug/Kg	0.67	0.58	0.58
Delta-BHC	ug/Kg	0.67	0.58	0.58
Dieldrin	ug/Kg	0.67	1.2	1.2
Endosulfan I	ug/Kg	0.67	1.2	1.2
Endosulfan II	ug/Kg	0.67	1.2	1.2
Endosulfan Sulfate	ug/Kg	0.67	1.2	1.2

# SAP MDL Comparison

PROJECT: 423062-200-4

Locator: DUD\_14C DUD\_15C  
 Descrip: PERIMETER LOCATION DUDI PERIMETER LOC  
 Sampled: Mar 10, 2006 Mar 10, 2006  
 Lab ID: L38327-7 L38327-8  
 Matrix: SALTWTRSED SALTWTRSED  
 % Solids: 86.9 86.2

Exceeds SAP MDL

Parameters	Units	SAP MDL (@50% TS)	MDL - Dry Weight Basis	MDL - Dry Weight Basis
Endrin	ug/Kg	0.67	1.2	1.2
Endrin Aldehyde	ug/Kg	0.67	2.3	2.3
Gamma-BHC (Lindane)	ug/Kg	0.67	0.58	0.58
Gamma-Chlordane	ug/Kg	2.7	0.58	0.58
Heptachlor	ug/Kg	0.67	0.58	0.58
Heptachlor Epoxide	ug/Kg	0.67	0.58	0.58
Methoxychlor	ug/Kg	3.3	5.8	5.8
Toxaphene	ug/Kg	6.7	12	12

\* Not converted to dry weight basis for this parameter

## SMS OC and Dry Weight Normalization MDL Check Tables



SMS OC and Dry Weight Normalization Detection Limit Check

	MDL (ug/Kg, ww)	MDL (mg/Kg, dw, oc)	SMS (mg/Kg, dw,oc)	Delta (SMS- MDL)
1,2,4-Trichlorobenzene	0.27	0.10	0.81	0.71
1,2-Dichlorobenzene	0.27	0.10	2.3	2.2
1,4-Dichlorobenzene	0.27	0.10	3.1	3.0
2-Methylnaphthalene	2.7	0.99	38	37
2,4-Dimethylphenol	2.7	3.11	29	26
2-Methylphenol	5.3	6.11	63	57
4-Methylphenol	5.3	6.11	670	664
Acenaphthene	2.7	0.99	16	15
Acenaphthylene	2.7	0.99	66	65
Anthracene	2.7	0.99	220	219
Benzo(a)anthracene	2.7	0.99	110	109
Benzo(a)pyrene	2.7	0.99	99	98
Benzo(b)fluoranthene	2.7	0.99	115	114
Benzo(g,h,i)perylene	2.7	0.99	31	30
Benzo(k)fluoranthene	2.7	0.99	115	114
Benzoic Acid	13	14.98	650	635
Benzyl Alcohol	5.3	6.11	57	51
Benzyl Butyl Phthalate	5.3	1.94	4.9	3.0
Bis(2-Ethylhexyl)Phthalate	5.3	1.94	47	45
Chrysene	2.7	0.99	110	109
Dibenzo(a,h)anthracene	2.7	0.99	12	11
Dibenzofuran	2.7	0.99	15	14
Diethyl Phthalate	5.3	1.94	61	59
Dimethyl Phthalate	5.3	1.94	53	51
Di-N-Butyl Phthalate	5.3	1.94	220	218
Di-N-Octyl Phthalate	5.3	1.94	58	56
Fluorene	2.7	0.99	23	22
Fluoranthene	2.7	0.99	160	159
Hexachlorobenzene	0.53	0.19	0.38	0.19
Hexachlorobutadiene	1.3	0.48	3.9	3.4
Indeno(1,2,3-Cd)Pyrene	2.7	0.99	34	33
N-Nitrosodiphenylamine	5.3	1.94	11	9
Naphthalene	2.7	0.99	99	98
Pentachlorophenol	13	14.98	360	345
Phenanthrene	2.7	0.99	100	99
Phenol	5.3	6.11	420	414
Pyrene	2.7	0.99	1000	999
Aroclor 1016	4.1	1.50		
Aroclor 1221	2.5	0.92		
Aroclor 1232	8.3	3.04		
Aroclor 1242	11	4.03		
Aroclor 1248	1.3	0.48		
Aroclor 1254	1.3	0.48		
Aroclor 1260	1.3	0.48		
Total Organic Carbon (dry)	3145.16129			
Total Solids	86.8			
HPAH	27	9.89	960	950
LPAH	18.9	6.92	370	363
Total PCB	11	4.03	12	8.0

## SMS OC and Dry Weight Normalization Detection Limit Check

	MDL (ug/Kg, ww)	MDL (mg/Kg, dw, oc)	SMS (mg/Kg, dw,oc)	Delta (SMS- MDL)
1,2,4-Trichlorobenzene	0.27	0.17	0.81	0.64
1,2-Dichlorobenzene	0.27	0.17	2.3	2.1
1,4-Dichlorobenzene	0.27	0.17	3.1	2.9
2-Methylnaphthalene	2.7	1.70	38	36
2,4-Dimethylphenol	2.7	3.29	29	26
2-Methylphenol	5.3	6.46	63	57
4-Methylphenol	5.3	6.46	670	664
Acenaphthene	2.7	1.70	16	14
Acenaphthylene	2.7	1.70	66	64
Anthracene	2.7	1.70	220	218
Benzo(a)anthracene	2.7	1.70	110	108
Benzo(a)pyrene	2.7	1.70	99	97
Benzo(b)fluoranthene	2.7	1.70	115	113
Benzo(g,h,i)perylene	2.7	1.70	31	29
Benzo(k)fluoranthene	2.7	1.70	115	113
Benzoic Acid	13	15.85	650	634
Benzyl Alcohol	5.3	6.46	57	51
Benzyl Butyl Phthalate	5.3	3.33	4.9	1.6
Bis(2-Ethylhexyl)Phthalate	5.3	3.33	47	44
Chrysene	2.7	1.70	110	108
Dibenzo(a,h)anthracene	2.7	1.70	12	10
Dibenzofuran	2.7	1.70	15	13
Diethyl Phthalate	5.3	3.33	61	58
Dimethyl Phthalate	5.3	3.33	53	50
Di-N-Butyl Phthalate	5.3	3.33	220	217
Di-N-Octyl Phthalate	5.3	3.33	58	55
Fluorene	2.7	1.70	23	21
Fluoranthene	2.7	1.70	160	158
Hexachlorobenzene	0.53	0.33	0.38	0.05
Hexachlorobutadiene	1.3	0.82	3.9	3.1
Indeno(1,2,3-Cd)Pyrene	2.7	1.70	34	32
N-Nitrosodiphenylamine	5.3	3.33	11	8
Naphthalene	2.7	1.70	99	97
Pentachlorophenol	13	15.85	360	344
Phenanthrene	2.7	1.70	100	98
Phenol	5.3	6.46	420	414
Pyrene	2.7	1.70	1000	998
Aroclor 1016	2.4	1.51		
Aroclor 1221	2.5	1.57		
Aroclor 1232	2.5	1.57		
Aroclor 1242	9.2	5.79		
Aroclor 1248	1.3	0.82		
Aroclor 1254	1.3	0.82		
Aroclor 1260	1.3	0.82		
Total Organic Carbon (dry)	1939.02439			
Total Solids	82			
HPAH	27	16.98	960	943
LPAH	18.9	11.89	370	358
Total PCB	9.2	5.79	12	6.2

SMS OC and Dry Weight Normalization Detection Limit Check

	MDL (ug/Kg, ww)	MDL (mg/Kg, dw, oc)	SMS (mg/Kg, dw,oc)	Delta (SMS- MDL)
1,2,4-Trichlorobenzene	0.27	0.21	0.81	0.60
1,2-Dichlorobenzene	0.27	0.21	2.3	2.1
1,4-Dichlorobenzene	0.27	0.21	3.1	2.9
2-Methylnaphthalene	2.7	2.06	38	36
2,4-Dimethylphenol	2.7	3.33	29	26
2-Methylphenol	5.3	6.54	63	56
4-Methylphenol	5.3	6.54	670	663
Acenaphthene	2.7	2.06	16	14
Acenaphthylene	2.7	2.06	66	64
Anthracene	2.7	2.06	220	218
Benzo(a)anthracene	2.7	2.06	110	108
Benzo(a)pyrene	2.7	2.06	99	97
Benzo(b)fluoranthene	2.7	2.06	115	113
Benzo(g,h,i)perylene	2.7	2.06	31	29
Benzo(k)fluoranthene	2.7	2.06	115	113
Benzoic Acid	13	16.03	650	634
Benzyl Alcohol	5.3	6.54	57	50
Benzyl Butyl Phthalate	5.3	4.05	4.9	0.9
Bis(2-Ethylhexyl)Phthalate	5.3	4.05	47	43
Chrysene	2.7	2.06	110	108
Dibenzo(a,h)anthracene	2.7	2.06	12	10
Dibenzofuran	2.7	2.06	15	13
Diethyl Phthalate	5.3	4.05	61	57
Dimethyl Phthalate	5.3	4.05	53	49
Di-N-Butyl Phthalate	5.3	4.05	220	216
Di-N-Octyl Phthalate	5.3	4.05	58	54
Fluorene	2.7	2.06	23	21
Fluoranthene	2.7	2.06	160	158
Hexachlorobenzene	0.53	0.40	0.38	-0.02
Hexachlorobutadiene	1.3	0.99	3.9	2.9
Indeno(1,2,3-Cd)Pyrene	2.7	2.06	34	32
N-Nitrosodiphenylamine	5.3	4.05	11	7
Naphthalene	2.7	2.06	99	97
Pentachlorophenol	13	16.03	360	344
Phenanthrene	2.7	2.06	100	98
Phenol	5.3	6.54	420	413
Pyrene	2.7	2.06	1000	998
Aroclor 1016	3.3	2.52		
Aroclor 1221	2.5	1.91		
Aroclor 1232	9.6	7.33		
Aroclor 1242	8.3	6.34		
Aroclor 1248	1.3	0.99		
Aroclor 1254	1.3	0.99		
Aroclor 1260	1.3	0.99		
Total Organic Carbon (dry)	1615.289766			
Total Solids	81.1			
HPAH	27	20.61	960	939
LPAH	18.9	14.43	370	356
Total PCB	9.6	7.33	12	4.7

SMS OC and Dry Weight Normalization Detection Limit Check

	MDL (ug/Kg, ww)	MDL (mg/Kg, dw, oc)	SMS (mg/Kg, dw,oc)	Delta (SMS- MDL)
1,2,4-Trichlorobenzene	0.27	0.05	0.81	0.76
1,2-Dichlorobenzene	0.27	0.05	2.3	2.2
1,4-Dichlorobenzene	0.27	0.05	3.1	3.0
2-Methylnaphthalene	2.7	0.53	38	37
2,4-Dimethylphenol	2.7	3.14	29	26
2-Methylphenol	5.3	6.16	63	57
4-Methylphenol	5.3	6.16	670	664
Acenaphthene	2.7	0.53	16	15
Acenaphthylene	2.7	0.53	66	65
Anthracene	2.7	0.53	220	219
Benzo(a)anthracene	2.7	0.53	110	109
Benzo(a)pyrene	2.7	0.53	99	98
Benzo(b)fluoranthene	2.7	0.53	115	114
Benzo(g,h,i)perylene	2.7	0.53	31	30
Benzo(k)fluoranthene	2.7	0.53	115	114
Benzoic Acid	13	15.10	650	635
Benzyl Alcohol	5.3	6.16	57	51
Benzyl Butyl Phthalate	5.3	1.04	4.9	3.9
Bis(2-Ethylhexyl)Phthalate	5.3	1.04	47	46
Chrysene	2.7	0.53	110	109
Dibenzo(a,h)anthracene	2.7	0.53	12	11
Dibenzofuran	2.7	0.53	15	14
Diethyl Phthalate	5.3	1.04	61	60
Dimethyl Phthalate	5.3	1.04	53	52
Di-N-Butyl Phthalate	5.3	1.04	220	219
Di-N-Octyl Phthalate	5.3	1.04	58	57
Fluorene	2.7	0.53	23	22
Fluoranthene	2.7	0.53	160	159
Hexachlorobenzene	0.53	0.10	0.38	0.28
Hexachlorobutadiene	1.3	0.26	3.9	3.6
Indeno(1,2,3-Cd)Pyrene	2.7	0.53	34	33
N-Nitrosodiphenylamine	5.3	1.04	11	10
Naphthalene	2.7	0.53	99	98
Pentachlorophenol	13	15.10	360	345
Phenanthrene	2.7	0.53	100	99
Phenol	5.3	6.16	420	414
Pyrene	2.7	0.53	1000	999
Aroclor 1016	2.9	0.57		
Aroclor 1221	2.5	0.49		
Aroclor 1232	6.8	1.34		
Aroclor 1242	6	1.18		
Aroclor 1248	1.3	0.26		
Aroclor 1254	1.3	0.26		
Aroclor 1260	1.3	0.26		
Total Organic Carbon (dry)	5900.116144			
Total Solids	86.1			
HPAH	27	5.31	960	955
LPAH	18.9	3.72	370	366
Total PCB	6.8	1.34	12	10.7

SMS OC and Dry Weight Normalization Detection Limit Check

	MDL (ug/Kg, ww)	MDL (mg/Kg, dw, oc)	SMS (mg/Kg, dw,oc)	Delta (SMS- MDL)
1,2,4-Trichlorobenzene	0.27	0.15	0.81	0.66
1,2-Dichlorobenzene	0.27	0.15	2.3	2.1
1,4-Dichlorobenzene	0.27	0.15	3.1	2.9
2-Methylnaphthalene	2.7	1.52	38	36
2,4-Dimethylphenol	2.7	3.40	29	26
2-Methylphenol	5.3	6.68	63	56
4-Methylphenol	5.3	6.68	670	663
Acenaphthene	2.7	1.52	16	14
Acenaphthylene	2.7	1.52	66	64
Anthracene	2.7	1.52	220	218
Benzo(a)anthracene	2.7	1.52	110	108
Benzo(a)pyrene	2.7	1.52	99	97
Benzo(b)fluoranthene	2.7	1.52	115	113
Benzo(g,h,i)perylene	2.7	1.52	31	29
Benzo(k)fluoranthene	2.7	1.52	115	113
Benzoic Acid	13	16.39	650	634
Benzyl Alcohol	5.3	6.68	57	50
Benzyl Butyl Phthalate	5.3	2.98	4.9	1.9
Bis(2-Ethylhexyl)Phthalate	5.3	2.98	47	44
Chrysene	2.7	1.52	110	108
Dibenzo(a,h)anthracene	2.7	1.52	12	10
Dibenzofuran	2.7	1.52	15	13
Diethyl Phthalate	5.3	2.98	61	58
Dimethyl Phthalate	5.3	2.98	53	50
Di-N-Butyl Phthalate	5.3	2.98	220	217
Di-N-Octyl Phthalate	5.3	2.98	58	55
Fluorene	2.7	1.52	23	21
Fluoranthene	2.7	1.52	160	158
Hexachlorobenzene	0.53	0.30	0.38	0.08
Hexachlorobutadiene	1.3	0.73	3.9	3.2
Indeno(1,2,3-Cd)Pyrene	2.7	1.52	34	32
N-Nitrosodiphenylamine	5.3	2.98	11	8
Naphthalene	2.7	1.52	99	97
Pentachlorophenol	13	16.39	360	344
Phenanthrene	2.7	1.52	100	98
Phenol	5.3	6.68	420	413
Pyrene	2.7	1.52	1000	998
Aroclor 1016	3.4	1.91		
Aroclor 1221	2.5	1.40		
Aroclor 1232	5.8	3.26		
Aroclor 1242	7.3	4.10		
Aroclor 1248	1.3	0.73		
Aroclor 1254	1.3	0.73		
Aroclor 1260	1.3	0.73		
Total Organic Carbon (dry)	2244.640605			
Total Solids	79.3			
HPAH	27	15.17	960	945
LPAH	18.9	10.62	370	359
Total PCB	7.3	4.10	12	7.9

## SMS OC and Dry Weight Normalization Detection Limit Check

	MDL (ug/Kg, ww)	MDL (mg/Kg, dw, oc)	SMS (mg/Kg, dw,oc)	Delta (SMS- MDL)
1,2,4-Trichlorobenzene	0.27	0.25	0.81	0.56
1,2-Dichlorobenzene	0.27	0.25	2.3	2.0
1,4-Dichlorobenzene	0.27	0.25	3.1	2.8
2-Methylnaphthalene	2.7	2.55	38	35
2,4-Dimethylphenol	2.7	3.15	29	26
2-Methylphenol	5.3	6.18	63	57
4-Methylphenol	5.3	6.18	670	664
Acenaphthene	2.7	2.55	16	13
Acenaphthylene	2.7	2.55	66	63
Anthracene	2.7	2.55	220	217
Benzo(a)anthracene	2.7	2.55	110	107
Benzo(a)pyrene	2.7	2.55	99	96
Benzo(b)fluoranthene	2.7	2.55	115	112
Benzo(g,h,i)perylene	2.7	2.55	31	28
Benzo(k)fluoranthene	2.7	2.55	115	112
Benzoic Acid	13	15.15	650	635
Benzyl Alcohol	5.3	6.18	57	51
Benzyl Butyl Phthalate	5.3	5.00	4.9	-0.1
Bis(2-Ethylhexyl)Phthalate	5.3	5.00	47	42
Chrysene	2.7	2.55	110	107
Dibenzo(a,h)anthracene	2.7	2.55	12	9
Dibenzofuran	2.7	2.55	15	12
Diethyl Phthalate	5.3	5.00	61	56
Dimethyl Phthalate	5.3	5.00	53	48
Di-N-Butyl Phthalate	5.3	5.00	220	215
Di-N-Octyl Phthalate	5.3	5.00	58	53
Fluorene	2.7	2.55	23	20
Fluoranthene	2.7	2.55	160	157
Hexachlorobenzene	0.53	0.50	0.38	-0.12
Hexachlorobutadiene	1.3	1.23	3.9	2.7
Indeno(1,2,3-Cd)Pyrene	2.7	2.55	34	31
N-Nitrosodiphenylamine	5.3	5.00	11	6
Naphthalene	2.7	2.55	99	96
Pentachlorophenol	13	15.15	360	345
Phenanthrene	2.7	2.55	100	97
Phenol	5.3	6.18	420	414
Pyrene	2.7	2.55	1000	997
Aroclor 1016	1.3	1.23		
Aroclor 1221	2.5	2.36		
Aroclor 1232	2.5	2.36		
Aroclor 1242	1.3	1.23		
Aroclor 1248	1.3	1.23		
Aroclor 1254	1.3	1.23		
Aroclor 1260	1.3	1.23		
Total Organic Carbon (dry)	1235.43	1235		
Total Solids	85.8			
HPAH	27	25.47	960	935
LPAH	18.9	17.83	370	352
Total PCB	2.5	2.36	12	9.6

SMS OC and Dry Weight Normalization Detection Limit Check

	MDL (ug/Kg, ww)	MDL (mg/Kg, dw, oc)	SMS (mg/Kg, dw,oc)	Delta (SMS- MDL)
1,2,4-Trichlorobenzene	0.27	0.08	0.81	0.73
1,2-Dichlorobenzene	0.27	0.08	2.3	2.2
1,4-Dichlorobenzene	0.27	0.08	3.1	3.0
2-Methylnaphthalene	2.7	0.84	38	37
2,4-Dimethylphenol	2.7	3.11	29	26
2-Methylphenol	5.3	6.10	63	57
4-Methylphenol	5.3	6.10	670	664
Acenaphthene	2.7	0.84	16	15
Acenaphthylene	2.7	0.84	66	65
Anthracene	2.7	0.84	220	219
Benzo(a)anthracene	2.7	0.84	110	109
Benzo(a)pyrene	2.7	0.84	99	98
Benzo(b)fluoranthene	2.7	0.84	115	114
Benzo(g,h,i)perylene	2.7	0.84	31	30
Benzo(k)fluoranthene	2.7	0.84	115	114
Benzoic Acid	13	14.96	650	635
Benzyl Alcohol	5.3	6.10	57	51
Benzyl Butyl Phthalate	5.3	1.65	4.9	3.3
Bis(2-Ethylhexyl)Phthalate	5.3	1.65	47	45
Chrysene	2.7	0.84	110	109
Dibenzo(a,h)anthracene	2.7	0.84	12	11
Dibenzofuran	2.7	0.84	15	14
Diethyl Phthalate	5.3	1.65	61	59
Dimethyl Phthalate	5.3	1.65	53	51
Di-N-Butyl Phthalate	5.3	1.65	220	218
Di-N-Octyl Phthalate	5.3	1.65	58	56
Fluorene	2.7	0.84	23	22
Fluoranthene	2.7	0.84	160	159
Hexachlorobenzene	0.53	0.16	0.38	0.22
Hexachlorobutadiene	1.3	0.40	3.9	3.5
Indeno(1,2,3-Cd)Pyrene	2.7	0.84	34	33
N-Nitrosodiphenylamine	5.3	1.65	11	9
Naphthalene	2.7	0.84	99	98
Pentachlorophenol	13	14.96	360	345
Phenanthrene	2.7	0.84	100	99
Phenol	5.3	6.10	420	414
Pyrene	2.7	0.84	1000	999
Aroclor 1016	3.1	0.96		
Aroclor 1221	2.5	0.78		
Aroclor 1232	6.3	1.96		
Aroclor 1242	7.1	2.20		
Aroclor 1248	1.3	0.40		
Aroclor 1254	1.3	0.40		
Aroclor 1260	1.3	0.40		
Total Organic Carbon (dry)	3705.408516			
Total Solids	86.9			
HPAH	27	8.39	960	952
LPAH	18.9	5.87	370	364
Total PCB	7.1	2.20	12	9.8

## SMS OC and Dry Weight Normalization Detection Limit Check

	MDL (ug/Kg, ww)	MDL (mg/Kg, dw, oc)	SMS (mg/Kg, dw,oc)	Delta (SMS- MDL)
1,2,4-Trichlorobenzene	0.27	0.13	0.81	0.68
1,2-Dichlorobenzene	0.27	0.13	2.3	2.2
1,4-Dichlorobenzene	0.27	0.13	3.1	3.0
2-Methylnaphthalene	2.7	1.29	38	37
2,4-Dimethylphenol	2.7	3.13	29	26
2-Methylphenol	5.3	6.15	63	57
4-Methylphenol	5.3	6.15	670	664
Acenaphthene	2.7	1.29	16	15
Acenaphthylene	2.7	1.29	66	65
Anthracene	2.7	1.29	220	219
Benzo(a)anthracene	2.7	1.29	110	109
Benzo(a)pyrene	2.7	1.29	99	98
Benzo(b)fluoranthene	2.7	1.29	115	114
Benzo(g,h,i)perylene	2.7	1.29	31	30
Benzo(k)fluoranthene	2.7	1.29	115	114
Benzoic Acid	13	15.08	650	635
Benzyl Alcohol	5.3	6.15	57	51
Benzyl Butyl Phthalate	5.3	2.52	4.9	2.4
Bis(2-Ethylhexyl)Phthalate	5.3	2.52	47	44
Chrysene	2.7	1.29	110	109
Dibenzo(a,h)anthracene	2.7	1.29	12	11
Dibenzofuran	2.7	1.29	15	14
Diethyl Phthalate	5.3	2.52	61	58
Dimethyl Phthalate	5.3	2.52	53	50
Di-N-Butyl Phthalate	5.3	2.52	220	217
Di-N-Octyl Phthalate	5.3	2.52	58	55
Fluorene	2.7	1.29	23	22
Fluoranthene	2.7	1.29	160	159
Hexachlorobenzene	0.53	0.25	0.38	0.13
Hexachlorobutadiene	1.3	0.62	3.9	3.3
Indeno(1,2,3-Cd)Pyrene	2.7	1.29	34	33
N-Nitrosodiphenylamine	5.3	2.52	11	8
Naphthalene	2.7	1.29	99	98
Pentachlorophenol	13	15.08	360	345
Phenanthrene	2.7	1.29	100	99
Phenol	5.3	6.15	420	414
Pyrene	2.7	1.29	1000	999
Aroclor 1016	1.3	0.62		
Aroclor 1221	2.5	1.19		
Aroclor 1232	2.5	1.19		
Aroclor 1242	3.7	1.76		
Aroclor 1248	1.3	0.62		
Aroclor 1254	1.3	0.62		
Aroclor 1260	1.3	0.62		
Total Organic Carbon (dry)	2436.194896			
Total Solids	86.2			
HPAH	27	12.86	960	947
LPAH	18.9	9.00	370	361
Total PCB	3.7	1.76	12	10.2



## CONVENTIONAL ANALYSES QC DATA

## King County Environmental Laboratory

## WORK GROUP REPORT (wk02)

Apr 20 2006, 03:25 pm

Work Group: WG85335 (DUDI SEDS) for Department: 3 - Conventionals

Created: 20-APR-06 PrepDate: Due: Operator:

Sample	Project Number	Project Description	PKY	C	Product	Matrix	Stat	UA	Workdate	Due date
L38325-1	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	TOC	SALTWTRSED	ANAL	U	07-MAR-06	24-APR-06
L38325-2	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	TOC	SALTWTRSED	ANAL	U	07-MAR-06	24-APR-06
L38325-3	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	TOC	SALTWTRSED	ANAL	U	07-MAR-06	24-APR-06
L38325-4	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	TOC	SALTWTRSED	ANAL	U	07-MAR-06	24-APR-06
L38325-5	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	TOC	SALTWTRSED	ANAL	U	07-MAR-06	24-APR-06
L38325-6	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	TOC	SALTWTRSED	ANAL	U	07-MAR-06	24-APR-06
L38325-7	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	TOC	SALTWTRSED	ANAL	U	07-MAR-06	24-APR-06
L38325-8	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	TOC	SALTWTRSED	ANAL	U	07-MAR-06	24-APR-06
L38325-9	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	TOC	SALTWTRSED	ANAL	U	07-MAR-06	24-APR-06
L38326-1	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	TOC	SALTWTRSED	ANAL	U	08-MAR-06	24-APR-06
L38326-10	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	TOC	SALTWTRSED	ANAL	U	08-MAR-06	24-APR-06
L38326-11	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	TOC	SALTWTRSED	ANAL	U	08-MAR-06	24-APR-06
L38326-12	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	TOC	SALTWTRSED	ANAL	U	08-MAR-06	24-APR-06
L38326-13	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	TOC	SALTWTRSED	ANAL	U	08-MAR-06	24-APR-06
L38326-14	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	TOC	SALTWTRSED	ANAL	U	08-MAR-06	24-APR-06
L38326-15	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	TOC	SALTWTRSED	ANAL	U	08-MAR-06	24-APR-06
L38326-2	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	TOC	SALTWTRSED	ANAL	U	08-MAR-06	24-APR-06
L38326-9	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	TOC	SALTWTRSED	ANAL	U	08-MAR-06	24-APR-06
L38327-1	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	TOC	SALTWTRSED	ANAL	U	10-MAR-06	24-APR-06
L38327-2	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	TOC	SALTWTRSED	ANAL	U	10-MAR-06	24-APR-06
L38327-3	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	TOC	SALTWTRSED	ANAL	U	10-MAR-06	24-APR-06
L38327-4	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	TOC	SALTWTRSED	ANAL	U	10-MAR-06	24-APR-06
L38327-5	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	TOC	SALTWTRSED	ANAL	U	10-MAR-06	24-APR-06
L38327-6	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	TOC	SALTWTRSED	ANAL	U	10-MAR-06	24-APR-06
L38327-7	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	TOC	SALTWTRSED	ANAL	U	10-MAR-06	24-APR-06
L38327-8	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	TOC	SALTWTRSED	ANAL	U	10-MAR-06	24-APR-06
WG85335-1	MB			S	TOC	OTHR SOLID	ANAL	U	20-APR-06	
WG85335-10	SRM		SED	S	TOC	SALTWTRSED	ANAL	U	20-APR-06	
WG85335-11	SB			S	TOC	OTHR SOLID	ANAL	U	20-APR-06	
WG85335-12	LD		SED	S	TOC	SALTWTRSED	ANAL	U	20-APR-06	
WG85335-13	LT		SED	S	TOC	SALTWTRSED	ANAL	U	20-APR-06	
WG85335-14	MS		SED	S	TOC	SALTWTRSED	ANAL	U	20-APR-06	
WG85335-2	SRM		SED	S	TOC	SALTWTRSED	ANAL	U	20-APR-06	
WG85335-3	SB			S	TOC	OTHR SOLID	ANAL	U	20-APR-06	
WG85335-4	LD		SED	S	TOC	SALTWTRSED	ANAL	U	20-APR-06	
WG85335-5	LT		SED	S	TOC	SALTWTRSED	ANAL	U	20-APR-06	
WG85335-6	MS		SED	S	TOC	SALTWTRSED	ANAL	U	20-APR-06	
WG85335-7	MB			S	TOC	OTHR SOLID	ANAL	U	20-APR-06	
WG85335-8	SRM		SED	S	TOC	SALTWTRSED	ANAL	U	20-APR-06	
WG85335-9	MB			S	TOC	OTHR SOLID	ANAL	U	20-APR-06	

## Comments:

L38325-1 3 grab comp, 0-10 cm  
 L38325-2 3 grab comp, 0-10 cm  
 L38325-3 3 grab comp, 0-10 cm  
 L38325-4 3 grab comp, 0-10 cm  
 L38325-5 0-10 cm, AREP  
 L38325-6 0-10 cm, FREP  
 L38325-7 3 grab comp, 0-10 cm  
 L38325-8 3 grab comp, 0-10 cm  
 L38325-9 3 grab comp, 0-10 cm  
 L38326-1 10 Grab Comp, 0-10 cm  
 L38326-10 10 Grab Comp, FREP  
 L38326-11 10 Grab Comp, 0-10 cm  
 L38326-12 10 Grab Comp, 0-10 cm  
 L38326-13 10 Grab Comp, 0-10 cm  
 L38326-14 10 Grab Comp, 0-10 cm  
 L38326-15 10 Grab Comp, 0-10 cm  
 L38326-2 10 Grab Comp, 0-10 cm  
 L38326-9 10 Grab Comp, AREP

## King County Environmental Laboratory

WORK GROUP REPORT (wk02)

Apr 20 2006, 03:25 pm

Work Group: WG85335 (DUDI SEDS) for Department: 3 - Conventionals

Created: 20-APR-06 PrepDate: Due: Operator:

Sample	Project Number	Project Description	PKay C Product	Matrix	Stat UA	Workdate	Duedate
L38327-1		Diver Cores, 2006					
L38327-2		Diver Cores, 2006, AREP					
L38327-3		Diver Cores, 2006, FREP					
L38327-4		Diver Cores, 2006					
L38327-5		Diver Cores, 2006					
L38327-6		Diver Cores, 2006					
L38327-7		Diver Cores, 2006					
L38327-8		Diver Cores, 2006					
WG85335-1		MB1 041906					
WG85335-10		HICONC					
WG85335-11		WG85335-9					
WG85335-12		L38327-2					
WG85335-13		WG85335-12 L38327-2					
WG85335-14		L38327-2					
WG85335-2		HICONC					
WG85335-3		WG85335-1					
WG85335-4		L38325-8					
WG85335-5		WG85335-4 L38325-8					
WG85335-6		L38325-8					
WG85335-7		MB1 041806					
WG85335-8		HICONC					
WG85335-9		MB1 042006					

MB:WG85335-1 (Method Blank)	Matrix: OTHER SOLID	Listtype: CVTOC	Method: EPA9060-PSEP96	(03-04-002-003)	Project: Pkey: SED
Parameter					
Total Organic Carbon	MDI	Rdl	Units	MB Value	Qual
	500	1000	mg/Kg	<MDL	
SRM:WG85335-2 (Std Reference Material)	Matrix: SALTWATERSED	Listtype: CVTOC	Method: EPA9060-PSEP96	(03-04-002-003)	Project: Pkey: SED
Parameter					
Total Organic Carbon	MDI	Rdl	Units	TrueValue SRM Value	Rec. Qual LabLimit
	2500	4910	mg/Kg	21900 21100	96 80-120
SB:WG85335-3 (Spike Blank, Method Blank)	Matrix: OTHER SOLID	Listtype: CVTOC	Method: EPA9060-PSEP96	(03-04-002-003)	Project: Pkey: SED
Parameter					
Total Organic Carbon	MDI	Rdl	Units	TrueValue SB Value	Rec. Qual LabLimit
	500	1000	mg/Kg	2500 2630	105 80-120
LT:WG85335-5 (Lab Triplicate, Lab Duplicate)	Matrix: SALTWATERSED	Listtype: CVTOC	Method: EPA9060-PSEP96	(03-04-002-003)	Project: 423062-100-4 Pkey: SED
Parameter					
Total Organic Carbon	MDI	Rdl	Units	LT Value	RSD
	1200	2500	mg/Kg	11500	9
MS:WG85335-6 (Matrix Spike)	Matrix: SALTWATERSED	Listtype: CVTOC	Method: EPA9060-PSEP96	(03-04-002-003)	Project: 423062-100-4 Pkey: SED
Parameter					
Total Organic Carbon	MDI	Rdl	Units	TrueValue MS Value	Rec. Qual LabLimit
	1300	2590	mg/Kg	6473 16500	89 75-125
MB:WG85335-7 (Method Blank)	Matrix: OTHER SOLID	Listtype: CVTOC	Method: EPA9060-PSEP96	(03-04-002-003)	Project: Pkey: SED
Parameter					
Total Organic Carbon	MDI	Rdl	Units	MB Value	Qual
	500	1000	mg/Kg	<MDL	
SRM:WG85335-8 (Std Reference Material)	Matrix: SALTWATERSED	Listtype: CVTOC	Method: EPA9060-PSEP96	(03-04-002-003)	Project: Pkey: SED
Parameter					
Total Organic Carbon	MDI	Rdl	Units	TrueValue SRM Value	Rec. Qual LabLimit
	2500	4970	mg/Kg	21900 21000	96 80-120
MB:WG85335-9 (Method Blank)	Matrix: OTHER SOLID	Listtype: CVTOC	Method: EPA9060-PSEP96	(03-04-002-003)	Project: Pkey: SED
Parameter					
Total Organic Carbon	MDI	Rdl	Units	MB Value	Qual
	500	1000	mg/Kg	<MDL	

SRM:WG85335-10 Matrix: SALTWTRSED Listtype: CVTOC Method: EPA9060-PSEP96 (03-04-002-003) Project: Pkey: SED Std Reference Material)									
Parameter	Mdl	Rdl	Units	Truevalue SRM Value	% Rec. Qual LabLimit				
Total Organic Carbon	2200	4490	mg/Kg	21900 20700 95	80-120				
SB:WG85335-11 MB:WG85335-9 Matrix: OTHR SOLID Listtype: CVTOC Method: EPA9060-PSEP96 (03-04-002-003) Project: Pkey: SED Spike Blank, Method Blank)									
Parameter	Mdl	Rdl	Units	MS Value	% Rec. Qual LabLimit				
Total Organic Carbon	500	1000	mg/Kg	<MDL 2500 2610 104	80-120				
LT:WG85335-13 LD:WG85335-12 L38327-2 Matrix: SALTWTRSED Listtype: CVTOC Method: EPA9060-PSEP96 (03-04-002-003) Project: 423062-200-4 Pkey: SED Lab Triplicate, Lab Duplicate)									
Parameter	Mdl	Rdl	Units	Sample Value	LD Value	LT Value	RSD	Qual LabLimit	
Total Organic Carbon	400	806	mg/Kg	1590	1610	1670	3		
MS:WG85335-14 L38327-2 Matrix: SALTWTRSED Listtype: CVTOC Method: EPA9060-PSEP96 (03-04-002-003) Project: 423062-200-4 Pkey: SED Matrix Spike)									
Parameter	Mdl	Rdl	Units	Sample Value	Truevalue MS Value	% Rec. Qual LabLimit			
Total Organic Carbon	400	790	mg/Kg	1590	1976 3680 106	75-125			

WG85335 CVTOC  
Sample Number mg/kg Prep Date MDL RDL  
Date Analyzed 4/20/2006

WG85335-9	-186	4/20/2006	500	1000	MB1 042006
WG85335-10	20717.8	4/20/2006	2243.8	4487.7	SRM1 042006
WG85335-11	2609.3	4/20/2006	500	1000	SB1 042006
L38327-1	2727.2	4/11/2006	576.8	1153.6	
L38327-2	1592	4/11/2006	405.4	810.8	
WG85335-12	1613.3	4/11/2006	402.8	805.6	L38327-2LD
WG85335-13	1672.5	4/11/2006	401.8	803.6	L38327-2LT
WG85335-14	3676.9	4/11/2006	395.1	790.3	L38327-2MS
L38327-3	1308.8	4/11/2006	407	814	
L38327-4	5084.1	4/11/2006	667.9	1335.9	
L38327-5	1776.5	4/11/2006	460.2	920.3	
L38327-6	1055.9	4/11/2006	425.1	850.3	
L38327-7	3220.7	4/11/2006	432.4	864.8	
L38327-8	2096.2	4/11/2006	425.9	851.8	

# TOC Solids Sample Analysis Worksheet

Analyst: CB  
 Analysis Date: 20-Apr-06  
 Workgroup #: WG85335

Help w/ this function?

Help w/ this function?

Help w/ this function?

Help w/ this function?

Sample Number	Instrument Result 1 (%C)	Instrument Result 2 (%C)	Instrument Result 3 (%C)	RSD (%)	Average (%C)	TOC (wet weight) (mg/Kg)	Rep. 1 Mass (mg)	Rep. 2 Mass (mg)	Rep. 3 Mass (mg)	Average Mass (mg)	MDL (wet weight) (mg/Kg)	RDL (wet weight) (mg/Kg)	% Solids (@ 70°C)
CCV1	101.54914	100.38028	100.98242	1	100.971	NA	1	1	1	1	NA	NA	NA
RDL CK	100.7699	101.3012	99.8844	1	100.652	NA	0.2	0.2	0.2	0.2	NA	NA	NA
MB1 042006	0.0051359	-0.0304612	-0.0304612	111	-0.019	-186	200	200	200	200	500	1000	100
SRM1 042006	2.01931284	2.09119016	2.10484368	2	2.072	20717.8	47.5	42.7	43.5	44.56667	2243.8	4487.7	100
SB1 042006	0.2562637	0.2552011	0.2713172	3	0.261	2609.3	200	200	200	200	500	1000	100
L38327-1	0.29923126	0.32750836	0.31368047	5	0.313	2727.2	91.5	181.8	179.2	150.8333	576.8	1153.6	87
L38327-2	0.19329817	0.20279043	0.2038574	3	0.200	1592	196.8	194.4	197.9	196.3667	405.4	810.8	80
L38327-2LD	0.19227499	0.20290323	0.20280521	3	0.199	1613.3	201.9	201.1	199.8	200.9333	402.8	805.6	81
L38327-2LT	0.20859231	0.20421871	0.20934859	1	0.207	1672.5	200.2	203.1	198.8	200.7	401.8	803.6	81
L38327-2MS	0.45870959	0.46494287	0.46201555	1	0.462	3676.9	206.4	199.9	198.1	201.4667	395.1	790.3	80
L38327-3	0.16307742	0.16126457	0.14886667	5	0.158	1308.8	204.6	206.9	200.1	203.8667	407	814	83
CCV2	100.84074	104.06396	99.5302	2	101.478	NA	1	1	1	1	NA	NA	NA
L38327-4	0.59455	0.58652173	0.60479786	2	0.595	5084.1	126	127	130.6	127.8667	667.9	1335.9	85
L38327-5	0.20322225	0.23124825	0.21100884	7	0.215	1776.5	160	186.1	192.2	179.4333	460.2	920.3	83
L38327-6	0.12208213	0.11818497	0.13137726	5	0.124	1055.9	197	199.6	204.9	200.5	425.1	850.3	85
L38327-7	0.39135385	0.38578801	0.35739099	5	0.378	3220.7	185.9	205.2	199.8	196.9667	432.4	864.8	85
L38327-8	0.24891217	0.25875471	0.23482967	5	0.247	2096.2	193.1	195.2	208.3	198.8667	425.9	851.8	85
L38326-2	1.95966323	1.91510418	1.91706186	1	1.931	10676.9	58.2	52.6	58.2	56.33333	981.7	1963.4	55
CCV3	100.13234	102.57632	100.7699	1	101.160	NA	1	1	1	1	NA	NA	NA

## Comments:

**L38326-2** RE-ANALYSIS FOR INFORMATION ONLY. THIS SAMPLE WAS ANALYZED ON 4/19/06. IT WAS THE LAST SAMPLE OF BEFORE CCV2. THERE WERE INADVERTANTLY 11 SAMPLES BEFORE CCV2. THIS REANALYSIS IS JUST TO CONFIRM THE INTITAL RESULTS.

## King County Environmental Laboratory

## WORK GROUP REPORT (wk02)

Apr 14 2006, 02:15 pm

Work Group: WG85272 (TOTS 423062-100-4) for Department: 3 - Conventionals

Created: 14-APR-06 PrepDate: Due: Operator: CB

Sample	Project Number	Project Description	PKey	C	Product	Matrix	Stat	UA	Workdate	Due date
L38327-1	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	TOTS	SALTWTRSED	ANAL	U	10-MAR-06	24-APR-06
L38327-2	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	TOTS	SALTWTRSED	ANAL	U	10-MAR-06	24-APR-06
L38327-3	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	TOTS	SALTWTRSED	ANAL	U	10-MAR-06	24-APR-06
L38327-4	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	TOTS	SALTWTRSED	ANAL	U	10-MAR-06	24-APR-06
L38327-5	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	TOTS	SALTWTRSED	ANAL	U	10-MAR-06	24-APR-06
L38327-6	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	TOTS	SALTWTRSED	ANAL	U	10-MAR-06	24-APR-06
L38327-7	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	TOTS	SALTWTRSED	ANAL	U	10-MAR-06	24-APR-06
L38327-8	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	TOTS	SALTWTRSED	ANAL	U	10-MAR-06	24-APR-06
WG85272-1	MB			S	TOTS	OTHR SOLID	ANAL	U	14-APR-06	
WG85272-2	LD		SED	S	TOTS	SALTWTRSED	ANAL	U	14-APR-06	
WG85272-3	LT		SED	S	TOTS	SALTWTRSED	ANAL	U	14-APR-06	

## Comments:

L38327-1 Diver Cores, 2006  
 L38327-2 Diver Cores, 2006, AREP  
 L38327-3 Diver Cores, 2006, FREP  
 L38327-4 Diver Cores, 2006  
 L38327-5 Diver Cores, 2006  
 L38327-6 Diver Cores, 2006  
 L38327-7 Diver Cores, 2006  
 L38327-8 Diver Cores, 2006  
 WG85272-1 MB1 041106  
 WG85272-2 L38327-2  
 WG85272-3 WG85272-2 L38327-2



MB:WG85272-1 Matrix: OTHER SOLID Listtype: CVTOTS Method: SM2540-G (03-01-007-002) Project: SED Pkey: SED									
Parameter	MDL	Rdl	Units	MB Value	Qual				
Total Solids	.005	.01	*	<MDL					
LT:WG85272-3 ID:WG85272-2 Matrix: SALTWRSED Listtype: CVTOTS Method: SM2540-G (03-01-007-002) Project: 423062-200-4 Pkey: SED									
Lab Triplicate, Lab Duplicate)									
Parameter	MDL	Rdl	Units	SampValue	ID Value	LT Value	RSD	Qual	LabLim
Total Solids	.005	.01	*	82	81.6	83.5	1		20

WG85272	CVTOTS	
Sample Number	%	Prep Date
Date Analyzed	04/11/06	
WG85272-1	-0.001	04/11/06
L38327-1	86.804	04/11/06
L38327-2	81.968	04/11/06
WG85272-2	81.620	04/11/06
WG85272-3	83.451	04/11/06
L38327-3	81.061	04/11/06
L38327-4	86.072	04/11/06
L38327-5	79.318	04/11/06
L38327-6	85.846	04/11/06
L38327-7	86.905	04/11/06
L38327-8	86.170	04/11/06

## Total Solids (Solid Matrix) - Balance Link Template

**Analyst: CB**

[illegible]

## King County Environmental Laboratory

WORK GROUP REPORT (wk02)

Apr 21 2006, 09:18 am

Work Group: WG85313 (PSD/423062 DuDi) for Department: 3 - Conventionals

Created: 18-APR-06 PrepDate: Due: Operator: DN

Sample	Project Number	Project Description	Key	C	Product	Matrix	Stat	UA	Workdate	Due date
L38327-1	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PSD	SALTWTRSED	ANAL	U	10-MAR-06	24-APR-06
L38327-2	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PSD	SALTWTRSED	ANAL	U	10-MAR-06	24-APR-06
L38327-3	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PSD	SALTWTRSED	ANAL	U	10-MAR-06	24-APR-06
L38327-4	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PSD	SALTWTRSED	ANAL	U	10-MAR-06	24-APR-06
L38327-5	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PSD	SALTWTRSED	ANAL	U	10-MAR-06	24-APR-06
L38327-6	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PSD	SALTWTRSED	ANAL	U	10-MAR-06	24-APR-06
L38327-7	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PSD	SALTWTRSED	ANAL	U	10-MAR-06	24-APR-06
L38327-8	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PSD	SALTWTRSED	ANAL	U	10-MAR-06	24-APR-06
WG85313-1	LD		SED	S	PSD	SALTWTRSED	ANAL	U	21-APR-06	
WG85313-2	LT		SED	S	PSD	SALTWTRSED	ANAL	U	21-APR-06	

## Comments:

L38327-1 Diver Cores, 2006  
 L38327-2 Diver Cores, 2006, AREP  
 L38327-3 Diver Cores, 2006, FREP  
 L38327-4 Diver Cores, 2006  
 L38327-5 Diver Cores, 2006  
 L38327-6 Diver Cores, 2006  
 L38327-7 Diver Cores, 2006  
 L38327-8 Diver Cores, 2006  
 WG85313-1 L38327-1  
 WG85313-2 WG85313-1 L38327-1

# Conventionals Data Anomaly Form

Date(s) Occurred: 4/18/06

WG #(s): WG85313

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

Project #(s): 423062

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

## I. Analysis

- ☐ Nutrients:
- ☐ Demands:
- ☐ Cyanides:
- ☐ Physicals:
- ☐ Solids:
- ☐ Anions:
- ☐ Chlorophylls:
- ☒ Others: PSD
- ☐ Subcontracted:

## II. Instrument

Ion Chromatography: ☐ Dionex 120  
Spectrophotometer: ☐ Hitachi U3000 UV/VIS ☐ Hach DR 890  
Fluorometer: ☐ Turner 10-AU  
TOC Analyzer: ☐ OI 1020A ☐ OI TOC Analyzer  
Autotitrator: ☐ Metrohm 736GP Titrator ☐ Metrohm 712 Conductometer  
Turbidimeter: ☐ Hach 2100AN  
Autoanalyzers: ☐ Astoria2+2 (freshwater system) ☐ Astoria2+2 (saltwater system)  
☐ Astoria2 (total nutrients system) ☐ Astoria2 (cyanide system)  
Dissolved Oxygen: ☐ YSI 5100 ☐ CAT Contriburette  
Salinometer: ☐ Portosal 8410A  
pH: ☐ Metrohm 736GP ☐ Accumet XL60  
Others: AT200 and PG503 Analytical Balances

## III. Type of Sample/Analytical Anomaly

- ☒ Values Outside of Control Limits:
- |  |  |  |
|--|--|--|
| 1 <input type="checkbox"/> Initial Calibration           | 4 <input type="checkbox"/> MB Anomaly                  | 7 <input type="checkbox"/> MS RPD              |
| 2 <input type="checkbox"/> Continuing Calibration Checks | 5 <input type="checkbox"/> LCS/SRM Recoveries          | 8 <input type="checkbox"/> Sample/LD RPD       |
| 3 <input type="checkbox"/> SB Spike Recoveries           | 6 <input checked="" type="checkbox"/> Sample/LD/LT RSD | 9 <input type="checkbox"/> MS Spike Recoveries |
- 10 ☐ Holding time exceeded by:  
11 ☐ Insufficient sample amount.  
12 ☐ Inappropriate storage, container or preservation.

April 20, 2006  
423062\_PSD\_041806

☐ Other

**Anomaly Description:** *The laboratory triplicate analysis for particle size distribution (PSD) for sample L38327-1 had a percent relative standard deviation (%RSD) of 33% for the clay category. This exceeded the established acceptance limit of 20% for the category. The clay category represented a small fraction of the overall sample mass associated with sample L38327-1. Variability due to the low contribution to this category is the probable cause.*

#### IV. Type of Project Anomaly

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

**Anomaly Description:**

#### V. Corrective Action Taken

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

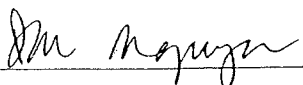


**Corrective Action Description:** *No reanalysis was required due to the clay category representing less than 10% of the overall sample mass. The data were reported to LIMS and the gravel category for all samples in the workgroup qualified with the E qualifier to indicate that an estimate value was reported for this category. No further corrective action was taken.*

#### VI. Potential Effects on Data Quality

**Based upon the expected performance of this method:**

- ☐ It is likely the observed anomaly influenced the reported value(s).
- ☒ It is unlikely the observed anomaly influenced the reported value(s).
- ☐ The observed anomaly may have influenced the reported value(s).
- ☐ It is unknown whether or not the observed anomaly affected the reported value(s).

**Explanation:** *This does not affect the quality of the data. Inherent variability at low levels can be expected in the method. In these instances, a high %RSD does not necessarily indicate poor precision or poor method performance. In the case of these samples, the QC data suggest that the clay category represents too small a fraction of the overall sample constituency to be considered appropriate for evaluation against a 20% control window.*

	Signatures	Signature Dates
Reported By: <i>Duc Nguyen</i>		<i>4/21/06</i>
Reviewer: <i>Despina Strong</i>		<i>4/24/06</i>
Supervisor: <i>Despina Strong</i>		<i>4/24/06</i>
QA Officer: <i>Colin Elliott</i> (For QA1 only)		
cc: LPM:		

LT:WG85313-2 LD:WG85313-1 L38327-1 Matrix: SALTWATERSED Listtype: CVPSD Method: ASTM D422(03-02-005-001) Project: 423062-200-4 Pkey: SED  
 (Lab Triplicate, Lab Duplicate)

Parameter	Mdl	Rdl	Units	SampValue	LD Value	LT Value	RSD	Qual	LabLim
Gravel	.1	1	%	54.1	50	49	5		20
Sand	.1	1	%	41.9	43.3	43.6	2		20
Silt	.5	1	%	3.8	3.3	4.4	14		20
Clay	.5	1	%	2.5	4.5	5	33		20



[illegible]

## METAL CHEMISTRY QC DATA

## King County Environmental Laboratory

WORK GROUP REPORT (wk02)

Mar 16 2006, 08:30 am

Work Group: WG84811 (Duwamish Diagonal Thin Layer Cap Monitor) for Department: 6 - Metals, Trace

Created: 13-MAR-06 PrepDate: 13-MAR-06 Due: Operator: DC

Sample	Project Number	Project Description	PKey	C	Product	Matrix	Stat	UA	Workdate	Due date
L38327-1	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	HG-CVAA	SALTWTRSED	PREP	U	07-APR-06	24-APR-06
L38327-2	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	HG-CVAA	SALTWTRSED	PREP	U	07-APR-06	24-APR-06
L38327-3	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	HG-CVAA	SALTWTRSED	PREP	U	07-APR-06	24-APR-06
L38327-4	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	HG-CVAA	SALTWTRSED	PREP	U	07-APR-06	24-APR-06
L38327-5	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	HG-CVAA	SALTWTRSED	PREP	U	07-APR-06	24-APR-06
L38327-6	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	HG-CVAA	SALTWTRSED	PREP	U	07-APR-06	24-APR-06
L38327-7	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	HG-CVAA	SALTWTRSED	PREP	U	07-APR-06	24-APR-06
L38327-8	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	HG-CVAA	SALTWTRSED	PREP	U	07-APR-06	24-APR-06
WG84811-1	SRM		SED	S	HG-CVAA	SALTWTRSED	PREP	U	13-MAR-06	
WG84811-2	MB			S	HG-CVAA	SOLIDBLANK	PREP	U	13-MAR-06	
WG84811-3	SB			S	HG-CVAA	SOLIDBLANK	PREP	U	13-MAR-06	
WG84811-4	MS		SED	S	HG-CVAA	SALTWTRSED	PREP	U	13-MAR-06	
WG84811-5	MSD		SED	S	HG-CVAA	SALTWTRSED	PREP	U	13-MAR-06	
WG84811-6	LD		SED	S	HG-CVAA	SALTWTRSED	PREP	U	13-MAR-06	

## Comments:

L38327-1 Diver Cores, 2006  
 L38327-2 Diver Cores, 2006, AREP  
 L38327-3 Diver Cores, 2006, FREP  
 L38327-4 Diver Cores, 2006  
 L38327-5 Diver Cores, 2006  
 L38327-6 Diver Cores, 2006  
 L38327-7 Diver Cores, 2006  
 L38327-8 Diver Cores, 2006  
 WG84811-1 PACS2  
 WG84811-2 METHOD BLANK  
 WG84811-3 WG84811-2 HG-SOL  
 WG84811-4 L38327-3 HG-SOL  
 WG84811-5 WG84811-4 L38327-3 HG-SOL-MSD  
 WG84811-6 L38327-5 RPD-SOL

# KING COUNTY ENVIRONMENTAL LABORATORY

## Trace Metals Section HG-CVAA Preparation Log

Preparation Method: EPA 7471A  
 Project Number(s): 423062  
 Project Description(s): Duwamish Diagonal CAP Monitoring  
 Preparation Date: 3/13/06  
 Temperature: 94.4°C

Work Group #: WG84811  
 Analyst: DC  
 Matrices: SALTWATER SEDIMENT  
 Preparation: (1st) 2nd 3rd  
 Storage conditions: room temp 4°C (20°C)

### Analytical Samples

Sample Number	Aliquot (g or mL)	Final Vol. (mL)	Comments	pH <2	Sample Number	Aliquot (g or mL)	Final Vol. (mL)	Comments	pH <2
1 L38327-1	0.983	126			11				
2 -2	1.019				12				
3 -3	1.021		BKG		13				
4 -4	1.037				14				
5 -5	1.049		LD		15				
6 -6	1.018				16				
7 -7	0.979				17				
8 -8	1.034				18				
9					19				
10					20				

### Batch Quality Control Samples

QC Sample Number	QC Sample Description	Aliquot (g or mL)	Final Vol. (mL)	Solution ID #	Solution Conc.	Amount Used (uL)	pH <2
1 WG84811-1	SRM-NROC PACS-2	0.201	126	M1-11-30			
2 WG84811-2	METHOD BLANK	1.050					
3 WG84811-3	SPIKE BLANK	1.050		Hg-06-028034	20ppm	250	
4 WG84811-4	L38327-3 MS	1.032					
5 WG84811-5	I MSD	0.995					
6 WG84811-6	L38327-5 LD	1.027					
7							
8							
9							

### Calibration and Instrument Check Standards

Standard Conc. (ppb or ppt)	Cal Std	Inst Chk Std	Aliquot (g or mL)	Final Vol. (mL)	Solution ID #	prep date Solution Conc.	Amount Used (uL)

\* Standards, Samples and pre-digestion dilutions are based on a 100 25/20 mL final volume

### Reagent Solution ID #'s

KMnO <sub>4</sub>	Hg-06-029	K <sub>2</sub> S <sub>2</sub> O <sub>8</sub>	N/A	NH <sub>2</sub> OH-HCl	Hg-06-017	SnCl <sub>2</sub>	Hg-06-036
-------------------	-----------	--	-----	------------------------	-----------	-------------------	-----------

Comments:

SRM:WG84811-1 Matrix: SALTWTRSED Listtype: MTHG-SED Method: EPA 7471A (06-01-004-003) Project: Pkey: SED (Std Reference Material)									
Parameter	Mdl	Rdl	Units	TrueValue	SRM Value	% Rec. Qual	LabLimit		
Mercury, Total, CVAA	.1	.995	mg/Kg	3.04	2.84	93	80-120		
MB:WG84811-2 Matrix: SOLIDBLANK Listtype: MTHG-SED Method: EPA 7471A (06-01-004-003) Project: Pkey: SED (Method Blank)									
Parameter	Mdl	Rdl	Units	MB Value	Qual				
Mercury, Total, CVAA	.019	.19	mg/Kg	<MDL					
SB:WG84811-3 MB:WG84811-2 Matrix: SOLIDBLANK Listtype: MTHG-SED Method: EPA 7471A (06-01-004-003) Project: Pkey: SED (Spike Blank, Method Blank)									
Parameter	Mdl	Rdl	Units	MB Value	TrueValue	SB Value	% Rec. Qual	LabLimit	
Mercury, Total, CVAA	.019	.19	mg/Kg	<MDL	0.476	.489	103	85-115	
MSD:WG84811-5 MS:WG84811-4 L38327-3 Matrix: SALTWTRSED Listtype: MTHG-SED Method: EPA 7471A (06-01-004-003) Project: 423062-200-4 Pkey: SED (Matrix Spike Duplicate, Matrix Spike)									
Parameter	Mdl	Rdl	Units	SampValue	TrueValue	MS Value	% Rec. Qual	LabLimit	
Mercury, Total, CVAA	.019	.194	mg/Kg	.023	0.484	.515	102	75-125	0
						0.503	.535	102	20
LD:WG84811-6 L38327-5 Matrix: SALTWTRSED Listtype: MTHG-SED Method: EPA 7471A (06-01-004-003) Project: 423062-200-4 Pkey: SED (Lab Duplicate)									
Parameter	Mdl	Rdl	Units	SampValue	LD Value				
Mercury, Total, CVAA	.019	.195	mg/Kg	.041	.026				
									RPD Qual LabLimit
									20

WG84811	6-SED	ug/L			
WG84811-1	16-Mar-06	5.6996	0.201	1	100
WG84811-2	16-Mar-06	-0.0078	1.050	1	100
WG84811-3	16-Mar-06	5.1309	1.050	1	100
L38327-1	16-Mar-06	0.29345	0.983	1	100
L38327-2	16-Mar-06	0.2975	1.019	1	100
L38327-3	16-Mar-06	0.23691	1.021	1	100
WG84811-4	16-Mar-06	5.3192	1.032	1	100
WG84811-5	16-Mar-06	5.3275	0.995	1	100
L38327-4	16-Mar-06	2.9981	1.037	1	100
L38327-5	16-Mar-06	0.42706	1.049	1	100
WG84811-6	16-Mar-06	0.26326	1.027	1	100
L38327-6	16-Mar-06	0.1337	1.018	1	100
L38327-7	16-Mar-06	0.41092	0.979	1	100
L38327-8	16-Mar-06	0.20537	1.034	1	100



## King County Environmental Laboratory

## WORK GROUP REPORT (wk02)

Mar 14 2006, 09:14 am

Work Group: WG84821 (Du/Di Thin L. 14-MAR-06) for Department: 6 - Metals, Trace

Created: 14-MAR-06 PrepDate: 14-MAR-06 Due: Operator: SH

Sample	Project Number	Project Description	PKey	C Product	Matrix	Stat	UA	Workdate	DueDate
L38327-7	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S AL-ICP	SALTWTRSED	WKGP	U	09-MAY-06	09-MAY-06
L38327-7	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S FE-ICP	SALTWTRSED	WKGP	U	09-MAY-06	09-MAY-06
L38327-7	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S MN-ICP	SALTWTRSED	WKGP	U	09-MAY-06	09-MAY-06
L38327-8	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S AL-ICP	SALTWTRSED	WKGP	U	09-MAY-06	09-MAY-06
L38327-8	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S FE-ICP	SALTWTRSED	WKGP	U	09-MAY-06	09-MAY-06
L38327-8	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S MN-ICP	SALTWTRSED	WKGP	U	09-MAY-06	09-MAY-06
L38327-8	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S PP ICP	SALTWTRSED	WKGP	U	09-MAY-06	09-MAY-06
WG84821-1	SB			S ROUTINE ICP	SOLIDBLANK	WKGP	U	14-MAR-06	
WG84821-2	SRM		SED	S ROUTINE ICP	SALTWTRSED	WKGP	U	14-MAR-06	
WG84821-3	LCS			S ROUTINE ICP	SOIL	WKGP	U	14-MAR-06	
WG84821-4	MB			S ROUTINE ICP	SOLIDBLANK	WKGP	U	14-MAR-06	
WG84821-5	LD		SED	S ROUTINE ICP	SALTWTRSED	WKGP	U	14-MAR-06	
WG84821-6	MS		SED	S ROUTINE ICP	SALTWTRSED	WKGP	U	14-MAR-06	
Comments:									
L38326-1	10	Grab Comp, 0-10 cm							
L38326-10	10	Grab Comp, FREP							
L38326-11	10	Grab Comp, 0-10 cm							
L38326-12	10	Grab Comp, 0-10 cm							
L38326-13	10	Grab Comp, 0-10 cm							
L38326-14	10	Grab Comp, 0-10 cm							
L38326-15	10	Grab Comp, 0-10 cm							
L38326-2	10	Grab Comp, 0-10 cm							
L38326-9	10	Grab Comp, AREP							
L38327-1		Diver Cores, 2006							
L38327-2		Diver Cores, 2006, AREP							
L38327-3		Diver Cores, 2006, FREP							
L38327-4		Diver Cores, 2006							
L38327-5		Diver Cores, 2006							
L38327-6		Diver Cores, 2006							
L38327-7		Diver Cores, 2006							
L38327-8		Diver Cores, 2006							
WG84821-1		WG84821-4 ICPH							
WG84821-2		PACS2							
WG84821-3		ERASOIL							
WG84821-4		METHOD BLANK							
WG84821-5		L38326-9 RPD-SOL							
WG84821-6		L38326-9 ICPH							



## Trace Metals Data Anomaly Form

Date(s) Occurred: 3/15/06

WG #(s): WG84821

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

Project #(s):

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

### I. Analysis/Digestion

☒ Total ☐ TCLP ☐ Other:  
☐ Dissolved ☐ SEM ☐ Subcontracted:

### II. Instrument

☐ CVAA ☐ CVAF ICP (☐ B ☒ E) ICP-MS (☐ PE ☐ X7 ☐ X II)

### III. Type of Sample/Analytical Anomaly

☒ Values Outside of Control Limits:

<sup>1</sup> ☐ Blank Contamination

<sup>2</sup> ☐ SB Spike Recoveries

<sup>3</sup> ☐ ISTD Recoveries

<sup>4</sup> ☐ LCS/SRM Recoveries

<sup>5</sup> ☒ MS/MSD Spike Recoveries

<sup>6</sup> ☐ MS/MSD RPD

<sup>7</sup> ☒ Sample/LD RPD

☐ Certified values developed by a method other than that which was used for the analysis.

<sup>8</sup> ☐ Holding time exceeded by:

<sup>9</sup> ☐ Insufficient sample amount.

<sup>10</sup> ☐ Inappropriate storage, container, or preservation.

<sup>11</sup> ☐ Other

**Anomaly Description:** 5.) The matrix spike recoveries for antimony for WG84821-6 was 44%. 7.) The sample/lab duplicate RPD for silver was 123%.

On 4/17/06

### IV. Type of Project Anomaly

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

**Anomaly Description:**

# V. Corrective Action Taken

- ☐ Sample(s) re-analyzed
- ☒ Sample(s) reported "AS IS"
- ☒ Data qualified with the following flags: G, E SA 4/6/06
- ☒ Other
- ☐ Sample(s) re-prepared and re-analyzed
- ☐ Exposure deleted

**Corrective Action Description:** 5a.) The background samples (L38326-9), lab duplicate (WG84821-5) and matrix spike (WG84821-6) were analyzed on 3/21/06 along with a Post Digestion Spike (PDS) spiked w/2.5 mg/L Sb, of the background sample. The PDS recovery was within control limits of +/-25% (98%). However, the spike amount was too high, relative to the MDL. 5b.) The background sample, lab duplicate and matrix spike was analyzed again on 3/23/06 with a PDS of the lab duplicate sample (due to limited background sample volume) spiked with 0.25 mg/L Sb. The PDS recovery was within control limits at 81%. 3.) The antimony values were qualified with a "G" flag to indicate that the reported values may be biased low, based on the matrix spike recovery. 7.) The silver values were qualified with an "E" and the following text: "Estimated value due to sample/lab duplicate RPD = 123%."

Scott Mickelson was called to confirm that no further corrective action was necessary & he


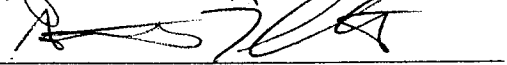
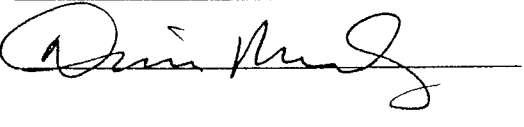
VI. Potential Effects on Data Quality

Based upon the expected performance of this method: continued. 4/17/06

- ☐ It is likely the observed anomaly influenced the reported value(s).
- ☒ It is unlikely the observed anomaly influenced the reported value(s).
- ☒ The observed anomaly may have influenced the reported value(s).
- ☐ It is unknown whether or not the observed anomaly affected the reported value(s).

May have: On 4/17/06

**Explanation:** The PDS recoveries indicate that there is not a matrix issue affecting the antimony recoveries in the the matrix spikes during analysis. The low matrix spike recoveries are related to the 3050 digestion procedure. The spike blank recovery (101%) indicates that the matrix may be affecting antimony during digestion.

	Signatures	Signature Dates
Reported By: Susannah Hochstein		4/6/06
Reviewer: Steve Talbot		4/6/06
Supervisor: Diane McElhany		4/17/06
QA Officer: Colin Elliott (For QA1 only)		
cc: LPM: Grotzkopp		

Unlikely: All silver values were < RDL but one which was just above the RDL. Values around the RDL will have greater variability & it is unlikely that there is any bias in the silver. On 4/17/06

April 5, 2006  
DAF\_WG84821

## **ICP ICV Solution SOP Deviation Document**

**Issue:** The ICP second source Initial Calibration Verification (ICV) solution was not a secondary source between January 24, 2006 and May 12, 2006.

**Explanation:** The 100 mL Spex QC21 solution received November of 2005 (M-05-040) is a different bottle of the same lot as the 500 mL Spex QC21 solution used in the calibration standards (M-05-068). This smaller bottle of QC21 was put into use on January 24<sup>th</sup>, 2006 for the ICP ICV solution. The ICV should be a different source than the calibration standards in order to validate the calibration. A different lot number qualifies as a second source. Trace Metals was out of compliance for the ICP ICV standard from 1/24/2006 to 5/12/2006. A custom standard from Spex (M-06-011) was created for use in the calibration standards in order to avoid the same source problem in the future. The RDL and LCS solutions are also different sources than the ICV but with different concentrations and acceptance limits than the ICV standard. During the approximate 3 month deviation of the ICV both the RDL and LCS met acceptance limits.

# KING COUNTY ENVIRONMENTAL LABORATORY

## Trace Metals Section ICP Preparation Log

Preparation Method: EPA 3050  
 Project Number(s): 423062-200-4  
 Project Description(s): DuDi Thin Layer  
 Preparation Date: 3/14/06

Work Group #: WG84821  
 Analyst: SH  
 Matrices: Saltwater sed.  
 Preparation: 1st 2nd 3rd  
 Storage conditions: room temp 4° C -20° C

### Analytical Samples

Sample Number	Aliquot (g or mL)	Final Vol.(mL)	Comments	pH <2	Sample Number	Aliquot (g or mL)	Final Vol.(mL)	Comments	pH <2
1 L38326-1	1.0221	50			11 L38327-2	1.0371	50		
2 -2	1.0413				12 -3	1.0222			
3 -9	1.0278		P&KG		13 -4	1.0127			
4 -10	1.0443				14 -5	0.99216			
5 -11	1.0253				15 -6	1.0352			
6 -12	0.9715				16 -7	1.0339			
7 -13	0.9920				17 -8	1.0014			
8 -14	1.0048				18				
9 -15	1.0060				19				
10 L38327-1	1.0634				20				

### Quality Control Samples

QC Sample Number	QC Sample Description	Aliquot (g or mL)	Final Vol.(mL)	Comments	pH <2
1 WG84821-1	Spike Blank	1.050	50	ICPH	
2 -2	Std. Reference Material	0.2484		PAC52 ML-11-30	
3 -3	Lab Control Sample	0.2591		ERASoil M-05-038	
4 -4	Method Blank	1.050			
5 -5	Lab Duplicate L38326-9	0.9596			
6 -6	Matrix Spike	0.9808		ICPH	
7					
8					
9					
10					

### Spike Solution

Solution Name	Solution ID #	Solution Conc.	Amount Used (uL)
Cal 1	M-05-040	100mg/L	500
2	M-05-039	varies	
3	M-05-042	100mg/L	
4	M-05-002	5000mg/L	250
K	M-05-033	10,000mg/L	500

### LCS Solution

Solution Name	Solution ID #	Solution Conc.	Amount Used (mL)

Comments:

Analyst neglected to use ICP Marine Spike (ICPH + Mn, Zn); all Mn & Zn spikes were within control limits.

SH 3/14/06

SB:WG84821-1 MB:WG84821-4 Matrix: SOLIDBLANK Listtype: MTICP-SED Method: EPA8050A/6010B (06-02-004-002) Project: Pkey: SED  
 (Spike Blank, Method Blank)

Parameter	MDI	RD1	Units	MB Value	Truevalue	SB Value	% Rec.	Qual	Lablimit
Silver, Total, ICP	.19	.952	mg/Kg	<MDL	47.6	45.8	96		85-115
Aluminum, Total, ICP	4.8	23.8	mg/Kg	<MDL	1190	1180	99		85-115
Arsenic, Total, ICP	2.4	11.9	mg/Kg	<MDL	47.6	48.1	101		85-115
Beryllium, Total, ICP	.048	.238	mg/Kg	<MDL	47.6	46.7	98		85-115
Cadmium, Total, ICP	.14	.714	mg/Kg	<MDL	47.6	46.6	98		85-115
Chromium, Total, ICP	.24	1.19	mg/Kg	<MDL	47.6	47.2	99		85-115
Copper, Total, ICP	.19	.952	mg/Kg	<MDL	47.6	46.2	97		85-115
Iron, Total, ICP	2.4	11.9	mg/Kg	<MDL	1240	1230	99		85-115
Manganese, Total, ICP	.095	.476	mg/Kg	<MDL	47.6	47.2	99		85-115
Nickel, Total, ICP	.05	4.76	mg/Kg	<MDL	47.6	46.6	98		85-115
Lead, Total, ICP	1.4	7.14	mg/Kg	<MDL	47.6	46.7	98		85-115
Antimony, Total, ICP	1.4	7.14	mg/Kg	<MDL	47.6	47.2	99		85-115
Selenium, Total, ICP	2.4	11.9	mg/Kg	<MDL	47.6	48.6	102		85-115
Thallium, Total, ICP	9.5	47.6	mg/Kg	<MDL	47.6	46	97		85-115
Zinc, Total, ICP	.24	1.19	mg/Kg	<MDL	47.6	45.8	96		85-115

SPM:WG84821-2 Matrix: SMTITRSED Listtype: MTICP-SED Method: EPA8050A/6010B (06-02-004-002) Project: Pkey: SED  
 (SED Reference Material)

Parameter	MDI	RD1	Units	Truevalue	SPM Value	% Rec.	Qual	Lablimit
Aluminum, Total, ICP	20	101	mg/Kg	66200	14100	21		10-43
Chromium, Total, ICP	.81	5.03	mg/Kg	30.7	44.1	49		30-70
Copper, Total, ICP	10	4.03	mg/Kg	210	288	93		78-118
Iron, Total, ICP	.4	50.3	mg/Kg	40900	29900	73		55-95
Manganese, Total, ICP	4	2.01	mg/Kg	440	227	52		35-75
Nickel, Total, ICP	6	20.1	mg/Kg	39.5	28	71		51-91
Lead, Total, ICP	1	30.2	mg/Kg	183	166	91		74-114
Zinc, Total, ICP	1	5.03	mg/Kg	364	320	88		73-113

LCS:WG84821-3 Matrix: SOLT Listtype: MTICP-SED Method: EPA8050A/6010B (06-02-004-002) Project: Pkey: SED  
 (Lab Control Sample)

Parameter	MDI	RD1	Units	Truevalue	LCS Value	% Rec.	Qual	Lablimit
Silver, Total, ICP	.77	3.86	mg/Kg	171	179	105		80-120
Aluminum, Total, ICP	19	96.5	mg/Kg	7890	6640	84		80-120
Arsenic, Total, ICP	9.6	48.2	mg/Kg	142	145	102		80-120
Beryllium, Total, ICP	.19	.965	mg/Kg	40.6	40.4	99		80-120
Cadmium, Total, ICP	.58	2.89	mg/Kg	64.5	65.1	101		80-120
Chromium, Total, ICP	.96	4.82	mg/Kg	86.5	85.3	99		80-120
Copper, Total, ICP	.77	3.86	mg/Kg	68.6	66.4	97		80-120
Iron, Total, ICP	9.6	48.2	mg/Kg	13600	12300	91		80-120
Manganese, Total, ICP	.39	1.93	mg/Kg	501	501	100		80-120
Nickel, Total, ICP	3.9	19.3	mg/Kg	68.4	66.7	98		80-120
Lead, Total, ICP	5.8	28.9	mg/Kg	93.6	95.4	102		80-120
Antimony, Total, ICP	5.8	28.9	mg/Kg	105	100	95		80-120
Selenium, Total, ICP	9.6	48.2	mg/Kg	124	130	105		80-120
Thallium, Total, ICP	39	193	mg/Kg	110	110	100		80-120
Zinc, Total, ICP	.96	4.82	mg/Kg	296	288	97		80-120

MB:W684821-4 Matrix: SOLIDHUNK Listtype: MTICP-SED Method: EPA3050A/6010B (06-02-004-002) Project: Pkey: SED  
 (Method Blank)

Parameter	Mdl	Rdl	Units	MB Value	Qual
Silver, Total, ICP	.19	.952	mg/Kg	<MDL	
Aluminum, Total, ICP	4.8	23.8	mg/Kg	<MDL	
Arsenic, Total, ICP	2.4	11.9	mg/Kg	<MDL	
Beryllium, Total, ICP	.048	.238	mg/Kg	<MDL	
Cadmium, Total, ICP	.14	.714	mg/Kg	<MDL	
Chromium, Total, ICP	.24	1.19	mg/Kg	<MDL	
Copper, Total, ICP	.19	.952	mg/Kg	<MDL	
Iron, Total, ICP	2.4	11.9	mg/Kg	<MDL	
Manganese, Total, ICP	.095	.476	mg/Kg	<MDL	
Nickel, Total, ICP	.95	4.76	mg/Kg	<MDL	
Lead, Total, ICP	1.4	7.14	mg/Kg	<MDL	
Antimony, Total, ICP	1.4	7.14	mg/Kg	<MDL	
Selenium, Total, ICP	2.4	11.9	mg/Kg	<MDL	
Thallium, Total, ICP	9.5	47.6	mg/Kg	<MDL	
Zinc, Total, ICP	.24	1.19	mg/Kg	<MDL	

LD:W684821-5 L38326-9 Matrix: SALTWTRSED Listtype: MTICP-SED Method: EPA3050A/6010B (06-02-004-002) Project: 423062-200-4 Pkey: SED  
 (Lab Duplicate)

Parameter	Mdl	Rdl	Units	Sample Value	LD Value	RPD	Qual	Lab Limit
Silver, Total, ICP	.21	1.04	mg/Kg	1.39	.33	123	E	20
Aluminum, Total, ICP	5.2	26.1	mg/Kg	8420	8530	1		20
Arsenic, Total, ICP	2.6	13	mg/Kg	3.4	3.5			20
Beryllium, Total, ICP	.052	.261	mg/Kg	.085	.09			20
Cadmium, Total, ICP	.16	.782	mg/Kg	.17	.17			20
Chromium, Total, ICP	.26	1.3	mg/Kg	14.4	14.8	3		20
Copper, Total, ICP	.21	1.04	mg/Kg	38.9	34.3	13		20
Iron, Total, ICP	2.6	13	mg/Kg	15100	15200	1		20
Manganese, Total, ICP	.1	.521	mg/Kg	176	181	1		20
Nickel, Total, ICP	1	5.21	mg/Kg	12.2	12.8	3		20
Lead, Total, ICP	1.6	7.82	mg/Kg	12	12.8	5		20
Antimony, Total, ICP	1.6	7.82	mg/Kg	<MDL	<MDL	7		20
Selenium, Total, ICP	2.6	13	mg/Kg	<MDL	<MDL			20
Thallium, Total, ICP	10	52.1	mg/Kg	<MDL	<MDL			20
Zinc, Total, ICP	.26	1.3	mg/Kg	42.2	42.9	2		20

MS:W684821-6 L38326-9 Matrix: SALTWTRSED Listtype: MTICP-SED Method: EPA3050A/6010B (06-02-004-002) Project: 423062-200-4 Pkey: SED  
 (Matrix Spike)

Parameter	Mdl	Rdl	Units	Sample Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Silver, Total, ICP	.2	1.02	mg/Kg	1.39	51.0	48.4	92		75-125
Aluminum, Total, ICP	5.1	25.5	mg/Kg	8420	1270	10800	191		75-125
Arsenic, Total, ICP	2.5	12.7	mg/Kg	3.4	51.0	54.1	99		75-125
Beryllium, Total, ICP	.051	.255	mg/Kg	.085	51.0	48.3	95		75-125
Cadmium, Total, ICP	.15	.765	mg/Kg	.17	51.0	48.8	95		75-125
Chromium, Total, ICP	.25	1.27	mg/Kg	14.4	51.0	65.9	101		75-125
Copper, Total, ICP	.2	1.02	mg/Kg	38.9	51.0	90.9	102		75-125
Iron, Total, ICP	2.5	12.7	mg/Kg	15100	1330	17100	156		75-125
Manganese, Total, ICP	.1	.51	mg/Kg	176	51.0	233	111		75-125

MS:WG84821-6 L38326-9 Matrix: SALTPRSED Listtype: MTICP-SED Method: EPA8050X/6010B (06-02-004-002) Project: 423062-200-4 Pkey: SED  
 (Matrix Spike)

Parameter	MDL	FDL	Units	Sample Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Nickel, Total, ICP	1	5.1	mg/Kg	12.2	51.0	60.6	95		75-125
Lead, Total, ICP	1.5	7.65	mg/Kg	12	51.0	59.9	94		75-125
Antimony, Total, ICP	1.5	7.65	mg/Kg	<MDL	51.0	22.6	44	G	75-125
Selenium, Total, ICP	2.5	12.7	mg/Kg	<MDL	51.0	50.1	98		75-125
Thallium, Total, ICP	10	51	mg/Kg	<MDL	51.0	41	81		75-125
Zinc, Total, ICP	.25	1.27	mg/Kg	42.2	51.0	91.4	96		75-125

## ORGANIC CHEMISTRY QC DATA



## King County Environmental Laboratory

WORK GROUP REPORT (wk02)

May 31 2006, 07:24 am

Work Group: WG84979 (bs#212 bnasms) for Department: 7 - Organics, Trace

Created: 27-MAR-06 PrepDate: 28-MAR-06 Due: Operator: km

Sample	Project Number	Project Description	PKey	C	Product	Matrix	Stat	UA	Workdate	Due date
L38326-1	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	BNASMS	SALTWTRSED	PREP	U	22-MAR-06	24-APR-06
L38326-10	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	BNASMS	SALTWTRSED	PREP	U	22-MAR-06	24-APR-06
L38326-11	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	BNASMS	SALTWTRSED	PREP	U	22-MAR-06	24-APR-06
L38326-12	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	BNASMS	SALTWTRSED	PREP	U	22-MAR-06	24-APR-06
L38326-13	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	BNASMS	SALTWTRSED	PREP	U	22-MAR-06	24-APR-06
L38326-14	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	BNASMS	SALTWTRSED	PREP	U	23-MAR-06	24-APR-06
L38326-15	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	BNASMS	SALTWTRSED	PREP	U	23-MAR-06	24-APR-06
L38326-2	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	BNASMS	SALTWTRSED	PREP	U	22-MAR-06	24-APR-06
L38326-9	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	BNASMS	SALTWTRSED	PREP	U	22-MAR-06	24-APR-06
L38327-1	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	BNASMS	SALTWTRSED	PREP	U	24-MAR-06	24-APR-06
L38327-2	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	BNASMS	SALTWTRSED	PREP	U	24-MAR-06	24-APR-06
L38327-3	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	BNASMS	SALTWTRSED	PREP	U	24-MAR-06	24-APR-06
L38327-4	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	BNASMS	SALTWTRSED	PREP	U	24-MAR-06	24-APR-06
L38327-5	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	BNASMS	SALTWTRSED	PREP	U	24-MAR-06	24-APR-06
L38327-6	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	BNASMS	SALTWTRSED	PREP	U	24-MAR-06	24-APR-06
L38327-7	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	BNASMS	SALTWTRSED	PREP	U	24-MAR-06	24-APR-06
L38327-8	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	BNASMS	SALTWTRSED	PREP	U	24-MAR-06	24-APR-06
WG84979-1	MB				S BNASMS	OTHR SOLID	PREP	U	27-MAR-06	
WG84979-10	MB				S BNASMS	OTHR SOLID	WKGP	U	31-MAY-06	
WG84979-5	SRM				S BNASMS	OTHR SOLID	PREP	U	27-MAR-06	
WG84979-6	LD				S BNASMS	OTHR SOLID	PREP	U	27-MAR-06	
WG84979-7	SB				S BNASMS	OTHR SOLID	PREP	U	27-MAR-06	
WG84979-8	MS		SED	S	BNASMS	SALTWTRSED	PREP	U	27-MAR-06	
WG84979-9	MSD		SED	S	BNASMS	SALTWTRSED	PREP	U	27-MAR-06	

## Comments:

L38326-1 10 Grab Comp, 0-10 cm  
 L38326-10 10 Grab Comp, FREP  
 L38326-11 10 Grab Comp, 0-10 cm  
 L38326-12 10 Grab Comp, 0-10 cm  
 L38326-13 10 Grab Comp, 0-10 cm  
 L38326-14 10 Grab Comp, 0-10 cm  
 L38326-15 10 Grab Comp, 0-10 cm  
 L38326-2 10 Grab Comp, 0-10 cm  
 L38326-9 10 Grab Comp, AREP  
 L38327-1 Diver Cores, 2006  
 L38327-2 Diver Cores, 2006, AREP  
 L38327-3 Diver Cores, 2006, FREP  
 L38327-4 Diver Cores, 2006  
 L38327-5 Diver Cores, 2006  
 L38327-6 Diver Cores, 2006  
 L38327-7 Diver Cores, 2006  
 L38327-8 Diver Cores, 2006  
 WG84979-1 MB060328  
 WG84979-10 MB060523  
 WG84979-5 1944  
 WG84979-6 L38326-2  
 WG84979-7 WG84979-1  
 WG84979-8 L38327-1  
 WG84979-9 WG84979-1 L38327-1

AM  
6/23/06  
pm

KING COUNTY METRO ENVIRONMENTAL LABORATORY  
Lab QC Report - 06/01/06 09:56  
Run ID: R113755 Workgroup: WG84979 (bs#212 bnasms)

MB:WG84979-1 Matrix: OTHER SOLID Listtype: ORNBSMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-200-4 Pkey: SED  
(Method Blank)

Parameter	Mail	Rdl	Units	MB Value	Qual
Phenol	5.3	10.7	ug/Kg	<MDL	
1,3-Dichlorobenzene	.27	.533	ug/Kg	<MDL	
1,4-Dichlorobenzene	.27	.533	ug/Kg	<MDL	
1,2-Dichlorobenzene	.27	.533	ug/Kg	<MDL	
Hexachloroethane	1.3	2.67	ug/Kg	<MDL	
2,4-Dimethylphenol	2.7	5.33	ug/Kg	<MDL	
1,2,4-Trichlorobenzene	.27	.533	ug/Kg	<MDL	
Naphthalene	2.7	5.33	ug/Kg	<MDL	
Hexachlorobutadiene	1.3	2.67	ug/Kg	<MDL	
Acenaphthylene	2.7	5.33	ug/Kg	<MDL	
Dimethyl Phthalate	5.3	10.7	ug/Kg	<MDL	
Acenaphthene	2.7	5.33	ug/Kg	<MDL	
Fluorene	2.7	5.33	ug/Kg	<MDL	
Diethyl Phthalate	5.3	10.7	ug/Kg	<MDL	
N-Nitrosodiphenylamine	5.3	10.7	ug/Kg	<MDL	
Hexachlorobenzene	.53	1.07	ug/Kg	<MDL	
Pentachlorophenol	13	26.7	ug/Kg	<MDL	
Phenanthrene	2.7	5.33	ug/Kg	<MDL	
Anthracene	2.7	5.33	ug/Kg	<MDL	
Di-N-Butyl Phthalate	5.3	10.7	ug/Kg	<MDL	
Fluoranthene	2.7	5.33	ug/Kg	<MDL	
Pyrene	2.7	5.33	ug/Kg	<MDL	
Benzyl Butyl Phthalate	5.3	10.7	ug/Kg	<MDL	
Benzo(a)anthracene	2.7	5.33	ug/Kg	<MDL	
Chrysene	2.7	5.33	ug/Kg	<MDL	
Bis(2-Ethylhexyl)Phthalate	5.3	10.7	ug/Kg	<MDL	
Di-N-Octyl Phthalate	5.3	10.7	ug/Kg	<MDL	
Benzo(b)fluoranthene	2.7	5.33	ug/Kg	<MDL	
Benzo(k)fluoranthene	2.7	5.33	ug/Kg	<MDL	
Benzo(a)pyrene	2.7	5.33	ug/Kg	<MDL	
Indeno(1,2,3-Cd)Pyrene	2.7	5.33	ug/Kg	<MDL	
Dibenzo(a,h)anthracene	2.7	5.33	ug/Kg	<MDL	
Benzo(g,h,i)perylene	2.7	5.33	ug/Kg	<MDL	
Benzyl Alcohol	5.3	10.7	ug/Kg	<MDL	
2-Methylphenol	5.3	10.7	ug/Kg	<MDL	
4-Methylphenol	5.3	10.7	ug/Kg	<MDL	
Benzoic Acid	13	26.7	ug/Kg	<MDL	
2-Methylnaphthalene	2.7	5.33	ug/Kg	<MDL	
Dibenzofuran	2.7	5.33	ug/Kg	<MDL	
Carbazole	2.7	5.33	ug/Kg	<MDL	
Coprostanol	53	107	ug/Kg	<MDL	
Caffeine	5.3	10.7	ug/Kg	<MDL	
Total LPAHS	2.7	5.33	ug/Kg	<MDL	
Total HPAHS	2.7	5.33	ug/Kg	<MDL	

KING COUNTY METRO ENVIRONMENTAL LABORATORY  
 Lab QC Report - 06/01/06 09:56  
 Run ID: R113755 Workgroup: WG84979 (bs#212 bnaams)

SRM:WG84979-5 Matrix: SALTWTRSED Listtype: ORNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-200-4 Pkey: SED									
(Std Reference Material)									
Parameter	Mdl	Rdl	Units	TrueValue	SRM Value	% Rec.	Qual LabLimit	RPD	Qual LabLimit
Naphthalene	130	267	ug/Kg	1630	220	13	10-29		
Phenanthrene	270	533	ug/Kg	5200	4550	88	51-106		
Anthracene	270	533	ug/Kg	1750	931	53	28-98		
Fluoranthene	270	533	ug/Kg	8800	9150	104	45-126		
Pyrene	270	533	ug/Kg	9570	9650	101	36-135		
Benzo(a)anthracene	270	533	ug/Kg	4660	4520	97	66-124		
Chrysene	270	533	ug/Kg	4800	5720	119	77-136		
Benzo(b)fluoranthene	270	533	ug/Kg	3820	3370	88	52-190		
Benzo(k)fluoranthene	270	533	ug/Kg	2270	3200	141	60-146		
Benzo(a)pyrene	270	533	ug/Kg	4240	3780	89	60-116		
Indeno(1,2,3-Cd)Pyrene	270	533	ug/Kg	2740	2290	84	33-121		
Dibenzo(a,h)anthracene	270	533	ug/Kg	419	664	159	10-200		
Benzo(g,h,i)perylene	270	533	ug/Kg	2800	2640	94	15-121		
ID:WG84979-6 L38326-2 Matrix: OTHER SOLID Listtype: ORNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-200-4 Pkey: SED									
(Lab Duplicate)									
Parameter	Mdl	Rdl	Units	SampleValue	ID Value	RPD	Qual LabLimit		
Phenol	53	107	ug/Kg	825	870	5	35		
1,3-Dichlorobenzene	2.7	5.33	ug/Kg	<MDL	<MDL		35		
1,4-Dichlorobenzene	2.7	5.33	ug/Kg	<MDL	<MDL		35		
1,2-Dichlorobenzene	2.7	5.33	ug/Kg	<MDL	<MDL		35		
Hexachloroethane	13	26.7	ug/Kg	<MDL	<MDL		35		
2,4-Dimethylphenol	27	53.3	ug/Kg	<MDL	<MDL		35		
1,2,4-Trichlorobenzene	2.7	5.33	ug/Kg	<MDL	<MDL		35		
Naphthalene	27	53.3	ug/Kg	<MDL	<MDL		35		
Hexachlorobutadiene	13	26.7	ug/Kg	<MDL	<MDL		35		
Acenaphthylene	27	53.3	ug/Kg	<MDL	<MDL		35		
Dimethyl Phthalate	53	107	ug/Kg	<MDL	<MDL		35		
Acenaphthene	27	53.3	ug/Kg	204	221	8	35		
Fluorene	27	53.3	ug/Kg	195	196	1	35		
Diethyl Phthalate	53	107	ug/Kg	<MDL	<MDL		35		
N-Nitrosodiphenylamine	53	107	ug/Kg	<MDL	<MDL		35		
Hexachlorobenzene	5.3	10.7	ug/Kg	<MDL	<MDL		35		
Pentachlorophenol	130	267	ug/Kg	<MDL	<MDL		35		
Phenanthrene	27	53.3	ug/Kg	835	860	3	35		
Anthracene	27	53.3	ug/Kg	218	220	1	35		
Di-N-Butyl Phthalate	53	107	ug/Kg	<MDL	69		35		
Fluoranthene	27	53.3	ug/Kg	1850	1870	1	35		
Pyrene	27	53.3	ug/Kg	1290	1260	2	35		
Benzy Butyl Phthalate	53	107	ug/Kg	143	143	22	35		
Benzo(a)anthracene	27	53.3	ug/Kg	521	489	6	35		
Chrysene	27	53.3	ug/Kg	534	501	6	35		
Bis(2-Ethylhexyl) Phthalate	53	107	ug/Kg	966	1040	7	35		
Di-N-Octyl Phthalate	53	107	ug/Kg	<MDL	<MDL		35		
Benzo(b)fluoranthene	27	53.3	ug/Kg	342	377	10	35		
Benzo(k)fluoranthene	27	53.3	ug/Kg	364	307	17	35		
Benzo(a)pyrene	27	53.3	ug/Kg	300	297	1	35		
Indeno(1,2,3-Cd)Pyrene	27	53.3	ug/Kg	135	136	1	35		
Dibenzo(a,h)anthracene	27	53.3	ug/Kg	53.4	52	3	35		

KING COUNTY METRO ENVIRONMENTAL LABORATORY  
Lab QC Report - 06/01/06 09:56  
Run ID: R113755 Workgroup: WG84979 (bs#212 bnaams)

ID: WG84979-6 L38326-2 Matrix: OTHER SOLID Listtype: ORENASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-200-4 Pkey: SED									
Parameter	Mdl	Rdl	Units	Sample Value	ID Value	RPD	Qual	Label	Limit
Benzo(g,h,i)perylene	27	53.3	ug/Kg	151	158	4			35
Benzyl Alcohol	53	107	ug/Kg	<MDL	<MDL				35
2-Methylphenol	53	107	ug/Kg	<MDL	<MDL				35
4-Methylphenol	53	107	ug/Kg	<MDL	<MDL				35
Benzoic Acid	130	267	ug/Kg	<MDL	<MDL				35
2-Methylnaphthalene	27	53.3	ug/Kg	67.6	71.9				35
Dibenzofuran	27	53.3	ug/Kg	125	141	6			35
Carbazole	27	53.3	ug/Kg	61.1	61.8	12			35
Coprostanol	530	1070	ug/Kg	<MDL	<MDL	1			35
Caffeine	53	107	ug/Kg	<MDL	<MDL				35
SB: WG84979-7 MB: WG84979-1 Matrix: OTHER SOLID Listtype: ORENASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-200-4 Pkey: SED									
(Spike Blank, Method Blank)									
Parameter	Mdl	Rdl	Units	MB Value	True Value	SB Value	* Rec.	Qual	Label
Phenol	5.3	10.7	ug/Kg	<MDL	15	198	49	10-107	
1,3-Dichlorobenzene	.27	.533	ug/Kg	<MDL	15	165	41	18-95	
1,4-Dichlorobenzene	.27	.533	ug/Kg	<MDL	15	172	43	21-99	
1,2-Dichlorobenzene	.27	.533	ug/Kg	<MDL	15	177	44	10-116	
Hexachloroethane	1.3	2.67	ug/Kg	<MDL	15	171	43	17-92	
2,4-Dimethylphenol	2.7	5.33	ug/Kg	<MDL	15	37.5	9	10-81	
1,2,4-Trichlorobenzene	.27	.533	ug/Kg	<MDL	15	181	45	13-110	
Naphthalene	2.7	5.33	ug/Kg	<MDL	15	177	44	17-94	
Hexachlorobutadiene	1.3	2.67	ug/Kg	<MDL	15	171	43	10-97	
Acenaphthylene	2.7	5.33	ug/Kg	<MDL	15	232	58	31-101	
Dimethyl Phthalate	5.3	10.7	ug/Kg	<MDL	15	298	74	38-114	
Acenaphthene	2.7	5.33	ug/Kg	<MDL	15	213	53	29-102	
Fluorene	2.7	5.33	ug/Kg	<MDL	15	275	69	39-106	
Diethyl Phthalate	5.3	10.7	ug/Kg	<MDL	15	328	82	51-118	
N-Nitrosodiphenylamine	5.3	10.7	ug/Kg	<MDL	15	277	69	11-148	
Hexachlorobenzene	.53	1.07	ug/Kg	<MDL	15	297	74	40-111	
Pentachlorophenol	13	26.7	ug/Kg	<MDL	15	197	49	38-124	
Phenanthrene	2.7	5.33	ug/Kg	<MDL	15	313	78	57-104	
Anthracene	2.7	5.33	ug/Kg	<MDL	15	285	71	45-114	
Di-N-Butyl Phthalate	5.3	10.7	ug/Kg	6	15	366	90	17-180	
Fluoranthene	2.7	5.33	ug/Kg	<MDL	15	358	89	55-132	
Pyrene	2.7	5.33	ug/Kg	<MDL	15	358	90	48-132	
Benzyl Butyl Phthalate	2.7	5.33	ug/Kg	<MDL	15	362	90	15-183	
Benzo(a)anthracene	2.7	5.33	ug/Kg	<MDL	15	318	79	69-117	
Chrysene	5.3	10.7	ug/Kg	<MDL	15	364	91	69-111	
Bis(2-Ethylhexyl) Phthalate	5.3	10.7	ug/Kg	<MDL	15	364	91	10-182	
Di-N-Octyl Phthalate	5.3	10.7	ug/Kg	<MDL	15	364	91	10-200	
Benzo(b)fluoranthene	2.7	5.33	ug/Kg	<MDL	15	308	77	50-121	
Benzo(k)fluoranthene	2.7	5.33	ug/Kg	<MDL	15	364	91	58-128	
Benzo(a)pyrene	2.7	5.33	ug/Kg	<MDL	15	305	76	15-137	
Indeno(1,2,3-Cd)Pyrene	2.7	5.33	ug/Kg	<MDL	15	320	80	15-137	
Dibenzo(a,h)anthracene	2.7	5.33	ug/Kg	<MDL	15	318	80	51-132	
Benzo(g,h,i)perylene	2.7	5.33	ug/Kg	<MDL	15	303	76	53-129	
Benzyl Alcohol	5.3	10.7	ug/Kg	<MDL	15	142	36	46-126	
2-Methylphenol	5.3	10.7	ug/Kg	<MDL	15	155	39	10-119	
								16-91	

KING COUNTY METRO ENVIRONMENTAL LABORATORY  
Lab QC Report - 06/01/06 09:56  
Run ID: R113755 Workgroup: WG84979 (bs#212 bnaams)

SB:WG84979-7 MS:WG84979-1 (Spike Blank, Method Blank)										Matrix: OTHER SOLID Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-200-4 Pkey: SED									
Parameter	Mdl	Rdl	Units	MB Value	Truevalue	SB Value	* Rec.	Qual	Lablimit	Parameter	Mdl	Rdl	Units	MB Value	Truevalue	MS Value	* Rec.	Qual	Lablimit
4-Methylphenol	5.3	10.7	ug/Kg	<MDL	15	161	40		10-125	Phenol	5.3	10.7	ug/Kg	<MDL	400	270	67		10-127
Benzoic Acid	13	26.7	ug/Kg	<MDL	15	45.2	11		10-170	1,3-Dichlorobenzene	2.7	.533	ug/Kg	<MDL	400	158	40		10-103
2-Methylnaphthalene	2.7	5.33	ug/Kg	<MDL	15	195	49		22-99	1,4-Dichlorobenzene	2.7	.533	ug/Kg	<MDL	400	168	42		10-104
Dibenzofuran	2.7	5.33	ug/Kg	<MDL	15	249	62		37-97	1,2-Dichlorobenzene	2.7	.533	ug/Kg	<MDL	400	179	45		10-105
Carbazole	2.7	5.33	ug/Kg	<MDL	15	323	81		44-179	Hexachloroethane	1.3	2.67	ug/Kg	<MDL	400	170	43		10-89
Coprostanol	53	107	ug/Kg	<MDL	150	2300	57		10-159	2,4-Dimethylphenol	2.7	5.33	ug/Kg	<MDL	400	173	43		10-150
Caffeine	5.3	10.7	ug/Kg	<MDL	15	372	93		45-159	1,2,4-Trichlorobenzene	2.7	.533	ug/Kg	<MDL	400	210	53		10-115
Total LPAHs	2.7	5.33	ug/Kg	<MDL	7.5	1690				Naphthalene	2.7	5.33	ug/Kg	<MDL	400	207	52		12-97
Total HPAHs	2.7	5.33	ug/Kg	<MDL	7.5	3320				Hexachlorobutadiene	1.3	2.67	ug/Kg	<MDL	400	195	49		10-97
										Acenaphthylene	2.7	5.33	ug/Kg	<MDL	400	287	72		27-132
										Dimethyl Phthalate	5.3	10.7	ug/Kg	<MDL	400	315	79		13-162
										Acenaphthene	2.7	5.33	ug/Kg	<MDL	400	256	64		25-130
										Fluorene	2.7	5.33	ug/Kg	4	400	313	77		22-147
										Diethyl Phthalate	5.3	10.7	ug/Kg	<MDL	400	333	83		31-150
										N-Nitrosodiphenylamine	5.3	10.7	ug/Kg	<MDL	400	309	77		10-169
										Hexachlorobenzene	2.7	.533	ug/Kg	<MDL	400	316	79		18-151
										Pentachlorophenol	13	26.7	ug/Kg	<MDL	400	203	51		17-170
										Phenanthrene	2.7	5.33	ug/Kg	15.2	400	337	78		10-200
										Anthracene	2.7	5.33	ug/Kg	14.2	400	351	84		10-181
										Di-N-Butyl Phthalate	5.3	10.7	ug/Kg	66	400	397	83		10-194
										Fluoranthene	2.7	5.33	ug/Kg	54.8	400	392	84		12-188
										Pyrene	2.7	5.33	ug/Kg	16.4	400	358	85		20-174
										Benzyl Butyl Phthalate	5.3	10.7	ug/Kg	33	400	380	87		41-145
										Benzo(a)anthracene	2.7	5.33	ug/Kg	71	400	352	75		32-168
										Chrysene	2.7	5.33	ug/Kg	<MDL	400	421	87		14-184
										Bis(2-Ethylhexyl) Phthalate	5.3	10.7	ug/Kg	37.5	400	621	146		10-189
										Di-N-Octyl Phthalate	2.7	5.33	ug/Kg	36.7	400	672	159		52-151
										Benzo(b)fluoranthene	2.7	5.33	ug/Kg	34.2	400	333	75		10-199
										Benzo(k)fluoranthene	2.7	5.33	ug/Kg	19.3	400	322	76		10-192
										Benzo(a)pyrene	2.7	5.33	ug/Kg	6.72	400	314	77		10-177
										Indeno(1,2,3-Cd)Pyrene	2.7	5.33	ug/Kg		400				10-165
										Dibenzo(a,h)anthracene	2.7	5.33	ug/Kg		400				

KING COUNTY METRO ENVIRONMENTAL LABORATORY  
Lab QC Report - 06/01/06 09:56  
Run ID: R113755 Workgroup: WG84979 (bs#212 bnaams)

Matrix Spike Duplicate Report									
MSD:WG84979-9 MS:WG84979-8 L38327-1									
Matrix: SALTWATERSED Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-200-4 Pkey: SED									
(Matrix Spike Duplicate, Matrix Spike)									
Parameter	Mdl	Rdl	Units	Sample Value	True Value	MS Value	* Rec. Qual	Lab Limit	Qual
Benzo(g,h,i)perylene	2.7	5.33	ug/Kg	20.8	400.	306	71	10-173	12
Benzyl Alcohol	5.3	10.7	ug/Kg	<MDL	400.	186	46	10-138	6
2-Methylphenol	5.3	10.7	ug/Kg	<MDL	400.	273	68	10-142	13
4-Methylphenol	5.3	10.7	ug/Kg	<MDL	400.	249	62	10-163	2
Benzoic Acid	13	26.7	ug/Kg	63.8	400.	228	41	10-158	33
2-Methylnaphthalene	2.7	5.33	ug/Kg	<MDL	400.	250	52	22-112	11
Dibenzofuran	2.7	5.33	ug/Kg	<MDL	400.	290	73	21-134	9
Carbazole	2.7	5.33	ug/Kg	<MDL	400.	319	80	16-200	14
Coprostanol	53	107	ug/Kg	<MDL	4000	1720	43	10-183	7
Caffeine	5.3	10.7	ug/Kg	<MDL	400.	355	89	17-195	95
Total LPAHs	2.7	5.33	ug/Kg	45.5	200.	1970		2460	
Total HPAHs	2.7	5.33	ug/Kg	361	200.	4090		4300	

MB:WG84979-10 Matrix: OTHER SOLID Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-200-4 Pkey: SED									
(Method Blank)									
Parameter	Mdl	Rdl	Units	MB Value	Qual				
Phenol	5.3	10.7	ug/Kg	<MDL					
1,3-Dichlorobenzene	27	.533	ug/Kg	<MDL					
1,4-Dichlorobenzene	27	.533	ug/Kg	<MDL					
1,2-Dichlorobenzene	27	.533	ug/Kg	<MDL					
Hexachloroethane	1.3	2.67	ug/Kg	<MDL					
2,4-Dimethylphenol	2.7	5.33	ug/Kg	<MDL					
1,2,4-Trichlorobenzene	27	.533	ug/Kg	<MDL					
Naphthalene	2.7	5.33	ug/Kg	<MDL					
Hexachlorobutadiene	1.3	2.67	ug/Kg	<MDL					
Acenaphthylene	2.7	5.33	ug/Kg	<MDL					
Dimethyl Phthalate	5.3	10.7	ug/Kg	<MDL					
Acenaphthene	2.7	5.33	ug/Kg	<MDL					
Fluorene	2.7	5.33	ug/Kg	<MDL					
Diethyl Phthalate	5.3	10.7	ug/Kg	<MDL					
N-Nitrosodiphenylamine	5.3	10.7	ug/Kg	<MDL					
Hexachlorobenzene	.53	1.07	ug/Kg	<MDL					
Pentachlorophenol	13	26.7	ug/Kg	<MDL					
Phenanthrene	2.7	5.33	ug/Kg	<MDL					
Anthracene	2.7	5.33	ug/Kg	<MDL					
Di-N-Butyl Phthalate	5.3	10.7	ug/Kg	<MDL					
Fluoranthene	2.7	5.33	ug/Kg	<MDL					
Pyrene	2.7	5.33	ug/Kg	<MDL					
Benzyl Butyl Phthalate	5.3	10.7	ug/Kg	<MDL					
Benzo(a)anthracene	2.7	5.33	ug/Kg	<MDL					
Chrysene	2.7	5.33	ug/Kg	<MDL					
Bis(2-Ethylhexyl)Phthalate	5.3	10.7	ug/Kg	<MDL					
Di-N-Octyl Phthalate	5.3	10.7	ug/Kg	<MDL					
Benzo(b)fluoranthene	2.7	5.33	ug/Kg	<MDL					
Benzo(k)fluoranthene	2.7	5.33	ug/Kg	<MDL					
Benzo(a)pyrene	2.7	5.33	ug/Kg	<MDL					
Indeno(1,2,3-Cd)Pyrene	2.7	5.33	ug/Kg	<MDL					



Parameter	Method	Matrix	OTHER SOLID	Listtype	ORHNASMS	Method	EPA 3550B/8270C (7.3-01-004)	Project	423062-200-4	Pkey	SED
Parameter	MDL	Rdl	Units	MB Value	Qual						
Dibenzo(a,h)anthracene	2.7	5.33	ug/Kg	<MDL							
Benzo(g,h,i)perylene	2.7	5.33	ug/Kg	<MDL							
Benzyl Alcohol	5.3	10.7	ug/Kg	<MDL							
2-Methylphenol	5.3	10.7	ug/Kg	<MDL							
4-Methylphenol	5.3	10.7	ug/Kg	<MDL							
Benzoic Acid	13	26.7	ug/Kg	<MDL							
2-Methylnaphthalene	2.7	5.33	ug/Kg	<MDL							
Dibenzofuran	2.7	5.33	ug/Kg	<MDL							
Carbazole	2.7	5.33	ug/Kg	<MDL							
Coprostanol	53	107	ug/Kg	<MDL							
Caffeine	5.3	10.7	ug/Kg	<MDL							
Total LPAHs	2.7	5.33	ug/Kg	<MDL							
Total HPAHs	2.7	5.33	ug/Kg	<MDL							

KING COUNTY METRO ENVIRONMENTAL LABORATORY  
 Lab QC Report - 06/01/06 09:56  
 Run ID: R113755 Workgroup: WG84979 (bs#212 bnaams)

Sample # (Lab Limits)	2-Fluorophenol 10-112	d5-Phenol 10-106	d5-Nitrobenzene 28-94	d4-2-Chlorophenol 11-105	d4-1,2-Dichlorobenzene 24-91	2-Fluorobiphenyl 31-101	2,4,6-Tribromophenol 29-112	d14-Terphenyl 51-130
L38326-1	47	59	69	58	46	75	99	95
L38326-2	57	70	72	66	41	79	108	102
L38326-9	44	42	52	45	46	75	105	111
L38326-10	45	64	72	51	46	78	104	113
L38326-11	37	48	66	50	44	78	107	103
L38326-12	43	34	46	40	43	79	105	107
L38326-13	64	51	62	59	59	99	116	112
L38326-14	49	73	85	52	51	84	95	102
L38326-15	59	49	65	56	65	105	111	108
L38327-1	50	44	56	51	49	75	87	102
L38327-2	72	87	73	85	58	88	100	115
L38327-3	44	53	54	54	44	68	97	118
L38327-4	62	74	71	74	55	80	96	103
L38327-5	51	55	61	56	48	76	101	113
L38327-6	37	39	52	40	42	71	82	106
L38327-7	46	54	60	51	46	73	100	112
L38327-8	43	51	61	44	49	83	89	119
WG84979-1	31	44	57	44	49	63	30	103
WG84979-5	63	55	80	69	58	98	98	109
WG84979-6	55	69	68	68	44	91	115	97
WG84979-7	44	50	47	48	44	51	62	91
WG84979-8	54	66	54	60	44	62	73	89
WG84979-9	54	63	58	59	44	66	82	96
WG84979-10	50	61	66	61	53	75	50	101



## TRACE ORGANICS LABORATORY

QC BATCH NO.: BS #212

1:1 Acetone:MeCl2

BNA SUMS

WORKGROUP NO.: WG-84979

BNA SUMS. #1164

EPA SW-846 EXTRACTION METHOD:

L BNA SURROGATE SPIKE I.D.#: 1193

Coprostanol:

SONICATION EPA 3550 SOXHLET EPA 3540 L BNA MATRIX SPIKE I.D.#: 118 &amp; A

Caffeine:

Date/ Analyst	Sample Number	Project Number	Sample Description	Init. Amt (g)	Spike Amount (uL)	Vf (mL)	Clean ups (GPC)	Conc. Anal.	Turn Over Date	Comments
3/28/06	WG	-1	QC	30.0	1193 uL	0.5	YES	Var	3/30/06	
		-2	MS		1188 uL					
		-3	MS (L38326-1)							
		-4	MSD (L38326-1)							
		-5	SRM 1944	3.0	1164 uL	5.0				
		-6	LD (L38326-2)	30.0	1193 uL	0.5				
		-7	MSZ		1188 uL					HIGH SPIKE LEVEL
		-8	MSZ (L38327-1)							
		-9	MSD (L38327-1)							
	L38326-1	423062 202-4	DWDT-TANALYER C		1193 uL					
		-2								
		-9								
		-10								
		-11								
		-12								
		-13								
		-14								
		-15								
	38327									
	138327-1									
		-2								
		-3								
		-4								
		-5								
		-6								
		-7								
		-8								

Sequence Name: C:\MSDCHEM\1\data\060413

Comment:

Operator:

Data Path: C:\MSDCHEM\1\data\060413\

Top Pre-Seq Cmd:

Instrument Control Pre-Seq Cmd:

Data Analysis Pre-Seq Cmd:

Top Post-Seq Cmd:

Instrument Control Post-Seq Cmd:

Data Analysis Post-Seq Cmd:

Method Sections To Run

On A Barcode Mismatch

(X) Full Method

(X) Inject Anyway

( ) Reprocessing Only

( ) Don't Inject

Line	Sample Name/Misc Info
1) Sample	1 cond-01 8270B1 cond
2) Blank	2 BLANK-01 8270B1 MECL2
3) Tune	3 DFTPP-1 DFTPP 10 NG/UL DFTPP MIX
4) Sample	4 CCALI-01 8270B1 SS#1263 D 6.00 PPM BNA STD
5) Inst. Blk	2 BLANK-02 8270B1 MECL2
6) Blank	5
Datafile	WG84979-1
Method	8270B1
7) SB	6
Datafile	WG84979-7
Method	8270B1
8) MS	7
Datafile	WG84979-8
Method	8270B1
9) MSD	8
Datafile	WG84979-9
Method	8270B1
10) SRM	9
Datafile	WG84979-5
Method	8270B1
11) Sample	10 L38327-1 8270B1 L38327-1 DU/DI CAP ok
12) LD	11
Datafile	WG84979-6 - re-extract
Method	8270B1
13) Sample	12 L38326-2 8270B1 L38326-2 DU/DI CAP - re-extract
14) Sample	13 L38326-1 8270B1 L38326-1 DU/DI CAP - run delete
15) Sample	14 L38326-9 8270B1 L38326-9 DU/DI CAP
16) Sample	15
Datafile	L38326-10
Method	8270B1
17) Sample	16
Datafile	L38326-11
Method	8270B1
18) Sample	17
Datafile	L38326-12
Method	8270B1
19) Sample	18
Datafile	L38326-13
Method	8270B1
20) Sample	19
Datafile	L38326-14
Method	8270B1
21) Sample	20
Datafile	L38326-15
Method	8270B1
22) Tune	3 DFTPP-2 DFTPP 10 NG/UL DFTPP MIX → 1 hr post
23) Sample	4 CCALI-02 8270B1 SS#1263 D 6.00 PPM BNA STD 12 hr

# Batch: \\orgizmo\EE\chem\6890j.i\060413.b

#	Sup. #	Injection Time	Wksp. #	QC #	Project #	Sample Description	Matrix Amount	DilFac	IS#2-RT	IS#2-Area	Method	Init Cali	Analyst
1	COND-01	13-APR-2006 07:30	SDGa0282	SDGa02	cond	MECL2	SOIL	0.000	1.0	20.212	1730097	8270B1.m	M.Doubrava
2	BLANK-01	13-APR-2006 08:11	SDGa0282	SDGa02	MECL2	SOIL	0.000	0.000	1.0	0.000	0	8270B1.m	M.Doubrava
3	DFTPP-1	13-APR-2006 08:53	SDGa0971	SDGa09	10 NG/UL DFTPP MIX	NONE	0.000	0.000	1.0	13.444	184064	DFTPP.m	M.Doubrava
4	CCALI-01	13-APR-2006 09:28	SDGa0282	SDGa02	SS#1263 D 6.00 PPM BNA STD	SOIL	0.000	0.000	1.0	8.611	597101	8270B1.m	M.Doubrava
5	BLANK-02	13-APR-2006 10:09	SDGa0282	SDGa02	MECL2	SOIL	0.000	0.000	1.0	0.000	0	8270B1.m	M.Doubrava
6	WG84979-1	13-APR-2006 10:51	WG84979	BS#212	WG84979-1 MB DU/DI CAP	SOIL	18.750	0.5	8.611	323805	8270B1.m	11-APR-2006	M.Doubrava
7	WG84979-7	13-APR-2006 11:32	WG84979	BS#212	WG84979-7 SB DU/DI CAP	SOIL	18.750	0.5	8.611	539224	8270B1.m	11-APR-2006	M.Doubrava
8	WG84979-8	13-APR-2006 12:14	WG84979	BS#212	WG84979-8 MS L38327-1 DU/DI	SOIL	18.750	0.5	8.611	904295	8270B1.m	11-APR-2006	M.Doubrava
9	WG84979-9	13-APR-2006 12:55	WG84979	BS#212	WG84979-9 MSD L38327-1 DU/DI	SOIL	18.750	0.5	8.611	657250	8270B1.m	11-APR-2006	M.Doubrava
10	WG84979-5	13-APR-2006 13:37	WG84979	BS#212	WG84979-5 SRM 1944 DU/DI CAP	SOIL	1.875	5.0	8.611	497499	8270B1.m	11-APR-2006	M.Doubrava
11	L38327-1	13-APR-2006 14:19	WG84979	BS#212	L38327-1 DU/DI CAP	SOIL	18.750	0.5	8.620	436217	8270B1.m	11-APR-2006	M.Doubrava
12	WG84979-6	13-APR-2006 15:00	WG84979	BS#212	WG84979-6 LD L38326-2 DU/DI	SOIL	18.750	0.5	8.611	231930	8270B1.m	11-APR-2006	M.Doubrava
13	L38326-2	13-APR-2006 15:42	WG84979	BS#212	L38326-2 DU/DI CAP	SOIL	18.750	0.5	8.611	213174	8270B1.m	11-APR-2006	M.Doubrava
14	L38326-1	13-APR-2006 16:23	WG84979	BS#212	L38326-1 DU/DI CAP	SOIL	18.750	0.5	8.620	326981	8270B1.m	11-APR-2006	M.Doubrava
15	L38326-9	13-APR-2006 17:05	WG84979	BS#212	L38326-9 DU/DI CAP	SOIL	18.750	0.5	8.620	492895	8270B1.m	11-APR-2006	M.Doubrava
16	L38326-10	13-APR-2006 17:46	WG84979	BS#212	L38326-10 DU/DI CAP	SOIL	18.750	0.5	8.620	179115	8270B1.m	11-APR-2006	M.Doubrava
17	L38326-11	13-APR-2006 18:28	WG84979	BS#212	L38326-11 DU/DI CAP	SOIL	18.750	0.5	8.620	126345	8270B1.m	11-APR-2006	M.Doubrava
18	L38326-12	13-APR-2006 19:09	WG84979	BS#212	L38326-12 DU/DI CAP	SOIL	18.750	0.5	8.620	353388	8270B1.m	11-APR-2006	M.Doubrava
19	L38326-13	13-APR-2006 19:50	WG84979	BS#212	L38326-13 DU/DI CAP	SOIL	18.750	0.5	8.620	452707	8270B1.m	11-APR-2006	M.Doubrava
20	L38326-14	13-APR-2006 20:31	WG84979	BS#212	L38326-14 DU/DI CAP	SOIL	18.750	0.5	8.620	114040	8270B1.m	11-APR-2006	M.Doubrava
21	L38326-15	13-APR-2006 21:13	WG84979	BS#212	L38326-15 DU/DI CAP	SOIL	18.750	0.5	8.620	452657	8270B1.m	11-APR-2006	M.Doubrava
22	DFTPP-2	13-APR-2006 21:54	SDGa0971	SDGa09	10 NG/UL DFTPP MIX	NONE	0.000	0.000	1.0	13.453	67976	DFTPP.m	M.Doubrava
23	CCALI-02	13-APR-2006 22:29	SDGa0282	SDGa02	SS#1263 D 6.00 PPM BNA STD	SOIL	0.000	0.000	1.0	8.620	286300	8270B1.m	M.Doubrava

QC Samples + Misc.: 8      ContinuingCals: 1      Tunes: 2      Calibrations: 0

Comment:

Operator:

Data Path: C:\MSDCHEM\1\data\060502\

Top Pre-Seq Cmd:

Instrument Control Pre-Seq Cmd:

Data Analysis Pre-Seq Cmd:

Top Post-Seq Cmd:

Instrument Control Post-Seq Cmd:

Data Analysis Post-Seq Cmd:

Method Sections To Run

On A Barcode Mismatch

(X) Full Method

(X) Inject Anyway

( ) Reprocessing Only

( ) Don't Inject

Line	Sample Name/Misc Info
1) Sample	1 cond-01 8270B1 cond
2) Blank	2 BLANK-01 8270B1 MECL2
3) Tune	3 DFTPP-1 DFTPP 10 NG/UL DFTPP MIX
4) Sample	4 CCALI-01 8270B1 SS#1263 D 6.00 PPM BNA STD
5) Inst. Blk	2 BLANK-02 8270B1 MECL2
6) Sample	5 L38325-9 8270B1 L38325-9 DU/DI CAP
7) Sample	6
Datafile	L38326-1X
Method	8270B1
8) Sample	7
Datafile	L38326-2X
Method	8270B1
9) Sample	8
Datafile	WG84979-6X
Method	8270B1
10) Sample	9 L38324-1 8270B1 L38324-1 DENNY WAY
11) Sample	10 L38324-2 8270B1 L38324-2 DENNY WAY
12) Blank	2 BLANK-03 8270B1 MECL2
13) Tune	3 DFTPP-2 DFTPP 10 NG/UL DFTPP MIX
14) Sample	4 CCALI-02 8270B1 SS#1263 D 6.00 PPM BNA STD

# Batch: \\orgizmo\EE\chem\6890j.i\060502.b

#	Sup. #	Injection Time	Wkqp. #	QC #	Project #	Sample Description	Matrix	Amount	DilFac	IS#2-RT	IS#2-Area	Method	Init Cali	Analyst
1	COND-01	02-MAY-2006 08:07	SDGa0282	SDGa02		cond	SOIL	0.000	1.0	20.039	523537	8270B1.m	11-APR-2006	M.Doubrava
2	BLANK-01	02-MAY-2006 08:48	SDGa0282	SDGa02		MECL2	SOIL	0.000	1.0	0.000	0	8270B1.m	11-APR-2006	M.Doubrava
3	DFTPP-1	02-MAY-2006 09:30	SDGa0971	SDGa09		10 NG/UL DFTPP MIX	NONE	0.000	1.0	13.345	146624	DFTPP.m		M.Doubrava
4	CCALI-01	02-MAY-2006 10:04	SDGa0282	SDGa02		SS#1263 D 6.00 PPM BNA STD	SOIL	0.000	1.0	8.547	559772	8270b1.m	11-APR-2006	M.Doubrava
5	BLANK-02	02-MAY-2006 10:46	SDGa0282	SDGa02		MECL2	SOIL	0.000	1.0	0.000	0	8270B1.m	11-APR-2006	M.Doubrava
6	L38325-9	02-MAY-2006 11:27	WG84958	BS#211		L38325-9 DU/DI CAP	SOIL	18.750	0.5	8.556	439068	8270b1.m	11-APR-2006	M.Doubrava
7	L38326-1X	02-MAY-2006 12:08	WG84979	BS#212		L38326-1 X 10 DIL DU/DI CAP	SOIL	18.750	5.0	8.556	494685	8270b1.m	11-APR-2006	M.Doubrava
8	L38326-2X	02-MAY-2006 12:50	WG84979	BS#212		L38326-2 X 10 DIL DU/DI CAP	SOIL	18.750	5.0	8.556	560599	8270b1.m	11-APR-2006	M.Doubrava
9	WG84979-6X	02-MAY-2006 13:31	WG84979	BS#212		WG84979-6 X 10 DIL DU/DI CAP	SOIL	18.750	5.0	8.556	490079	8270b1.m	11-APR-2006	M.Doubrava
10	L38324-1	02-MAY-2006 14:13	WG84958	BS#211		L38324-1 DENNY WAY	SOIL	18.750	0.5	8.556	427434	8270B1.m	11-APR-2006	M.Doubrava
11	L38324-2	02-MAY-2006 14:54	WG84958	BS#211		L38324-2 DENNY WAY	SOIL	18.750	0.5	8.556	510537	8270B1.m	11-APR-2006	M.Doubrava
12	BLANK-03	02-MAY-2006 15:36	SDGa0282	SDGa02		MECL2	SOIL	0.000	1.0	0.000	0	8270B1.m	11-APR-2006	M.Doubrava
13	DFTPP-2	02-MAY-2006 16:17	SDGa0971	SDGa09		10 NG/UL DFTPP MIX	NONE	0.000	1.0	13.350	137408	DFTPP.m	11-APR-2006	M.Doubrava
14	CCALI-02	02-MAY-2006 16:52	SDGa0282	SDGa02		SS#1263 D 6.00 PPM BNA STD	SOIL	0.000	1.0	8.556	681306	8270B1.m	11-APR-2006	M.Doubrava

Samples: 8    QC Samples + Misc.: 3    ContinuingCals: 1    Tunes: 2    Calibrations: 0

Comment:  
Operator:  
Data Path: C:\MSDCHEM\1\data\060426\

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

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

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

Line	Sample Name/Misc Info
1) Tune	3 DFTPP-1 DFTPP 10 NG/UL DFTPP MIX
2) Sample	4 CCALI-01 8270B1 SS#1263 D 6.00 PPM BNA STD
3) Inst. Blk	2 BLANK-02 8270B1 MECL2
4) Sample	5 L38327-2 8270B1 L38327-2 DU/DI CAP
5) Sample	6 L38327-3 8270B1 L38327-3 DU/DI CAP
6) Sample	7 L38327-4 8270B1 L38327-4 DU/DI CAP
7) Sample	8 L38327-5 8270B1 L38327-5 DU/DI CAP
8) Sample	9 L38327-6 8270B1 L38327-6 DU/DI CAP
9) Sample	10 L38327-7 8270B1 L38327-7 DU/DI CAP
10) Sample	11 L38327-8 8270B1 L38327-8 DU/DI CAP
11) Sample	12 L38325-3 8270B1 L38325-3 DU/DI CAP
12) Sample	13
Datafile	L38326-10
Method	8270B1
13) Sample	14
Datafile	L38326-11
Method	8270B1
14) Sample	15
Datafile	L38326-14
Method	8270B1
15) Tune	3 DFTPP-2 DFTPP 10 NG/UL DFTPP MIX
16) Sample	4 CCALI-02 8270B1 SS#1263 D 6.00 PPM BNA STD

*ms*  
*4/20/06*

# Batch: \\orgizmo\EE\chem\6890j.i\060426.b

#	Sup. #	Injection Time	Wksp. #	QC #	Project #	Sample Description	Matrix	Amount	DilFac	IS#2-RT	IS#2-Area	Method	Init Cali	Analyst
1	DFTPP-1	26-APR-2006 12:44	SDGa0971	SDGa09	10	NG/UL DFTPP MIX	NONE	0.000	1.0	13.383	443136	DFTPP.m	11-APR-2006	M.Doubrava
2	CCALI-01	26-APR-2006 13:19	SDGa0282	SDGa02	SS#1263	D 6.00 PPM BNA STD	SOIL	0.000	1.0	8.575	1257055	8270b1.m	11-APR-2006	M.Doubrava
3	BLANK-02	26-APR-2006 14:00	SDGa0282	SDGa02	MECL2		SOIL	0.000	1.0	0.000	0	8270b1.m	11-APR-2006	M.Doubrava
4	L38327-2	26-APR-2006 14:42	WG84979	BS#212	L38327-2	DU/DI CAP	SOIL	18.750	0.5	8.584	1332900	8270b1.m	11-APR-2006	M.Doubrava
5	L38327-3	26-APR-2006 15:23	WG84979	BS#212	L38327-3	DU/DI CAP	SOIL	18.750	0.5	8.584	1164158	8270b1.m	11-APR-2006	M.Doubrava
6	L38327-4	26-APR-2006 16:05	WG84979	BS#212	L38327-4	DU/DI CAP	SOIL	18.750	0.5	8.584	1064389	8270b1.m	11-APR-2006	M.Doubrava
7	L38327-5	26-APR-2006 16:47	WG84979	BS#212	L38327-5	DU/DI CAP	SOIL	18.750	0.5	8.584	1014821	8270b1.m	11-APR-2006	M.Doubrava
8	L38327-6	26-APR-2006 17:28	WG84979	BS#212	L38327-6	DU/DI CAP	SOIL	18.750	0.5	8.584	846484	8270b1.m	11-APR-2006	M.Doubrava
9	L38327-7	26-APR-2006 18:10	WG84979	BS#212	L38327-7	DU/DI CAP	SOIL	18.750	0.5	8.584	1241488	8270b1.m	11-APR-2006	M.Doubrava
10	L38327-8	26-APR-2006 18:51	WG84979	BS#212	L38327-8	DU/DI CAP	SOIL	18.750	0.5	8.584	978834	8270b1.m	11-APR-2006	M.Doubrava
11	L38325-3	26-APR-2006 19:33	WG84958	BS#211	L38325-3	DU/DI CAP	SOIL	18.750	0.5	8.584	1026256	8270b1.m	11-APR-2006	M.Doubrava
12	L38326-10	26-APR-2006 20:14	WG84958	BS#211	L38326-10	DU/DI CAP	SOIL	18.750	0.5	8.593	1008808	8270b1.m	11-APR-2006	M.Doubrava
13	L38326-11	26-APR-2006 20:56	WG84958	BS#211	L38326-11	DU/DI CAP	SOIL	18.750	0.5	8.593	693330	8270b1.m	11-APR-2006	M.Doubrava
14	L38326-14	26-APR-2006 21:37	WG84958	BS#211	L38326-14	DU/DI CAP	SOIL	18.750	0.5	8.593	700637	8270b1.m	11-APR-2006	M.Doubrava
15	DFTPP-2	26-APR-2006 22:18	SDGa0971	SDGa09	10	NG/UL DFTPP MIX	NONE	0.000	1.0	13.392	242304	DFTPP.m	11-APR-2006	M.Doubrava
16	CCALI-02	26-APR-2006 22:53	SDGa0282	SDGa02	SS#1263	D 6.00 PPM BNA STD	SOIL	0.000	1.0	8.584	711777	8270b1.m	11-APR-2006	M.Doubrava

Samples: 12      QC Samples + Misc.: 1      ContinuingCals: 1      Tunes: 2      Calibrations: 0

Comment:

Operator:

Data Path: C:\MSDCHEM\1\data\060525A\

Top Pre-Seq Cmd:

Instrument Control Pre-Seq Cmd:

Data Analysis Pre-Seq Cmd:

Top Post-Seq Cmd:

Instrument Control Post-Seq Cmd:

Data Analysis Post-Seq Cmd:

Method Sections To Run

On A Barcode Mismatch

(X) Full Method

(X) Inject Anyway

( ) Reprocessing Only

( ) Don't Inject

Line	Sample Name/Misc Info
1) Tune	3 DFTPP-1 DFTPP 10 NG/UL DFTPP MIX
2) Sample	4 CCALI-01 8270B1 SS#1263 D 6.00 PPM BNA STD
3) Inst. Blk	2 BLANK-02 8270B1 MECL2
4) Blank	5 MB-01 8270B1 MB DUDI CHECK
5) SB	6 SB-01 8270B1 SB DUDI CHECK
6) Sample	7
Datafile	L38326-15
Method	8270B1
7) LD	8
Datafile	L38326-15LD
Method	8270B1
8) Sample	9 L38326-2 8270B1 L38326-2 DUDI CHECK
9) LD	10
Datafile	L38326-2LD
Method	8270B1

} info only

- rename WG84979-6 LD  
of L38326-2



Batch: \\orgizmo\EE\chem\6890j.i\060525A.b

#	Sup. #	Injection Time	Wksp. #	QC #	Project #	Sample Description	Matrix Amount	DilFac	IS#2-RT	IS#2-Area	Method	Init Cali	Analyst
1	DTTPP-1	25-MAY-2006 13:17	SDGa0971	SDGa09	10 NG/UL DTTPP MIX	NONE	0.000	1.0	13.303	112400	DTTPP.m	11-APR-2006	M.Doubrava
2	CCALI-01	25-MAY-2006 13:52	SDGa0282	SDGa02	SS#1263 D 6.00 PPM BNA STD	SOIL	0.000	1.0	8.502	384740	8270b1.m	11-APR-2006	M.Doubrava
3	BLANK-02	25-MAY-2006 14:33	SDGa0282	SDGa02	MECL2	SOIL	0.000	1.0	0.000	0	8270b1.m	11-APR-2006	M.Doubrava
4	WG84979-10	25-MAY-2006 15:15	WG84979	SDGa02	WG84979-10 MB DUDI CHECK	SOIL	18.750	0.5	8.502	304635	8270b1.m	11-APR-2006	M.Doubrava
5	SB-01	25-MAY-2006 15:56	SDGa0282	SDGa02	SB DUDI CHECK	SOIL	18.750	0.5	8.502	348378	8270b1.m	11-APR-2006	M.Doubrava
6	L38326-15	25-MAY-2006 16:38	SDGa0282	SDGa02	L38326-15 DUDI CHECK	SOIL	18.750	0.5	8.502	294987	8270b1.m	11-APR-2006	M.Doubrava
7	L38326-15L	25-MAY-2006 17:20	SDGa0282	SDGa02	LD L38326-15 DUDI CHECK	SOIL	18.750	0.5	8.502	349650	8270b1.m	11-APR-2006	M.Doubrava
8	L38326-2	25-MAY-2006 18:01	WG84979	SDGa0282	L38326-2 DUDI CHECK	SOIL	18.750	5.0	8.502	273650	8270b1.m	11-APR-2006	M.Doubrava
9	WG84979-6	25-MAY-2006 18:43	WG84979	SDGa0282	WG84979-6 LD L38326-2 DUDI C	SOIL	18.750	5.0	8.502	433656	8270b1.m	11-APR-2006	M.Doubrava
Samples: 2							ContinuingCals: 1			Tunes: 1			
							QC Samples + Misc.: 5			Calibrations: 0			

QC BATCH NO.: BS

1:1 Acetone:MeCl<sub>2</sub>

EPA SW-846 EXTRACTION METHOD:

DNASMS  
SOXHLET EPA 3540

WORKGROUP NO.:

BNA SURROGATE SPIKE I.D.#: 1276 100  $\mu$ l

Coprostanol:

BNA MATRIX SPIKE I.D.#: 1188 A 100 µl Caffeine:

[illegible]

# Trace Organics Data Anomaly Form

Date(s) Occurred: 06/04/13, 06/04/26, 06/05/02, 06/05/25A

WG #(s): WG84979

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

Project #(s): 423062-100-004

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

## I. Analysis/Extraction

- |   |                                   |                                     |                                     |
|---|-----------------------------------|-------------------------------------|-------------------------------------|
| <input type="checkbox"/> BNA                      | <input type="checkbox"/> BNALL    | <input type="checkbox"/> EDC        | <input type="checkbox"/> EDC-LVI    |
| <input type="checkbox"/> CLPESTPCB                | <input type="checkbox"/> PEST     | <input type="checkbox"/> PCB        | <input type="checkbox"/> OPPEST     |
| <input type="checkbox"/> VOA-GCMS                 | <input type="checkbox"/> NWTPH-GX | <input type="checkbox"/> NWTPH-DX   | <input type="checkbox"/> NWTPH-HCID |
| <input type="checkbox"/> BUTYL TIN                | <input type="checkbox"/> AIRTOX   | <input type="checkbox"/> AIR-SULFUR |                                     |
| <input checked="" type="checkbox"/> Other: BNASMS |                                   |                                     |                                     |
| <input type="checkbox"/> Subcontracted:           |                                   |                                     |                                     |

## II. Instrument

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

## III. Type of Sample/Analytical Anomaly

☒ Values Outside of Control Limits:

- 1 ☒ Blank Contamination
- 2 ☐ SB/SBD Spike Recoveries
- 3 ☐ MS/MSD Spike Recoveries
- 4 ☐ LCS/SRM Recoveries
- 5 ☐ Initial Calibration
- 6 ☐ Performance Checks
- 7 ☒ ISTD % Differences

- 8 ☐ Surrogate Spike Recoveries
- 9 ☐ SB/SBD RPD
- 10 ☐ MS/MSD RPD
- 11 ☒ Sample/LD RPD
- 12 ☒ Continuing Calibration Checks
- 13 ☒ Tuning Criteria

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

### Anomaly Description:

1. The MB (WG84979-1) contained reportable levels of Di-N-Butyl Phthalate. The level is consistent with sediment extractions and is attributed to lab background. All sample are flagged "B" with the exception of WG84979-6 and L38326. The MB (WG84979-10) is associated the re-extracted WG84979-6 and L38326-2 on 06/05/25A. WG84979-10 had no reportable targets as contamination.

June 8, 2006

ORGJ\_DAF060413WG84979

7. Initial analyses of WG84979 on 06/04/13 had L38326-10, -11, -14 failing ISTD % differences QA/QC. Sample were re-analyzed on 06/04/16. All samples passed ISTD % difference.

11. L38326-2 was extracted in duplicate as WG84979-6. The RPDs failed for all targets determined. The quantitated values differed by approximately 20 to 25 times. L38326-2 and WG84979-6 were re-extracted and analyzed on 06/05/25A. All RPDs for determined targets were within QA/QA limits.

12. CCALI-01 on 06/04/26 for phenol exceeded 20 % (23.3%) compared to the calibration curve. Since the failure was due to an increase in sensitivity for phenol analyses was continued. CCALI-01 on 06/05/02 for acenaphthylene exceeded 20% (21.1%) compared to the calibration curve. Since the failure was due to an increase in sensitivity analyses was continued. For pentachlorophenol, the CCALI-01 exceeded 25% (30%) compared to the calibration curve. Since the failure was due to a loss of sensitivity, any reportable pentachlorophenol would be quantitated against the daily standard. CCALI-01 on 06/05/25A for pentachlorophenol exceeded 25% (32.7%) compared to the calibration curve. Since the failure was due to a loss of sensitivity, any reportable pentachlorophenol would be quantitated against the daily standard. CCALI-01 on 06/05/25A for coprostanol exceeded 20% (23.8%) compared to the calibration curve. Since the failure was due to a loss of sensitivity, any reportable coprostanol would be quantitated against the daily standard. CCALI-01 on 06/05/25A for di-n-octylphthalate exceeded 20 % (24.8%) compared to the calibration curve. Since the failure was due to an increase in sensitivity for di-n-octylphthalate analyses was continued.

13. Injection of L383216-15 exceeded the initial 12 hour DFTPP-01 shift by 20 minutes. DFTPP-02 was injected approximately 1 hour passed the 12 shift of DFTPP-01 but passed all QA/QA tuning criteria.

17. Sample L38326-1 quantitated target compounds above the calibration curve. L38326-1 was diluted X 10 and reanalyzed on 06/05/02.

#### IV. Type of Project Anomaly

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

**Anomaly Description:** For the diluted samples L38326-1, -2, and WG84979-6 the MDLs/RDLs are corrected for the dilution.

#### V. Corrective Action Taken

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

**Corrective Action Description:** see anomaly description

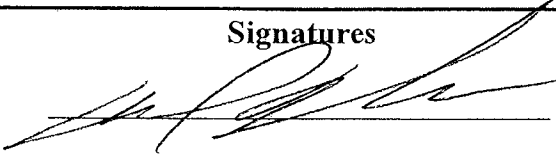

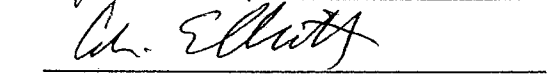
#### VI. Potential Effects on Data Quality

June 8, 2006  
ORGJ\_DAF060413WG84979

Based upon the expected performance of this method:

- ☐ It is likely the observed anomaly influenced the reported value(s).  
☒ It is unlikely the observed anomaly influenced the reported value(s).  
☐ The observed anomaly may have influenced the reported value(s).  
☐ It is unknown whether or not the observed anomaly affected the reported value(s).

Explanation:

	Signatures	Signature Dates
Reported By: <i>Doubrava</i>		<u>6/8/06</u>
Reviewer:		
Supervisor: <i>Dana Walker</i>		<u>6/22/06</u>
QA Officer: <i>Colin Elliott</i> (For QA1 only)		<u>6/8/06</u>
cc: LPM: <i>F. Grothkopp</i>		

## King County Environmental Laboratory

WORK GROUP REPORT (wk02)

Apr 10 2006, 11:52 am

Work Group: WG85024 (PPLLS#50 PCBLL) for Department: 7 - Organics, Trace

Created: 29-MAR-06 PrepDate: 31-MAR-06 Due: Operator: KM/JG

Sample	Project Number	Project Description	PKey	C	Product	Matrix	Stat	UA	Workdate	Due date
L38326-1	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PCBLL	SALTWTRSED	PREP	U	22-MAR-06	24-APR-06
L38326-10	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PCBLL	SALTWTRSED	PREP	U	22-MAR-06	24-APR-06
L38326-11	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PCBLL	SALTWTRSED	PREP	U	22-MAR-06	24-APR-06
L38326-12	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PCBLL	SALTWTRSED	PREP	U	22-MAR-06	24-APR-06
L38326-13	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PCBLL	SALTWTRSED	PREP	U	23-MAR-06	24-APR-06
L38326-14	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PCBLL	SALTWTRSED	PREP	U	23-MAR-06	24-APR-06
L38326-15	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PCBLL	SALTWTRSED	PREP	U	23-MAR-06	24-APR-06
L38326-2	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PCBLL	SALTWTRSED	PREP	U	22-MAR-06	24-APR-06
L38326-9	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PCBLL	SALTWTRSED	PREP	U	22-MAR-06	24-APR-06
L38327-1	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PCBLL	SALTWTRSED	PREP	U	24-MAR-06	24-APR-06
L38327-2	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PCBLL	SALTWTRSED	PREP	U	24-MAR-06	24-APR-06
L38327-3	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PCBLL	SALTWTRSED	PREP	U	24-MAR-06	24-APR-06
L38327-4	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PCBLL	SALTWTRSED	PREP	U	24-MAR-06	24-APR-06
L38327-5	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PCBLL	SALTWTRSED	PREP	U	24-MAR-06	24-APR-06
L38327-6	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PCBLL	SALTWTRSED	PREP	U	24-MAR-06	24-APR-06
L38327-7	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PCBLL	SALTWTRSED	PREP	U	24-MAR-06	24-APR-06
L38327-8	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PCBLL	SALTWTRSED	PREP	U	24-MAR-06	24-APR-06
WG85024-1	MB			S	PCBLL	OTHR SOLID	PREP	U	29-MAR-06	
WG85024-2	SB			S	PCBLL	OTHR SOLID	PREP	U	29-MAR-06	
WG85024-3	MS		SED	S	PCBLL	SALTWTRSED	PREP	U	29-MAR-06	
WG85024-4	MSD		SED	S	PCBLL	SALTWTRSED	PREP	U	29-MAR-06	
WG85024-5	SRM		SED	S	PCBLL	SALTWTRSED	PREP	U	29-MAR-06	
WG85024-6	LD		SED	S	PCBLL	SALTWTRSED	PREP	U	29-MAR-06	

## Comments:

L38326-1 10 Grab Comp, 0-10 cm  
 L38326-10 10 Grab Comp, FREP  
 L38326-11 10 Grab Comp, 0-10 cm  
 L38326-12 10 Grab Comp, 0-10 cm  
 L38326-13 10 Grab Comp, 0-10 cm  
 L38326-14 10 Grab Comp, 0-10 cm  
 L38326-15 10 Grab Comp, 0-10 cm  
 L38326-2 10 Grab Comp, 0-10 cm  
 L38326-9 10 Grab Comp, AREP  
 L38327-1 Diver Cores, 2006  
 L38327-2 Diver Cores, 2006, AREP  
 L38327-3 Diver Cores, 2006, FREP  
 L38327-4 Diver Cores, 2006  
 L38327-5 Diver Cores, 2006  
 L38327-6 Diver Cores, 2006  
 L38327-7 Diver Cores, 2006  
 L38327-8 Diver Cores, 2006  
 WG85024-1 MB060331  
 WG85024-2 WG85024-1  
 WG85024-3 L38327-5  
 WG85024-4 WG85024-3 L38327-5  
 WG85024-5 SRMHS2  
 WG85024-6 L38327-3

Run ID: R112961 Workgroup: WG85024 (PPLLS#50 PCBLL)

Page 1

2,4,5,6-Tetrachlo-		Decachlorobipheny-	
Sample #	ro-m-xylene		1
(Lab Limits)	30-134	15-155	
L38326-1	84	87	
L38326-2	92	84	
L38326-9	93	93	
L38326-10	81	90	
L38326-11	77	84	
L38326-12	90	93	
L38326-13	37	40	
L38326-14	80	85	
L38326-15	82	87	
L38327-1	66	76	
L38327-2	47	82	
L38327-3	64	103	
L38327-4	63	83	
L38327-5	66	81	
L38327-6	42	82	
L38327-7	67	78	
L38327-8	42	83	
WG85024-1	26	81	
WG85024-2	32	102	
WG85024-3	74	104	
WG85024-4	94	109	
WG85024-5	101	100	
WG85024-6	63	82	



# SOLID AND TISSUE SAMPLE EXTRACTION RECORD FOR PESTICIDE-LL/PCB-LL ANALYSIS

## TRACE ORGANICS LABORATORY

1:1 MeCL2:ACETONE

QC BATCH NO.: PPLS # 50

EPA SW-846 EXTRACTION METHOD:

SONICATION EPA 3550

SOXHLET EPA 3540

PCBLL/PESTLL

PEST-LL WORKGROUP NO.: W685023

PCB-LL WORKGROUP NO.: W685024

LL PESTICIDE SURROGATE SPIKE I.D. # 1260

LL PESTICIDE MATRIX SPIKE I.D. # 1163, 1

LL PCB MATRIX SPIKE I.D. # 1260

2.0 ml PCB extract split from 2.5 ml total

Date/Analyst		Sample Number	Project Number	Sample Description	Initial Amt (g)	Effective Amt (g) after split	Spike Amt. (uL)	Vf (ml)	CLEANUPS (GPC, PCB AL, TBA)	H+	Pest-LL conc. turn in analyst Date	PCB-LL conc. turn in analyst Date	Comments
from 2.5 ml total													
JS/KM	W685023-1	QC	MB		20.0	Pest 1260-100uL	100uL	2.5	ALL		4/10/06		
JS/KM	W685024-1					PCB 1163, 1-100uL	100uL	0.5		H+		4/10/06	
JS/KM	W685023-2		5B	PESTLL	20.0	Pest 1163, 1-100uL	100uL	2.5					
JS/KM	W685024-2		5B	PCBLL	16.0	PCB 1260-100uL	100uL	/		/			JS 03/30/06
JS/KM	W685023-3		PESTLL MB	(L38327-2)	20.0	Pest 1163, 1-100uL	100uL	2.5					
JS/KM	W685024-3		PCBLL MB	(L38327-2)	20.0	PCB 1260-100uL	100uL	/		/			
JS/KM	W685023-4		PESTLL MB	(L38327-2)	20.0	Pest 1163, 1-100uL	100uL	2.5					
JS/KM	W685024-4		PCBLL MB	(L38327-5)	16.0	PCB 1260-100uL	100uL	/		/			
JS/KM	W685023-5		PESTLL MB	(L38327-5)	16.0	Pest 1260-100uL	100uL	0.5		H+			
JS/KM	W685024-5		PCBLL MB	(L38327-5)	3.0	PCB 1163, 1-100uL	100uL	/					
JS/KM	W685023-6		PESTLL MB	(L38327-3)	20.0	Pest 1260-100uL	100uL	0.5		H+			
JS/KM	W685024-6		PCBLL MB	(L38327-3)	7.5	PCB 1260-100uL	100uL	/		/			
JS/KM	W685023-7		PESTLL MB	(L38327-3)	20.0	Pest 1163, 1-100uL	100uL	2.5					
JS/KM	W685024-7		PCBLL MB	(L38327-3)	20.0	PCB 1260-100uL	100uL	0.5		H+			
JS/KM	W685023-8		PESTLL MB	(L38327-3)	20.0	Pest 1163, 1-100uL	100uL	2.5					
JS/KM	W685024-8		PCBLL MB	(L38327-3)	20.0	PCB 1260-100uL	100uL	0.5		/			
JS/KM	W685023-9		PESTLL MB	(L38327-3)	20.0	Pest 1163, 1-100uL	100uL	2.5					
JS/KM	W685024-9		PCBLL MB	(L38327-3)	20.0	PCB 1260-100uL	100uL	0.5		H+			
JS/KM	W685023-10		PESTLL MB	(L38327-3)	20.0	Pest 1163, 1-100uL	100uL	2.5					
JS/KM	W685024-10		PCBLL MB	(L38327-3)	20.0	PCB 1260-100uL	100uL	0.5		/			
JS/KM	W685023-11		PESTLL MB	(L38327-3)	20.0	Pest 1163, 1-100uL	100uL	2.5					
JS/KM	W685024-11		PCBLL MB	(L38327-3)	20.0	PCB 1260-100uL	100uL	0.5		H+			
JS/KM	W685023-12		PESTLL MB	(L38327-3)	20.0	Pest 1163, 1-100uL	100uL	2.5					
JS/KM	W685024-12		PCBLL MB	(L38327-3)	20.0	PCB 1260-100uL	100uL	0.5		/			
JS/KM	W685023-13		PESTLL MB	(L38327-3)	20.0	Pest 1163, 1-100uL	100uL	2.5					
JS/KM	W685024-13		PCBLL MB	(L38327-3)	20.0	PCB 1260-100uL	100uL	0.5		H+			
JS/KM	W685023-14		PESTLL MB	(L38327-3)	20.0	Pest 1163, 1-100uL	100uL	2.5					
JS/KM	W685024-14		PCBLL MB	(L38327-3)	20.0	PCB 1260-100uL	100uL	0.5		/			
JS/KM	W685023-15		PESTLL MB	(L38327-3)	20.0	Pest 1163, 1-100uL	100uL	2.5					
JS/KM	W685024-15		PCBLL MB	(L38327-3)	20.0	PCB 1260-100uL	100uL	0.5		H+			
JS/KM	W685023-16		PESTLL MB	(L38327-3)	20.0	Pest 1163, 1-100uL	100uL	2.5					
JS/KM	W685024-16		PCBLL MB	(L38327-3)	20.0	PCB 1260-100uL	100uL	0.5		/			
JS/KM	W685023-17		PESTLL MB	(L38327-3)	20.0	Pest 1163, 1-100uL	100uL	2.5					
JS/KM	W685024-17		PCBLL MB	(L38327-3)	20.0	PCB 1260-100uL	100uL	0.5		H+			
JS/KM	W685023-18		PESTLL MB	(L38327-3)	20.0	Pest 1163, 1-100uL	100uL	2.5					
JS/KM	W685024-18		PCBLL MB	(L38327-3)	20.0	PCB 1260-100uL	100uL	0.5		/			
JS/KM	W685023-19		PESTLL MB	(L38327-3)	20.0	Pest 1163, 1-100uL	100uL	2.5					
JS/KM	W685024-19		PCBLL MB	(L38327-3)	20.0	PCB 1260-100uL	100uL	0.5		H+			
JS/KM	W685023-20		PESTLL MB	(L38327-3)	20.0	Pest 1163, 1-100uL	100uL	2.5					
JS/KM	W685024-20		PCBLL MB	(L38327-3)	20.0	PCB 1260-100uL	100uL	0.5		/			
JS/KM	W685023-21		PESTLL MB	(L38327-3)	20.0	Pest 1163, 1-100uL	100uL	2.5					
JS/KM	W685024-21		PCBLL MB	(L38327-3)	20.0	PCB 1260-100uL	100uL	0.5		H+			
JS/KM	W685023-22		PESTLL MB	(L38327-3)	20.0	Pest 1163, 1-100uL	100uL	2.5					
JS/KM	W685024-22		PCBLL MB	(L38327-3)	20.0	PCB 1260-100uL	100uL	0.5		/			
JS/KM	W685023-23		PESTLL MB	(L38327-3)	20.0	Pest 1163, 1-100uL	100uL	2.5					
JS/KM	W685024-23		PCBLL MB	(L38327-3)	20.0	PCB 1260-100uL	100uL	0.5		H+			
JS/KM	W685023-24		PESTLL MB	(L38327-3)	20.0	Pest 1163, 1-100uL	100uL	2.5					
JS/KM	W685024-24		PCBLL MB	(L38327-3)	20.0	PCB 1260-100uL	100uL	0.5		/			
JS/KM	W685023-25		PESTLL MB	(L38327-3)	20.0	Pest 1163, 1-100uL	100uL	2.5					
JS/KM	W685024-25		PCBLL MB	(L38327-3)	20.0	PCB 1260-100uL	100uL	0.5		H+			
JS/KM	W685023-26		PESTLL MB	(L38327-3)	20.0	Pest 1163, 1-100uL	100uL	2.5					
JS/KM	W685024-26		PCBLL MB	(L38327-3)	20.0	PCB 1260-100uL	100uL	0.5		/			
JS/KM	W685023-27		PESTLL MB	(L38327-3)	20.0	Pest 1163, 1-100uL	100uL	2.5					
JS/KM	W685024-27		PCBLL MB	(L38327-3)	20.0	PCB 1260-100uL	100uL	0.5		H+			
JS/KM	W685023-28		PESTLL MB	(L38327-3)	20.0	Pest 1163, 1-100uL	100uL	2.5					
JS/KM	W685024-28		PCBLL MB	(L38327-3)	20.0	PCB 1260-100uL	100uL	0.5		/			
JS/KM	W685023-29		PESTLL MB	(L38327-3)	20.0	Pest 1163, 1-100uL	100uL	2.5					
JS/KM	W685024-29		PCBLL MB	(L38327-3)	20.0	PCB 1260-100uL	100uL	0.5		H+			
JS/KM	W685023-30		PESTLL MB	(L38327-3)	20.0	Pest 1163, 1-100uL	100uL	2.5					
JS/KM	W685024-30		PCBLL MB	(L38327-3)	20.0	PCB 1260-100uL	100uL	0.5		/			
JS/KM	W685023-31		PESTLL MB	(L38327-3)	20.0	Pest 1163, 1-100uL	100uL	2.5					
JS/KM	W685024-31		PCBLL MB	(L38327-3)	20.0	PCB 1260-100uL	100uL	0.5		H+			
JS/KM	W685023-32		PESTLL MB	(L38327-3)	20.0	Pest 1163, 1-100uL	100uL	2.5					
JS/KM	W685024-32		PCBLL MB	(L38327-3)	20.0	PCB 1260-100uL	100uL	0.5		/			
JS/KM	W685023-33		PESTLL MB	(L38327-3)	20.0	Pest 1163, 1-100uL	100uL	2.5					
JS/KM	W685024-33		PCBLL MB	(L38327-3)	20.0	PCB 1260-100uL	100uL	0.5		H+			
JS/KM	W685023-34		PESTLL MB	(L38327-3)	20.0	Pest 1163, 1-100uL	100uL	2.5					
JS/KM	W685024-34		PCBLL MB	(L38327-3)	20.0	PCB 1260-100uL	100uL	0.5		/			
JS/KM	W685023-35		PESTLL MB	(L38327-3)	20.0	Pest 1163, 1-100uL	100uL	2.5					
JS/KM	W685024-35		PCBLL MB	(L38327-3)	20.0	PCB 1260-100uL	100uL	0.5		H+			
JS/KM	W685023-36		PESTLL MB	(L38327-3)	20.0	Pest 1163, 1-100uL	100uL	2.5					
JS/KM	W685024-36		PCBLL MB	(L38327-3)	20.0	PCB 1260-100uL	100uL	0.5		/			
JS/KM	W685023-37		PESTLL MB	(L38327-3)	20.0	Pest 1163, 1-100uL	100uL	2.5					
JS/KM	W685024-37		PCBLL MB	(L38327-3)	20.0	PCB 1260-100uL	100uL	0.5		H+			
JS/KM	W685023-38		PESTLL MB	(L38327-3)	20.0	Pest 1163, 1-100uL	100uL	2.5					
JS/KM	W685024-38		PCBLL MB	(L38327-3)	20.0	PCB 1260-100uL	100uL	0.5		/			
JS/KM	W685023-39		PESTLL MB	(L38327-3)	20.0	Pest 1163, 1-100uL	100uL	2.5					
JS/KM	W685024-39		PCBLL MB	(L38327-3)	20.0	PCB 1260-100uL	100uL	0.5		H+			
JS/KM	W685023-40		PESTLL MB	(L38327-3)	20.0	Pest 1163, 1-100uL	100uL	2.5					
JS/KM	W685024-40		PCBLL MB	(L38327-3)	20.0	PCB 1260-100uL	100uL	0.5		/			
JS/KM	W685023-41		PESTLL MB	(L38327-3)	20.0	Pest 1163, 1-100uL	100uL	2.5					
JS/KM	W685024-41		PCBLL MB	(L38327-3)	20.0	PCB 1260-100uL	100uL	0.5		H+			
JS/KM	W685023-42		PESTLL MB	(L38327-3)	20.0	Pest 1163, 1-100uL	100uL	2.5					
JS/KM	W685024-42		PCBLL MB	(L38327-3)	20.0	PCB 1260-100uL	100uL	0.5		/			
JS/KM	W685023-43		PESTLL MB	(L38327-3)	20.0	Pest 1163, 1-100uL	100uL	2.5					
JS/KM	W685024-43		PCBLL MB	(L38327-3)	20.0	PCB 1260-100uL	100uL	0.5		H+			
JS/KM	W685023-44		PESTLL MB	(L38327-3)	20.0	Pest 1163, 1-100uL	100uL	2.5					

# SOLID AND TISSUE SAMPLE EXTRACTION RECORD FOR PESTICIDE-LL/PCB-LL ANALYSIS TRACE ORGANICS LABORATORY

1:1 MeCL2:ACETONE  
QC BATCH NO.: PPLLS # 50 (continued)  
EPA SW-846 EXTRACTION METHOD:  
SONICATION EPA 3550 > SOXHLET EPA 3540

PCBLL/PESTLL

2.0 ml PCB extract split  
from 2.5 ml total

PEST-LL WORKGROUP NO.: W585023  
PCB-LL WORKGROUP NO.: W585024  
LL PESTICIDE SURROGATE SPIKE I.D. #  
LL PESTICIDE MATRIX SPIKE I.D. #  
LL PCB MATRIX SPIKE I.D. #

Date/ Analyst	Sample Number	Project Number	Sample Description	Effective		Spike Amt. (uL)	Vf (ml)	CLEANUPS		Pest-LL		PCB-LL		Comments
				Initial Amt. (g)	coc Amt(g) after split			GPC, PCB AL, TBA	H+	conc.	turn in analyst	conc.	turn in analyst	
JG/ML 03/30/00	138326-2	423022- 200-4	Dunsmuir Thm Layer	20.0	Pest	1200-100µl	2.5	AI		4/10/06				
						PCB	0.5		H+		4/10/06			
	138326-9				Pest		2.5							
						PCB	0.5		H+					
	138326-10				Pest		2.5							
						PCB	0.5		H+					
	138326-11				Pest		2.5							
						PCB	0.5		H+					
	138326-12				Pest		2.5							
						PCB	0.5		H+					
	138326-13				Pest		2.5							
						PCB	0.5		H+					
	138326-14				Pest		2.5							
						PCB	0.5		H+					
	138326-15				Pest		2.5							
						PCB	0.5		H+					
	138327-1				Pest		2.5							
						PCB	0.5		H+					
	138327-2				Pest		2.5							
						PCB	0.5		H+					
	138327-3				Pest		2.5							
						PCB	0.5		H+					

continued on Next Page

# SOLID AND TISSUE SAMPLE EXTRACTION RECORD FOR PESTICIDE-LL/PCB-LL ANALYSIS

## TRACE ORGANICS LABORATORY

1:1 MeCL2:ACETONE

QC BATCH NO.: PPLS # 50 (continued)

EPA SW-846 EXTRACTION METHOD:

SONICATION EPA 3550 SOXHLET EPA 3540

PCBLL/PEBTL

PEST-LL WORKGROUP NO.: W685023

PCB-LL WORKGROUP NO.: W685024

PESTICIDE SURROGATE SPIKE I.D. #

PESTICIDE MATRIX SPIKE I.D. #

PCB MATRIX SPIKE I.D. #

2.0 ml PCB extract split  
from 2.5 ml total

Date/ Analyst	Sample Number	Project Number	Sample Description	Effective		Spike Amt. (uL)	Vf (ml)	CLEANUPS		Pest-LL conc. turn in analyst Date	PCB-LL conc. turn in analyst Date	Comments
				Initial Amt(g)	after split			(GPC, PCB AL, TBA) H+	H+			
4/6/06	L38327-4	1423042	Dynawash Diagonal	20.0	Pest	1260-100uL	2.5	All		4/10/06		
			1st Layer		PCB		0.5		H+	4/10/06		
	L38327-5				Pest		2.5					
					PCB		0.5		H+			
	L38327-6				Pest		2.5					
					PCB		0.5		H+			
	L38327-7				Pest		2.5					
					PCB		0.5		H+			
	L38327-8				Pest		2.5					
					PCB		0.5		H+			* Clean to dryness w/ N2 prior to shipping
					Pest							
					PCB							
					Pest							
					PCB							
					Pest							
					PCB							
					Pest							
					PCB							
					Pest							
					PCB							
					Pest							
					PCB							
					Pest							
					PCB							
					Pest							
					PCB							

Data File Name	Sample Name	Date Acquired	Vial Numb	Sample Amount	Sample Multiple	Isodrin (RT)	Isodrin (Height)	Leptophos (RT)	Leptophos (Height)	Isodrin #2 (RT)	Isodrin #2 (Height)	Leptophos #2 (RT)	Leptophos #2 (Height)	Misc Info	Data File Path
COND-01.D	conditioner	4/11/2008 10:37	1	0	1										S:\MSDCHEM2\DATA\060411\
BLANK-01.D	blank	4/11/2008 11:14	2	0	1										S:\MSDCHEM2\DATA\060411\
PCB-01.D	1218D 1016/1260 500/50	4/11/2008 11:50	3	0	1	14.430	87451707	22.648	157294734	13.078	223574191	19.548	342087479		S:\MSDCHEM2\DATA\060411\
PCB-02.D	1209.1 1248 500/50	4/11/2008 12:27	4	0	1	14.429	88007998	22.648	159726229	13.078	227992945	19.548	333080625		S:\MSDCHEM2\DATA\060411\
PCB-03.D	1210.1 1254 500/50	4/11/2008 13:03	5	0	1	14.430	77891858	22.647	140718154	13.078	198330538	19.544	299125392		S:\MSDCHEM2\DATA\060411\
PCB-04.D	1206.1 1221 500/50	4/11/2008 13:40	6	0	1	14.430	78909667	22.647	141317248	13.078	191913832	19.545	278646475		S:\MSDCHEM2\DATA\060411\
PCB-05.D	1207.1 1232 500/50	4/11/2008 14:17	7	0	1	14.429	80916986	22.648	143734155	13.078	208895732	19.543	313864528		S:\MSDCHEM2\DATA\060411\
PCB-06.D	1208.1 1242 500/50	4/11/2008 14:53	8	0	1	14.428	80243881	22.646	147251829	13.076	204708388	19.543	301198606		S:\MSDCHEM2\DATA\060411\
WG85024-1.D	MB	4/11/2008 15:30	9	10	0.5	14.427	79811343	22.646	147025439	13.077	206919657	19.544	307863663		S:\MSDCHEM2\DATA\060411\
WG85024-2.D	SB	4/11/2008 16:06	10	10	0.5	14.428	68185821	22.646	125881970	13.078	177793005	19.543	280024019		S:\MSDCHEM2\DATA\060411\
WG85024-3.D	MS L38327-5	4/11/2008 16:44	11	10	0.5	14.429	59884286	22.648	126589337	13.077	163135919	19.547	278003761		S:\MSDCHEM2\DATA\060411\
WG85024-4.D	MSD L38327-5	4/11/2008 17:21	12	10	0.5	14.429	61833677	22.649	132246390	13.077	164087944	19.547	284775068		S:\MSDCHEM2\DATA\060411\
WG85024-5.D	SRM HS2	4/11/2008 17:57	13	4.6875	0.5	14.439	55793094	22.664	139113592	13.090	159942238	19.573	327114814		S:\MSDCHEM2\DATA\060411\
WG85024-6.D	LD L38327-3	4/11/2008 18:34	14	10	0.5	14.431	56503594	22.668	122596742	13.077	152377242	19.546	282506522		S:\MSDCHEM2\DATA\060411\
L38326-1.D	L38326-1	4/11/2008 19:11	15	10	0.5	14.430	44577672	22.686	122807657	13.100	129742866	19.607	274517636		S:\MSDCHEM2\DATA\060411\
L38326-2.D	L38326-2	4/11/2008 19:47	16	10	0.5	14.439	48250848	22.673	116421800	13.087	128898689	19.584	276000510		S:\MSDCHEM2\DATA\060411\
L38326-3.D	L38326-3	4/11/2008 20:24	17	10	0.5	14.433	56708877	22.657	132540559	13.080	153072378	19.592	302189877		S:\MSDCHEM2\DATA\060411\
L38326-4.D	L38326-4	4/11/2008 21:01	18	10	0.5	14.434	48672273	22.658	127345458	13.082	140565399	19.598	310384525		S:\MSDCHEM2\DATA\060411\
PCB-07.D	1218D 1016/1260 500/50	4/11/2008 21:38	3	0	1	14.428	82698853	22.644	168203588	13.074	208799426	19.539	330834953		S:\MSDCHEM2\DATA\060411\
PCB-08.D	1209.1 1248 500/50	4/11/2008 22:15	4	0	1	14.427	88310147	22.643	182192207	13.075	227614895	19.539	343931380		S:\MSDCHEM2\DATA\060411\
L38326-11.D	L38326-11	4/11/2008 22:51	19	10	0.5	14.432	55015143	22.655	132083838	13.080	145632879	19.557	299854036		S:\MSDCHEM2\DATA\060411\
L38326-12.D	L38326-12	4/11/2008 23:28	20	10	0.5	14.432	51576825	22.656	124356020	13.079	140291889	19.557	291324342		S:\MSDCHEM2\DATA\060411\
L38326-13.D	L38326-13	4/11/2008 12:05	21	10	0.5	14.430	62146092	22.651	139667916	13.077	161132833	19.550	287022763		S:\MSDCHEM2\DATA\060411\
L38326-14.D	L38326-14	4/11/2008 12:41	22	10	0.5	14.433	50637462	22.660	126421931	13.081	138539374	19.565	284677911		S:\MSDCHEM2\DATA\060411\
L38326-15.D	L38326-15	4/11/2008 1:18	23	10	0.5	14.434	54444181	22.667	132207499	13.081	147693298	19.560	305053454		S:\MSDCHEM2\DATA\060411\
L38327-1.D	L38327-1	4/11/2008 1:55	24	10	0.5	14.429	66890387	22.647	145742084	13.076	179611347	19.546	325203388		S:\MSDCHEM2\DATA\060411\
L38327-2.D	L38327-2	4/11/2008 2:32	25	10	0.5	14.428	61477566	22.647	126620978	13.075	158563875	19.541	269289590		S:\MSDCHEM2\DATA\060411\
L38327-3.D	L38327-3	4/11/2008 3:08	26	10	0.5	14.427	49192856	22.645	111887718	13.075	127012025	19.541	230309047		S:\MSDCHEM2\DATA\060411\
L38327-4.D	L38327-4	4/11/2008 3:45	27	10	0.5	14.428	64202928	22.646	123093651	13.075	169515198	19.543	287500409		S:\MSDCHEM2\DATA\060411\
PCB-09.D	1218D 1016/1260 500/50	4/11/2008 4:22	28	0	1	14.427	77052366	22.643	175642388	13.075	229874535	19.541	358876255		S:\MSDCHEM2\DATA\060411\
PCB-10.D	1210.1 1254 500/50	4/11/2008 4:59	3	0	1	14.428	92227798	22.643	132093651	13.075	169515198	19.543	287500409		S:\MSDCHEM2\DATA\060411\
L38327-5.D	L38327-5	4/11/2008 5:35	5	0	1	14.427	77052366	22.643	144209017	13.075	201268468	19.540	304534141		S:\MSDCHEM2\DATA\060411\
L38327-6.D	L38327-6	4/11/2008 6:12	29	10	0.5	14.428	64328109	22.645	120477981	13.077	169126708	19.543	271250002		S:\MSDCHEM2\DATA\060411\
L38327-7.D	L38327-7	4/11/2008 6:49	30	10	0.5	14.429	65078544	22.650	137046562	13.079	174613995	19.548	315103564		S:\MSDCHEM2\DATA\060411\
L38327-8.D	L38327-8	4/11/2008 7:25	31	10	0.5	14.431	67597114	22.649	139904288	13.078	173117019	19.546	298552723		S:\MSDCHEM2\DATA\060411\
PCB-11.D	1218D 1016/1260 500/50	4/11/2008 8:02	3	0	1	14.429	86430412	22.648	184645558	13.077	238651890	19.543	373262655		S:\MSDCHEM2\DATA\060411\
PCB-12.D	1209.1 1248 500/50	4/11/2008 8:39	4	0	1	14.428	90036087	22.645	162590706	13.077	234142441	19.543	348504817		S:\MSDCHEM2\DATA\060411\
				Ave.		14.431	67373512	22.651	138611933	13.079	177090071	19.550	301731335		
				Std. Dev.		0.004	14337689	0.009	16081416	0.005	33753697	0.014	30920884		
				%RSD		21%			12%		19%		10%		



# Trace Organics Data Anomaly Form

Date(s) Occurred: 7/7/06

WG # (s): WG8502-1

☐ All samples in WKCP(s) or Sample # (s): WG8502-1-1

Project # (s): 125062

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

## I. Analysis/Extraction

☐ TOX ☐ BNALL ☐ EDC ☐ EDC-LVI  
☐ CIP/EST/PCB ☐ PEST ☒ PCB ☐ POP/EST  
☐ VOA-GCMS ☐ NWTP/ECX ☐ NWTP/EDX ☐ NWTP/HCHD  
☐ BUTYL TIN ☐ AIRTOX ☐ AIR-SULFUR  
☐ Other  
☐ Subcontracted

## II. Instrument

GC/MS ☐ P  
GC/MS ☐ D ☐ E ☐ J ☐ K ☐ F ☐ M ☐ N  
GC ☐ ECD ☒ C-ECD ☐ HFD ☐ H-OL/50/ID/ID  
☐ HFD  
Extraction/Cleanup ☐ DFT ☐ GPC  
☐ Other

## III. Type of Sample/Analytical Anomaly

☒ Values Outside of Control Limits  
☐ Blank Contamination ☒ Surrogate Spike Recoveries  
☐ SB/SBD Spike Recoveries ☐ SB/SBD RPD  
☐ MS/MSD Spike Recoveries ☐ MS/MSD RPD  
☐ LC/MSRM Recoveries ☐ Sample LDRPD  
☐ Initial Calibration ☒ Continuing Calibration Checks  
☐ Performance Checks ☐ Tuning Criteria  
☐ IS EE % Differences  
☐ Holding time exceeded by  
☐ Insufficient sample amount  
☐ Inappropriate storage, container or preservation  
☐ Other

Anomaly Description: 8 PCB surrogate recovery in the blank was low at 26% recovery (limit 30-88%). E2 Arsenic E-60 is still a little high in the blank column (E-60 was) in the Continuing Cals. All responses are from the front column.

## IV. Type of Project Anomaly

April 24, 2006  
DAFOrganics G060411.doc

## King County Environmental Laboratory

## WORK GROUP REPORT (wk02)

Apr 10 2006, 11:51 am

Work Group: WG85023 (PPLLS#50 PESTLL) for Department: 7 - Organics, Trace

Created: 29-MAR-06 PrepDate: 31-MAR-06 Due: Operator: KM/JG

Sample	Project Number	Project Description	PKey	C	Product	Matrix	Stat	UA	Workdate	Due date
L38326-1	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PESTLL	SALTWTRSED	PREP	U	22-MAR-06	24-APR-06
L38326-10	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PESTLL	SALTWTRSED	PREP	U	22-MAR-06	24-APR-06
L38326-11	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PESTLL	SALTWTRSED	PREP	U	22-MAR-06	24-APR-06
L38326-12	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PESTLL	SALTWTRSED	PREP	U	22-MAR-06	24-APR-06
L38326-13	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PESTLL	SALTWTRSED	PREP	U	22-MAR-06	24-APR-06
L38326-14	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PESTLL	SALTWTRSED	PREP	U	23-MAR-06	24-APR-06
L38326-15	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PESTLL	SALTWTRSED	PREP	U	23-MAR-06	24-APR-06
L38326-2	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PESTLL	SALTWTRSED	PREP	U	23-MAR-06	24-APR-06
L38326-9	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PESTLL	SALTWTRSED	PREP	U	22-MAR-06	24-APR-06
L38327-1	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PESTLL	SALTWTRSED	PREP	U	22-MAR-06	24-APR-06
L38327-2	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PESTLL	SALTWTRSED	PREP	U	24-MAR-06	24-APR-06
L38327-3	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PESTLL	SALTWTRSED	PREP	U	24-MAR-06	24-APR-06
L38327-4	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PESTLL	SALTWTRSED	PREP	U	24-MAR-06	24-APR-06
L38327-5	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PESTLL	SALTWTRSED	PREP	U	24-MAR-06	24-APR-06
L38327-6	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PESTLL	SALTWTRSED	PREP	U	24-MAR-06	24-APR-06
L38327-7	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PESTLL	SALTWTRSED	PREP	U	24-MAR-06	24-APR-06
L38327-8	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PESTLL	SALTWTRSED	PREP	U	24-MAR-06	24-APR-06
WG85023-1	MB				S PESTLL	OTHER SOLID	PREP	U	29-MAR-06	
WG85023-2	SB				S PESTLL	OTHER SOLID	PREP	U	29-MAR-06	
WG85023-3	MS		SED	S	PESTLL	SALTWTRSED	PREP	U	29-MAR-06	
WG85023-4	MSD		SED	S	PESTLL	SALTWTRSED	PREP	U	29-MAR-06	
WG85023-5	SRM		SED	S	PESTLL	SALTWTRSED	PREP	U	29-MAR-06	
WG85023-6	LD		SED	S	PESTLL	SALTWTRSED	PREP	U	29-MAR-06	

## Comments:

L38326-1 10 Grab Comp, 0-10 cm  
 L38326-10 10 Grab Comp, FREP  
 L38326-11 10 Grab Comp, 0-10 cm  
 L38326-12 10 Grab Comp, 0-10 cm  
 L38326-13 10 Grab Comp, 0-10 cm  
 L38326-14 10 Grab Comp, 0-10 cm  
 L38326-15 10 Grab Comp, 0-10 cm  
 L38326-2 10 Grab Comp, 0-10 cm  
 L38326-9 10 Grab Comp, AREP  
 L38327-1 Diver Cores, 2006  
 L38327-2 Diver Cores, 2006, AREP  
 L38327-3 Diver Cores, 2006, FREP  
 L38327-4 Diver Cores, 2006  
 L38327-5 Diver Cores, 2006  
 L38327-6 Diver Cores, 2006  
 L38327-7 Diver Cores, 2006  
 L38327-8 Diver Cores, 2006  
 WG85023-1 MB060331  
 WG85023-2 WG85023-1  
 WG85023-3 L38327-2  
 WG85023-4 WG85023-3 L38327-2  
 WG85023-5 SRM1944  
 WG85023-6 L38327-3

MB:WG85023-1 Matrix: OTHER SOLID Listtype: ORPESTILL Method: EPA 8081A/8082 (7-3-03-002) Project: Pkey: SED  
 (Method Blank)

Parameter	Mdl	Rdl	Units	MB Value	Qual
Alpha-BHC	.5	1	ug/Kg	<MDL	
Beta-BHC	.5	1	ug/Kg	<MDL	
Delta-BHC	.5	1	ug/Kg	<MDL	
Gamma-BHC (Lindane)	.5	1	ug/Kg	<MDL	
Heptachlor	.5	1	ug/Kg	<MDL	
Aldrin	1	2	ug/Kg	<MDL	
Heptachlor Epoxide	.5	1	ug/Kg	<MDL	
Endosulfan I	1	2	ug/Kg	<MDL	
Dieldrin	1	2	ug/Kg	<MDL	
4,4'-DDE	1	2	ug/Kg	<MDL	
Endrin	1	2	ug/Kg	<MDL	
Endosulfan II	1	2	ug/Kg	<MDL	
4,4'-DDD	1	2	ug/Kg	<MDL	
Endrin Aldehyde	2	4	ug/Kg	<MDL	
Endosulfan Sulfate	1	2	ug/Kg	<MDL	
4,4'-DDT	1	2	ug/Kg	<MDL	
Methoxychlor	.5	10	ug/Kg	<MDL	
Gamma-Chlordane	.5	1	ug/Kg	<MDL	
Alpha-Chlordane	.5	1	ug/Kg	<MDL	
Toxaphene	10	20	ug/Kg	<MDL	

SB:WG85023-2 MB:WG85023-1 Matrix: OTHER SOLID Listtype: ORPESTILL Method: EPA 8081A/8082 (7-3-03-002) Project: Pkey: SED  
 (Spike Blank, Method Blank)

Parameter	Mdl	Rdl	Units	MB Value	Truevalue	SB Value	* Rec. Qual	LabLimit
Alpha-BHC	.5	1	ug/Kg	<MDL	10.0	4.65	47	20-99
Beta-BHC	.5	1	ug/Kg	<MDL	10.0	7.68	77	66-102
Delta-BHC	.5	1	ug/Kg	<MDL	10.0	7.63	76	63-108
Gamma-BHC (Lindane)	.5	1	ug/Kg	<MDL	10.0	5.57	56	27-130
Heptachlor	.5	1	ug/Kg	<MDL	10.0	5.68	57	20-137
Aldrin	1	2	ug/Kg	<MDL	10.0	5.52	55	28-113
Heptachlor Epoxide	.5	1	ug/Kg	<MDL	10.0	7.83	78	59-107
Endosulfan I	1	2	ug/Kg	<MDL	10.0	8.16	82	62-104
Dieldrin	1	2	ug/Kg	<MDL	10.0	9.09	91	58-139
4,4'-DDE	1	2	ug/Kg	<MDL	10.0	8.98	90	75-111
Endrin	1	2	ug/Kg	<MDL	10.0	10.3	103	60-160
Endosulfan II	1	2	ug/Kg	<MDL	10.0	8.83	88	72-109
4,4'-DDD	1	2	ug/Kg	<MDL	10.0	9.49	95	78-121
Endrin Aldehyde	2	4	ug/Kg	<MDL	10.0	<MDL	14	10-77
Endosulfan Sulfate	1	2	ug/Kg	<MDL	10.0	7.97	80	61-104
4,4'-DDT	1	2	ug/Kg	<MDL	10.0	9.27	93	57-145
Methoxychlor	5	10	ug/Kg	<MDL	10.0	10	100	72-131

KING COUNTY METRO ENVIRONMENTAL LABORATORY  
Lab QC Report - 05/16/06 03:46  
Run ID: R113245 Workgroup: WG85023 (PFLS#50 PESTLL)

Matrix Spike Duplicate Report														
MSD:WG85023-4 MS:WG85023-3 L38327-2 Matrix: SALTWTRSED Listtype: ORPESTLL Method: EPA 8081A/8082 (7-3-03-002) Project: 423062-200-4 Pkey: SED														
(Matrix Spike Duplicate, Matrix Spike)														
Parameter	Mdl	Rdl	Units	SampValue	Truevalue	MS Value	% Rec. Qual	LabLimit	Truevalue	MSD Value	% Rec. Qual	RPD	Qual	LabLimit
Alpha-BHC	5	1	ug/Kg	<MDL	10.0	9.37	94	59-111	10.0	7.42	74	24		35
Beta-BHC	.5	1	ug/Kg	<MDL	10.0	9.62	96	60-119	10.0	8.54	85	12		35
Delta-BHC	.5	1	ug/Kg	<MDL	10.0	10.3	103	54-126	10.0	9.08	91	12		35
Gamma-BHC (Lindane)	.5	1	ug/Kg	<MDL	10.0	9.81	98	61-135	10.0	8.07	81	19		35
Heptachlor	.5	1	ug/Kg	<MDL	10.0	10.8	108	52-157	10.0	9.15	92	16		35
Aldrin	1	2	ug/Kg	<MDL	10.0	10.3	103	61-119	10.0	8.65	87	17		35
Heptachlor Epoxide	.5	1	ug/Kg	<MDL	10.0	10.7	107	61-118	10.0	9.46	95	12		35
Endosulfan I	1	2	ug/Kg	<MDL	10.0	11.2	112	64-118	10.0	9.75	97	14		35
Dieldrin	1	2	ug/Kg	<MDL	10.0	11.5	115	60-139	10.0	10.1	101	13		35
4,4'-DDE	1	2	ug/Kg	<MDL	10.0	10.8	108	59-125	10.0	9.46	95	13		35
Endrin	1	2	ug/Kg	<MDL	10.0	12.4	124	62-166	10.0	11	110	12		35
Endosulfan II	1	2	ug/Kg	<MDL	10.0	10.4	104	36-146	10.0	9.08	91	13		35
4,4'-DDD	1	2	ug/Kg	<MDL	10.0	11.1	111	41-157	10.0	9.56	96	14		35
Endrin Aldehyde	2	4	ug/Kg	<MDL	10.0	<MDL	18	10-66	10.0	<MDL	19	5		35
Endosulfan Sulfate	1	2	ug/Kg	<MDL	10.0	9.47	95	46-113	10.0	8.33	83	13		35
4,4'-DDT	1	2	ug/Kg	<MDL	10.0	11	110	50-144	10.0	9.28	93	17		35
Methoxychlor	5	10	ug/Kg	<MDL	10.0	12.1	121	53-129	10.0	10.6	106	13		35
SRM:WG85023-5 Matrix: SALTWTRSED Listtype: ORPESTLL Method: EPA 8081A/8082 (7-3-03-002) Project: SED														
(Std Reference Material)														
Parameter	Mdl	Rdl	Units	Truevalue	SRM Value	% Rec. Qual	LabLimit							
4,4'-DDT	5.3	10.7	ug/Kg	119.	313	263	10-200	L						
Alpha-Chlordane	2.7	5.33	ug/Kg	16.5	24.2	117	48-144							
LD:WG85023-6 L38327-3 Matrix: SALTWTRSED Listtype: ORPESTLL Method: EPA 8081A/8082 (7-3-03-002) Project: 423062-200-4 Pkey: SED														
(Lab Duplicate)														
Parameter	Mdl	Rdl	Units	SampValue	LD Value		RPD	Qual	LabLimit					
Alpha-BHC	.5	1	ug/Kg	<MDL	<MDL									35
Beta-BHC	.5	1	ug/Kg	<MDL	<MDL									35
Delta-BHC	.5	1	ug/Kg	<MDL	<MDL									35
Gamma-BHC (Lindane)	.5	1	ug/Kg	<MDL	<MDL									35
Heptachlor	.5	1	ug/Kg	<MDL	<MDL									35
Aldrin	1	2	ug/Kg	<MDL	<MDL									35
Heptachlor Epoxide	.5	1	ug/Kg	<MDL	<MDL									35
Endosulfan I	1	2	ug/Kg	<MDL	<MDL									35
Dieldrin	1	2	ug/Kg	<MDL	<MDL									35
4,4'-DDE	1	2	ug/Kg	<MDL	<MDL									35
Endrin	1	2	ug/Kg	<MDL	<MDL									35
Endosulfan II	1	2	ug/Kg	<MDL	<MDL									35
4,4'-DDD	1	2	ug/Kg	<MDL	<MDL									35
Endrin Aldehyde	2	4	ug/Kg	<MDL	<MDL									35
Endosulfan Sulfate	1	2	ug/Kg	<MDL	<MDL									35
4,4'-DDT	1	2	ug/Kg	<MDL	<MDL									35
Methoxychlor	5	10	ug/Kg	<MDL	<MDL									35
Gamma-Chlordane	.5	1	ug/Kg	<MDL	<MDL									35
Alpha-Chlordane	.5	1	ug/Kg	<MDL	<MDL									35



ID: WG85023-6 L3B327-3 Matrix: SALTWTRSRD Listtype: ORPESTILL Method: EPA 8081A/8082 (7-3-03-002) Project: 423062-200-4 Pkey: SBD (Lab Duplicate)									
Parameter	Mdl	Rdl	Units	SampValue	ID Value	RPD	Qual	LabLimit	
Toxaphene	10	20	ug/Kg	<MDL	<MDL				

Sample # (Lab Limits)	2,4,5,6-Tetrachloro- ro-m-xylene		Decachlorobiphenyl-	
	30-134	15-155	1	
L38326-1	106	127		
L38326-2	112	117		
L38326-9	105	134		
L38326-10	91	114		
L38326-11	87	118		
L38326-12	100	132		
L38326-13	46	62		
L38326-14	100	135		
L38326-15	90	119		
L38327-1	81	116		
L38327-2	55	115		
L38327-3	58	120		
L38327-4	65	137		
L38327-5	78	133		
L38327-6	57	132		
L38327-7	76	119		
L38327-8	53	143		
WG85023-1	33	122		
WG85023-2	34	123		
WG85023-3	86	135		
WG85023-4	66	123		
WG85023-5	93	113		
WG85023-6	90	131		

# SOLID AND TISSUE SAMPLE EXTRACTION RECORD FOR PESTICIDE-LL/PCB-LL ANALYSIS

## TRACE ORGANICS LABORATORY

1:1 MeCL2:ACETONE

QC BATCH NO.: PPLS # 50

EPA SW-846 EXTRACTION METHOD:

(SONICATION EPA 3550) SOXHLET EPA 3540

PCBLL/PESTLL

PEST-LL WORKGROUP NO.: 12085023

PCB-LL WORKGROUP NO.: 12085024

PESTICIDE SURROGATE SPIKE I.D. # 12085024

PESTICIDE MATRIX SPIKE I.D. # 12085024

PCB MATRIX SPIKE I.D. # 12085024

LL

LL

LL

2.0 ml PCB extract split from 2.5 ml total

Date/Analyst	Sample Number	Project Number	Sample Description	Initial Amt. (g)	Effective Amt. (g) after split	Spike Amt. (uL)	Vf (ml)	CLEANUPS (GPC, PCB AL, TBA) H+	PCB-LL conc. turn in analyst Date	PCB-LL conc. turn in analyst Date	Comments
JS/KM 03/3/06	12085023-1	QC	MB	20.0	Pest 1240-100 µl	1240-100 µl	2.5	ALL	1240-100 µl	1240-100 µl	
	12085024-1				PCB 1103.1-100 µl	1103.1-100 µl	0.5	H+	1103.1-100 µl	1103.1-100 µl	
	12085023-2		SB PESTLL	20.0	Pest 1240-100 µl	1240-100 µl	2.5				
	12085024-2		SB PCBLL	16.0	Pest 1240-100 µl	1240-100 µl	0.5				JG 03/30/06
	12085023-3		PESTLL MB (1238327-2)	20.0	Pest 1240-100 µl	1240-100 µl	2.5				
	12085024-3		PCBLL MB (1238327-2)	20.0	Pest 1240-100 µl	1240-100 µl	0.5	H+			
	12085023-4		PESTLL MB (1238327-2)	20.0	Pest 1240-100 µl	1240-100 µl	2.5				
	12085024-4		PCBLL MB (1238327-2)	16.0	Pest 1240-100 µl	1240-100 µl	0.5	H+			
	12085023-5		PESTLL MB (1238327-5)	16.0	Pest 1240-100 µl	1240-100 µl	2.5				
	12085024-5		PCBLL MB (1238327-5)	16.0	Pest 1240-100 µl	1240-100 µl	0.5	H+			
	12085023-6		PESTLL MB (1238327-3)	20.0	Pest 1240-100 µl	1240-100 µl	2.5				
	12085024-6		PCBLL MB (1238327-3)	20.0	Pest 1240-100 µl	1240-100 µl	0.5	H+			
	123002-200-4		Diurnal 200-4	20.0	Pest 1240-100 µl	1240-100 µl	2.5				
	123002-200-4		Thermal 200-4	20.0	Pest 1240-100 µl	1240-100 µl	0.5	H+			

continued on Next Page

# SOLID AND TISSUE SAMPLE EXTRACTION RECORD FOR PESTICIDE-LL/PCB-LL ANALYSIS TRACE ORGANICS LABORATORY

1:1 MeCL2:ACETONE

QC BATCH NO.: PPLS # 50 (continued)

EPA SW-846 EXTRACTION METHOD:

SONICATION EPA 3550 SOXHLET EPA 3540

PCBLL/PESTLL

PEST-LL WORKGROUP NO.: W585023

PCB-LL WORKGROUP NO.: W585024

LL PESTICIDE SURROGATE SPIKE I.D. #

LL PESTICIDE MATRIX SPIKE I.D. #

LL PCB MATRIX SPIKE I.D. #

2.0 ml PCB extract split  
from 2.5 ml total

Date/ Analyst	Sample Number	Project Number	Sample Description	Initial Amt.(g)	Effective Amt.(g) after split	Spike Amt. (uL)	Vf (ml)	CLEANUPS		Pest-LL conc. turn in analyst Date	PCB-LL conc. turn in analyst Date	Comments
								(GPC, AL, TBA)	PCB H+			
5/6/04	L38326-2	423062-200-4	Duramish Dragon 1 Thin Layer	200		1200-100µl	2.5	All		4/10/06		
							0.5		H+		4/10/06	
	L38326-9						2.5					
							0.5		H+			
	L38326-10						2.5					
							0.5		H+			
	L38326-11						2.5					
							0.5		H+			
	L38326-12						2.5					
							0.5		H+			
	L38326-13						2.5					
							0.5		H+			
	L38326-14						2.5					
							0.5		H+			
	L38326-15						2.5					
							0.5		H+			
	L38327-1						2.5					
							0.5		H+			
	L38327-2						2.5					
							0.5		H+			
	L38327-3						2.5					
							0.5		H+			

# SOLID AND TISSUE SAMPLE EXTRACTION RECORD FOR PESTICIDE-LL/PCB-LL ANALYSIS

## TRACE ORGANICS LABORATORY

1:1 MeCL2:ACETONE

QC BATCH NO.: PPLS # 50 (continued)

EPA SW-846 EXTRACTION METHOD:

SONICATION EPA 3550 SOXHLET EPA 3540

PEST-LL WORKGROUP NO.: W685023  
 PCB-LL WORKGROUP NO.: W685024  
 PESTICIDE SURROGATE SPIKE I.D. #  
 PESTICIDE MATRIX SPIKE I.D. #  
 PCB MATRIX SPIKE I.D. #

PCBLL/PESTLL

2.0 ml PCB extract split  
 from 2.5 ml total

Date/ Analyst	Sample Number	Project Number	Sample Description	Initial Amt (g)	Effective Amt (g) after split	Spike Amt. (uL)	Vf (ml)	CLEANUPS (GPC, PCB AL, TBA, H+)	Pest-LL conc. turn in analyst Date	PCB-LL conc. turn in analyst Date	Comments
3/31/06 CSE	L38327-4	1423002- 200-4	DuPont with Diogenes Thin Layer	20.0	Pest	120-100µl	2.5	All	✓ 4/10/06		
	L38327-5				PCB		0.5	H+		✓ 4/10/06	
	L38327-6				Pest		2.5				
	L38327-7				PCB		0.5	H+			
	L38327-8				Pest		2.5				
	L38327-9				PCB		0.5	H+			
	L38327-10				Pest		2.5				
	L38327-11				PCB		0.5	H+			
	L38327-12				Pest		2.5				
	L38327-13				PCB		0.5	H+			
	L38327-14				Pest		2.5				
	L38327-15				PCB		0.5	H+			
	L38327-16				Pest		2.5				
	L38327-17				PCB		0.5	H+			
	L38327-18				Pest		2.5				
	L38327-19				PCB		0.5	H+			
	L38327-20				Pest		2.5				
	L38327-21				PCB		0.5	H+			
	L38327-22				Pest		2.5				
	L38327-23				PCB		0.5	H+			
	L38327-24				Pest		2.5				
	L38327-25				PCB		0.5	H+			
	L38327-26				Pest		2.5				
	L38327-27				PCB		0.5	H+			
	L38327-28				Pest		2.5				
	L38327-29				PCB		0.5	H+			
	L38327-30				Pest		2.5				
	L38327-31				PCB		0.5	H+			
	L38327-32				Pest		2.5				
	L38327-33				PCB		0.5	H+			
	L38327-34				Pest		2.5				
	L38327-35				PCB		0.5	H+			
	L38327-36				Pest		2.5				
	L38327-37				PCB		0.5	H+			
	L38327-38				Pest		2.5				
	L38327-39				PCB		0.5	H+			
	L38327-40				Pest		2.5				
	L38327-41				PCB		0.5	H+			
	L38327-42				Pest		2.5				
	L38327-43				PCB		0.5	H+			
	L38327-44				Pest		2.5				
	L38327-45				PCB		0.5	H+			
	L38327-46				Pest		2.5				
	L38327-47				PCB		0.5	H+			
	L38327-48				Pest		2.5				
	L38327-49				PCB		0.5	H+			
	L38327-50				Pest		2.5				
	L38327-51				PCB		0.5	H+			
	L38327-52				Pest		2.5				
	L38327-53				PCB		0.5	H+			
	L38327-54				Pest		2.5				
	L38327-55				PCB		0.5	H+			
	L38327-56				Pest		2.5				
	L38327-57				PCB		0.5	H+			
	L38327-58				Pest		2.5				
	L38327-59				PCB		0.5	H+			
	L38327-60				Pest		2.5				
	L38327-61				PCB		0.5	H+			
	L38327-62				Pest		2.5				
	L38327-63				PCB		0.5	H+			
	L38327-64				Pest		2.5				
	L38327-65				PCB		0.5	H+			
	L38327-66				Pest		2.5				
	L38327-67				PCB		0.5	H+			
	L38327-68				Pest		2.5				
	L38327-69				PCB		0.5	H+			
	L38327-70				Pest		2.5				
	L38327-71				PCB		0.5	H+			
	L38327-72				Pest		2.5				
	L38327-73				PCB		0.5	H+			
	L38327-74				Pest		2.5				
	L38327-75				PCB		0.5	H+			
	L38327-76				Pest		2.5				
	L38327-77				PCB		0.5	H+			
	L38327-78				Pest		2.5				
	L38327-79				PCB		0.5	H+			
	L38327-80				Pest		2.5				
	L38327-81				PCB		0.5	H+			
	L38327-82				Pest		2.5				
	L38327-83				PCB		0.5	H+			
	L38327-84				Pest		2.5				
	L38327-85				PCB		0.5	H+			
	L38327-86				Pest		2.5				
	L38327-87				PCB		0.5	H+			
	L38327-88				Pest		2.5				
	L38327-89				PCB		0.5	H+			
	L38327-90				Pest		2.5				
	L38327-91				PCB		0.5	H+			
	L38327-92				Pest		2.5				
	L38327-93				PCB		0.5	H+			
	L38327-94				Pest		2.5				
	L38327-95				PCB		0.5	H+			
	L38327-96				Pest		2.5				
	L38327-97				PCB		0.5	H+			
	L38327-98				Pest		2.5				
	L38327-99				PCB		0.5	H+			
	L38327-100				Pest		2.5				

3/31/06  
CSE 3/7/07

\* Clean to dryness w  
 N2 prior to shipping

Data File Name	Sample Name	Date Acquired	Vial Numb	Sample Amount	Sample Multiple	Isodrin (RT)	Isodrin (Height)	Leptophos (RT)	Leptophos (Height)	Isodrin #2 (RT)	Isodrin #2 (Height)	Leptophos (RT)	Leptophos (Height)	Misc Info	Data File Path
COND-01.D	conditioner	10 Apr 2006 9:51 am	1	0	1										S:\MSDCHEM\2\DATA\060410\
BLANK-01.D	blank	10 Apr 2006 10:28 am	2	0	1										S:\MSDCHEM\2\DATA\060410\
PPES-01.D	1211 PPES 20 PPB (BREAKDOWN)	10 Apr 2006 11:04 am	3	0	1	14.429	84362439	22.648	153574135	13.077	213598765	19.543	323942869		S:\MSDCHEM\2\DATA\060410\
PEST-01.D	1225D PEST 50 PPB (DAILY CAL)	10 Apr 2006 11:41 am	4	0	1	14.428	80537813	22.647	143291881	13.077	204991698	19.543	307156739		S:\MSDCHEM\2\DATA\060410\
TOX-01.D	1212.1 TOXAPHENE 1000 PPB	10 Apr 2006 12:18 pm	5	0	1	14.430	84898773	22.647	154098888	13.077	220132889	19.542	343414578		S:\MSDCHEM\2\DATA\060410\
WG5023-1.D	NB	10 Apr 2006 12:54 pm	6	12.5	2.5	14.429	74234298	22.647	132608649	13.076	184268419	19.543	276705852	PPLS50 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\060410\
WG5023-2.D	SB	10 Apr 2006 1:31 pm	7	12.5	2.5	14.429	74532071	22.648	132608649	13.077	183984735	19.542	279855546	PPLS50 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\060410\
WG5023-3.D	MS L38327-2	10 Apr 2006 2:08 pm	8	12.5	2.5	14.430	76331296	22.648	133546842	13.077	176202235	19.547	273423539	PPLS50 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\060410\
WG5023-4.D	MSD L38327-2	10 Apr 2006 2:44 pm	9	12.5	2.5	14.428	71219804	22.648	139489028	13.077	176202235	19.547	273423539	PPLS50 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\060410\
WG5023-5.D	SRM 1844	10 Apr 2006 3:21 pm	10	1.875	2	14.440	59586188	22.645	143526229	13.088	162061945	19.575	231968774	PPLS50 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\060410\
WG5023-6.D	LD L38327-3	10 Apr 2006 3:58 pm	11	12.5	2.5	14.431	54892433	22.649	117381367	13.079	140104157	19.546	228719986	PPLS50 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\060410\
L38326-1.D	L38326-1	10 Apr 2006 4:35 pm	12	12.5	2.5	14.439	47764713	22.668	115521446	13.088	126811989	19.575	258575030	PPLS50 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\060410\
L38326-2.D	L38326-2	10 Apr 2006 5:12 pm	13	12.5	2.5	14.434	57537117	22.681	126674874	13.081	139690735	19.564	277562165	PPLS50 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\060410\
L38326-9.D	L38326-9	10 Apr 2006 5:48 pm	14	12.5	2.5	14.431	58500938	22.653	124406253	13.079	140801738	19.550	258111983	PPLS50 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\060410\
L38326-10.D	L38326-10	10 Apr 2006 6:25 pm	15	12.5	2.5	14.432	60049351	22.653	134253181	13.080	147054008	19.554	277670851	PPLS50 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\060410\
PPES-02.D	1211 PPES 20 PPB (BREAKDOWN)	10 Apr 2006 7:02 pm	3	0	1	14.429	75059684	22.648	145888869	13.076	179122358	19.544	278481139		S:\MSDCHEM\2\DATA\060410\
L38326-11.D	L38326-11	10 Apr 2006 7:38 pm	4	0	1	14.429	74289840	22.647	140036543	13.076	184130670	19.542	273707182		S:\MSDCHEM\2\DATA\060410\
L38326-12.D	L38326-12	10 Apr 2006 8:15 pm	16	12.5	2.5	14.431	61452341	22.651	137300387	13.077	153283987	19.548	279349846	PPLS50 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\060410\
L38326-13.D	L38326-13	10 Apr 2006 8:52 pm	17	12.5	2.5	14.431	61452341	22.652	135135923	13.078	144061253	19.551	262509381	PPLS50 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\060410\
L38326-14.D	L38326-14	10 Apr 2006 9:28 pm	18	12.5	2.5	14.428	62247066	22.649	131031313	13.076	150675983	19.545	258761668	PPLS50 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\060410\
L38326-15.D	L38326-15	10 Apr 2006 10:05 pm	19	12.5	2.5	14.430	58748949	22.653	134443405	13.077	141864164	19.547	267046486	PPLS50 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\060410\
L38327-1.D	L38327-1	10 Apr 2006 10:42 pm	20	12.5	2.5	14.430	59733044	22.651	133339958	13.076	138565688	19.547	253255443	PPLS50 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\060410\
L38327-2.D	L38327-2	10 Apr 2006 11:19 pm	21	12.5	2.5	14.428	64017804	22.647	132752965	13.076	148950824	19.543	255681156	PPLS50 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\060410\
L38327-3.D	L38327-3	10 Apr 2006 11:55 pm	22	12.5	2.5	14.429	60014014	22.647	133888648	13.076	148565161	19.542	250543236	PPLS50 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\060410\
L38327-4.D	L38327-4	11 Apr 2006 12:32 am	23	12.5	2.5	14.428	65242225	22.647	129290162	13.076	150424652	19.543	237168831	PPLS50 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\060410\
L38327-5.D	L38327-5	11 Apr 2006 1:09 am	24	12.5	2.5	14.427	63665217	22.646	128920823	13.075	144175454	19.543	238611464	PPLS50 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\060410\
PPES-03.D	1211 PPES 20 PPB (BREAKDOWN)	11 Apr 2006 1:46 am	25	12.5	2.5	14.427	62389945	22.648	127036127	13.076	137523940	19.543	228003871	PPLS50 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\060410\
PEST-03.D	1225D PEST 50 PPB (DAILY CAL)	11 Apr 2006 2:23 am	3	0	1	14.427	87147262	22.644	152103995	13.074	183442768	19.539	276893256		S:\MSDCHEM\2\DATA\060410\
L38327-6.D	L38327-6	11 Apr 2006 2:59 am	4	0	1	14.426	76886624	22.644	143442753	13.074	187068795	19.540	280247562		S:\MSDCHEM\2\DATA\060410\
L38327-7.D	L38327-7	11 Apr 2006 3:36 am	26	12.5	2.5	14.426	69914424	22.645	127708035	13.074	181846524	19.539	247022219	PPLS50 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\060410\
L38327-8.D	L38327-8	11 Apr 2006 4:13 am	27	12.5	2.5	14.427	65474029	22.645	136391284	13.074	155219683	19.540	238122892	PPLS50 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\060410\
PPES-04.D	1211 PPES 20 PPB (BREAKDOWN)	11 Apr 2006 4:50 am	28	12.5	2.5	14.426	65021609	22.645	129537355	13.074	149551081	19.540	237780120	PPLS50 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\060410\
PEST-04.D	1225D PEST 50 PPB (DAILY CAL)	11 Apr 2006 5:26 am	3	0	1	14.428	81731940	22.647	151997356	13.076	201875019	19.543	306195507		S:\MSDCHEM\2\DATA\060410\
		11 Apr 2006 6:03 am	4	0	1	14.429	77457502	22.647	144301749	13.076	194444516	19.542	288379483		S:\MSDCHEM\2\DATA\060410\
					Ave.	14.430	67674950	22.648	135784430	13.077	184539815	19.547	271582122		
					Std. Dev.	0.003	9354166	0.005	9665820	0.003	25066290	0.008	27726941	10%	
					%RSD					7%		15%			



Data		Sample Name		Date	Vial	Sample	Sample	Isodrin	Leptophos	Isodrin #2	Leptophos #2	Misc Info		Data File Path
File Name		Acquired	Numbr	Amount	Multiple	RT	(Height)	(RT)	(Height)	(RT)	(Height)			
COND-01.D	conditioner	17 Apr 2006 9:40 am	1	0	1									S:\MSDCHEM\2\DATA\060417\
BLANK-01.D	blank	17 Apr 2006 10:17 am	2	0	1									S:\MSDCHEM\2\DATA\060417\
PPES-01.D	1211 PPES 20 PPB (BREAKDOWN)	17 Apr 2006 10:54 am	3	0	1	14.424	88935744	22.640	155318216	13.074	238847627	19.539	352734218	S:\MSDCHEM\2\DATA\060417\
PEST-01.D	1225D PEST 50 PPB (DAILY CAL)	17 Apr 2006 11:30 am	4	0	1	14.424	84021319	22.643	151759513	13.074	217568085	19.538	322790050	S:\MSDCHEM\2\DATA\060417\
TOX-01.D	1212.1 TOXAPHENE 1000 PPB	17 Apr 2006 12:07 pm	5	0	1	14.425	66466911	22.641	155229789	13.072	226143603	19.537	338187996	S:\MSDCHEM\2\DATA\060417\
L38326-11.D	L38326-11	17 Apr 2006 12:44 pm	6	12.5	2.5	14.426	64028323	22.646	135145844	13.075	165901064	19.543	292036382	S:\MSDCHEM\2\DATA\060417\
L38326-12.D	L38326-12	17 Apr 2006 1:20 pm	7	12.5	2.5	14.426	61997815	22.646	135624641	13.075	158481653	19.544	285546220	S:\MSDCHEM\2\DATA\060417\
L38326-13.D	L38326-13	17 Apr 2006 1:57 pm	8	12.5	2.5	14.426	63745833	22.643	131257640	13.074	167550985	19.541	287192339	S:\MSDCHEM\2\DATA\060417\
L38326-14.D	L38326-14	17 Apr 2006 2:34 pm	9	12.5	2.5	14.428	59351747	22.648	128219825	13.076	151960132	19.549	279334444	S:\MSDCHEM\2\DATA\060417\
L38326-15.D	L38326-15	17 Apr 2006 3:10 pm	10	12.5	2.5	14.428	58170080	22.648	128499532	13.075	151176579	19.545	263444815	S:\MSDCHEM\2\DATA\060417\
L38327-1.D	L38327-1	17 Apr 2006 3:47 pm	11	12.5	2.5	14.424	66113241	22.643	133266356	13.074	160995282	19.540	267298389	S:\MSDCHEM\2\DATA\060417\
L38327-2.D	L38327-2	17 Apr 2006 4:24 pm	12	12.5	2.5	14.425	64974081	22.643	128637482	13.073	164498738	19.538	259203210	S:\MSDCHEM\2\DATA\060417\
L38327-3.D	L38327-3	17 Apr 2006 5:00 pm	13	12.5	2.5	14.424	64886475	22.641	126987811	13.074	161268796	19.538	243185790	S:\MSDCHEM\2\DATA\060417\
L38327-4.D	L38327-4	17 Apr 2006 5:37 pm	14	12.5	2.5	14.424	62776503	22.643	123995646	13.074	158065027	19.539	242991314	S:\MSDCHEM\2\DATA\060417\
COND-02.D	conditioner	17 Apr 2006 6:14 pm	1	0	1									S:\MSDCHEM\2\DATA\060417\
PPES-02.D	1211 PPES 20 PPB (BREAKDOWN)	17 Apr 2006 6:50 pm	3	0	1	14.424	82843868	22.640	144029310	13.071	209949800	19.534	308737462	S:\MSDCHEM\2\DATA\060417\
PEST-02.D	1225D PEST 50 PPB (DAILY CAL)	17 Apr 2006 7:27 pm	4	0	1	14.422	78310836	22.638	145364535	13.071	209914592	19.532	310326679	S:\MSDCHEM\2\DATA\060417\
L38327-5.D	L38327-5	17 Apr 2006 8:04 pm	15	12.5	2.5	14.422	64805714	22.639	130840848	13.071	160330086	19.533	248222737	S:\MSDCHEM\2\DATA\060417\
L38327-6.D	L38327-6	17 Apr 2006 8:40 pm	16	12.5	2.5	14.421	66817941	22.638	127131408	13.070	167851199	19.530	235838620	S:\MSDCHEM\2\DATA\060417\
L38327-7.D	L38327-7	17 Apr 2006 9:17 pm	17	12.5	2.5	14.422	67480176	22.636	135737866	13.070	163067374	19.532	253707926	S:\MSDCHEM\2\DATA\060417\
L38327-8.D	L38327-8	17 Apr 2006 9:54 pm	18	12.5	2.5	14.421	66755623	22.637	132782045	13.070	167608078	19.532	263679873	S:\MSDCHEM\2\DATA\060417\
COND-03.D	conditioner	17 Apr 2006 10:31 pm	1	0	1									S:\MSDCHEM\2\DATA\060417\
PPES-03.D	1211 PPES 20 PPB (BREAKDOWN)	17 Apr 2006 11:07 pm	3	0	1	14.421	87930033	22.637	161773641	13.069	218801264	19.529	324538845	S:\MSDCHEM\2\DATA\060417\
PEST-03.D	1225D PEST 50 PPB (DAILY CAL)	17 Apr 2006 11:44 pm	4	0	1	14.418	81896078	22.633	151657198	13.069	211307882	19.529	319588709	S:\MSDCHEM\2\DATA\060417\
					Ave.	14.424	71071435	22.641	138372957	13.073	181565595	19.537	265611556	
					Std. Dev.	0.003	10489828	0.004	11408506	0.002	28527198	0.006	33489230	
					%RSD	15%				8%	16%		12%	

## Trace Organics Data Anomaly Form

Date(s) Occurred: 04/10,17/2006

WG #(s): 85023

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

Project #(s): 423062

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

### I. Analysis/Extraction

- |   |  |                                     |                                     |
|---|--|-------------------------------------|-------------------------------------|
| <input type="checkbox"/> BNA            | <input type="checkbox"/> BNALL           | <input type="checkbox"/> EDC        | <input type="checkbox"/> EDC-LVI    |
| <input type="checkbox"/> CLPESTPCB      | <input checked="" type="checkbox"/> PEST | <input type="checkbox"/> PCB        | <input type="checkbox"/> OPPEST     |
| <input type="checkbox"/> VOA-GCMS       | <input type="checkbox"/> NWTPH-GX        | <input type="checkbox"/> NWTPH-DX   | <input type="checkbox"/> NWTPH-HCID |
| <input type="checkbox"/> BUTYL TIN      | <input type="checkbox"/> AIRTOX          | <input type="checkbox"/> AIR-SULFUR |                                     |
| <input type="checkbox"/> Other:         |  |                                     |                                     |
| <input type="checkbox"/> Subcontracted: |  |                                     |                                     |

### II. Instrument

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

### III. Type of Sample/Analytical Anomaly

☐ Values Outside of Control Limits:

- |  |  |
|--|--|
| 1 <input type="checkbox"/> Blank Contamination           | 8 <input type="checkbox"/> Surrogate Spike Recoveries                |
| 2 <input type="checkbox"/> SB/SBD Spike Recoveries       | 9 <input type="checkbox"/> SB/SBD RPD                                |
| 3 <input type="checkbox"/> MS/MSD Spike Recoveries       | 10 <input type="checkbox"/> MS/MSD RPD                               |
| 4 <input checked="" type="checkbox"/> LCS/SRM Recoveries | 11 <input type="checkbox"/> Sample/LD RPD                            |
| 5 <input type="checkbox"/> Initial Calibration           | 12 <input checked="" type="checkbox"/> Continuing Calibration Checks |
| 6 <input checked="" type="checkbox"/> Performance Checks | 13 <input type="checkbox"/> Tuning Criteria                          |
| 7 <input type="checkbox"/> ISTD % Differences            |  |
- 14 ☐ Holding time exceeded by:
- 15 ☐ Insufficient sample amount.
- 16 ☐ Inappropriate storage, container or preservation.
- 17 ☐ Other

**Anomaly Description:** 4. The SRM had a recovery for DDT that was outside the lab limits. All DDT results are flagged with an "L". 6. PPES-02 on 4-10-06 had breakdown on the front column >15% for DDT. All DDT and breakdown components were reported from the back column. PPES-03 failed on both columns for DDT on 4-10-06. 12. Final calibration check (PEST-02) on 4-10-06 had low recoveries (<85%) for methoxychlor and DDT.



## CHAIN OF CUSTODY FORMS

## DUDI SEDS, STAS. C, THIN

Project Number: 423062-200-4

Personnel: \_\_\_\_\_

Sample Number	P38327-1	P38327-2	P38327-3
Locator	DUD_3C	DUD_4C	DUD_4C
Short Loc. Desc.	DUD_3C	DUD_4C	DUD_4C
Locator Desc.	Cleanup area perimeter assessment	Cleanup area perimeter assessment	Cleanup area perimeter assessment
Site	DUWAMISH RIVER	DUWAMISH RIVER	DUWAMISH RIVER
Start Date/Time			
End Date/Time			
Sample Depth			
Collect Date			
Comments	Diver Cores, 2006	Diver Cores, 2006, AREP	Diver Cores, 2006, FREP
PERSONNEL	Eric Parker, Anchor		
SAMP METH	30010		
SED DEPTH	10		
SED SAMP RANGE	0-10		
SED TYPE	23N40	23N40	23N40
TIDE COND	Flood	Flood	Flood
TIDE HT	2	2	2
TIME	0930	1020	1020
SAMP FUNC	*****	*****	FREP@L38327-2
Dept., Matrix, Prod	3   SALTWTRSED   PSD 3   SALTWTRSED   TOC 3   SALTWTRSED   TOTS 6   SALTWTRSED   AL-ICP 6   SALTWTRSED   FE-ICP 6   SALTWTRSED   HG-CVAA	3   SALTWTRSED   PSD 3   SALTWTRSED   TOC 3   SALTWTRSED   TOTS 6   SALTWTRSED   AL-ICP 6   SALTWTRSED   FE-ICP 6   SALTWTRSED   HG-CVAA	3   SALTWTRSED   PSD 3   SALTWTRSED   TOC 3   SALTWTRSED   TOTS 6   SALTWTRSED   AL-ICP 6   SALTWTRSED   FE-ICP 6   SALTWTRSED   HG-CVAA

RELINQUISHED BY		Date	Time
RECEIVED BY		Date	Time
Sample Number(s)			
(All)			

S. Plan: \_\_\_\_\_

Login #: L \_\_\_\_\_

WKGP #: WG 85362 73 4/24/06

Enter #: R113143 73 4/24/06

Approved by: \_\_\_\_\_

Moved by: \_\_\_\_\_

continue ...

## DUDI SEDS, STAS. C, THIN

Project Number: 423062-200-4

Personnel: \_\_\_\_\_

Sample Number	P38327-4	P38327-5	P38327-6
Locator	DUD_5C	DUD_6C	DUD_7C
Short Loc. Desc.	DUD_5C	DUD_6C	DUD_7C
Locator Desc.	Cleanup area perimeter assessment	Cleanup area perimeter assessment	Cleanup area perimeter assessment
Site	DUWAMISH RIVER	DUWAMISH RIVER	DUWAMISH RIVER
Start Date/Time			
End Date/Time			
Sample Depth			
Collect Date			
Comments	Diver Cores, 2006	Diver Cores, 2006	Diver Cores, 2006
PERSONNEL	Eric Parker, Anchor →		
SAMP METH	30010 →		
SED DEPTH	10 →		
SED SAMP RANGE	0-10 →		
SED TYPE	23N40 → <del>23N30</del>		
TIDE COND	SLACK	SLACK	EBB
TIDE HT	2	2	2
TIME	1120	1230	1300
Dept., Matrix, Prod	3   SALTWTRSED   PSD 3   SALTWTRSED   TOC 3   SALTWTRSED   TOTS 6   SALTWTRSED   AL-ICP 6   SALTWTRSED   FE-ICP 6   SALTWTRSED   HG-CVAA 6   SALTWTRSED   MN-ICP 6   SALTWTRSED   PP ICP	3   SALTWTRSED   PSD 3   SALTWTRSED   TOC 3   SALTWTRSED   TOTS 6   SALTWTRSED   AL-ICP 6   SALTWTRSED   FE-ICP 6   SALTWTRSED   HG-CVAA 6   SALTWTRSED   MN-ICP 6   SALTWTRSED   PP ICP	3   SALTWTRSED   PSD 3   SALTWTRSED   TOC 3   SALTWTRSED   TOTS 6   SALTWTRSED   AL-ICP 6   SALTWTRSED   FE-ICP 6   SALTWTRSED   HG-CVAA 6   SALTWTRSED   MN-ICP 6   SALTWTRSED   PP ICP

continue ...

## DUDI SEDS, STAS. C, THIN

Project Number: 423062-200-4

Personnel: \_\_\_\_\_

Sample Number	P38327-7	P38327-8
Locator	DUD_14C	DUD_15C
Short Loc. Desc.	DUD_14C	DUD_15C
Locator Desc.	PERIMETER LOCATION 14C	DUDI PERIMETER LOCATION 15C
Site	DUWAMISH RIVER	DUWAMISH RIVER
Start Date/Time		
End Date/Time		
Sample Depth		
Collect Date		
Comments	Diver Cores, 2006	Diver Cores, 2006
PERSONNEL	Eric Parker, Anchor →	
SAMP METH	30010 →	
SED DEPTH	10 →	
SED SAMP RANGE	0-10 →	
SED TYPE	23N40	33N30
TIDE COND	EBB	EBB
TIDE HT	1	1
TIME	1320	1355
Dept., Matrix, Prod	3   SALTWTRSED   PSD 3   SALTWTRSED   TOC 3   SALTWTRSED   TOTS 6   SALTWTRSED   AL-ICP 6   SALTWTRSED   FE-ICP 6   SALTWTRSED   HG-CVAA 6   SALTWTRSED   MN-ICP 6   SALTWTRSED   PP ICP	3   SALTWTRSED   PSD 3   SALTWTRSED   TOC 3   SALTWTRSED   TOTS 6   SALTWTRSED   AL-ICP 6   SALTWTRSED   FE-ICP 6   SALTWTRSED   HG-CVAA 6   SALTWTRSED   MN-ICP 6   SALTWTRSED   PP ICP

continue ...

**King County Department of Natural Resources  
Water and Land Resources Division  
Environmental Laboratory  
322 West Ewing Street  
Seattle, Washington 98119-1507**

**Laboratory Project Manager:** Fritz Grothkopp/John Blaine  
**Telephone Number:** 684 2327/2384

Sample Number	Client Locator	Collect Date	Collect Time	Analyses					Number of Containers	Comments
				TOC/TOTS	PSD	Metals-ICP/HG-CVAA	BNASMS/PESTLL/PCBLL			
P38327-1	DUD_3C	3/10/06	0930	X	X	X	X			
P38327-2	DUD_4C		1020	X	X	X	X			
P38327-3	DUD_4C		1020	X	X	X	X			
P38327-4	DUD_5C		1120	X	X	X	X			Field Replicate
P38327-5	DUD_6C		1230	X	X	X	X			
P38327-6	DUD_7C	PG	1300	X	X	X	X			
P38327-7	DUD_14C	1320	1355	X	X	X	X			
P38327-8	DUD_15C	✓	1355	X	X	X	X			
Additional Comments:				Total Number of Containers						Sampled By:

Relinquished By:	Received By:
Signature <i>David Gillingham</i>	Signature <i>David C. Hunn</i>
Printed Name <i>David Gillingham</i>	Printed Name <i>David C. Hunn</i>
Organization <i>King County Environmental Laboratory</i>	Organization <i>King County Environmental Laboratory</i>
Date <i>3/10/06</i>	Date <i>3/10/06</i>
Time <i>1600</i>	Time <i>1600</i>