KING COUNTY ENVIRONMENTAL LABORATORY
QUALITY ASSURANCE REVIEW

for

ESTUARINE SEDIMENT ANALYTICAL DATA

DUWAMISH/DIAGONAL SEDIMENT REMEDIATION PROJECT
YEAR THREE, CAP SEDIMENT CHARACTERIZATION
APRIL 2007 SAMPLING EVENT

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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 3 Main Cap Monitoring. 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 April 3, 2007 as part of the Duwamish Diagonal Sediment Remediation Project, Year 3, Main Cap Monitoring.

The Sampling and Analysis Plan (SAP) in effect for this sampling event is titled: Duwamish/Diagonal Sediment Remediation Dredging and Capping Operations
Sediment Monitoring Sampling and Analysis Plan. October 28, 2003. (KCEL document # 177)

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 conventionals 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 nine saltwater sediment samples on April 3, 2007. All sampling activities were conducted following guidance suggested in the Puget Sound Protocols (PSEP, 1996 and 1998).

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. Also presented in the table are the actual coordinates recorded during sampling activities. All station coordinates are recorded in state plane coordinate system North American Datum 1983 (NAD83).

Duwamish/Diagonal Sediment Sampling
Actual and Prescribed Sample Coordinates, April 2007

Lab Sample #	Locator/Cast	# Grabs Accepted	Prescribed Northing	Prescribed Easting	Actual Northing	Actual Easting
L42276-1	DUD_1A		209089	1267047		
	Cast 1	1			209089	1267050
	Cast 2	1			209091	1267048
	Cast 3	1			209085	1267038
L42276-2	DUD_2A		208902	1267139		
	Cast 1	1			208903	1267146
	Cast 2	2			208899	1267142
L42276-3	DUD_3A		208973	1266951		
	Cast 1	2			208974	1266950
	Cast 2	1			208975	1266952
L42276-4	DUD_4A		209354	1266888		
	Cast 1	1			209353	1266885
	Cast 2	2			209355	1266885
L42276-5	DUD_5A		209410	1266805		
	Cast 1	2			209412	1266805
	Cast 2	1			209407	1266803
L42276-6	DUD_5A, FREP		209410	1266805		
	Cast 1	1			209407	1266803
	Cast 2	1			209407	1266808
	Cast 3	1			209412	1266802
L42276-7	DUD_1B		208484	1267060		
	Cast 1	2			208478	1267056
	Cast 2	1			208482	1267059
L42276-8	DUD_2B		208621	1267079		
	Cast 1	2			208618	1267076
	Cast 2	1			208620	1267081
L42276-9	DUD_3B		208716	1267049		
	Cast 1	1			208716	1267048
	Cast 2	2			208713	1267053

Sediment grab samples were collected from the King County research vessel *Liberty*, which is equipped with a differential global positioning system (DGPS). Field coordinates were recorded using DGPS for each deployment of the grab samplers as they contacted the sediment. All field coordinates for individual grabs listed in the above table are within the +/- 3 meter accuracy limits, as defined in the SAP.

Sample Description Table

Lab Sample #	Locator	Sample Collection	Average Sediment Sampling Depth	Sample Usage
L42276-1	DUD_1A	Surface Grabs	6 cm	Chemistry only
L42276-2	DUD_2A	Surface Grabs	10 cm	Chemistry only
L42276-3	DUD_3A	Surface Grabs	9 cm	Chemistry only
L42276-4	DUD_4A	Surface Grabs	7 cm	Chemistry only
L42276-5	DUD_5A	Surface Grabs	4 cm	Chemistry only
L42276-6	DUD_5A	Surface Grabs (field replicate)	4 cm	Chemistry only
L42276-7	DUD_1B	Surface Grabs	10 cm	Chemistry only
L42276-8	DUD_2B	Surface Grabs	7 cm	Chemistry only
L42276-9	DUD_3B	Surface Grabs	10 cm	Chemistry only

Sample Collection

Sediment was collected at each station using two stainless steel, modified, 0.1 m^2 Van Veen grab samplers deployed in tandem via hydrowire. For each acceptable deployment, between 5-15 cm of sediment was recovered, allowing for sub-sampling of all but the bottom 1 cm of material lying against the jaws. A minimum of two twin-sampler deployments (i.e., three individual grabs) was needed to collect sufficient sample volume to perform all chemistry analyses at each station.

Water depth at the eight subtidal cap sample stations ranged between 5-9 meters (not corrected for tide).

Sample Handling

Approximately equal amounts of sediment were subsampled from the three or more separate grabs used for chemistry analysis. For chemistry testing, 4 to 10 cm aliquots, as measured from the sediment surface, were collected using a stainless steel spoon. When necessary, less than the top 10 cm of sediment was taken in an attempt to exclude the sediment that had touched the sides or bottom of the grab sampler. Each of the aliquots was placed into a covered stainless-steel bowl, specific for that locator. After collecting all aliquots from three or more grabs, the sediment was thoroughly homogenized and split out into pre-labeled containers. Sample containers were supplied by the King County Environmental Laboratory and were pre-cleaned according to analytical specifications.

Decontamination

Individual sets of the sub-sampling and mixing equipment were dedicated to each station, precluding the need for decontamination of the field gear. The Van Veen grab samplers were decontaminated between stations by scrubbing with a brush using ambient seawater and Detergent 8 followed by a thorough *in situ* rinsing.

Sample Storage and Preservation

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. The collect times represent the start times of each sampling sequence upon arrival on station.

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.

List those samples and QC that may not have been analyzed and the rationale.

Subcontracted Analyses
All analyses were conducted at the King County Env Lab.

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 Conventionals 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
Total Organic Carbon	L42276-1	1000	1900	Reduced sample size analyzed due to High Organic Background
Total Organic Carbon	L42276-2	1000	1900	Reduced sample size analyzed due to High Organic Background, TS<50%
Total Organic Carbon	L42276-3	1000	1800	Reduced sample size analyzed due to High Organic Background, TS<50%
Total Organic Carbon	L42276-4	1000	2200	Reduced sample size analyzed due to High Organic Background
Total Organic Carbon	L42276-7	1000	1700	Reduced sample size analyzed due to High Organic Background
Total Organic Carbon	L42276-8	1000	1700	Reduced sample size analyzed due to High Organic Background, TS<50%
Total Organic Carbon	L42276-9	1000	1800	Reduced sample size analyzed due to High Organic Background, TS<50%
PSD (P+10, +5, +6, +7, +8, +9	L42276-all	0.1	0.5	Wrong MDL in SAP

For all samples where the MDL did not meet the SAP MDL, the TOC levels were detectable, thus the project objectives were met. The MDLs for PSD data in the % fines range were 0.5% based on the method currently used in the laboratory. This method was not in use when the SAP was finalized.

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, Conventionals 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	L42276-1 to -4	03-Apr-2007	18-Apr-2007	19-Apr-2007	6 Months at 4°C	NA
	L42276-5 to -9	03-Apr-2007	24-Apr-2007	25-Apr-2007		
Total Organic Carbon	L42276-1 to -9	03-Apr-2007	17-Apr-2007	03-May-2007	6 months at -18°C	6 months at -18°C
Total Solids	L42276-1 to -9	03-Apr-2007	17-Apr-2007	17-Apr-2007	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 and 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.

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.

METALS CHEMISTRY

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

Subcontracted Analyses
Metals analysis was not subcontracted for these sets of samples.

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

Target List
The reported target list includes all metals specified in Table 1.

Detection Limits
The detection limits (MDLs) reported for Metals parameters are all within the requirements defined by the SAP except as noted on the attached SAP MDL comparison table. All MDLs that were outside the SAP specified value were due to total solids that were less than 50%.

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 during the Third Annual PSDDA Review Meeting. 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	L42276-1 through -9	4/3/07	5/2/07	5/3/07	2 Years at -18°C	6 months
Total Mercury	L42276-1 through -9	4/3/07	4/23/07	4/25/07	28 days at -18°C	NA

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

Method Blanks
All metals method blanks results were less than the MDL

Standard Reference Materials
The SRM analyzed in association with samples included in this data submission is National Research Council of Canada PACS-2. This SRM is not certified for Silver, Arsenic or Cadmium. Acceptance limits for the certified elements 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 indicated in the SAP.

A laboratory control sample (LCS) was also analyzed with the total metals digestion. All recoveries were within the certified limits of the sample, with the exception of Fe and Sb in WG91308. The LCS is used as a secondary check for the total metals digestion procedure because the certified values for the elements are determined using the same methodology. LCS results are not used to qualify sample data.

Matrix Spikes

All matrix spike recoveries were within the 75 to 125% QC limits with the following exceptions: The reported matrix spike recovery of 23% for Antimony in WG91308 for sample numbers L42276-1>9 is less than the 75% QC acceptance limit. Antimony results for all samples in this data submission have been qualified with the G flag. The reported matrix spike recovery of 137% for Aluminum in WG91308 for sample numbers L42276-1>9 is greater than the 125% QC acceptance limit. Aluminum results for all samples in this data submission have been qualified with the L flag.

Laboratory Replicate Samples

The relative percent differences (RPDs) for laboratory duplicate results for all metals were less than or equal to the QC limit of 20%.

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: (Refer to the SAP MDL table at the back of the document)

BNAs

1) For all samples, the reported MDLs for Coprostanol and Pentachlorophenol were greater than the SAP MDL values.
2) For samples L42276-1 – 4 and 7-9, the reported MDLs for 1,4-Dichlorobenzene were greater than the SAP MDL values

PCBs

The reported MDLs for Aroclors 1016, 1232 and 1242 in selected samples were greater than the MDL values listed in the SAP. The reported MDLs for these Aroclors were elevated to compensate for overlap of PCB congeners from other Aroclors detected in the samples.

Chlorinated Pesticides

The reported MDLs for 4, 4'-DDT, 4,4'-DDE, 4,4'-DDD, Aldrin, Dieldrin, Endosulfan I, Endosulfan II, Endosulfan Sulfate, Endrin, Endrin Aldehyde, Methoxychlor and Toxaphene in all samples were greater than the MDL values listed in the SAP. The reported MDLs for Alpha-BHC, Alpha Chlordane, Beta-BHC, Delta-BHC, Gamma-BHC (Lindane), Heptachlor and Heptachlor Epoxide in samples L42276-2,3,8 and 9 were also greater than the MDL values listed in the SAP due to total solids less than 50 %.

The attached SMS OC and Dry Weight Normalization MDL Check tables compare the reported MDL value to the SMS requirement. All the values met the SAP required MDLs.

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	L42276-1 to 3	03-Apr-07	10-Apr-07	26-Apr-07	1 year at -18°C	40 days at 4°C
	L42276-4 to 9	03-Apr-07	11-Apr-07	19, 26-Apr-07		
Chlorinated Pesticides	L42276-1 to 3	03-Apr-07	19-Apr-07	19-May-07	1 year at -18°C	40 days at 4°C
	L42276-4 to 9	03-Apr-07	24-Apr-07	09-May-07		
PCB	L42276-1 to 3	03-Apr-07	19-Apr-07	18-May-07	1 year at -18°C	40 days at 4°C
	L42276-4 to 9	03-Apr-07	24-Apr-07	10, 11-May-07		

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

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 blanks analyzed with BNAs for L42276 had results above the MDL for Bis (2-Ethylhexyl) Phthalate (5.4 and 5.6 ug/Kg). Sample results for Bis (2-Ethylhexyl) Phthalate for both batches (WG90997 and WG90996) have been qualified with the B flag. All Bis (2-Ethylhexyl) 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 surrogate recoveries met acceptance limits for both batches.

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.

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 were 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, except for the parameters listed in the table below:

	L42276-1 to 3	
Compound	**% Recovery**	**Flag**
Aroclor 1260	284	L

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% with the exception of Aroclor 1260 with an RPD

of 46% for samples L42276-1 to 3. The Aroclor 1260 results for these 3 samples have been qualified with the "E" flag to indicate estimated values.

Additional QC 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 listed below due to the overlap of the components from other more prominent Aroclors. 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.

Lab Sample Number	PCB 1016	PCB 1232	PCB 1242
L42276-1	X		X
L42276-2	X		X
L42276-3	X		X
L42276-4	X	X	X
L42276-5	X		X
L42276-6	X		X
L42276-7	X	X	X
L42276-8	X	X	X
L42276-9	X	X	X

Chlorinated Pesticide and PCB Analysis:

The sample jar for sample L42276-2, 4 - 9 broke while stored in the freezer. Each broken container was thawed and moved to a new container. All the pesticide and PCB results for these samples have been flagged with an "H" to indicate sample handling and storage issues.

The Continuing Calibration Verification Std for samples L42276-1 through -3 was unacceptable for DDT and Methoxychlor due to matrix interferences. The results for these parameters for these samples have been qualified with an "E" flag.

TABLE 1
SEDIMENT SAMPLE INVENTORY

Sample	Locator / Description (see SAP)	PSD	Solids	TOC	Metals[1]	BNAs[2]	Pest/ PCBs	Comments
L42276-1	DUD_1A	X	X	X	X	X	X	
L42276-2	DUD_2A	X	X	X	X	X	X	
L42276-3	DUD_3A	X	X	X	X	X	X	
L42276-4	DUD_4A	X	X	X	X	X	X	
L42276-5	DUD_5A	X	X	X	X	X	X	
L42276-6	DUD_5A	X	X	X	X	X	X	field replicate
L42276-7	DUD_1B	X	X	X	X	X	X	
L42276-8	DUD_2B	X	X	X	X	X	X	
L42276-9	DUD_3B	X	X	X	X	X	X	

1 Metals = Hg, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, Tl, Zn, Al, Fe
2 BNAs = includes Chlorobenzenes

TABLE 2
QC SAMPLE FREQUENCY FOR SEDIMENT CHEMICAL AND PHYSICAL PARAMETERS

Parameter	Method Blank	Duplicate	Triplicate	Matrix Spike	SRM	Surrogates
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: 423062-100-4

Locator:	DUD_1A					DUD_2A					DUD_3A					DUD_4A				
Descrip:	CLEANUP AREA A MON					CLEANUP AREA A MON					CLEANUP AREA A MON					CLEANUP AREA A MON				
Sampled:	04/03/07 9:15:00 AM					04/03/07 9:45:00 AM					04/03/07 10:05:00 AM					04/03/07 10:38:00 AM				
Lab ID:	L42276-1					L42276-2					L42276-3					L42276-4				
Matrix:	SALTWTRSED					SALTWTRSED					SALTWTRSED					SALTWTRSED				
% Solids:	74.7					43					44.1					63.1				
Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
			- Dry Weight Basis					- Dry Weight Basis					- Dry Weight Basis					- Dry Weight Basis		
COMBINED LABS																				
M=CV ASTM D422(03-02-005-001)																				
Clay *	3.2		0.5	1	%	29.5		0.5	1	%	33.7		0.5	1	%	11.7		0.5	1	%
Fines *	7.6		0.5	1	%	82.5		0.5	1	%	80.9		0.5	1	%	30.8		0.5	1	%
Gravel *	21.8		0.1	1	%	2.4		0.1	1	%	1		0.1	1	%	6		0.1	1	%
p+0.00 *	19.8		0.1	1	%	0.9	<RDL	0.1	1	%	0.3	<RDL	0.1	1	%	4.1		0.1	1	%
p+1.00 *	38.4		0.1	1	%	1.1		0.1	1	%	0.3	<RDL	0.1	1	%	8.3		0.1	1	%
p+10.0(equal/more than) *	2.5		0.5	1	%	17.7		0.5	1	%	19.1		0.5	1	%	8.1		0.5	1	%
p+2.00 *	7.5		0.1	1	%	1.7		0.1	1	%	2.3		0.1	1	%	23.5		0.1	1	%
p+3.00 *	2.8		0.1	1	%	4		0.1	1	%	5.2		0.1	1	%	20.7		0.1	1	%
p+4.00 *	0.8	<RDL	0.1	1	%	3.9		0.1	1	%	4.1		0.1	1	%	5.2		0.1	1	%
p+5.00 *	1.9		0.5	1	%	11.8		0.5	1	%	9		0.5	1	%	4.4		0.5	1	%
p+6.00 *	0.6	<RDL	0.5	1	%	11.8		0.5	1	%	11.2		0.5	1	%	3.7		0.5	1	%
p+7.00 *	1.3		0.5	1	%	18.9		0.5	1	%	13.5		0.5	1	%	5.1		0.5	1	%
p+8.00 *	0.6	<RDL	0.5	1	%	10.6		0.5	1	%	13.5		0.5	1	%	5.9		0.5	1	%
p+9.00 *	0.6	<RDL	0.5	1	%	11.8		0.5	1	%	14.6		0.5	1	%	3.7		0.5	1	%
p-1.00 *	10.4		0.1	1	%	1.3		0.1	1	%	0.2	<RDL	0.1	1	%	2.8		0.1	1	%
p-2.00 *	2.2		0.1	1	%	0.2	<RDL	0.1	1	%		<MDL	0.1	1	%	2.1		0.1	1	%
p-2.00(less than) *	9.2		0.1	1	%	1	<RDL	0.1	1	%	0.8	<RDL	0.1	1	%	1.1		0.1	1	%
Sand *	69.3		0.1	1	%	11.6		0.1	1	%	12.2		0.1	1	%	61.8		0.1	1	%
Silt *	4.4		0.5	1	%	53.1		0.5	1	%	47.2		0.5	1	%	19.1		0.5	1	%
M=CV EPA 9060-PSEP96(03-04-002-003)																				
Total Organic Carbon	13900		1900	3680	mg/Kg	29100		2100	4210	mg/Kg	20500		2300	4690	mg/Kg	13200		2200	4450	mg/Kg
M=CV SM2540-G (03-01-007-002)																				
Total Solids *	74.7		0.005	0.01	%	43		0.005	0.01	%	44.1		0.005	0.01	%	63.1		0.005	0.01	%
M=ES NONE																				
Field Personnel	JB,SH,JO,JDD				none	JB,SH,JO,JDD				none	JB,SH,JO,JDD				none	JB,SH,JO,JDD				none
Sampcoordx1 *	1267050				ft	1267146				ft	1266950				ft	1266885				ft
Sampcoordx2 *	1267048				ft	1267142				ft	1266952				ft	1266885				ft
Sampcoordx3 *	1267038				ft															
Sampcoordy1 *	209089				ft	208903				ft	208974				ft	209353				ft
Sampcoordy2 *	209091				ft	208899				ft	208975				ft	209355				ft
Sampcoordy3 *	209085				ft															
Sample Depth *	5				m	5				m	9				m	6				m
Sample Function																				
Sampling Method *	20042				none	20042				none	20042				none	20042				none
Sediment Sampling Depth *	7				cm	12				cm	10				cm	8				cm
Sediment Sampling Range *	0-6 cm				cm	0-10 cm				cm	0-9 cm				cm	0-7 cm				cm
Sediment Type	34N17				none	12P37				none	12N40				none	13N20				none
Tidal Condition	E				none	E				none	E				none	E				none
Tide Height *	6.5				ft	5.5				ft	5				ft	4				ft
M=MT EPA 7471A (06-01-004-003)																				
Mercury, Total, CVAA	0.079		0.0068	0.0677	mg/Kg	0.203		0.011	0.112	mg/Kg	0.188		0.011	0.111	mg/Kg	0.1		0.0078	0.078	mg/Kg
M=MT EPA3050B/6010B MOD(6-2-04-02)																				
Aluminum, Total, ICP	8490	L	6.7	33.3	mg/Kg	27000	L	12	58.1	mg/Kg	27400	L	11	56.7	mg/Kg	16600	L	7.9	39.5	mg/Kg
Antimony, Total, ICP		<MDL,G	1	5.01	mg/Kg		<MDL,G	1.7	8.72	mg/Kg		<MDL,G	1.7	8.5	mg/Kg		<MDL,G	1.2	5.93	mg/Kg
Arsenic, Total, ICP	4.8	<RDL	1.6	8.34	mg/Kg	14	<RDL	3	14.5	mg/Kg	12	<RDL	2.9	14.2	mg/Kg	6	<RDL	1.9	9.87	mg/Kg

King County Environmental Lab Analytical Report

PROJECT: 423062-100-4

Locator:	DUD_1A					Locator:	DUD_2A					Locator:	DUD_3A					Locator:	DUD_4A			
Descrip:	CLEANUP AREA A MON					Descrip:	CLEANUP AREA A MON					Descrip:	CLEANUP AREA A MON					Descrip:	CLEANUP AREA A MON			
Sampled:	04/03/07 9:15:00 AM					Sampled:	04/03/07 9:45:00 AM					Sampled:	04/03/07 10:05:00 AM					Sampled:	04/03/07 10:38:00 AM			
Lab ID:	L42276-1					Lab ID:	L42276-2					Lab ID:	L42276-3					Lab ID:	L42276-4			
Matrix:	SALTWTRSED					Matrix:	SALTWTRSED					Matrix:	SALTWTRSED					Matrix:	SALTWTRSED			
% Solids:	74.7					% Solids:	43					% Solids:	44.1					% Solids:	63.1			
Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
			- Dry Weight Basis					- Dry Weight Basis					- Dry Weight Basis					- Dry Weight Basis		
COMBINED LABS																				
Beryllium, Total, ICP	0.16	<RDL	0.067	0.333	mg/Kg	0.607		0.12	0.581	mg/Kg	0.615		0.11	0.567	mg/Kg	0.3	<RDL	0.079	0.395	mg/Kg
Cadmium, Total, ICP	0.66	<RDL	0.13	0.668	mg/Kg	0.56	<RDL	0.23	1.16	mg/Kg	0.32	<RDL	0.23	1.13	mg/Kg	0.36	<RDL	0.16	0.789	mg/Kg
Chromium, Total, ICP	107		0.2	1	mg/Kg	33		0.35	1.74	mg/Kg	27.7		0.34	1.7	mg/Kg	24.7		0.24	1.18	mg/Kg
Copper, Total, ICP	68.9		0.27	1.33	mg/Kg	87		0.47	2.33	mg/Kg	64.4		0.45	2.27	mg/Kg	62.8		0.32	1.58	mg/Kg
Iron, Total, ICP	17400		3.3	16.7	mg/Kg	36500		5.8	29.1	mg/Kg	35600		5.7	28.3	mg/Kg	25000		4	19.8	mg/Kg
Lead, Total, ICP	107		1.3	6.68	mg/Kg	42.1		2.3	11.6	mg/Kg	27.9		2.3	11.3	mg/Kg	50.4		1.6	7.89	mg/Kg
Manganese, Total, ICP	241		0.13	0.668	mg/Kg	391		0.23	1.16	mg/Kg	417		0.23	1.13	mg/Kg	295		0.16	0.789	mg/Kg
Nickel, Total, ICP	44.8		0.33	1.67	mg/Kg	25.3		0.58	2.91	mg/Kg	21.9		0.57	2.83	mg/Kg	21.7		0.4	1.98	mg/Kg
Selenium, Total, ICP		<MDL	1.6	8.34	mg/Kg		<MDL	3	14.5	mg/Kg		<MDL	2.9	14.2	mg/Kg		<MDL	1.9	9.87	mg/Kg
Silver, Total, ICP		<MDL	0.27	1.33	mg/Kg		<MDL	0.47	2.33	mg/Kg		<MDL	0.45	2.27	mg/Kg		<MDL	0.32	1.58	mg/Kg
Thallium, Total, ICP		<MDL	2.7	13.3	mg/Kg		<MDL	4.7	23.3	mg/Kg		<MDL	4.5	22.7	mg/Kg		<MDL	3.2	15.8	mg/Kg
Zinc, Total, ICP	181		0.33	1.67	mg/Kg	182		0.58	2.91	mg/Kg	117		0.57	2.83	mg/Kg	112		0.4	1.98	mg/Kg
M=OR EPA 3550B/8270C (7-3-01-004)																				
1,2,4-Trichlorobenzene		<MDL	0.13	0.268	ug/Kg		<MDL	0.23	0.465	ug/Kg		<MDL	0.23	0.454	ug/Kg		<MDL	0.16	0.317	ug/Kg
1,2-Dichlorobenzene		<MDL	0.27	0.535	ug/Kg		<MDL	0.47	0.93	ug/Kg		<MDL	0.45	0.907	ug/Kg		<MDL	0.32	0.634	ug/Kg
1,3-Dichlorobenzene		<MDL	0.27	0.535	ug/Kg		<MDL	0.47	0.93	ug/Kg		<MDL	0.45	0.907	ug/Kg		<MDL	0.32	0.634	ug/Kg
1,4-Dichlorobenzene	14.7		0.27	0.535	ug/Kg	3.14		0.47	0.93	ug/Kg	1.42		0.45	0.907	ug/Kg	5.28		0.32	0.634	ug/Kg
2,4-Dimethylphenol		<MDL	1.3	2.68	ug/Kg		<MDL	2.3	4.65	ug/Kg		<MDL	2.3	4.54	ug/Kg		<MDL	1.6	3.17	ug/Kg
2-Methylnaphthalene	4.4	<RDL	2.7	5.35	ug/Kg	9.4		4.7	9.3	ug/Kg		<MDL	4.5	9.07	ug/Kg	4.1	<RDL	3.2	6.34	ug/Kg
2-Methylphenol		<MDL	2.7	5.35	ug/Kg		<MDL	4.7	9.3	ug/Kg		<MDL	4.5	9.07	ug/Kg		<MDL	3.2	6.34	ug/Kg
4-Methylphenol		<MDL	5.4	10.7	ug/Kg		<MDL	9.3	18.6	ug/Kg		<MDL	9.1	18.1	ug/Kg		<MDL	6.3	12.7	ug/Kg
Acenaphthene	15.7		2.7	5.35	ug/Kg	13.8		4.7	9.3	ug/Kg		<MDL	4.5	9.07	ug/Kg	5.2	<RDL	3.2	6.34	ug/Kg
Acenaphthylene	4.7	<RDL	2.7	5.35	ug/Kg	10.9		4.7	9.3	ug/Kg	7.3	<RDL	4.5	9.07	ug/Kg	5.1	<RDL	3.2	6.34	ug/Kg
Anthracene	44.3		2.7	5.35	ug/Kg	56		4.7	9.3	ug/Kg	31.5		4.5	9.07	ug/Kg	31.5		3.2	6.34	ug/Kg
Benzo(a)anthracene	141		2.7	5.35	ug/Kg	191		4.7	9.3	ug/Kg	78.5		4.5	9.07	ug/Kg	79.4		3.2	6.34	ug/Kg
Benzo(a)pyrene	169		2.7	5.35	ug/Kg	197		4.7	9.3	ug/Kg	79.8		4.5	9.07	ug/Kg	113		3.2	6.34	ug/Kg
Benzo(b)fluoranthene	190		2.7	5.35	ug/Kg	230		4.7	9.3	ug/Kg	144		4.5	9.07	ug/Kg	121		3.2	6.34	ug/Kg
Benzo(g,h,i)perylene	121		2.7	5.35	ug/Kg	136		4.7	9.3	ug/Kg	55.8		4.5	9.07	ug/Kg	82.3		3.2	6.34	ug/Kg
Benzo(k)fluoranthene	147		2.7	5.35	ug/Kg	203		4.7	9.3	ug/Kg	59.9		4.5	9.07	ug/Kg	143		3.2	6.34	ug/Kg
Benzoic Acid	84.7		13	26.8	ug/Kg	138		23	46.5	ug/Kg	116		23	45.4	ug/Kg	98.4		16	31.7	ug/Kg
Benzyl Alcohol		<MDL	2.7	5.35	ug/Kg		<MDL	4.7	9.3	ug/Kg		<MDL	4.5	9.07	ug/Kg		<MDL	3.2	6.34	ug/Kg
Benzyl Butyl Phthalate	69.9		1.3	2.68	ug/Kg	107		2.3	4.65	ug/Kg	41.5		2.3	4.54	ug/Kg		<MDL	1.6	3.17	ug/Kg
Bis(2-Ethylhexyl)Phthalate	1210	B	5.4	10.7	ug/Kg	1990	B	9.3	18.6	ug/Kg	426	B	9.1	18.1	ug/Kg	851	B	6.3	12.7	ug/Kg
Carbazole	36.8		2.7	5.35	ug/Kg	42.3		4.7	9.3	ug/Kg	19.4		4.5	9.07	ug/Kg	19.5		3.2	6.34	ug/Kg
Chrysene	268		2.7	5.35	ug/Kg	319		4.7	9.3	ug/Kg	118		4.5	9.07	ug/Kg	165		3.2	6.34	ug/Kg
Coprostanol	659		54	107	ug/Kg	858		93	186	ug/Kg	485		91	181	ug/Kg	452		63	127	ug/Kg
Dibenzo(a,h)anthracene	41.2		2.7	5.35	ug/Kg	41.9		4.7	9.3	ug/Kg	13.5		4.5	9.07	ug/Kg	20		3.2	6.34	ug/Kg
Dibenzofuran	9.77		2.7	5.35	ug/Kg	13		4.7	9.3	ug/Kg	5.2	<RDL	4.5	9.07	ug/Kg	5.2	<RDL	3.2	6.34	ug/Kg
Diethyl Phthalate		<MDL	5.4	10.7	ug/Kg		<MDL	9.3	18.6	ug/Kg		<MDL	9.1	18.1	ug/Kg		<MDL	6.3	12.7	ug/Kg
Dimethyl Phthalate	93.3		5.4	10.7	ug/Kg		<MDL	9.3	18.6	ug/Kg		<MDL	9.1	18.1	ug/Kg		<MDL	6.3	12.7	ug/Kg
Di-N-Butyl Phthalate	19.9		5.4	10.7	ug/Kg	35.1		9.3	18.6	ug/Kg	14	<RDL	9.1	18.1	ug/Kg		<MDL	6.3	12.7	ug/Kg
Di-N-Octyl Phthalate		<MDL	5.4	10.7	ug/Kg		<MDL	9.3	18.6	ug/Kg		<MDL	9.1	18.1	ug/Kg		<MDL	6.3	12.7	ug/Kg
Fluoranthene	455		2.7	5.35	ug/Kg	493		4.7	9.3	ug/Kg	186		4.5	9.07	ug/Kg	212		3.2	6.34	ug/Kg
Fluorene	19		2.7	5.35	ug/Kg	22.9		4.7	9.3	ug/Kg	10.5		4.5	9.07	ug/Kg	10.5		3.2	6.34	ug/Kg
Hexachlorobenzene		<MDL	0.13	0.268	ug/Kg		<MDL	0.23	0.465	ug/Kg		<MDL	0.23	0.454	ug/Kg		<MDL	0.16	0.317	ug/Kg
Hexachlorobutadiene		<MDL	0.67	1.34	ug/Kg		<MDL	1.2	2.33	ug/Kg		<MDL	1.1	2.27	ug/Kg		<MDL	0.79	1.58	ug/Kg

King County Environmental Lab Analytical Report

PROJECT: 423062-100-4

Locator:	DUD_1A					Locator:	DUD_2A					Locator:	DUD_3A					Locator:	DUD_4A				
Descrip:	CLEANUP AREA A MON					Descrip:	CLEANUP AREA A MON					Descrip:	CLEANUP AREA A MON					Descrip:	CLEANUP AREA A MON				
Sampled:	04/03/07 9:15:00 AM					Sampled:	04/03/07 9:45:00 AM					Sampled:	04/03/07 10:05:00 AM					Sampled:	04/03/07 10:38:00 AM				
Lab ID:	L42276-1					Lab ID:	L42276-2					Lab ID:	L42276-3					Lab ID:	L42276-4				
Matrix:	SALTWTRSED					Matrix:	SALTWTRSED					Matrix:	SALTWTRSED					Matrix:	SALTWTRSED				
% Solids:	74.7					% Solids:	43					% Solids:	44.1					% Solids:	63.1				
Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
			- Dry Weight Basis					- Dry Weight Basis					- Dry Weight Basis					- Dry Weight Basis					
COMBINED LABS																									
Hexachloroethane		<MDL	1.3	2.68	ug/Kg		<MDL	2.3	4.65	ug/Kg		<MDL	2.3	4.54	ug/Kg		<MDL	1.6	3.17	ug/Kg					
Indeno(1,2,3-Cd)Pyrene	106		2.7	5.35	ug/Kg	127		4.7	9.3	ug/Kg	57.4		4.5	9.07	ug/Kg	79.9		3.2	6.34	ug/Kg					
Naphthalene	6.95		2.7	5.35	ug/Kg	9.7		4.7	9.3	ug/Kg	4.8	<RDL	4.5	9.07	ug/Kg	4.1	<RDL	3.2	6.34	ug/Kg					
N-Nitrosodiphenylamine		<MDL	5.4	10.7	ug/Kg		<MDL	9.3	18.6	ug/Kg		<MDL	9.1	18.1	ug/Kg		<MDL	6.3	12.7	ug/Kg					
Pentachlorophenol		<MDL	13	26.8	ug/Kg		<MDL	23	46.5	ug/Kg		<MDL	23	45.4	ug/Kg		<MDL	16	31.7	ug/Kg					
Phenanthrene	146		2.7	5.35	ug/Kg	168		4.7	9.3	ug/Kg	62.8		4.5	9.07	ug/Kg	72.3		3.2	6.34	ug/Kg					
Phenol		<MDL	5.4	10.7	ug/Kg	32.8		9.3	18.6	ug/Kg	12	<RDL	9.1	18.1	ug/Kg		<MDL	6.3	12.7	ug/Kg					
Pyrene	382		2.7	5.35	ug/Kg	437		4.7	9.3	ug/Kg	162		4.5	9.07	ug/Kg	189		3.2	6.34	ug/Kg					
Total HPAHS	2020		2.7	5.35	ug/Kg	2370		4.7	9.3	ug/Kg	955		4.5	9.07	ug/Kg	1200		3.2	6.34	ug/Kg					
Total LPAHs	241		2.7	5.35	ug/Kg	291		4.7	9.3	ug/Kg	126		4.5	9.07	ug/Kg	133		3.2	6.34	ug/Kg					
M=OR EPA 8081A/8082 (7-3-03-002)																									
4,4'-DDD		<MDL	0.9	1.78	ug/Kg		<MDL,H	1.6	3.09	ug/Kg		<MDL	1.5	3.02	ug/Kg		<MDL,H	1.1	2.11	ug/Kg					
4,4'-DDE		<MDL	0.9	1.78	ug/Kg		<MDL,H	1.6	3.09	ug/Kg		<MDL	1.5	3.02	ug/Kg		<MDL,H	1.1	2.11	ug/Kg					
4,4'-DDT		<MDL,E	0.9	1.78	ug/Kg		<MDL,E,H	1.6	3.09	ug/Kg		<MDL,E	1.5	3.02	ug/Kg		<MDL,H	1.1	2.11	ug/Kg					
Aldrin		<MDL	0.9	1.78	ug/Kg		<MDL,H	1.6	3.09	ug/Kg		<MDL	1.5	3.02	ug/Kg		<MDL,H	1.1	2.11	ug/Kg					
Alpha-BHC		<MDL	0.44	0.893	ug/Kg		<MDL,H	0.77	1.55	ug/Kg		<MDL	0.75	1.51	ug/Kg		<MDL,H	0.52	1.06	ug/Kg					
Alpha-Chlordane		<MDL	0.44	0.893	ug/Kg		<MDL,H	0.77	1.55	ug/Kg		<MDL	0.75	1.51	ug/Kg		<MDL,H	0.52	1.06	ug/Kg					
Aroclor 1016		<MDL,TA	12	23.7	ug/Kg		<MDL,H,TA	11	22.5	ug/Kg		<MDL,TA	12	24.5	ug/Kg		<MDL,H,TA	8.7	17.3	ug/Kg					
Aroclor 1221		<MDL	2.3	4.46	ug/Kg		<MDL,H	4	7.74	ug/Kg		<MDL	3.9	7.55	ug/Kg		<MDL,H	2.7	5.28	ug/Kg					
Aroclor 1232		<MDL	2.3	4.46	ug/Kg		<MDL,H	4	7.74	ug/Kg		<MDL	3.9	7.55	ug/Kg		<MDL,H,TA	19	37.6	ug/Kg					
Aroclor 1242		<MDL,TA	33	67.9	ug/Kg		<MDL,H,TA	42	85.8	ug/Kg		<MDL,TA	27	52.2	ug/Kg		<MDL,H,TA	15	30.1	ug/Kg					
Aroclor 1248	25.2		1.1	2.24	ug/Kg	33	H	1.9	3.88	ug/Kg	16.8		1.9	3.79	ug/Kg	12.9	H	1.3	2.65	ug/Kg					
Aroclor 1254	74.6		1.1	2.24	ug/Kg	67.9	H	1.9	3.88	ug/Kg	34		1.9	3.79	ug/Kg	22.5	H	1.3	2.65	ug/Kg					
Aroclor 1260	47.7	L,E	1.1	2.24	ug/Kg	42.3	H,L,E	1.9	3.88	ug/Kg	30.8	L,E	1.9	3.79	ug/Kg	16	H	1.3	2.65	ug/Kg					
Beta-BHC		<MDL	0.44	0.893	ug/Kg		<MDL,H	0.77	1.55	ug/Kg		<MDL	0.75	1.51	ug/Kg		<MDL,H	0.52	1.06	ug/Kg					
Delta-BHC		<MDL	0.44	0.893	ug/Kg		<MDL,H	0.77	1.55	ug/Kg		<MDL	0.75	1.51	ug/Kg		<MDL,H	0.52	1.06	ug/Kg					
Dieldrin		<MDL	0.9	1.78	ug/Kg		<MDL,H	1.6	3.09	ug/Kg		<MDL	1.5	3.02	ug/Kg		<MDL,H	1.1	2.11	ug/Kg					
Endosulfan I		<MDL	0.9	1.78	ug/Kg		<MDL,H	1.6	3.09	ug/Kg		<MDL	1.5	3.02	ug/Kg		<MDL,H	1.1	2.11	ug/Kg					
Endosulfan II		<MDL	0.9	1.78	ug/Kg		<MDL,H	1.6	3.09	ug/Kg		<MDL	1.5	3.02	ug/Kg		<MDL,H	1.1	2.11	ug/Kg					
Endosulfan Sulfate		<MDL	0.9	1.78	ug/Kg		<MDL,H	1.6	3.09	ug/Kg		<MDL	1.5	3.02	ug/Kg		<MDL,H	1.1	2.11	ug/Kg					
Endrin		<MDL	0.9	1.78	ug/Kg		<MDL,H	1.6	3.09	ug/Kg		<MDL	1.5	3.02	ug/Kg		<MDL,H	1.1	2.11	ug/Kg					
Endrin Aldehyde		<MDL	0.9	1.78	ug/Kg		<MDL,H	1.6	3.09	ug/Kg		<MDL	1.5	3.02	ug/Kg		<MDL,H	1.1	2.11	ug/Kg					
Gamma-BHC (Lindane)		<MDL	0.44	0.893	ug/Kg		<MDL,H	0.77	1.55	ug/Kg		<MDL	0.75	1.51	ug/Kg		<MDL,H	0.52	1.06	ug/Kg					
Gamma-Chlordane		<MDL	0.44	0.893	ug/Kg		<MDL,H	0.77	1.55	ug/Kg		<MDL	0.75	1.51	ug/Kg		<MDL,H	0.52	1.06	ug/Kg					
Heptachlor		<MDL	0.44	0.893	ug/Kg		<MDL,H	0.77	1.55	ug/Kg		<MDL	0.75	1.51	ug/Kg		<MDL,H	0.52	1.06	ug/Kg					
Heptachlor Epoxide		<MDL	0.44	0.893	ug/Kg		<MDL,H	0.77	1.55	ug/Kg	1.1	<RDL	0.75	1.51	ug/Kg	1.12	H	0.52	1.06	ug/Kg					
Methoxychlor		<MDL,E	4.4	8.93	ug/Kg		<MDL,E,H	7.7	15.5	ug/Kg		<MDL,E	7.5	15.1	ug/Kg		<MDL,H	5.2	10.6	ug/Kg					
Toxaphene		<MDL	9	17.8	ug/Kg		<MDL,H	16	30.9	ug/Kg		<MDL	15	30.2	ug/Kg		<MDL,H	11	21.1	ug/Kg					

* Not converted to dry weight basis for this parameter

King County Environmental Lab Analytical Report

PROJECT: 423062-100-4

Locator:	DUD_5A					DUD_5A					DUD_1B					DUD_2B				
Descrip:	CLEANUP AREA A MON					CLEANUP AREA A MON					CLEANUP AREA A MON					CLEANUP AREA A MON				
Sampled:	04/03/07 10:55:00 AM					04/03/07 10:55:00 AM					04/03/07 11:40:00 AM					04/03/07 12:35:00 PM				
Lab ID:	L42276-5					L42276-6					L42276-7					L42276-8				
Matrix:	SALTWTRSED					SALTWTRSED					SALTWTRSED					SALTWTRSED				
% Solids:	80.6					82.4					54.5					41.7				
Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
			- Dry Weight Basis					- Dry Weight Basis					- Dry Weight Basis					- Dry Weight Basis		
COMBINED LABS																				
M=CV ASTM D422(03-02-005-001)																				
Clay *	2.6		0.5	1	%	2.9		0.5	1	%	19.4		0.5	1	%	29.7		0.5	1	%
Fines *	7.2		0.5	1	%	7		0.5	1	%	55.3		0.5	1	%	83.2		0.5	1	%
Gravel *	14.2		0.1	1	%	31.8		0.1	1	%	2.9		0.1	1	%	3.2		0.1	1	%
p+0.00 *	9.4		0.1	1	%	14.9		0.1	1	%	0.9	<RDL	0.1	1	%	0.4	<RDL	0.1	1	%
p+1.00 *	17.1		0.1	1	%	16		0.1	1	%	1.8		0.1	1	%	0.4	<RDL	0.1	1	%
p+10.0(equal/more than) *	2		0.5	1	%	1.7		0.5	1	%	12		0.5	1	%	17.8		0.5	1	%
p+2.00 *	34.5		0.1	1	%	20.6		0.1	1	%	11.5		0.1	1	%	1.6		0.1	1	%
p+3.00 *	15		0.1	1	%	9.2		0.1	1	%	19.1		0.1	1	%	3.7		0.1	1	%
p+4.00 *	2.2		0.1	1	%	1.6		0.1	1	%	7.5		0.1	1	%	4.9		0.1	1	%
p+5.00 *	1		0.5	1	%	2.3		0.5	1	%	9.2		0.5	1	%	11.9		0.5	1	%
p+6.00 *		<MDL	0.5	1	%	1.2		0.5	1	%	12.9		0.5	1	%	7.1		0.5	1	%
p+7.00 *	2		0.5	1	%	0.6	<RDL	0.5	1	%	6.5		0.5	1	%	20.2		0.5	1	%
p+8.00 *	1.5		0.5	1	%		<MDL	0.5	1	%	7.4		0.5	1	%	14.3		0.5	1	%
p+9.00 *	0.5	<RDL	0.5	1	%	1.2		0.5	1	%	7.4		0.5	1	%	11.9		0.5	1	%
p-1.00 *	6.6		0.1	1	%	17.5		0.1	1	%	0.5	<RDL	0.1	1	%	0.8	<RDL	0.1	1	%
p-2.00 *	3.1		0.1	1	%	5.6		0.1	1	%	0.2	<RDL	0.1	1	%	0.7	<RDL	0.1	1	%
p-2.00(less than) *	4.6		0.1	1	%	8.7		0.1	1	%	2.3		0.1	1	%	1.7		0.1	1	%
Sand *	78.1		0.1	1	%	62.3		0.1	1	%	40.7		0.1	1	%	11		0.1	1	%
Silt *	4.6		0.5	1	%	4.1		0.5	1	%	36		0.5	1	%	53.5		0.5	1	%
M=CV EPA 9060-PSEP96(03-04-002-003)																				
Total Organic Carbon	2740		500	985	mg/Kg	2820		510	1010	mg/Kg	14200		2000	4110	mg/Kg	20000		2000	4000	mg/Kg
M=CV SM2540-G (03-01-007-002)																				
Total Solids *	80.6		0.005	0.01	%	82.4		0.005	0.01	%	54.5		0.005	0.01	%	41.7		0.005	0.01	%
M=ES NONE																				
Field Personnel	JB,SH,JO,JDD				none	JB,SH,JO,JDD				none	JB,SH,JO,JDD				none	JB,SH,JO,JDD				none
Sampcoordx1 *	1266805				ft	1266803				ft	1267056				ft	1267076				ft
Sampcoordx2 *	1266803				ft	1266808				ft	1267059				ft	1267081				ft
Sampcoordx3 *						1266802				ft										
Sampcoordy1 *	209412				ft	209407				ft	208478				ft	208618				ft
Sampcoordy2 *	209407				ft	209407				ft	208482				ft	208620				ft
Sampcoordy3 *						209412				ft										
Sample Depth *	8				m	8				m	7				m	6				m
Sample Function						FREP @ L42276-5				none										
Sampling Method *	20042				none	20042				none	20042				none	20042				none
Sediment Sampling Depth *	5				cm	5				cm	15				cm	8				cm
Sediment Sampling Range *	0-4 cm				cm	0-4 cm				cm	0-10 cm				cm	0-7 cm				cm
Sediment Type	34N21				none	34N21				none	13N40				none	12N30				none
Tidal Condition	E				none	E				none	E				none	S				none
Tide Height *	3.5				ft	3.5				ft	2.5				ft	0.8				ft
M=MT EPA 7471A (06-01-004-003)																				
Mercury, Total, CVAA	0.024	<RDL	0.0061	0.0602	mg/Kg	0.019	<RDL	0.0059	0.0597	mg/Kg	0.166		0.0092	0.0917	mg/Kg	0.166		0.012	0.12	mg/Kg
M=MT EPA3050B/6010B MOD(6-2-04-02)																				
Aluminum, Total, ICP	11100	L	6.2	31	mg/Kg	13600	L	6.1	30.3	mg/Kg	19300	L	9.2	45.9	mg/Kg	26100	L	12	60	mg/Kg
Antimony, Total, ICP	1.6	<RDL,G	0.93	4.65	mg/Kg		<MDL,G	0.91	4.55	mg/Kg		<MDL,G	1.4	6.88	mg/Kg		<MDL,G	1.8	8.99	mg/Kg
Arsenic, Total, ICP	8.25		1.5	7.75	mg/Kg	2.2	<RDL	1.5	7.57	mg/Kg	9	<RDL	2.4	11.5	mg/Kg	13	<RDL	2.9	15	mg/Kg

King County Environmental Lab Analytical Report

PROJECT: 423062-100-4

Locator:	DUD_5A					Locator:	DUD_5A					Locator:	DUD_1B					Locator:	DUD_2B				
Descrip:	CLEANUP AREA A MON					Descrip:	CLEANUP AREA A MON					Descrip:	CLEANUP AREA A MON					Descrip:	CLEANUP AREA A MON				
Sampled:	04/03/07 10:55:00 AM					Sampled:	04/03/07 10:55:00 AM					Sampled:	04/03/07 11:40:00 AM					Sampled:	04/03/07 12:35:00 PM				
Lab ID:	L42276-5					Lab ID:	L42276-6					Lab ID:	L42276-7					Lab ID:	L42276-8				
Matrix:	SALTWTRSED					Matrix:	SALTWTRSED					Matrix:	SALTWTRSED					Matrix:	SALTWTRSED				
% Solids:	80.6					% Solids:	82.4					% Solids:	54.5					% Solids:	41.7				
Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
			- Dry Weight Basis					- Dry Weight Basis					- Dry Weight Basis					- Dry Weight Basis		
COMBINED LABS																				
Beryllium, Total, ICP	0.16	<RDL	0.062	0.31	mg/Kg	0.15	<RDL	0.061	0.303	mg/Kg	0.4	<RDL	0.092	0.459	mg/Kg	0.58	<RDL	0.12	0.6	mg/Kg
Cadmium, Total, ICP		<MDL	0.12	0.62	mg/Kg	0.12	<RDL	0.12	0.606	mg/Kg	0.28	<RDL	0.18	0.917	mg/Kg	0.31	<RDL	0.24	1.2	mg/Kg
Chromium, Total, ICP	16.6		0.19	0.931	mg/Kg	17.6		0.18	0.909	mg/Kg	24		0.28	1.38	mg/Kg	28.1		0.36	1.8	mg/Kg
Copper, Total, ICP	44.4		0.25	1.24	mg/Kg	67.4		0.24	1.21	mg/Kg	56.7		0.37	1.83	mg/Kg	64.3		0.48	2.4	mg/Kg
Iron, Total, ICP	18900		3.1	15.5	mg/Kg	23400		3	15.2	mg/Kg	27300		4.6	22.9	mg/Kg	34500		6	30	mg/Kg
Lead, Total, ICP	11.4		1.2	6.2	mg/Kg	5.6	<RDL	1.2	6.06	mg/Kg	27		1.8	9.17	mg/Kg	28.5		2.4	12	mg/Kg
Manganese, Total, ICP	297		0.12	0.62	mg/Kg	367		0.12	0.606	mg/Kg	314		0.18	0.917	mg/Kg	424		0.24	1.2	mg/Kg
Nickel, Total, ICP	16.7		0.31	1.55	mg/Kg	17.6		0.3	1.52	mg/Kg	19.3		0.46	2.29	mg/Kg	22.2		0.6	3	mg/Kg
Selenium, Total, ICP		<MDL	1.5	7.75	mg/Kg		<MDL	1.5	7.57	mg/Kg		<MDL	2.4	11.5	mg/Kg		<MDL	2.9	15	mg/Kg
Silver, Total, ICP		<MDL	0.25	1.24	mg/Kg		<MDL	0.24	1.21	mg/Kg		<MDL	0.37	1.83	mg/Kg		<MDL	0.48	2.4	mg/Kg
Thallium, Total, ICP		<MDL	2.5	12.4	mg/Kg		<MDL	2.4	12.1	mg/Kg		<MDL	3.7	18.3	mg/Kg		<MDL	4.8	24	mg/Kg
Zinc, Total, ICP	55.8		0.31	1.55	mg/Kg	46.8		0.3	1.52	mg/Kg	90.8		0.46	2.29	mg/Kg	119		0.6	3	mg/Kg
M=OR EPA 3550B/8270C (7-3-01-004)																				
1,2,4-Trichlorobenzene		<MDL	0.12	0.248	ug/Kg		<MDL	0.12	0.243	ug/Kg		<MDL	0.18	0.367	ug/Kg		<MDL	0.24	0.48	ug/Kg
1,2-Dichlorobenzene		<MDL	0.25	0.496	ug/Kg		<MDL	0.24	0.485	ug/Kg		<MDL	0.37	0.734	ug/Kg		<MDL	0.48	0.959	ug/Kg
1,3-Dichlorobenzene		<MDL	0.25	0.496	ug/Kg		<MDL	0.24	0.485	ug/Kg		<MDL	0.37	0.734	ug/Kg		<MDL	0.48	0.959	ug/Kg
1,4-Dichlorobenzene	0.36	<RDL	0.25	0.496	ug/Kg		<MDL	0.24	0.485	ug/Kg		<MDL	0.37	0.734	ug/Kg		<MDL	0.48	0.959	ug/Kg
2,4-Dimethylphenol		<MDL	1.2	2.48	ug/Kg		<MDL	1.2	2.43	ug/Kg		<MDL	1.8	3.67	ug/Kg		<MDL	2.4	4.8	ug/Kg
2-Methylnaphthalene		<MDL	2.5	4.96	ug/Kg		<MDL	2.4	4.85	ug/Kg		<MDL	3.7	7.34	ug/Kg		<MDL	4.8	9.59	ug/Kg
2-Methylphenol		<MDL	2.5	4.96	ug/Kg		<MDL	2.4	4.85	ug/Kg		<MDL	3.7	7.34	ug/Kg		<MDL	4.8	9.59	ug/Kg
4-Methylphenol		<MDL	5	9.93	ug/Kg		<MDL	4.9	9.71	ug/Kg		<MDL	7.3	14.7	ug/Kg		<MDL	9.6	19.2	ug/Kg
Acenaphthene		<MDL	2.5	4.96	ug/Kg		<MDL	2.4	4.85	ug/Kg	5.7	<RDL	3.7	7.34	ug/Kg	8.6	<RDL	4.8	9.59	ug/Kg
Acenaphthylene		<MDL	2.5	4.96	ug/Kg		<MDL	2.4	4.85	ug/Kg		<MDL	3.7	7.34	ug/Kg	7.4	<RDL	4.8	9.59	ug/Kg
Anthracene	5.02		2.5	4.96	ug/Kg	3.4	<RDL	2.4	4.85	ug/Kg	29.2		3.7	7.34	ug/Kg	42.9		4.8	9.59	ug/Kg
Benzo(a)anthracene	22.2		2.5	4.96	ug/Kg	11.4		2.4	4.85	ug/Kg	93.2		3.7	7.34	ug/Kg	99.3		4.8	9.59	ug/Kg
Benzo(a)pyrene	25.7		2.5	4.96	ug/Kg	17.6		2.4	4.85	ug/Kg	91.2		3.7	7.34	ug/Kg	102		4.8	9.59	ug/Kg
Benzo(b)fluoranthene	36.4		2.5	4.96	ug/Kg	20.3		2.4	4.85	ug/Kg	129		3.7	7.34	ug/Kg	106		4.8	9.59	ug/Kg
Benzo(g,h,i)perylene	15.9		2.5	4.96	ug/Kg	11.3		2.4	4.85	ug/Kg	56.5		3.7	7.34	ug/Kg	71		4.8	9.59	ug/Kg
Benzo(k)fluoranthene	19.7		2.5	4.96	ug/Kg	12		2.4	4.85	ug/Kg	89.9		3.7	7.34	ug/Kg	150		4.8	9.59	ug/Kg
Benzoic Acid	54.1		12	24.8	ug/Kg	61.9		12	24.3	ug/Kg	89.9		18	36.7	ug/Kg	122		24	48	ug/Kg
Benzyl Alcohol		<MDL	2.5	4.96	ug/Kg		<MDL	2.4	4.85	ug/Kg		<MDL	3.7	7.34	ug/Kg		<MDL	4.8	9.59	ug/Kg
Benzyl Butyl Phthalate	12.8		1.2	2.48	ug/Kg	14.1		1.2	2.43	ug/Kg	27.5		1.8	3.67	ug/Kg	40.5		2.4	4.8	ug/Kg
Bis(2-Ethylhexyl)Phthalate	74.3	B	5	9.93	ug/Kg	65	B	4.9	9.71	ug/Kg	229	B	7.3	14.7	ug/Kg	436	B	9.6	19.2	ug/Kg
Carbazole	4.6	<RDL	2.5	4.96	ug/Kg		<MDL	2.4	4.85	ug/Kg	18.2		3.7	7.34	ug/Kg	20.3		4.8	9.59	ug/Kg
Chrysene	28.9		2.5	4.96	ug/Kg	18.7		2.4	4.85	ug/Kg	142		3.7	7.34	ug/Kg	167		4.8	9.59	ug/Kg
Coprostanol	208		50	99.3	ug/Kg	187		49	97.1	ug/Kg	299		73	147	ug/Kg	499		96	192	ug/Kg
Dibenzo(a,h)anthracene	4.6	<RDL	2.5	4.96	ug/Kg	2.9	<RDL	2.4	4.85	ug/Kg	16.8		3.7	7.34	ug/Kg	18.3		4.8	9.59	ug/Kg
Dibenzofuran		<MDL	2.5	4.96	ug/Kg		<MDL	2.4	4.85	ug/Kg	4.4	<RDL	3.7	7.34	ug/Kg	7.4	<RDL	4.8	9.59	ug/Kg
Diethyl Phthalate		<MDL	5	9.93	ug/Kg		<MDL	4.9	9.71	ug/Kg		<MDL	7.3	14.7	ug/Kg		<MDL	9.6	19.2	ug/Kg
Dimethyl Phthalate		<MDL	5	9.93	ug/Kg		<MDL	4.9	9.71	ug/Kg		<MDL	7.3	14.7	ug/Kg		<MDL	9.6	19.2	ug/Kg
Di-N-Butyl Phthalate		<MDL	5	9.93	ug/Kg		<MDL	4.9	9.71	ug/Kg	8.8	<RDL	7.3	14.7	ug/Kg	15	<RDL	9.6	19.2	ug/Kg
Di-N-Octyl Phthalate		<MDL	5	9.93	ug/Kg		<MDL	4.9	9.71	ug/Kg		<MDL	7.3	14.7	ug/Kg		<MDL	9.6	19.2	ug/Kg
Fluoranthene	54.8		2.5	4.96	ug/Kg	27.2		2.4	4.85	ug/Kg	215		3.7	7.34	ug/Kg	254		4.8	9.59	ug/Kg
Fluorene		<MDL	2.5	4.96	ug/Kg		<MDL	2.4	4.85	ug/Kg	9.49		3.7	7.34	ug/Kg	15.2		4.8	9.59	ug/Kg
Hexachlorobenzene		<MDL	0.12	0.248	ug/Kg		<MDL	0.12	0.243	ug/Kg		<MDL	0.18	0.367	ug/Kg		<MDL	0.24	0.48	ug/Kg
Hexachlorobutadiene		<MDL	0.62	1.24	ug/Kg		<MDL	0.61	1.21	ug/Kg		<MDL	0.92	1.83	ug/Kg		<MDL	1.2	2.4	ug/Kg

King County Environmental Lab Analytical Report

PROJECT: 423062-100-4

Locator:	DUD_5A					Locator:	DUD_5A					Locator:	DUD_1B					Locator:	DUD_2B				
Descrip:	CLEANUP AREA A MON					Descrip:	CLEANUP AREA A MON					Descrip:	CLEANUP AREA A MON					Descrip:	CLEANUP AREA A MON				
Sampled:	04/03/07 10:55:00 AM					Sampled:	04/03/07 10:55:00 AM					Sampled:	04/03/07 11:40:00 AM					Sampled:	04/03/07 12:35:00 PM				
Lab ID:	L42276-5					Lab ID:	L42276-6					Lab ID:	L42276-7					Lab ID:	L42276-8				
Matrix:	SALTWTRSED					Matrix:	SALTWTRSED					Matrix:	SALTWTRSED					Matrix:	SALTWTRSED				
% Solids:	80.6					% Solids:	82.4					% Solids:	54.5					% Solids:	41.7				
Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
			- Dry Weight Basis					- Dry Weight Basis					- Dry Weight Basis					- Dry Weight Basis		
COMBINED LABS																				
Hexachloroethane		<MDL	1.2	2.48	ug/Kg		<MDL	1.2	2.43	ug/Kg		<MDL	1.8	3.67	ug/Kg		<MDL	2.4	4.8	ug/Kg
Indeno(1,2,3-Cd)Pyrene	18.5		2.5	4.96	ug/Kg	13.8		2.4	4.85	ug/Kg	55.6		3.7	7.34	ug/Kg	67.9		4.8	9.59	ug/Kg
Naphthalene		<MDL	2.5	4.96	ug/Kg		<MDL	2.4	4.85	ug/Kg		<MDL	3.7	7.34	ug/Kg	5.3	<RDL	4.8	9.59	ug/Kg
N-Nitrosodiphenylamine		<MDL	5	9.93	ug/Kg		<MDL	4.9	9.71	ug/Kg		<MDL	7.3	14.7	ug/Kg		<MDL	9.6	19.2	ug/Kg
Pentachlorophenol		<MDL	12	24.8	ug/Kg		<MDL	12	24.3	ug/Kg		<MDL	18	36.7	ug/Kg		<MDL	24	48	ug/Kg
Phenanthrene	21.8		2.5	4.96	ug/Kg	10.7		2.4	4.85	ug/Kg	65.9		3.7	7.34	ug/Kg	97.1		4.8	9.59	ug/Kg
Phenol	10.2		5	9.93	ug/Kg	6.3	<RDL	4.9	9.71	ug/Kg		<MDL	7.3	14.7	ug/Kg	11	<RDL	9.6	19.2	ug/Kg
Pyrene	43.2		2.5	4.96	ug/Kg	22.7		2.4	4.85	ug/Kg	171		3.7	7.34	ug/Kg	201		4.8	9.59	ug/Kg
Total HPAHS	269		2.5	4.96	ug/Kg	158		2.4	4.85	ug/Kg	1060		3.7	7.34	ug/Kg	1240		4.8	9.59	ug/Kg
Total LPAHs	26.8		2.5	4.96	ug/Kg	17.4		2.4	4.85	ug/Kg	116		3.7	7.34	ug/Kg	181		4.8	9.59	ug/Kg
M=OR EPA 8081A/8082 (7-3-03-002)																				
4,4'-DDD		<MDL,H	0.83	1.65	ug/Kg		<MDL,H	0.81	1.61	ug/Kg		<MDL,H	1.2	2.44	ug/Kg		<MDL,H	1.6	3.19	ug/Kg
4,4'-DDE		<MDL,H	0.83	1.65	ug/Kg		<MDL,H	0.81	1.61	ug/Kg		<MDL,H	1.2	2.44	ug/Kg		<MDL,H	1.6	3.19	ug/Kg
4,4'-DDT		<MDL,H	0.83	1.65	ug/Kg		<MDL,H	0.81	1.61	ug/Kg		<MDL,H	1.2	2.44	ug/Kg		<MDL,H	1.6	3.19	ug/Kg
Aldrin		<MDL,H	0.83	1.65	ug/Kg		<MDL,H	0.81	1.61	ug/Kg		<MDL,H	1.2	2.44	ug/Kg		<MDL,H	1.6	3.19	ug/Kg
Alpha-BHC		<MDL,H	0.41	0.828	ug/Kg		<MDL,H	0.4	0.809	ug/Kg		<MDL,H	0.61	1.22	ug/Kg		<MDL,H	0.79	1.6	ug/Kg
Alpha-Chlordane		<MDL,H	0.41	0.828	ug/Kg		<MDL,H	0.4	0.809	ug/Kg		<MDL,H	0.61	1.22	ug/Kg		<MDL,H	0.79	1.6	ug/Kg
Aroclor 1016		<MDL,H,TA	1.7	3.56	ug/Kg		<MDL,H,TA	1.7	3.31	ug/Kg		<MDL,H,TA	13	26.8	ug/Kg		<MDL,H,TA	8.6	17.1	ug/Kg
Aroclor 1221		<MDL,H	2.1	4.13	ug/Kg		<MDL,H	2.1	4.04	ug/Kg		<MDL,H	3.1	6.11	ug/Kg		<MDL,H	4.1	7.99	ug/Kg
Aroclor 1232		<MDL,H	2.1	4.13	ug/Kg		<MDL,H	2.1	4.04	ug/Kg		<MDL,H,TA	22	44.8	ug/Kg		<MDL,H,TA	13	26.1	ug/Kg
Aroclor 1242		<MDL,H,TA	3.7	7.53	ug/Kg		<MDL,H,TA	6.8	13.7	ug/Kg		<MDL,H,TA	28	54.3	ug/Kg		<MDL,H,TA	15	30.9	ug/Kg
Aroclor 1248	4.03	H	1	2.07	ug/Kg	2.58	H	1	2.03	ug/Kg	27	H	1.5	3.06	ug/Kg	17.3	H	2	4	ug/Kg
Aroclor 1254	6.82	H	1	2.07	ug/Kg	4.6	H	1	2.03	ug/Kg	45	H	1.5	3.06	ug/Kg	29.7	H	2	4	ug/Kg
Aroclor 1260	12.2	H	1	2.07	ug/Kg	2.96	H	1	2.03	ug/Kg	27	H	1.5	3.06	ug/Kg	20	H	2	4	ug/Kg
Beta-BHC		<MDL,H	0.41	0.828	ug/Kg		<MDL,H	0.4	0.809	ug/Kg		<MDL,H	0.61	1.22	ug/Kg		<MDL,H	0.79	1.6	ug/Kg
Delta-BHC		<MDL,H	0.41	0.828	ug/Kg		<MDL,H	0.4	0.809	ug/Kg		<MDL,H	0.61	1.22	ug/Kg		<MDL,H	0.79	1.6	ug/Kg
Dieldrin		<MDL,H	0.83	1.65	ug/Kg		<MDL,H	0.81	1.61	ug/Kg		<MDL,H	1.2	2.44	ug/Kg		<MDL,H	1.6	3.19	ug/Kg
Endosulfan I		<MDL,H	0.83	1.65	ug/Kg		<MDL,H	0.81	1.61	ug/Kg		<MDL,H	1.2	2.44	ug/Kg		<MDL,H	1.6	3.19	ug/Kg
Endosulfan II		<MDL,H	0.83	1.65	ug/Kg		<MDL,H	0.81	1.61	ug/Kg		<MDL,H	1.2	2.44	ug/Kg		<MDL,H	1.6	3.19	ug/Kg
Endosulfan Sulfate		<MDL,H	0.83	1.65	ug/Kg		<MDL,H	0.81	1.61	ug/Kg		<MDL,H	1.2	2.44	ug/Kg		<MDL,H	1.6	3.19	ug/Kg
Endrin		<MDL,H	0.83	1.65	ug/Kg		<MDL,H	0.81	1.61	ug/Kg		<MDL,H	1.2	2.44	ug/Kg		<MDL,H	1.6	3.19	ug/Kg
Endrin Aldehyde		<MDL,H	0.83	1.65	ug/Kg		<MDL,H	0.81	1.61	ug/Kg		<MDL,H	1.2	2.44	ug/Kg		<MDL,H	1.6	3.19	ug/Kg
Gamma-BHC (Lindane)		<MDL,H	0.41	0.828	ug/Kg		<MDL,H	0.4	0.809	ug/Kg		<MDL,H	0.61	1.22	ug/Kg		<MDL,H	0.79	1.6	ug/Kg
Gamma-Chlordane		<MDL,H	0.41	0.828	ug/Kg		<MDL,H	0.4	0.809	ug/Kg		<MDL,H	0.61	1.22	ug/Kg		<MDL,H	0.79	1.6	ug/Kg
Heptachlor		<MDL,H	0.41	0.828	ug/Kg		<MDL,H	0.4	0.809	ug/Kg		<MDL,H	0.61	1.22	ug/Kg		<MDL,H	0.79	1.6	ug/Kg
Heptachlor Epoxide		<MDL,H	0.41	0.828	ug/Kg		<MDL,H	0.4	0.809	ug/Kg		<MDL,H	0.61	1.22	ug/Kg	1.83	H	0.79	1.6	ug/Kg
Methoxychlor		<MDL,H	4.1	8.28	ug/Kg		<MDL,H	4	8.09	ug/Kg		<MDL,H	6.1	12.2	ug/Kg		<MDL,H	7.9	16	ug/Kg
Toxaphene		<MDL,H	8.3	16.5	ug/Kg		<MDL,H	8.1	16.1	ug/Kg		<MDL,H	12	24.4	ug/Kg		<MDL,H	16	31.9	ug/Kg

* Not converted to dry weight basis for this parameter

King County Environmental Lab Analytical Report

PROJECT: 423062-100-4

Locator: DUD_3B
Descrip: CLEANUP AREA A MON
Sampled: 04/03/07 12:55:00 PM
Lab ID: L42276-9
Matrix: SALTWTRSED
% Solids: 42

Parameters	Value	Qual	MDL	RDL	Units
			- Dry Weight Basis		
COMBINED LABS					
M=CV ASTM D422(03-02-005-001)					
Clay *	35		0.5	1	%
Fines *	88.6		0.5	1	%
Gravel *	2.3		0.1	1	%
p+0.00 *	0.1	<RDL	0.1	1	%
p+1.00 *	0.3	<RDL	0.1	1	%
p+10.0(equal/more than) *	21.6		0.5	1	%
p+2.00 *	0.4	<RDL	0.1	1	%
p+3.00 *	1.2		0.1	1	%
p+4.00 *	3.1		0.1	1	%
p+5.00 *	10.3		0.5	1	%
p+6.00 *	11.3		0.5	1	%
p+7.00 *	17.5		0.5	1	%
p+8.00 *	14.4		0.5	1	%
p+9.00 *	13.4		0.5	1	%
p-1.00 *	0.2	<RDL	0.1	1	%
p-2.00 *		<MDL	0.1	1	%
p-2.00(ess than) *	2.1		0.1	1	%
Sand *	5		0.1	1	%
Silt *	53.6		0.5	1	%
M=CV EPA 9060-PSEP96(03-04-002-003)					
Total Organic Carbon	20300		2100	4210	mg/Kg
M=CV SM2540-G (03-01-007-002)					
Total Solids *	42		0.005	0.01	%
M=ES NONE					
Field Personnel	JB,SH,JO,JDD				none
Sampcoordx1 *	1267048				ft
Sampcoordx2 *	1267053				ft
Sampcoordx3 *					
Sampcoordy1 *	208716				ft
Sampcoordy2 *	208713				ft
Sampcoordy3 *					
Sample Depth *	6				m
Sample Function					
Sampling Method *	20042				none
Sediment Sampling Depth *	11				cm
Sediment Sampling Range *	0-10 cm				cm
Sediment Type	14N30				none
Tidal Condition	F				none
Tide Height *	1.5				ft
M=MT EPA 7471A (06-01-004-003)					
Mercury, Total, CVAA	0.165		0.012	0.123	mg/Kg
M=MT EPA3050B/6010B MOD(6-2-04-02)					
Aluminum, Total, ICP	28300	L	12	59.3	mg/Kg
Antimony, Total, ICP		<MDL,G	1.8	8.9	mg/Kg
Arsenic, Total, ICP	13	<RDL	2.9	14.8	mg/Kg

King County Environmental Lab Analytical Report

PROJECT: 423062-100-4

Locator: DUD_3B
Descrip: CLEANUP AREA A MON
Sampled: 04/03/07 12:55:00 PM
Lab ID: L42276-9
Matrix: SALTWTRSED
% Solids: 42

Parameters	Value	Qual	MDL	RDL	Units
			- Dry Weight Basis		
COMBINED LABS					
Beryllium, Total, ICP	0.638		0.12	0.593	mg/Kg
Cadmium, Total, ICP	0.31	<RDL	0.24	1.19	mg/Kg
Chromium, Total, ICP	26.2		0.36	1.78	mg/Kg
Copper, Total, ICP	58.8		0.48	2.37	mg/Kg
Iron, Total, ICP	36000		6	29.8	mg/Kg
Lead, Total, ICP	24.3		2.4	11.9	mg/Kg
Manganese, Total, ICP	405		0.24	1.19	mg/Kg
Nickel, Total, ICP	21		0.6	2.98	mg/Kg
Selenium, Total, ICP		<MDL	2.9	14.8	mg/Kg
Silver, Total, ICP		<MDL	0.48	2.37	mg/Kg
Thallium, Total, ICP		<MDL	4.8	23.7	mg/Kg
Zinc, Total, ICP	110		0.6	2.98	mg/Kg
M=OR EPA 3550B/8270C (7-3-01-004)					
1,2,4-Trichlorobenzene		<MDL	0.24	0.476	ug/Kg
1,2-Dichlorobenzene		<MDL	0.48	0.952	ug/Kg
1,3-Dichlorobenzene		<MDL	0.48	0.952	ug/Kg
1,4-Dichlorobenzene		<MDL	0.48	0.952	ug/Kg
2,4-Dimethylphenol		<MDL	2.4	4.76	ug/Kg
2-Methylnaphthalene	5.5	<RDL	4.8	9.52	ug/Kg
2-Methylphenol		<MDL	4.8	9.52	ug/Kg
4-Methylphenol		<MDL	9.5	19	ug/Kg
Acenaphthene	6.9	<RDL	4.8	9.52	ug/Kg
Acenaphthylene	7.1	<RDL	4.8	9.52	ug/Kg
Anthracene	70.7		4.8	9.52	ug/Kg
Benzo(a)anthracene	83.8		4.8	9.52	ug/Kg
Benzo(a)pyrene	85.2		4.8	9.52	ug/Kg
Benzo(b)fluoranthene	131		4.8	9.52	ug/Kg
Benzo(g,h,i)perylene	62.9		4.8	9.52	ug/Kg
Benzo(k)fluoranthene	76		4.8	9.52	ug/Kg
Benzoic Acid	124		24	47.6	ug/Kg
Benzyl Alcohol		<MDL	4.8	9.52	ug/Kg
Benzyl Butyl Phthalate	32.9		2.4	4.76	ug/Kg
Bis(2-Ethylhexyl)Phthalate	502	B	9.5	19	ug/Kg
Carbazole	40.5		4.8	9.52	ug/Kg
Chrysene	139		4.8	9.52	ug/Kg
Coprostanol	519		95	190	ug/Kg
Dibenzo(a,h)anthracene	17.5		4.8	9.52	ug/Kg
Dibenzofuran	8.8	<RDL	4.8	9.52	ug/Kg
Diethyl Phthalate		<MDL	9.5	19	ug/Kg
Dimethyl Phthalate		<MDL	9.5	19	ug/Kg
Di-N-Butyl Phthalate	10	<RDL	9.5	19	ug/Kg
Di-N-Octyl Phthalate		<MDL	9.5	19	ug/Kg
Fluoranthene	209		4.8	9.52	ug/Kg
Fluorene	16.8		4.8	9.52	ug/Kg
Hexachlorobenzene		<MDL	0.24	0.476	ug/Kg
Hexachlorobutadiene		<MDL	1.2	2.38	ug/Kg

King County Environmental Lab Analytical Report

PROJECT: 423062-100-4

Locator: DUD_3B
Descrip: CLEANUP AREA A MON
Sampled: 04/03/07 12:55:00 PM
Lab ID: L42276-9
Matrix: SALTWTRSED
% Solids: 42

Parameters	Value	Qual	MDL	RDL	Units
			- Dry Weight Basis		
COMBINED LABS					
Hexachloroethane		<MDL	2.4	4.76	ug/Kg
Indeno(1,2,3-Cd)Pyrene	61.9		4.8	9.52	ug/Kg
Naphthalene		<MDL	4.8	9.52	ug/Kg
N-Nitrosodiphenylamine		<MDL	9.5	19	ug/Kg
Pentachlorophenol		<MDL	24	47.6	ug/Kg
Phenanthrene	88.6		4.8	9.52	ug/Kg
Phenol		<MDL	9.5	19	ug/Kg
Pyrene	170		4.8	9.52	ug/Kg
Total HPAHS	1040		4.8	9.52	ug/Kg
Total LPAHs	200		4.8	9.52	ug/Kg
M=OR EPA 8081A/8082 (7-3-03-002)					
4,4'-DDD		<MDL,H	1.6	3.17	ug/Kg
4,4'-DDE		<MDL,H	1.6	3.17	ug/Kg
4,4'-DDT		<MDL,H	1.6	3.17	ug/Kg
Aldrin		<MDL,H	1.6	3.17	ug/Kg
Alpha-BHC		<MDL,H	0.79	1.59	ug/Kg
Alpha-Chlordane		<MDL,H	0.79	1.59	ug/Kg
Aroclor 1016		<MDL,H,TA	8.8	17.8	ug/Kg
Aroclor 1221		<MDL,H	4	7.93	ug/Kg
Aroclor 1232		<MDL,H,TA	22	43.3	ug/Kg
Aroclor 1242		<MDL,H,TA	18	36.9	ug/Kg
Aroclor 1248	17.7	H	2	3.98	ug/Kg
Aroclor 1254	26.4	H	2	3.98	ug/Kg
Aroclor 1260	17.7	H	2	3.98	ug/Kg
Beta-BHC		<MDL,H	0.79	1.59	ug/Kg
Delta-BHC		<MDL,H	0.79	1.59	ug/Kg
Dieldrin		<MDL,H	1.6	3.17	ug/Kg
Endosulfan I		<MDL,H	1.6	3.17	ug/Kg
Endosulfan II		<MDL,H	1.6	3.17	ug/Kg
Endosulfan Sulfate		<MDL,H	1.6	3.17	ug/Kg
Endrin		<MDL,H	1.6	3.17	ug/Kg
Endrin Aldehyde		<MDL,H	1.6	3.17	ug/Kg
Gamma-BHC (Lindane)		<MDL,H	0.79	1.59	ug/Kg
Gamma-Chlordane		<MDL,H	0.79	1.59	ug/Kg
Heptachlor		<MDL,H	0.79	1.59	ug/Kg
Heptachlor Epoxide	1.2	<RDL,H	0.79	1.59	ug/Kg
Methoxychlor		<MDL,H	7.9	15.9	ug/Kg
Toxaphene		<MDL,H	16	31.7	ug/Kg

* Not converted to dry weight basis for this parameter

PROJECT: 423062-100-4

King County Environmental Lab Matrix Report

COMBINED LABS-Solid

Locator	Sample Depth	Lab ID	Clay * %	Fines * %	Gravel * %	p+0.00 * %	p+1.00 * %	p+10.0(equal/more than) * %	p+2.00 * %	p+3.00 * %	p+4.00 * %	p+5.00 * %	p+6.00 * %	p+7.00 * %	p+8.00 * %	p+9.00 * %	p-1.00 * %	p-2.00 * %	p-2.00(less than) * %	Sand * %	Silt * %	Total Organic Carbon mg/Kg	Total Solids * %	Sampcoordx1 * ft	Sampcoordx2 * ft
DUD_1A	5	L42276-1	3.2	7.6	21.8	19.8	38.4	2.5	7.5	2.8	0.8	1.9	0.6	1.3	0.6	0.6	10.4	2.2	9.2	69.3	4.4	13900	74.7	1267050	1267048
DUD_2A	5	L42276-2	29.5	82.5	2.4	0.9	1.1	17.7	1.7	4	3.9	11.8	11.8	18.9	10.6	11.8	1.3	0.2	1	11.6	53.1	29100	43	1267146	1267142
DUD_3A	9	L42276-3	33.7	80.9	1	0.3	0.3	19.1	2.3	5.2	4.1	9	11.2	13.5	13.5	14.6	0.2		0.8	12.2	47.2	20500	44.1	1266950	1266952
DUD_4A	6	L42276-4	11.7	30.8	6	4.1	8.3	8.1	23.5	20.7	5.2	4.4	3.7	5.1	5.9	3.7	2.8	2.1	1.1	61.8	19.1	13200	63.1	1266885	1266885
DUD_5A	8	L42276-5	2.6	7.2	14.2	9.4	17.1	2	34.5	15	2.2	1		2	1.5	0.5	6.6	3.1	4.6	78.1	4.6	2740	80.6	1266805	1266803
DUD_5A FREP	8	L42276-6	2.9	7	31.8	14.9	16	1.7	20.6	9.2	1.6	2.3	1.2	0.6		1.2	17.5	5.6	8.7	62.3	4.1	2820	82.4	1266803	1266808
DUD_1B	7	L42276-7	19.4	55.3	2.9	0.9	1.8	12	11.5	19.1	7.5	9.2	12.9	6.5	7.4	7.4	0.5	0.2	2.3	40.7	36	14200	54.5	1267056	1267059
DUD_2B	6	L42276-8	29.7	83.2	3.2	0.4	0.4	17.8	1.6	3.7	4.9	11.9	7.1	20.2	14.3	11.9	0.8	0.7	1.7	11	53.5	20000	41.7	1267076	1267081
DUD_3B	6	L42276-9	35	88.6	2.3	0.1	0.3	21.6	0.4	1.2	3.1	10.3	11.3	17.5	14.4	13.4	0.2		2.1	5	53.6	20300	42	1267048	1267053

PROJECT: 423062-100-4

King County Environmental Lab Matrix Report

COMBINED LABS-Solid

Locator	Sample Depth	Lab ID	Sampcoordx3 *	Sampcoordy1 *	Sampcoordy2 *	Sampcoordy3 *	Sample Depth *	Sampling Method *	Sediment Sampling Depth *	Tide Height *	Aluminum, Total, ICP	Antimony, Total, ICP	Arsenic, Total, ICP	Beryllium, Total, ICP	Cadmium, Total, ICP	Chromium, Total, ICP	Copper, Total, ICP	Iron, Total, ICP	Lead, Total, ICP	Manganese, Total, ICP	Mercury, Total, CVAA	Nickel, Total, ICP	Zinc, Total, ICP
			ft	ft	ft	ft	m	none	cm	ft	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
DUD_1A	5	L42276-1	1267038	209089	209091	209085	5	20042	7	6.5	8490		4.8	0.16	0.66	107	68.9	17400	107	241	0.079	44.8	181
DUD_2A	5	L42276-2		208903	208899		5	20042	12	5.5	27000		14	0.607	0.56	33	87	36500	42.1	391	0.203	25.3	182
DUD_3A	9	L42276-3		208974	208975		9	20042	10	5	27400		12	0.615	0.32	27.7	64.4	35600	27.9	417	0.188	21.9	117
DUD_4A	6	L42276-4		209353	209355		6	20042	8	4	16600		6	0.3	0.36	24.7	62.8	25000	50.4	295	0.1	21.7	112
DUD_5A	8	L42276-5		209412	209407		8	20042	5	3.5	11100	1.6	8.25	0.16		16.6	44.4	18900	11.4	297	0.024	16.7	55.8
DUD_5A FREP	8	L42276-6	1266802	209407	209407	209412	8	20042	5	3.5	13600		2.2	0.15	0.12	17.6	67.4	23400	5.6	367	0.019	17.6	46.8
DUD_1B	7	L42276-7		208478	208482		7	20042	15	2.5	19300		9	0.4	0.28	24	56.7	27300	27	314	0.166	19.3	90.8
DUD_2B	6	L42276-8		208618	208620		6	20042	8	0.8	26100		13	0.58	0.31	28.1	64.3	34500	28.5	424	0.166	22.2	119
DUD_3B	6	L42276-9		208716	208713		6	20042	11	1.5	28300		13	0.638	0.31	26.2	58.8	36000	24.3	405	0.165	21	110

PROJECT: 423062-100-4

King County Environmental Lab Matrix Report

COMBINED LABS-Solid

Locator	Sample Depth	Lab ID	1,4-Dichlorobenzene	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Aroclor 1248	Aroclor 1254	Aroclor 1260	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic Acid	Benzyl Butyl Phthalate	Bis(2-Ethylhexyl)Phthalate	Carbazole	Chrysene	Coprostanol	Di-N-Butyl Phthalate	Dibenzo(a,h)anthracene	Dibenzofuran
			ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
DUD_1A	5	L42276-1	14.7	4.4	15.7	4.7	44.3	25.2	74.6	47.7	141	169	190	121	147	84.7	69.9	1210	36.8	268	659	19.9	41.2	9.77
DUD_2A	5	L42276-2	3.14	9.4	13.8	10.9	56	33	67.9	42.3	191	197	230	136	203	138	107	1990	42.3	319	858	35.1	41.9	13
DUD_3A	9	L42276-3	1.42			7.3	31.5	16.8	34	30.8	78.5	79.8	144	55.8	59.9	116	41.5	426	19.4	118	485	14	13.5	5.2
DUD_4A	6	L42276-4	5.28	4.1	5.2	5.1	31.5	12.9	22.5	16	79.4	113	121	82.3	143	98.4		851	19.5	165	452		20	5.2
DUD_5A	8	L42276-5	0.36				5.02	4.03	6.82	12.2	22.2	25.7	36.4	15.9	19.7	54.1	12.8	74.3	4.6	28.9	208		4.6	
DUD_5A FREP	8	L42276-6					3.4	2.58	4.6	2.96	11.4	17.6	20.3	11.3	12	61.9	14.1	65		18.7	187		2.9	
DUD_1B	7	L42276-7			5.7		29.2	27	45	27	93.2	91.2	129	56.5	89.9	89.9	27.5	229	18.2	142	299	8.8	16.8	4.4
DUD_2B	6	L42276-8			8.6	7.4	42.9	17.3	29.7	20	99.3	102	106	71	150	122	40.5	436	20.3	167	499	15	18.3	7.4
DUD_3B	6	L42276-9		5.5	6.9	7.1	70.7	17.7	26.4	17.7	83.8	85.2	131	62.9	76	124	32.9	502	40.5	139	519	10	17.5	8.8

PROJECT: 423062-100-4

King County Environmental Lab Matrix Report

COMBINED LABS-Solid

Locator	Sample Depth	Lab ID	Dimethyl Phthalate ug/Kg	Fluoranthene ug/Kg	Fluorene ug/Kg	Heptachlor Epoxide ug/Kg	Indeno(1,2,3-Cd)Pyrene ug/Kg	Naphthalene ug/Kg	Phenanthrene ug/Kg	Phenol ug/Kg	Pyrene ug/Kg	Total HPAHS ug/Kg	Total LPAHs ug/Kg
DUD_1A	5	L42276-1	93.3	455	19		106	6.95	146		382	2020	241
DUD_2A	5	L42276-2		493	22.9		127	9.7	168	32.8	437	2370	291
DUD_3A	9	L42276-3		186	10.5	1.1	57.4	4.8	62.8	12	162	955	126
DUD_4A	6	L42276-4		212	10.5	1.12	79.9	4.1	72.3		189	1200	133
DUD_5A	8	L42276-5		54.8			18.5		21.8	10.2	43.2	269	26.8
DUD_5A FREP	8	L42276-6		27.2			13.8		10.7	6.3	22.7	158	17.4
DUD_1B	7	L42276-7		215	9.49		55.6		65.9		171	1060	116
DUD_2B	6	L42276-8		254	15.2	1.83	67.9	5.3	97.1	11	201	1240	181
DUD_3B	6	L42276-9		209	16.8	1.2	61.9		88.6		170	1040	200

KING COUNTY ENVIRONMENTAL LABORATORY

Analytical Text Value Report

JUL 24 2007, 13:25

PROJECT:423062-100-4

SAMPLENUM	PARM NAME	TEXT VALUE
L42276-1	4,4'-DDT	Estimate due to CCAL failure
L42276-1	Aroclor 1016	MDL/RDL raised due to overlapping PCB congeners
L42276-1	Aroclor 1242	MDL/RDL raised due to overlapping PCB congeners
L42276-1	Methoxychlor	Estimate due to CCAL failure
L42276-2	4,4'-DDD	Broken sample container
L42276-2	4,4'-DDE	Broken sample container
L42276-2	4,4'-DDT	Estimate due to CCAL failure, Broken sample container
L42276-2	Aldrin	Broken sample container
L42276-2	Alpha-BHC	Broken sample container
L42276-2	Alpha-Chlordane	Broken sample container
L42276-2	Aroclor 1016	Broken sample container. ; MDL/RDL raised due to overlapping PCB congeners
L42276-2	Aroclor 1221	Broken sample container
L42276-2	Aroclor 1232	Broken sample container
L42276-2	Aroclor 1242	Broken sample container; MDL/RDL raised due to overlapping PCB congeners
L42276-2	Aroclor 1248	Broken sample container
L42276-2	Aroclor 1254	Broken sample container
L42276-2	Aroclor 1260	Broken sample container
L42276-2	Beta-BHC	Broken sample container
L42276-2	Delta-BHC	Broken sample container
L42276-2	Dieldrin	Broken sample container
L42276-2	Endosulfan I	Broken sample container
L42276-2	Endosulfan II	Broken sample container
L42276-2	Endosulfan Sulfate	Broken sample container
L42276-2	Endrin	Broken sample container
L42276-2	Endrin Aldehyde	Broken sample container
L42276-2	Gamma-BHC (Lindane)	Broken sample container
L42276-2	Gamma-Chlordane	Broken sample container
L42276-2	Heptachlor	Broken sample container
L42276-2	Heptachlor Epoxide	Broken sample container
L42276-2	Methoxychlor	Estimate due to CCAL failure, Broken sample container
L42276-2	Toxaphene	Broken sample container
L42276-3	4,4'-DDT	Estimate due to CCAL failure
L42276-3	Aroclor 1016	MDL/RDL raised due to overlapping PCB congeners
L42276-3	Aroclor 1242	MDL/RDL raised due to overlapping PCB congeners
L42276-3	Methoxychlor	Estimate due to CCAL failure
L42276-4	4,4'-DDD	Broken sample container
L42276-4	4,4'-DDE	Broken sample container
L42276-4	4,4'-DDT	Broken sample container
L42276-4	Aldrin	Broken sample container

L42276-4	Alpha-BHC	Broken sample container
L42276-4	Alpha-Chlordane	Broken sample container
L42276-4	Aroclor 1016	Broken sample container, MDL/RDL raised due to overlapping PCB congeners
L42276-4	Aroclor 1221	Broken sample container
L42276-4	Aroclor 1232	Broken sample container, MDL/RDL raised due to overlapping PCB congeners
L42276-4	Aroclor 1242	Broken sample container, MDL/RDL raised due to overlapping PCB congeners
L42276-4	Aroclor 1248	Broken sample container
L42276-4	Aroclor 1254	Broken sample container
L42276-4	Aroclor 1260	Broken sample container
L42276-4	Beta-BHC	Broken sample container
L42276-4	Delta-BHC	Broken sample container
L42276-4	Dieldrin	Broken sample container
L42276-4	Endosulfan I	Broken sample container
L42276-4	Endosulfan II	Broken sample container
L42276-4	Endosulfan Sulfate	Broken sample container
L42276-4	Endrin	Broken sample container
L42276-4	Endrin Aldehyde	Broken sample container
L42276-4	Gamma-BHC (Lindane)	Broken sample container
L42276-4	Gamma-Chlordane	Broken sample container
L42276-4	Heptachlor	Broken sample container
L42276-4	Heptachlor Epoxide	Broken sample container
L42276-4	Methoxychlor	Broken sample container
L42276-4	Toxaphene	Broken sample container
L42276-5	4,4'-DDD	Broken sample container
L42276-5	4,4'-DDE	Broken sample container
L42276-5	4,4'-DDT	Broken sample container
L42276-5	Aldrin	Broken sample container
L42276-5	Alpha-BHC	Broken sample container
L42276-5	Alpha-Chlordane	Broken sample container
L42276-5	Aroclor 1016	Broken sample container, MDL/RDL raised due to overlapping PCB congeners
L42276-5	Aroclor 1221	Broken sample container
L42276-5	Aroclor 1232	Broken sample container
L42276-5	Aroclor 1242	Broken sample container, MDL/RDL raised due to overlapping PCB congeners
L42276-5	Aroclor 1248	Broken sample container
L42276-5	Aroclor 1254	Broken sample container
L42276-5	Aroclor 1260	Broken sample container
L42276-5	Beta-BHC	Broken sample container
L42276-5	Delta-BHC	Broken sample container
L42276-5	Dieldrin	Broken sample container
L42276-5	Endosulfan I	Broken sample container
L42276-5	Endosulfan II	Broken sample container
L42276-5	Endosulfan Sulfate	Broken sample container
L42276-5	Endrin	Broken sample container
L42276-5	Endrin Aldehyde	Broken sample container
L42276-5	Gamma-BHC (Lindane)	Broken sample container
L42276-5	Gamma-Chlordane	Broken sample container

L42276-5	Heptachlor	Broken sample container
L42276-5	Heptachlor Epoxide	Broken sample container
L42276-5	Methoxychlor	Broken sample container
L42276-5	Toxaphene	Broken sample container
L42276-6	4,4'-DDD	Broken sample container
L42276-6	4,4'-DDE	Broken sample container
L42276-6	4,4'-DDT	Broken sample container
L42276-6	Aldrin	Broken sample container
L42276-6	Alpha-BHC	Broken sample container
L42276-6	Alpha-Chlordane	Broken sample container
L42276-6	Aroclor 1016	Broken sample container, MDL/RDL raised due to overlapping PCB congeners
L42276-6	Aroclor 1221	Broken sample container
L42276-6	Aroclor 1232	Broken sample container
L42276-6	Aroclor 1242	Broken sample container, MDL/RDL raised due to overlapping PCB congeners
L42276-6	Aroclor 1248	Broken sample container
L42276-6	Aroclor 1254	Broken sample container
L42276-6	Aroclor 1260	Broken sample container
L42276-6	Beta-BHC	Broken sample container
L42276-6	Delta-BHC	Broken sample container
L42276-6	Dieldrin	Broken sample container
L42276-6	Endosulfan I	Broken sample container
L42276-6	Endosulfan II	Broken sample container
L42276-6	Endosulfan Sulfate	Broken sample container
L42276-6	Endrin	Broken sample container
L42276-6	Endrin Aldehyde	Broken sample container
L42276-6	Gamma-BHC (Lindane)	Broken sample container
L42276-6	Gamma-Chlordane	Broken sample container
L42276-6	Heptachlor	Broken sample container
L42276-6	Heptachlor Epoxide	Broken sample container
L42276-6	Methoxychlor	Broken sample container
L42276-6	Sample Function	FREP @ L42276-5
L42276-6	Toxaphene	Broken sample container
L42276-7	4,4'-DDD	Broken sample container
L42276-7	4,4'-DDE	Broken sample container
L42276-7	4,4'-DDT	Broken sample container
L42276-7	Aldrin	Broken sample container
L42276-7	Alpha-BHC	Broken sample container
L42276-7	Alpha-Chlordane	Broken sample container
L42276-7	Aroclor 1016	Broken sample container, MDL/RDL raised due to overlapping PCB congeners
L42276-7	Aroclor 1221	Broken sample container
L42276-7	Aroclor 1232	Broken sample container, MDL/RDL raised due to overlapping PCB congeners
L42276-7	Aroclor 1242	Broken sample container, MDL/RDL raised due to overlapping PCB congeners
L42276-7	Aroclor 1248	Broken sample container
L42276-7	Aroclor 1254	Broken sample container
L42276-7	Aroclor 1260	Broken sample container

L42276-7	Beta-BHC	Broken sample container
L42276-7	Delta-BHC	Broken sample container
L42276-7	Dieldrin	Broken sample container
L42276-7	Endosulfan I	Broken sample container
L42276-7	Endosulfan II	Broken sample container
L42276-7	Endosulfan Sulfate	Broken sample container
L42276-7	Endrin	Broken sample container
L42276-7	Endrin Aldehyde	Broken sample container
L42276-7	Gamma-BHC (Lindane)	Broken sample container
L42276-7	Gamma-Chlordane	Broken sample container
L42276-7	Heptachlor	Broken sample container
L42276-7	Heptachlor Epoxide	Broken sample container
L42276-7	Methoxychlor	Broken sample container
L42276-7	Toxaphene	Broken sample container
L42276-8	4,4'-DDD	Broken sample container
L42276-8	4,4'-DDE	Broken sample container
L42276-8	4,4'-DDT	Broken sample container
L42276-8	Aldrin	Broken sample container
L42276-8	Alpha-BHC	Broken sample container
L42276-8	Alpha-Chlordane	Broken sample container
L42276-8	Aroclor 1016	Broken sample container, MDL/RDL raised due to overlapping PCB congeners
L42276-8	Aroclor 1221	Broken sample container
L42276-8	Aroclor 1232	Broken sample container, MDL/RDL raised due to overlapping PCB congeners
L42276-8	Aroclor 1242	Broken sample container, MDL/RDL raised due to overlapping PCB congeners
L42276-8	Aroclor 1248	Broken sample container
L42276-8	Aroclor 1254	Broken sample container
L42276-8	Aroclor 1260	Broken sample container
L42276-8	Beta-BHC	Broken sample container
L42276-8	Delta-BHC	Broken sample container
L42276-8	Dieldrin	Broken sample container
L42276-8	Endosulfan I	Broken sample container
L42276-8	Endosulfan II	Broken sample container
L42276-8	Endosulfan Sulfate	Broken sample container
L42276-8	Endrin	Broken sample container
L42276-8	Endrin Aldehyde	Broken sample container
L42276-8	Gamma-BHC (Lindane)	Broken sample container
L42276-8	Gamma-Chlordane	Broken sample container
L42276-8	Heptachlor	Broken sample container
L42276-8	Heptachlor Epoxide	Broken sample container
L42276-8	Methoxychlor	Broken sample container
L42276-8	Toxaphene	Broken sample container
L42276-9	4,4'-DDD	Broken sample container
L42276-9	4,4'-DDE	Broken sample container
L42276-9	4,4'-DDT	Broken sample container
L42276-9	Aldrin	Broken sample container
L42276-9	Alpha-BHC	Broken sample container
L42276-9	Alpha-Chlordane	Broken sample container

L42276-9	Aroclor 1016	Broken sample container, MDL/RDL raised due to overlapping PCB congeners
L42276-9	Aroclor 1221	Broken sample container
L42276-9	Aroclor 1232	Broken sample container, MDL/RDL raised due to overlapping PCB congeners
L42276-9	Aroclor 1242	Broken sample container, MDL/RDL raised due to overlapping PCB congeners
L42276-9	Aroclor 1248	Broken sample container
L42276-9	Aroclor 1254	Broken sample container
L42276-9	Aroclor 1260	Broken sample container
L42276-9	Beta-BHC	Broken sample container
L42276-9	Delta-BHC	Broken sample container
L42276-9	Dieldrin	Broken sample container
L42276-9	Endosulfan I	Broken sample container
L42276-9	Endosulfan II	Broken sample container
L42276-9	Endosulfan Sulfate	Broken sample container
L42276-9	Endrin	Broken sample container
L42276-9	Endrin Aldehyde	Broken sample container
L42276-9	Gamma-BHC (Lindane)	Broken sample container
L42276-9	Gamma-Chlordane	Broken sample container
L42276-9	Heptachlor	Broken sample container
L42276-9	Heptachlor Epoxide	Broken sample container
L42276-9	Methoxychlor	Broken sample container
L42276-9	Toxaphene	Broken sample container

King County Environmental Lab Analytical Report
SAP MDL Comparison

PROJECT: 423062-100-4

Exceeds SAP MDL

Locator:		DUD_1A	DUD_2A	DUD_3A	DUD_4A	DUD_5A	DUD_5A	DUD_1B
Descrip:		CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON
Sampled:		04/03/07 9:15:00 AM	04/03/07 9:45:00 AM	04/03/07 10:05:00 AM	04/03/07 10:38:00 AM	04/03/07 10:55:00 AM	04/03/07 10:55:00 AM	04/03/07 11:40:00 AM
Lab ID:		L42276-1	L42276-2	L42276-3	L42276-4	L42276-5	L42276-6	L42276-7
Matrix:		SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED
% Solids:		74.7	43	44.1	63.1	80.6	82.4	54.5
Parameters	Units	SAP MDL	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis
COMBINED LABS									
M=CV ASTM D422(03-02-005-001)									
Fines *	%	NA	0.5	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	0.5
Silt *	%	NA	0.5	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	0.1
Gravel *	%	NA	0.1	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	0.1
p+1.00 *	%	0.1	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	0.5
p+2.00 *	%	0.1	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	0.1
p+4.00 *	%	0.1	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	0.5
p+6.00 *	%	0.1	0.5	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	0.5
p+8.00 *	%	0.1	0.5	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	0.5
p-1.00 *	%	0.1	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	0.1
p-2.00(less than) *	%	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
M=CV EPA 9060-PSEP96(03-04-002-003)									
Total Organic Carbon	mg/Kg	1000	1900	2100	2300	2200	500	510	2000
M=CV SM2540-G (03-01-007-002)									
Total Solids *	%	0.005	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	0.0068	0.011	0.011	0.0078	0.0061	0.0059	0.0092
M=MT EPA3050B/6010B MOD(6-2-04-02)									
Aluminum, Total, ICP	mg/Kg	10	6.7	12	11	7.9	6.2	6.1	9.2
Antimony, Total, ICP	mg/Kg	3	1	1.7	1.7	1.2	0.93	0.91	1.4
Arsenic, Total, ICP	mg/Kg	5	1.6	3	2.9	1.9	1.5	1.5	2.4
Beryllium, Total, ICP	mg/Kg	0.1	0.067	0.12	0.11	0.079	0.062	0.061	0.092
Cadmium, Total, ICP	mg/Kg	0.3	0.13	0.23	0.23	0.16	0.12	0.12	0.18
Chromium, Total, ICP	mg/Kg	0.5	0.2	0.35	0.34	0.24	0.19	0.18	0.28
Copper, Total, ICP	mg/Kg	0.4	0.27	0.47	0.45	0.32	0.25	0.24	0.37
Iron, Total, ICP	mg/Kg	5	3.3	5.8	5.7	4	3.1	3	4.6
Lead, Total, ICP	mg/Kg	3	1.3	2.3	2.3	1.6	1.2	1.2	1.8
Manganese, Total, ICP	mg/Kg	0.2	0.13	0.23	0.23	0.16	0.12	0.12	0.18
Nickel, Total, ICP	mg/Kg	2	0.33	0.58	0.57	0.4	0.31	0.3	0.46
Selenium, Total, ICP	mg/Kg	5	1.6	3	2.9	1.9	1.5	1.5	2.4
Silver, Total, ICP	mg/Kg	0.4	0.27	0.47	0.45	0.32	0.25	0.24	0.37
Thallium, Total, ICP	mg/Kg	20	2.7	4.7	4.5	3.2	2.5	2.4	3.7
Zinc, Total, ICP	mg/Kg	0.5	0.33	0.58	0.57	0.4	0.31	0.3	0.46
M=OR EPA 3550B/8270C (7-3-01-004)									
1,2,4-Trichlorobenzene	ug/Kg	0.52	0.13	0.23	0.23	0.16	0.12	0.12	0.18
1,2-Dichlorobenzene	ug/Kg	0.52	0.27	0.47	0.45	0.32	0.25	0.24	0.37

King County Environmental Lab Analytical Report
SAP MDL Comparison

PROJECT: 423062-100-4

Exceeds SAP MDL

Locator:		DUD_1A	DUD_2A	DUD_3A	DUD_4A	DUD_5A	DUD_5A	DUD_1B
Descrip:		CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON
Sampled:		04/03/07 9:15:00 AM	04/03/07 9:45:00 AM	04/03/07 10:05:00 AM	04/03/07 10:38:00 AM	04/03/07 10:55:00 AM	04/03/07 10:55:00 AM	04/03/07 11:40:00 AM
Lab ID:		L42276-1	L42276-2	L42276-3	L42276-4	L42276-5	L42276-6	L42276-7
Matrix:		SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED
% Solids:		74.7	43	44.1	63.1	80.6	82.4	54.5
Parameters	Units	SAP MDL	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis
COMBINED LABS									
1,3-Dichlorobenzene	ug/Kg	0.52	0.27	0.47	0.45	0.32	0.25	0.24	0.37
1,4-Dichlorobenzene	ug/Kg	0.26	0.27	0.47	0.45	0.32	0.25	0.24	0.37
2,4-Dimethylphenol	ug/Kg	14	1.3	2.3	2.3	1.6	1.2	1.2	1.8
2-Methylnaphthalene	ug/Kg	28	2.7	4.7	4.5	3.2	2.5	2.4	3.7
2-Methylphenol	ug/Kg	38	2.7	4.7	4.5	3.2	2.5	2.4	3.7
4-Methylphenol	ug/Kg	32	5.4	9.3	9.1	6.3	5	4.9	7.3
Acenaphthene	ug/Kg	14	2.7	4.7	4.5	3.2	2.5	2.4	3.7
Acenaphthylene	ug/Kg	29	2.7	4.7	4.5	3.2	2.5	2.4	3.7
Anthracene	ug/Kg	7.9	2.7	4.7	4.5	3.2	2.5	2.4	3.7
Benzo(a)anthracene	ug/Kg	4	2.7	4.7	4.5	3.2	2.5	2.4	3.7
Benzo(a)pyrene	ug/Kg	6	2.7	4.7	4.5	3.2	2.5	2.4	3.7
Benzo(b)fluoranthene	ug/Kg	6	2.7	4.7	4.5	3.2	2.5	2.4	3.7
Benzo(g,h,i)perylene	ug/Kg	16	2.7	4.7	4.5	3.2	2.5	2.4	3.7
Benzo(k)fluoranthene	ug/Kg	6	2.7	4.7	4.5	3.2	2.5	2.4	3.7
Benzoic Acid	ug/Kg	12	13	23	23	16	12	12	18
Benzyl Alcohol	ug/Kg	12	2.7	4.7	4.5	3.2	2.5	2.4	3.7
Benzyl Butyl Phthalate	ug/Kg	12	1.3	2.3	2.3	1.6	1.2	1.2	1.8
Bis(2-Ethylhexyl)Phthalate	ug/Kg	13	5.4	9.3	9.1	6.3	5	4.9	7.3
Carbazole	ug/Kg	14	2.7	4.7	4.5	3.2	2.5	2.4	3.7
Chrysene	ug/Kg	7.9	2.7	4.7	4.5	3.2	2.5	2.4	3.7
Coprostanol	ug/Kg	28	54	93	91	63	50	49	73
Dibenzo(a,h)anthracene	ug/Kg	14	2.7	4.7	4.5	3.2	2.5	2.4	3.7
Dibenzofuran	ug/Kg	28	2.7	4.7	4.5	3.2	2.5	2.4	3.7
Diethyl Phthalate	ug/Kg	12	5.4	9.3	9.1	6.3	5	4.9	7.3
Dimethyl Phthalate	ug/Kg	22	5.4	9.3	9.1	6.3	5	4.9	7.3
Di-N-Butyl Phthalate	ug/Kg	10	5.4	9.3	9.1	6.3	5	4.9	7.3
Di-N-Octyl Phthalate	ug/Kg	16	5.4	9.3	9.1	6.3	5	4.9	7.3
Fluoranthene	ug/Kg	16	2.7	4.7	4.5	3.2	2.5	2.4	3.7
Fluorene	ug/Kg	26	2.7	4.7	4.5	3.2	2.5	2.4	3.7
Hexachlorobenzene	ug/Kg	1.3	0.13	0.23	0.23	0.16	0.12	0.12	0.18
Hexachlorobutadiene	ug/Kg	1.5	0.67	1.2	1.1	0.79	0.62	0.61	0.92
Indeno(1,2,3-Cd)Pyrene	ug/Kg	18	2.7	4.7	4.5	3.2	2.5	2.4	3.7
Naphthalene	ug/Kg	28	2.7	4.7	4.5	3.2	2.5	2.4	3.7
N-Nitrosodiphenylamine	ug/Kg	40	5.4	9.3	9.1	6.3	5	4.9	7.3
Pentachlorophenol	ug/Kg	10	13	23	23	16	12	12	18
Phenanthrene	ug/Kg	7.9	2.7	4.7	4.5	3.2	2.5	2.4	3.7
Phenol	ug/Kg	18	5.4	9.3	9.1	6.3	5	4.9	7.3
Pyrene	ug/Kg	7.9	2.7	4.7	4.5	3.2	2.5	2.4	3.7
Total HPAHS	ug/Kg	NA	2.7	4.7	4.5	3.2	2.5	2.4	3.7
Total LPAHs	ug/Kg	NA	2.7	4.7	4.5	3.2	2.5	2.4	3.7
M=OR EPA 8081A/8082 (7-3-03-002)									
4,4'-DDD	ug/Kg	0.67	0.9	1.6	1.5	1.1	0.83	0.81	1.2
4,4'-DDE	ug/Kg	0.67	0.9	1.6	1.5	1.1	0.83	0.81	1.2
4,4'-DDT	ug/Kg	0.67	0.9	1.6	1.5	1.1	0.83	0.81	1.2
Aldrin	ug/Kg	0.67	0.9	1.6	1.5	1.1	0.83	0.81	1.2

King County Environmental Lab Analytical Report
SAP MDL Comparison

PROJECT: 423062-100-4

Exceeds SAP MDL

Locator:	DUD_1A	DUD_2A	DUD_3A	DUD_4A	DUD_5A	DUD_5A	DUD_1B
Descrip:	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON	CLEANUP AREA A MON
Sampled:	04/03/07 9:15:00 AM	04/03/07 9:45:00 AM	04/03/07 10:05:00 AM	04/03/07 10:38:00 AM	04/03/07 10:55:00 AM	04/03/07 10:55:00 AM	04/03/07 11:40:00 AM
Lab ID:	L42276-1	L42276-2	L42276-3	L42276-4	L42276-5	L42276-6	L42276-7
Matrix:	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED	SALTWTRSED
% Solids:	74.7	43	44.1	63.1	80.6	82.4	54.5

Parameters	Units	SAP MDL	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis	MDL - Dry Weight Basis
COMBINED LABS									
Alpha-BHC	ug/Kg	0.67	0.44	0.77	0.75	0.52	0.41	0.4	0.61
Alpha-Chlordane	ug/Kg	0.67	0.44	0.77	0.75	0.52	0.41	0.4	0.61
Aroclor 1016	ug/Kg	4	12	11	12	8.7	1.7	1.7	13
Aroclor 1221	ug/Kg	8	2.3	4	3.9	2.7	2.1	2.1	3.1
Aroclor 1232	ug/Kg	8	2.3	4	3.9	19	2.1	2.1	22
Aroclor 1242	ug/Kg	4	33	42	27	15	3.7	6.8	28
Aroclor 1248	ug/Kg	4	1.1	1.9	1.9	1.3	1	1	1.5
Aroclor 1254	ug/Kg	4	1.1	1.9	1.9	1.3	1	1	1.5
Aroclor 1260	ug/Kg	4	1.1	1.9	1.9	1.3	1	1	1.5
Beta-BHC	ug/Kg	0.67	0.44	0.77	0.75	0.52	0.41	0.4	0.61
Delta-BHC	ug/Kg	0.67	0.44	0.77	0.75	0.52	0.41	0.4	0.61
Dieldrin	ug/Kg	0.67	0.9	1.6	1.5	1.1	0.83	0.81	1.2
Endosulfan I	ug/Kg	0.67	0.9	1.6	1.5	1.1	0.83	0.81	1.2
Endosulfan II	ug/Kg	0.67	0.9	1.6	1.5	1.1	0.83	0.81	1.2
Endosulfan Sulfate	ug/Kg	0.67	0.9	1.6	1.5	1.1	0.83	0.81	1.2
Endrin	ug/Kg	0.67	0.9	1.6	1.5	1.1	0.83	0.81	1.2
Endrin Aldehyde	ug/Kg	0.67	0.9	1.6	1.5	1.1	0.83	0.81	1.2
Gamma-BHC (Lindane)	ug/Kg	0.67	0.44	0.77	0.75	0.52	0.41	0.4	0.61
Gamma-Chlordane	ug/Kg	2.7	0.44	0.77	0.75	0.52	0.41	0.4	0.61
Heptachlor	ug/Kg	0.67	0.44	0.77	0.75	0.52	0.41	0.4	0.61
Heptachlor Epoxide	ug/Kg	0.67	0.44	0.77	0.75	0.52	0.41	0.4	0.61
Methoxychlor	ug/Kg	3.3	4.4	7.7	7.5	5.2	4.1	4	6.1
Toxaphene	ug/Kg	6.7	9	16	15	11	8.3	8.1	12

* Not converted to dry weight basis for this parameter

King County Environmental Lab Analytical Report
SAP MDL Comparison

PROJECT: 423062-100-4

Locator:	DUD_2B	DUD_3B
Descrip:	CLEANUP AREA A MON	CLEANUP AREA A MON
Sampled:	04/03/07 12:35:00 PM	04/03/07 12:55:00 PM
Lab ID:	L42276-8	L42276-9
Matrix:	SALTWTRSED	SALTWTRSED
% Solids:	41.7	42

Exceeds SAP MDL

Parameters	Units	SAP MDL	MDL - Dry Weight Basis	MDL - Dry Weight Basis
COMBINED LABS				
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 EPA 9060-PSEP96(03-04-002-003)				
Total Organic Carbon	mg/Kg	1000	2000	2100
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	0.012	0.012
M=MT EPA3050B/6010B MOD(6-2-04-02)				
Aluminum, Total, ICP	mg/Kg	10	12	12
Antimony, Total, ICP	mg/Kg	3	1.8	1.8
Arsenic, Total, ICP	mg/Kg	5	2.9	2.9
Beryllium, Total, ICP	mg/Kg	0.1	0.12	0.12
Cadmium, Total, ICP	mg/Kg	0.3	0.24	0.24
Chromium, Total, ICP	mg/Kg	0.5	0.36	0.36
Copper, Total, ICP	mg/Kg	0.4	0.48	0.48
Iron, Total, ICP	mg/Kg	5	6	6
Lead, Total, ICP	mg/Kg	3	2.4	2.4
Manganese, Total, ICP	mg/Kg	0.2	0.24	0.24
Nickel, Total, ICP	mg/Kg	2	0.6	0.6
Selenium, Total, ICP	mg/Kg	5	2.9	2.9
Silver, Total, ICP	mg/Kg	0.4	0.48	0.48
Thallium, Total, ICP	mg/Kg	20	4.8	4.8
Zinc, Total, ICP	mg/Kg	0.5	0.6	0.6
M=OR EPA 3550B/8270C (7-3-01-004)				
1,2,4-Trichlorobenzene	ug/Kg	0.52	0.24	0.24
1,2-Dichlorobenzene	ug/Kg	0.52	0.48	0.48

King County Environmental Lab Analytical Report
SAP MDL Comparison

PROJECT: 423062-100-4

Locator:	DUD_2B	DUD_3B
Descrip:	CLEANUP AREA A MON	CLEANUP AREA A MON
Sampled:	04/03/07 12:35:00 PM	04/03/07 12:55:00 PM
Lab ID:	L42276-8	L42276-9
Matrix:	SALTWTRSED	SALTWTRSED
% Solids:	41.7	42

Exceeds SAP MDL

Parameters	Units	SAP MDL	MDL - Dry Weight Basis	MDL - Dry Weight Basis
COMBINED LABS				
1,3-Dichlorobenzene	ug/Kg	0.52	0.48	0.48
1,4-Dichlorobenzene	ug/Kg	0.26	0.48	0.48
2,4-Dimethylphenol	ug/Kg	14	2.4	2.4
2-Methylnaphthalene	ug/Kg	28	4.8	4.8
2-Methylphenol	ug/Kg	38	4.8	4.8
4-Methylphenol	ug/Kg	32	9.6	9.5
Acenaphthene	ug/Kg	14	4.8	4.8
Acenaphthylene	ug/Kg	29	4.8	4.8
Anthracene	ug/Kg	7.9	4.8	4.8
Benzo(a)anthracene	ug/Kg	4	4.8	4.8
Benzo(a)pyrene	ug/Kg	6	4.8	4.8
Benzo(b)fluoranthene	ug/Kg	6	4.8	4.8
Benzo(g,h,i)perylene	ug/Kg	16	4.8	4.8
Benzo(k)fluoranthene	ug/Kg	6	4.8	4.8
Benzoic Acid	ug/Kg	12	24	24
Benzyl Alcohol	ug/Kg	12	4.8	4.8
Benzyl Butyl Phthalate	ug/Kg	12	2.4	2.4
Bis(2-Ethylhexyl)Phthalate	ug/Kg	13	9.6	9.5
Carbazole	ug/Kg	14	4.8	4.8
Chrysene	ug/Kg	7.9	4.8	4.8
Coprostanol	ug/Kg	28	96	95
Dibenzo(a,h)anthracene	ug/Kg	14	4.8	4.8
Dibenzofuran	ug/Kg	28	4.8	4.8
Diethyl Phthalate	ug/Kg	12	9.6	9.5
Dimethyl Phthalate	ug/Kg	22	9.6	9.5
Di-N-Butyl Phthalate	ug/Kg	10	9.6	9.5
Di-N-Octyl Phthalate	ug/Kg	16	9.6	9.5
Fluoranthene	ug/Kg	16	4.8	4.8
Fluorene	ug/Kg	26	4.8	4.8
Hexachlorobenzene	ug/Kg	1.3	0.24	0.24
Hexachlorobutadiene	ug/Kg	1.5	1.2	1.2
Indeno(1,2,3-Cd)Pyrene	ug/Kg	18	4.8	4.8
Naphthalene	ug/Kg	28	4.8	4.8
N-Nitrosodiphenylamine	ug/Kg	40	9.6	9.5
Pentachlorophenol	ug/Kg	10	24	24
Phenanthrene	ug/Kg	7.9	4.8	4.8
Phenol	ug/Kg	18	9.6	9.5
Pyrene	ug/Kg	7.9	4.8	4.8
Total HPAHS	ug/Kg	NA	4.8	4.8
Total LPAHs	ug/Kg	NA	4.8	4.8
M=OR EPA 8081A/8082 (7-3-03-002)				
4,4'-DDD	ug/Kg	0.67	1.6	1.6
4,4'-DDE	ug/Kg	0.67	1.6	1.6
4,4'-DDT	ug/Kg	0.67	1.6	1.6
Aldrin	ug/Kg	0.67	1.6	1.6

King County Environmental Lab Analytical Report
SAP MDL Comparison

PROJECT: 423062-100-4

Locator:	DUD_2B	DUD_3B
Descrip:	CLEANUP AREA A MON	CLEANUP AREA A MON
Sampled:	04/03/07 12:35:00 PM	04/03/07 12:55:00 PM
Lab ID:	L42276-8	L42276-9
Matrix:	SALTWTRSED	SALTWTRSED
% Solids:	41.7	42

Exceeds SAP MDL

Parameters	Units	SAP MDL	MDL - Dry Weight Basis	MDL - Dry Weight Basis
COMBINED LABS				
Alpha-BHC	ug/Kg	0.67	0.79	0.79
Alpha-Chlordane	ug/Kg	0.67	0.79	0.79
Aroclor 1016	ug/Kg	4	8.6	8.8
Aroclor 1221	ug/Kg	8	4.1	4
Aroclor 1232	ug/Kg	8	13	22
Aroclor 1242	ug/Kg	4	15	18
Aroclor 1248	ug/Kg	4	2	2
Aroclor 1254	ug/Kg	4	2	2
Aroclor 1260	ug/Kg	4	2	2
Beta-BHC	ug/Kg	0.67	0.79	0.79
Delta-BHC	ug/Kg	0.67	0.79	0.79
Dieldrin	ug/Kg	0.67	1.6	1.6
Endosulfan I	ug/Kg	0.67	1.6	1.6
Endosulfan II	ug/Kg	0.67	1.6	1.6
Endosulfan Sulfate	ug/Kg	0.67	1.6	1.6
Endrin	ug/Kg	0.67	1.6	1.6
Endrin Aldehyde	ug/Kg	0.67	1.6	1.6
Gamma-BHC (Lindane)	ug/Kg	0.67	0.79	0.79
Gamma-Chlordane	ug/Kg	2.7	0.79	0.79
Heptachlor	ug/Kg	0.67	0.79	0.79
Heptachlor Epoxide	ug/Kg	0.67	0.79	0.79
Methoxychlor	ug/Kg	3.3	7.9	7.9
Toxaphene	ug/Kg	6.7	16	16

* Not converted to dry weight basis for this parameter

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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.02	2.3	2.3
1,4-Dichlorobenzene	0.2	0.02	3.1	3.1
2-Methylnaphthalene	2	0.19	38	38
2,4-Dimethylphenol	1	1.34	29	28
2-Methylphenol	2	2.68	63	60
4-Methylphenol	4	5.35	670	665
Acenaphthene	2	0.19	16	16
Acenaphthylene	2	0.19	66	66
Anthracene	2	0.19	220	220
Benzo(a)anthracene	2	0.19	110	110
Benzo(a)pyrene	2	0.19	99	99
Benzo(b)fluoranthene	2	0.19	115	115
Benzo(g,h,i)perylene	2	0.19	31	31
Benzo(k)fluoranthene	2	0.19	115	115
Benzoic Acid	10	13.39	650	637
Benzyl Alcohol	2	2.68	57	54
Benzyl Butyl Phthalate	1	0.10	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.38	47	47
Chrysene	2	0.19	110	110
Dibenzo(a,h)anthracene	2	0.19	12	12
Dibenzofuran	2	0.19	15	15
Diethyl Phthalate	4	0.38	61	61
Dimethyl Phthalate	4	0.38	53	53
Di-N-Butyl Phthalate	4	0.38	220	220
Di-N-Octyl Phthalate	4	0.38	58	58
Fluorene	2	0.19	23	23
Fluoranthene	2	0.19	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.05	3.9	3.9
Indeno(1,2,3-Cd)Pyrene	2	0.19	34	34
N-Nitrosodiphenylamine	4	0.38	11	11
Naphthalene	2	0.19	99	99
Pentachlorophenol	10	13.39	360	347
Phenanthrene	2	0.19	100	100
Phenol	4	5.35	420	415
Pyrene	2	0.19	1000	1000
Aroclor 1016	8.9	0.86		
Aroclor 1221	1.7	0.16		
Aroclor 1232	1.7	0.16		
Aroclor 1242	25	2.40		
Aroclor 1248	0.83	0.08		
Aroclor 1254	0.83	0.08		
Aroclor 1260	0.83	0.08		
Total Organic Carbon (dry)	13922.35609			
Total Solids	74.7			
HPAH	20	1.92	960	958
LPAH	14	1.35	370	369
Total PCB	25	2.40	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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.02	2.3	2.3
1,4-Dichlorobenzene	0.2	0.02	3.1	3.1
2-Methylnaphthalene	2	0.16	38	38
2,4-Dimethylphenol	1	2.33	29	27
2-Methylphenol	2	4.65	63	58
4-Methylphenol	4	9.30	670	661
Acenaphthene	2	0.16	16	16
Acenaphthylene	2	0.16	66	66
Anthracene	2	0.16	220	220
Benzo(a)anthracene	2	0.16	110	110
Benzo(a)pyrene	2	0.16	99	99
Benzo(b)fluoranthene	2	0.16	115	115
Benzo(g,h,i)perylene	2	0.16	31	31
Benzo(k)fluoranthene	2	0.16	115	115
Benzoic Acid	10	23.26	650	627
Benzyl Alcohol	2	4.65	57	52
Benzyl Butyl Phthalate	1	0.08	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.32	47	47
Chrysene	2	0.16	110	110
Dibenzo(a,h)anthracene	2	0.16	12	12
Dibenzofuran	2	0.16	15	15
Diethyl Phthalate	4	0.32	61	61
Dimethyl Phthalate	4	0.32	53	53
Di-N-Butyl Phthalate	4	0.32	220	220
Di-N-Octyl Phthalate	4	0.32	58	58
Fluorene	2	0.16	23	23
Fluoranthene	2	0.16	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.04	3.9	3.9
Indeno(1,2,3-Cd)Pyrene	2	0.16	34	34
N-Nitrosodiphenylamine	4	0.32	11	11
Naphthalene	2	0.16	99	99
Pentachlorophenol	10	23.26	360	337
Phenanthrene	2	0.16	100	100
Phenol	4	9.30	420	411
Pyrene	2	0.16	1000	1000
Aroclor 1016	4.8	0.38		
Aroclor 1221	1.7	0.14		
Aroclor 1232	1.7	0.14		
Aroclor 1242	18	1.44		
Aroclor 1248	0.83	0.07		
Aroclor 1254	0.83	0.07		
Aroclor 1260	0.83	0.07		
Total Organic Carbon (dry)	29069.76744			
Total Solids	43			
HPAH	20	1.60	960	958
LPAH	14	1.12	370	369
Total PCB	18	1.44	12	10.6

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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.02	2.3	2.3
1,4-Dichlorobenzene	0.2	0.02	3.1	3.1
2-Methylnaphthalene	2	0.22	38	38
2,4-Dimethylphenol	1	2.27	29	27
2-Methylphenol	2	4.54	63	58
4-Methylphenol	4	9.07	670	661
Acenaphthene	2	0.22	16	16
Acenaphthylene	2	0.22	66	66
Anthracene	2	0.22	220	220
Benzo(a)anthracene	2	0.22	110	110
Benzo(a)pyrene	2	0.22	99	99
Benzo(b)fluoranthene	2	0.22	115	115
Benzo(g,h,i)perylene	2	0.22	31	31
Benzo(k)fluoranthene	2	0.22	115	115
Benzoic Acid	10	22.68	650	627
Benzyl Alcohol	2	4.54	57	52
Benzyl Butyl Phthalate	1	0.11	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.44	47	47
Chrysene	2	0.22	110	110
Dibenzo(a,h)anthracene	2	0.22	12	12
Dibenzofuran	2	0.22	15	15
Diethyl Phthalate	4	0.44	61	61
Dimethyl Phthalate	4	0.44	53	53
Di-N-Butyl Phthalate	4	0.44	220	220
Di-N-Octyl Phthalate	4	0.44	58	58
Fluorene	2	0.22	23	23
Fluoranthene	2	0.22	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.06	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.22	34	34
N-Nitrosodiphenylamine	4	0.44	11	11
Naphthalene	2	0.22	99	99
Pentachlorophenol	10	22.68	360	337
Phenanthrene	2	0.22	100	100
Phenol	4	9.07	420	411
Pyrene	2	0.22	1000	1000
Aroclor 1016	5.4	0.60		
Aroclor 1221	1.7	0.19		
Aroclor 1232	1.7	0.19		
Aroclor 1242	12	1.33		
Aroclor 1248	0.83	0.09		
Aroclor 1254	0.83	0.09		
Aroclor 1260	0.83	0.09		
Total Organic Carbon (dry)	20498.86621			
Total Solids	44.1			
HPAH	20	2.21	960	958
LPAH	14	1.55	370	368
Total PCB	12	1.33	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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.02	2.3	2.3
1,4-Dichlorobenzene	0.2	0.02	3.1	3.1
2-Methylnaphthalene	2	0.24	38	38
2,4-Dimethylphenol	1	1.58	29	27
2-Methylphenol	2	3.17	63	60
4-Methylphenol	4	6.34	670	664
Acenaphthene	2	0.24	16	16
Acenaphthylene	2	0.24	66	66
Anthracene	2	0.24	220	220
Benzo(a)anthracene	2	0.24	110	110
Benzo(a)pyrene	2	0.24	99	99
Benzo(b)fluoranthene	2	0.24	115	115
Benzo(g,h,i)perylene	2	0.24	31	31
Benzo(k)fluoranthene	2	0.24	115	115
Benzoic Acid	10	15.85	650	634
Benzyl Alcohol	2	3.17	57	54
Benzyl Butyl Phthalate	1	0.12	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.48	47	47
Chrysene	2	0.24	110	110
Dibenzo(a,h)anthracene	2	0.24	12	12
Dibenzofuran	2	0.24	15	15
Diethyl Phthalate	4	0.48	61	61
Dimethyl Phthalate	4	0.48	53	53
Di-N-Butyl Phthalate	4	0.48	220	220
Di-N-Octyl Phthalate	4	0.48	58	58
Fluorene	2	0.24	23	23
Fluoranthene	2	0.24	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.06	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.24	34	34
N-Nitrosodiphenylamine	4	0.48	11	11
Naphthalene	2	0.24	99	99
Pentachlorophenol	10	15.85	360	344
Phenanthrene	2	0.24	100	100
Phenol	4	6.34	420	414
Pyrene	2	0.24	1000	1000
Aroclor 1016	5.5	0.66		
Aroclor 1221	1.7	0.20		
Aroclor 1232	12	1.44		
Aroclor 1242	9.5	1.14		
Aroclor 1248	0.83	0.10		
Aroclor 1254	0.83	0.10		
Aroclor 1260	0.83	0.10		
Total Organic Carbon (dry)	13248.81141			
Total Solids	63.1			
HPAH	20	2.39	960	958
LPAH	14	1.67	370	368
Total PCB	12	1.44	12	10.6

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	0.1	0.05	0.81	0.76
1,2-Dichlorobenzene	0.2	0.09	2.3	2.2
1,4-Dichlorobenzene	0.2	0.09	3.1	3.0
2-Methylnaphthalene	2	0.90	38	37
2,4-Dimethylphenol	1	1.24	29	28
2-Methylphenol	2	2.48	63	61
4-Methylphenol	4	4.96	670	665
Acenaphthene	2	0.90	16	15
Acenaphthylene	2	0.90	66	65
Anthracene	2	0.90	220	219
Benzo(a)anthracene	2	0.90	110	109
Benzo(a)pyrene	2	0.90	99	98
Benzo(b)fluoranthene	2	0.90	115	114
Benzo(g,h,i)perylene	2	0.90	31	30
Benzo(k)fluoranthene	2	0.90	115	114
Benzoic Acid	10	12.41	650	638
Benzyl Alcohol	2	2.48	57	55
Benzyl Butyl Phthalate	1	0.45	4.9	4.4
Bis(2-Ethylhexyl)Phthalate	4	1.81	47	45
Chrysene	2	0.90	110	109
Dibenzo(a,h)anthracene	2	0.90	12	11
Dibenzofuran	2	0.90	15	14
Diethyl Phthalate	4	1.81	61	59
Dimethyl Phthalate	4	1.81	53	51
Di-N-Butyl Phthalate	4	1.81	220	218
Di-N-Octyl Phthalate	4	1.81	58	56
Fluorene	2	0.90	23	22
Fluoranthene	2	0.90	160	159
Hexachlorobenzene	0.1	0.05	0.38	0.33
Hexachlorobutadiene	0.5	0.23	3.9	3.7
Indeno(1,2,3-Cd)Pyrene	2	0.90	34	33
N-Nitrosodiphenylamine	4	1.81	11	9
Naphthalene	2	0.90	99	98
Pentachlorophenol	10	12.41	360	348
Phenanthrene	2	0.90	100	99
Phenol	4	4.96	420	415
Pyrene	2	0.90	1000	999
Aroclor 1016	1.4	0.63		
Aroclor 1221	1.7	0.77		
Aroclor 1232	1.7	0.77		
Aroclor 1242	3	1.36		
Aroclor 1248	0.83	0.38		
Aroclor 1254	0.83	0.38		
Aroclor 1260	0.83	0.38		
Total Organic Carbon (dry)	2741.935484			
Total Solids	80.6			
HPAH	20	9.05	960	951
LPAH	14	6.33	370	364
Total PCB	3	1.36	12	10.6

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	0.1	0.04	0.81	0.77
1,2-Dichlorobenzene	0.2	0.09	2.3	2.2
1,4-Dichlorobenzene	0.2	0.09	3.1	3.0
2-Methylnaphthalene	2	0.86	38	37
2,4-Dimethylphenol	1	1.21	29	28
2-Methylphenol	2	2.43	63	61
4-Methylphenol	4	4.85	670	665
Acenaphthene	2	0.86	16	15
Acenaphthylene	2	0.86	66	65
Anthracene	2	0.86	220	219
Benzo(a)anthracene	2	0.86	110	109
Benzo(a)pyrene	2	0.86	99	98
Benzo(b)fluoranthene	2	0.86	115	114
Benzo(g,h,i)perylene	2	0.86	31	30
Benzo(k)fluoranthene	2	0.86	115	114
Benzoic Acid	10	12.14	650	638
Benzyl Alcohol	2	2.43	57	55
Benzyl Butyl Phthalate	1	0.43	4.9	4.5
Bis(2-Ethylhexyl)Phthalate	4	1.72	47	45
Chrysene	2	0.86	110	109
Dibenzo(a,h)anthracene	2	0.86	12	11
Dibenzofuran	2	0.86	15	14
Diethyl Phthalate	4	1.72	61	59
Dimethyl Phthalate	4	1.72	53	51
Di-N-Butyl Phthalate	4	1.72	220	218
Di-N-Octyl Phthalate	4	1.72	58	56
Fluorene	2	0.86	23	22
Fluoranthene	2	0.86	160	159
Hexachlorobenzene	0.1	0.04	0.38	0.34
Hexachlorobutadiene	0.5	0.22	3.9	3.7
Indeno(1,2,3-Cd)Pyrene	2	0.86	34	33
N-Nitrosodiphenylamine	4	1.72	11	9
Naphthalene	2	0.86	99	98
Pentachlorophenol	10	12.14	360	348
Phenanthrene	2	0.86	100	99
Phenol	4	4.85	420	415
Pyrene	2	0.86	1000	999
Aroclor 1016	1.4	0.60		
Aroclor 1221	1.7	0.73		
Aroclor 1232	1.7	0.73		
Aroclor 1242	5.6	2.41		
Aroclor 1248	0.83	0.36		
Aroclor 1254	0.83	0.36		
Aroclor 1260	0.83	0.36		
Total Organic Carbon (dry)	2815.533981			
Total Solids	82.4			
HPAH	20	8.62	960	951
LPAH	14	6.03	370	364
Total PCB	5.6	2.41	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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.03	2.3	2.3
1,4-Dichlorobenzene	0.2	0.03	3.1	3.1
2-Methylnaphthalene	2	0.26	38	38
2,4-Dimethylphenol	1	1.83	29	27
2-Methylphenol	2	3.67	63	59
4-Methylphenol	4	7.34	670	663
Acenaphthene	2	0.26	16	16
Acenaphthylene	2	0.26	66	66
Anthracene	2	0.26	220	220
Benzo(a)anthracene	2	0.26	110	110
Benzo(a)pyrene	2	0.26	99	99
Benzo(b)fluoranthene	2	0.26	115	115
Benzo(g,h,i)perylene	2	0.26	31	31
Benzo(k)fluoranthene	2	0.26	115	115
Benzoic Acid	10	18.35	650	632
Benzyl Alcohol	2	3.67	57	53
Benzyl Butyl Phthalate	1	0.13	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.52	47	46
Chrysene	2	0.26	110	110
Dibenzo(a,h)anthracene	2	0.26	12	12
Dibenzofuran	2	0.26	15	15
Diethyl Phthalate	4	0.52	61	60
Dimethyl Phthalate	4	0.52	53	52
Di-N-Butyl Phthalate	4	0.52	220	219
Di-N-Octyl Phthalate	4	0.52	58	57
Fluorene	2	0.26	23	23
Fluoranthene	2	0.26	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.06	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.26	34	34
N-Nitrosodiphenylamine	4	0.52	11	10
Naphthalene	2	0.26	99	99
Pentachlorophenol	10	18.35	360	342
Phenanthrene	2	0.26	100	100
Phenol	4	7.34	420	413
Pyrene	2	0.26	1000	1000
Aroclor 1016	7.3	0.94		
Aroclor 1221	1.7	0.22		
Aroclor 1232	12	1.55		
Aroclor 1242	15	1.93		
Aroclor 1248	0.83	0.11		
Aroclor 1254	0.83	0.11		
Aroclor 1260	0.83	0.11		
Total Organic Carbon (dry)	14238.53211			
Total Solids	54.5			
HPAH	20	2.58	960	957
LPAH	14	1.80	370	368
Total PCB	15	1.93	12	10.1

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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.02	2.3	2.3
1,4-Dichlorobenzene	0.2	0.02	3.1	3.1
2-Methylnaphthalene	2	0.24	38	38
2,4-Dimethylphenol	1	2.40	29	27
2-Methylphenol	2	4.80	63	58
4-Methylphenol	4	9.59	670	660
Acenaphthene	2	0.24	16	16
Acenaphthylene	2	0.24	66	66
Anthracene	2	0.24	220	220
Benzo(a)anthracene	2	0.24	110	110
Benzo(a)pyrene	2	0.24	99	99
Benzo(b)fluoranthene	2	0.24	115	115
Benzo(g,h,i)perylene	2	0.24	31	31
Benzo(k)fluoranthene	2	0.24	115	115
Benzoic Acid	10	23.98	650	626
Benzyl Alcohol	2	4.80	57	52
Benzyl Butyl Phthalate	1	0.12	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.48	47	47
Chrysene	2	0.24	110	110
Dibenzo(a,h)anthracene	2	0.24	12	12
Dibenzofuran	2	0.24	15	15
Diethyl Phthalate	4	0.48	61	61
Dimethyl Phthalate	4	0.48	53	53
Di-N-Butyl Phthalate	4	0.48	220	220
Di-N-Octyl Phthalate	4	0.48	58	58
Fluorene	2	0.24	23	23
Fluoranthene	2	0.24	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.06	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.24	34	34
N-Nitrosodiphenylamine	4	0.48	11	11
Naphthalene	2	0.24	99	99
Pentachlorophenol	10	23.98	360	336
Phenanthrene	2	0.24	100	100
Phenol	4	9.59	420	410
Pyrene	2	0.24	1000	1000
Aroclor 1016	3.6	0.43		
Aroclor 1221	1.7	0.20		
Aroclor 1232	5.5	0.66		
Aroclor 1242	6.4	0.77		
Aroclor 1248	0.83	0.10		
Aroclor 1254	0.83	0.10		
Aroclor 1260	0.83	0.10		
Total Organic Carbon (dry)	20023.98082			
Total Solids	41.7			
HPAH	20	2.40	960	958
LPAH	14	1.68	370	368
Total PCB	6.4	0.77	12	11.2

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	0.1	0.01	0.81	0.80
1,2-Dichlorobenzene	0.2	0.02	2.3	2.3
1,4-Dichlorobenzene	0.2	0.02	3.1	3.1
2-Methylnaphthalene	2	0.23	38	38
2,4-Dimethylphenol	1	2.38	29	27
2-Methylphenol	2	4.76	63	58
4-Methylphenol	4	9.52	670	660
Acenaphthene	2	0.23	16	16
Acenaphthylene	2	0.23	66	66
Anthracene	2	0.23	220	220
Benzo(a)anthracene	2	0.23	110	110
Benzo(a)pyrene	2	0.23	99	99
Benzo(b)fluoranthene	2	0.23	115	115
Benzo(g,h,i)perylene	2	0.23	31	31
Benzo(k)fluoranthene	2	0.23	115	115
Benzoic Acid	10	23.81	650	626
Benzyl Alcohol	2	4.76	57	52
Benzyl Butyl Phthalate	1	0.12	4.9	4.8
Bis(2-Ethylhexyl)Phthalate	4	0.47	47	47
Chrysene	2	0.23	110	110
Dibenzo(a,h)anthracene	2	0.23	12	12
Dibenzofuran	2	0.23	15	15
Diethyl Phthalate	4	0.47	61	61
Dimethyl Phthalate	4	0.47	53	53
Di-N-Butyl Phthalate	4	0.47	220	220
Di-N-Octyl Phthalate	4	0.47	58	58
Fluorene	2	0.23	23	23
Fluoranthene	2	0.23	160	160
Hexachlorobenzene	0.1	0.01	0.38	0.37
Hexachlorobutadiene	0.5	0.06	3.9	3.8
Indeno(1,2,3-Cd)Pyrene	2	0.23	34	34
N-Nitrosodiphenylamine	4	0.47	11	11
Naphthalene	2	0.23	99	99
Pentachlorophenol	10	23.81	360	336
Phenanthrene	2	0.23	100	100
Phenol	4	9.52	420	410
Pyrene	2	0.23	1000	1000
Aroclor 1016	3.7	0.43		
Aroclor 1221	1.7	0.20		
Aroclor 1232	9.1	1.07		
Aroclor 1242	7.7	0.90		
Aroclor 1248	0.83	0.10		
Aroclor 1254	0.83	0.10		
Aroclor 1260	0.83	0.10		
Total Organic Carbon (dry)	20285.71429			
Total Solids	42			
HPAH	20	2.35	960	958
LPAH	14	1.64	370	368
Total PCB	9.1	1.07	12	10.9

CONVENTIONAL ANALYSES QC DATA

King County Environmental Laboratory

WORK GROUP REPORT (wk02)

May 04 2007, 04:07 pm

Work Group: WG90944 (PSD - Duwa. Diagonal) for Department: 3 - Conventionals

Created: 04-APR-07 PrepDate: Due: Operator: keith

Sample	Project Number	Project Description	PKey	C	Product	Matrix	Stat	UA	Workdate	Duedate
L42274-1	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PSD	SALTWTRSED	ANAL	U	03-APR-07	19-MAY-07
L42274-2	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PSD	SALTWTRSED	ANAL	U	03-APR-07	19-MAY-07
L42274-3	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PSD	SALTWTRSED	ANAL	U	03-APR-07	19-MAY-07
L42274-4	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PSD	SALTWTRSED	ANAL	U	03-APR-07	19-MAY-07
L42274-5	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PSD	SALTWTRSED	ANAL	U	03-APR-07	19-MAY-07
L42274-6	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PSD	SALTWTRSED	ANAL	U	04-APR-07	19-MAY-07
L42274-7	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PSD	SALTWTRSED	ANAL	U	04-APR-07	19-MAY-07
L42274-8	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PSD	SALTWTRSED	ANAL	U	04-APR-07	19-MAY-07
L42275-1	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PSD	SALTWTRSED	ANAL	U	02-APR-07	19-MAY-07
L42275-2	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PSD	SALTWTRSED	ANAL	U	02-APR-07	19-MAY-07
L42275-3	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PSD	SALTWTRSED	ANAL	U	02-APR-07	19-MAY-07
L42275-4	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PSD	SALTWTRSED	ANAL	U	02-APR-07	19-MAY-07
L42275-5	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PSD	SALTWTRSED	ANAL	U	02-APR-07	19-MAY-07
L42275-6	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PSD	SALTWTRSED	ANAL	U	02-APR-07	19-MAY-07
L42275-7	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PSD	SALTWTRSED	ANAL	U	02-APR-07	19-MAY-07
L42275-8	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PSD	SALTWTRSED	ANAL	U	02-APR-07	19-MAY-07
L42275-9	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PSD	SALTWTRSED	ANAL	U	04-APR-07	19-MAY-07
L42276-1	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	PSD	SALTWTRSED	ANAL	U	03-APR-07	19-MAY-07
L42276-2	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	PSD	SALTWTRSED	ANAL	U	03-APR-07	19-MAY-07
L42276-3	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	PSD	SALTWTRSED	ANAL	U	03-APR-07	19-MAY-07
L42276-4	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	PSD	SALTWTRSED	ANAL	U	03-APR-07	19-MAY-07
L42276-5	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	PSD	SALTWTRSED	ANAL	U	03-APR-07	19-MAY-07
L42276-6	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	PSD	SALTWTRSED	ANAL	U	03-APR-07	19-MAY-07
L42276-7	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	PSD	SALTWTRSED	ANAL	U	03-APR-07	19-MAY-07
L42276-8	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	PSD	SALTWTRSED	ANAL	U	03-APR-07	19-MAY-07
L42276-9	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	PSD	SALTWTRSED	ANAL	U	03-APR-07	19-MAY-07
WG90944-1	LD		SED	S	PSD	SALTWTRSED	ANAL	U	10-APR-07	
WG90944-2	LT		SED	S	PSD	SALTWTRSED	ANAL	U	10-APR-07	
WG90944-3	LD		SED	S	PSD	SALTWTRSED	ANAL	U	24-APR-07	
WG90944-4	LT		SED	S	PSD	SALTWTRSED	ANAL	U	24-APR-07	

Comments:

L42274-1	Take Minimum Casts
L42274-2	Take Minimum Casts, AREP
L42274-3	Take Minimum Casts, FREP
L42274-4	Take Minimum Casts
L42274-5	Take Minimum Casts
L42274-6	Take Minimum Casts
L42274-7	Take Minimum Casts
L42274-8	Take Minimum Casts
L42275-1	10 Grab Comp, 0-10 cm
L42275-2	10 Grab Comp, 0-10 cm
L42275-3	10 Grab Comp, AREP
L42275-4	10 Grab Comp, FREP
L42275-5	10 Grab Comp, 0-10 cm
L42275-6	10 Grab Comp, 0-10 cm
L42275-7	10 Grab Comp, 0-10 cm
L42275-8	10 Grab Comp, 0-10 cm
L42275-9	10 Grab Comp, 0-10 cm
L42276-1	3 grab comp, 0-10 cm
L42276-2	3 grab comp, 0-10 cm
L42276-3	3 grab comp, 0-10 cm
L42276-4	3 grab comp, 0-10 cm
L42276-5	0-10 cm, AREP
L42276-6	0-10 cm, FREP
L42276-7	3 grab comp, 0-10 cm
L42276-8	3 grab comp, 0-10 cm
L42276-9	3 grab comp, 0-10 cm
WG90944-1	L42274-1
WG90944-2	WG90944-1 L42274-1

King County Environmental Laboratory

WORK GROUP REPORT (wk02)

May 04 2007, 04:07 pm

Work Group: WG90944 (PSD - Duwa. Diagonal) for Department: 3 - Conventionals

Created: 04-APR-07 PrepDate: Due: Operator: keith

Sample	Project Number	Project Description	PKey	C	Product	Matrix	Stat	UA	Workdate	Duedate
WG90944-3	L42276-6									
WG90944-4	WG90944-3	L42276-6								

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 05/09/07 11:00
Run ID: R119511 Workgroup: WG90944 (PSD - Duwa. Diagonal)

LT:WG90944-2 LD:WG90944-1 L42274-1 Matrix: SALTWTRSED 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	LabLimi
Gravel	.1	1	%	13.5	15	16.8	11		20
Sand	.1	1	%	39.4	38.3	37.6	2		20
Silt	.5	1	%	30.7	31	30.7	1		20
Clay	.5	1	%	18.8	18.9	17	6		20

LT:WG90944-4 LD:WG90944-3 L42276-6 Matrix: SALTWTRSED Listtype: CVPSD Method: ASTM D422(03-02-005-001) Project: 423062-100-4 Pkey: SED
(Lab Triplicate, Lab Duplicate)

Parameter	Mdl	Rdl	Units	SampValue	LD Value	LT Value	RSD	Qual	LabLimi
Gravel	.1	1	%	31.8	31	31.5	1		20
Sand	.1	1	%	62.3	62.5	63.1	1		20
Silt	.5	1	%	4.1	4.8	4.4	8		20
Clay	.5	1	%	2.9	2.4	2.2	15		20

==========

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

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

PARTICLE SIZE DISTRIBUTION - ASTM D 422
Sample Preparation

4-18-07	Date
H.S.	Analyst Initials
WG 90944	Workgroup No.
423062-200-4	Project Number
~~40~~ Kis-41	4% Dispersant ID #

Sample Tracking

		Location	
Date	Time	From	To
4-18-07	3:00	12	LAB
4/18/07	4:15	LAB	12

Water Content (w) Analysis

	Date	Time	Temp (°C)
Spl IN	4/18/07	4:00	107
Spl OUT	4/19/07	8:00	109

Sample ID	Water Content (w) Calc			PSD Calc	COMMENTS
	Empty Dish (g)	Wet Sample (g)	Dry Dish + Sample (g)	Sample Wet Wt (g)	
L42275-7	2.1434	27.4089	20.6425	101.60	small grit
8	2.1791	33.5724	25.7408	102.92	small grit
9	2.1558	25.0137	15.9546	100.56	smooth, very little grit
L42276-1	2.1350	23.6738	20.2422	103.68	very coarse; removed 2 rock ~1" and chunk of clam shell
2	2.1372	20.7644	11.0924	98.31	very thick, smooth, some plant matter
3	2.0875	22.1243	11.8600	100.71	very smooth; removed 3 rocks
4	2.1459	30.1198	21.7097	104.86	gritty

Add 125 mL of 4% Dispersant to sample

Allow sample + dispersant to stand overnight

PARTICLE SIZE DISTRIBUTION - ASTM D 422
Sample Preparation

4-24-07	Date
KS	Analyst Initials
WG90944	Workgroup No.
423062-200/100-4	Project Number
41	4% Dispersant ID #

Sample Tracking

[redacted]		Location	
Date	Time	From	To
4/24/07	2:00	12	LAB
4/24/07	3:20	LAB	12

Water Content (w) Analysis

[redacted]	Date	Time	Temp (°C)
Spl IN	4/24/07	3:20	108
Spl OUT	4/25/07	8:40	109

Sample ID	Water Content (w) Calc			PSD Calc	COMMENTS
	Empty Dish (g)	Wet Sample (g)	Dry Dish + Sample (g)	Sample Wet Wt (g)	
L42275-2					very smooth
L42276-5	recording weights was discontinued				very sandy gritty
L42276-6	with the use of the balance's				" " " " removed 1 rock ~1" diameter
-6LD	weight transfer software			K.S	
-6LT				4/24/07	
-7					very smooth
-8					very smooth, removed 2 rocks ~½" diameter
-9					

Add 125 mL of 4% Dispersant to sample

Allow sample + dispersant to stand overnight

PARTICLE-SIZE DISTRIBUTION (PSD) - ASTM D 422

Hydrometer/Sieve Analysis

04/18/07	Preparation Date	L42276-1	Sample Number
KS	Analyst Initials	423062-100-4	Project Number

(1) For Calc. of Water Content (w)	
2.1350	Dish Weight in grams (g)
23.6733	Spl Wet Weight in grams (g)
20.2422	Dish + Spl Dry Wt in grams (g)

(2) Calc. of Sample Dry Wt. (M_s) for Test	
103.680	Spl Wet Weight in grams (g)
30.74	Water Content (w) in Percent (%)
79.303	Spl Dry Weight (M_s) in grams (g)

(3) Calculation Constants	
Temp in °C	Constant (K) for G_s at Temp
19.0	0.01382
20.0	0.01365
21.0	0.01348
22.0	0.0
2.65	Specific Gravity (G_s)
1.00	α

Hydrometer Calc.	
R_{152} Value	(L_e) Effective Depth in cm
12.0	14.35
11.5	14.44
10.5	14.60
10.0	14.68
9.5	14.77
9.0	14.85
8.5	14.93
8.0	15.02

(4) 152H HYDROMETER ANALYSIS CALCULATIONS

DATE	TIME	Elapsed Time Δt	TEMP	HYD. Readings (g/L)		Particle Size		(%) Percent Finer in Suspension	
				(R_{152})	(R_{152w})	PHI	Diameter		
mm/dd	hh:mm	minutes	(T) °C	Sample	Control	Size	(D) in mm	Total (N)	Retained
4/19	9:21	0	22.0		6.0				
4/19	9:22	1	22.0	12.0	6.0	P+5	0.0421	7.57	**0.63**
4/19	9:23	2	22.0	11.5	6.0	P+5	0.0358	6.93	**1.26**
4/19	9:26	5	22.0	10.5	6.0	P+6	0.0228	5.67	**0.63**
4/19	9:36	15	22.0	10.0	6.0	P+7	0.0132	5.04	**0.63**
4/19	9:51	30	22.0	9.5	6.0	P+7	0.0093	4.41	**0.63**
4/19	10:21	60	21.0	9.0	6.0	P+8	0.0067	3.78	**0.63**
4/19	13:31	250	20.0	8.5	6.0	P+9	0.0033	3.15	**0.63**
4/20	9:21	1440	21.0	8.0	6.0	P+10	0.0014	2.52	**2.52**
								Percent (%) Fines	7.57

(5) SIEVE ANALYSIS CALCULATIONS

PARTICLE SIZE			WEIGHT in grams (g)			(%)
PHI Size	Sieve No.	Opening (mm)	Empty Sieve (B)	Sieve + Dry Sample	Dry Sample Retained	Percent Retained
P <-2	4	4.75	434.72	442.02	7.300	**9.21**
P -2	5	4.00	423.83	425.59	1.760	**2.22**
P -1	10	2.00	400.34	408.56	8.220	**10.37**
P 0	18	1.00	337.81	353.51	15.700	**19.80**
P +1	35	0.500	295.28	325.74	30.460	**38.41**
P +2	60	0.250	280.00	285.96	5.960	**7.52**
P +3	120	0.125	351.80	353.99	2.190	**2.76**
P +4	230	0.0625	346.73	347.36	0.630	**0.79**
					Percent (%) Course	91.07
					TOTAL PERCENT (%) (% Course + % Fines)	98.63

FINES PARTICLE SIZE Reference	
PHI Size	Opening (mm)
P+ 5	0.032
P+ 6	0.016
P+ 7	0.008
P+ 8	0.004
P+ 9	0.002
P+ 10	0.001

CATERGORY RESULTS SUMMARY

21.79	(%) Percent Gravel (<-2, -2, -1)
69.28	(%) Percent Sand (0, +1, +2, +3, +4)
4.41	(%) Percent Silt (+5, +6, +7, +8)
3.15	(%) Percent Clay (+9, =/>+10)
98.63	TOTAL PERCENT (%)= % Gravel + % Sand + % Silt + % Clay

PARTICLE-SIZE DISTRIBUTION (PSD) - ASTM D 422

Hydrometer/Sieve Analysis

04/18/07	Preparation Date	L42276-2	Sample Number
KS	Analyst Initials	423062-100-4	Project Number

(1) For Calc. of Water Content (w)	
2.1372	Dish Weight in grams (g)
20.7644	Spl Wet Weight in grams (g)
11.0924	Dish + Spl Dry Wt in grams (g)

(2) Calc. of Sample Dry Wt. (M_s) for Test	
98.310	Spl Wet Weight in grams (g)
131.87	Water Content (w) in Percent (%)
42.399	Spl Dry Weight (M_s) in grams (g)

(3) Calculation Constants	
Temp in °C	Constant (K) for G_s at Temp
19.0	0.01382
20.0	0.01365
21.0	0.01348
22.0	0.0
2.65	Specific Gravity (G_s)
1.00	α

Hydrometer Calc.	
R_{152} Value	(L_e) Effective Depth in cm
41.0	9.54
40.0	9.70
36.0	10.37
31.0	11.20
26.5	11.95
23.0	12.53
18.5	13.27
13.5	14.10

(4) 152H HYDROMETER ANALYSIS CALCULATIONS

DATE	TIME	Elapsed Time Δt	TEMP	HYD. Readings (g/L)		Particle Size		(%) Percent Finer in Suspension	
				(R_{152})	(R_{152w})	PHI	Diameter		
mm/dd	hh:mm	minutes	(T) °C	Sample	Control	Size	(D) in mm	Total (N)	Retained
4/19	9:28	0	22.0		6.0				
4/19	9:29	1	22.0	41.0	6.0	P+5	0.0343	82.54	**2.36**
4/19	9:30	2	22.0	40.0	6.0	P+6	0.0293	80.19	**9.43**
4/19	9:33	5	22.0	36.0	6.0	P+6	0.0192	70.75	**11.79**
4/19	9:43	15	22.0	31.0	6.0	P+7	0.0115	58.96	**10.61**
4/19	9:58	30	22.0	26.5	6.0	P+7	0.0084	48.35	**8.25**
4/19	10:28	60	21.0	23.0	6.0	P+8	0.0062	40.09	**10.61**
4/19	13:38	250	20.0	18.5	6.0	P+9	0.0031	29.48	**11.79**
4/20	9:28	1440	21.0	13.5	6.0	P+10	0.0013	17.69	**17.69**
							Percent (%) Fines		82.54

(5) SIEVE ANALYSIS CALCULATIONS

PARTICLE SIZE			WEIGHT in grams (g)			(%)
PHI Size	Sieve No.	Opening (mm)	Empty Sieve (C)	Sieve + Dry Sample	Dry Sample Retained	Percent Retained
P <-2	4	4.75	435.92	436.34	0.420	**0.99**
P -2	5	4.00	425.29	425.36	0.070	**0.17**
P -1	10	2.00	401.29	401.83	0.540	**1.27**
P 0	18	1.00	339.17	339.56	0.390	**0.92**
P +1	35	0.500	293.40	293.88	0.480	**1.13**
P +2	60	0.250	275.28	276.01	0.730	**1.72**
P +3	120	0.125	354.29	355.97	1.680	**3.96**
P +4	230	0.0625	344.80	346.45	1.650	**3.89**
					Percent (%) Course	14.06
					TOTAL PERCENT (%) (% Course + % Fines)	96.60

FINES PARTICLE SIZE Reference	
PHI Size	Opening (mm)
P+ 5	0.032
P+ 6	0.016
P+ 7	0.008
P+ 8	0.004
P+ 9	0.002
P+ 10	0.001

CATERGORY RESULTS SUMMARY

2.43	(%) Percent Gravel (<-2, -2, -1)
11.63	(%) Percent Sand (0, +1, +2, +3, +4)
53.06	(%) Percent Silt (+5, +6, +7, +8)
29.48	(%) Percent Clay (+9, =/>+10)
96.60	TOTAL PERCENT (%)= % Gravel + % Sand + % Silt + % Clay

PARTICLE-SIZE DISTRIBUTION (PSD) - ASTM D 422

Hydrometer/Sieve Analysis

04/18/07	Preparation Date
KS	Analyst Initials

L42276-3	Sample Number
423062-100-4	Project Number

(1) For Calc. of Water Content (w)	
2.0875	Dish Weight in grams (g)
22.1243	Spl Wet Weight in grams (g)
11.8600	Dish + Spl Dry Wt in grams (g)

(2) Calc. of Sample Dry Wt. (M_s) for Test	
100.710	Spl Wet Weight in grams (g)
126.39	Water Content (w) in Percent (%)
44.485	Spl Dry Weight (M_s) in grams (g)

(3) Calculation Constants	
Temp in °C	Constant (K) for G_s at Temp
19.0	0.01382
20.0	0.01365
21.0	0.01348
22.0	0.0
2.65	Specific Gravity (G_s)
1.00	α

Hydrometer Calc.	
R_{152} Value	(L_e) Effective Depth in cm
42.0	9.37
41.0	9.54
38.0	10.04
33.0	10.87
31.0	11.20
27.0	11.86
21.0	12.86
14.5	13.94

(4) 152H HYDROMETER ANALYSIS CALCULATIONS

DATE mm/dd	TIME hh:mm	Elapsed Time Δt minutes	TEMP (T) °C	HYD. Readings (g/L) (R_{152}) Sample	(R_{152w}) Control	Particle Size PHI Size	Diameter (D) in mm	(%) Percent Finer in Suspension Total (N)	Retained
4/19	9:35	0	22.0		6.0				
4/19	9:36	1	22.0	42.0	6.0	P+5	0.0340	80.92	**2.25**
4/19	9:37	2	22.0	41.0	6.0	P+6	0.0291	78.67	**6.74**
4/19	9:40	5	22.0	38.0	6.0	P+6	0.0189	71.93	**11.24**
4/19	9:50	15	22.0	33.0	6.0	P+7	0.0113	60.69	**4.50**
4/19	10:05	30	21.0	31.0	6.0	P+7	0.0082	56.20	**8.99**
4/19	10:35	60	21.0	27.0	6.0	P+8	0.0060	47.20	**13.49**
4/19	13:45	250	20.0	21.0	6.0	P+9	0.0031	33.72	**14.61**
4/20	9:35	1440	21.0	14.5	6.0	P+10	0.0013	19.11	**19.11**
								Percent (%) Fines	80.92

(5) SIEVE ANALYSIS CALCULATIONS

PARTICLE SIZE PHI Size	Sieve No.	Opening (mm)	WEIGHT in grams (g) Empty Sieve (F)	Sieve + Dry Sample	Dry Sample Retained	(%) Percent Retained
P <-2	4	4.75	441.88	442.23	0.350	**0.79**
P -2	5	4.00	424.72	424.73	0.010	**0.02**
P -1	10	2.00	396.82	396.92	0.100	**0.22**
P 0	18	1.00	335.91	336.04	0.130	**0.29**
P +1	35	0.500	299.38	299.53	0.150	**0.34**
P +2	60	0.250	279.09	280.11	1.020	**2.29**
P +3	120	0.125	356.02	358.34	2.320	**5.22**
P +4	230	0.0625	341.57	343.39	1.820	**4.09**
					Percent (%) Course	13.26
					TOTAL PERCENT (%) (% Course + % Fines)	94.18

FINES PARTICLE SIZE Reference	
PHI Size	Opening (mm)
P+ 5	0.032
P+ 6	0.016
P+ 7	0.008
P+ 8	0.004
P+ 9	0.002
P+ 10	0.001

CATERGORY RESULTS SUMMARY

1.03	(%) Percent Gravel (<-2, -2, -1)
12.23	(%) Percent Sand (0, +1, +2, +3, +4)
47.20	(%) Percent Silt (+5, +6, +7, +8)
33.72	(%) Percent Clay (+9, =/>+10)
94.18	TOTAL PERCENT (%)= % Gravel + % Sand + % Silt + % Clay

PARTICLE-SIZE DISTRIBUTION (PSD) - ASTM D 422

Hydrometer/Sieve Analysis

04/18/07	Preparation Date	L42276-4	Sample Number
KS	Analyst Initials	423062-100-4	Project Number

(1) For Calc. of Water Content (w)	
2.1459	Dish Weight in grams (g)
30.1198	Spl Wet Weight in grams (g)
21.7097	Dish + Spl Dry Wt in grams (g)

(2) Calc. of Sample Dry Wt. (M_s) for Test	
104.860	Spl Wet Weight in grams (g)
53.96	Water Content (w) in Percent (%)
68.110	Spl Dry Weight (M_s) in grams (g)

(3) Calculation Constants	
Temp in °C	Constant (K) for G_s at Temp
19.0	0.01382
20.0	0.01365
21.0	0.01348
22.0	0.0
2.65	Specific Gravity (G_s)
1.00	α

Hydrometer Calc.	
R_{152} Value	(L_e) Effective Depth in cm
27.0	11.86
26.0	12.03
24.0	12.36
21.5	12.78
19.0	13.19
18.0	13.36
14.0	14.02
11.5	14.44

(4) 152H HYDROMETER ANALYSIS CALCULATIONS

DATE	TIME	Elapsed Time Δt	TEMP	HYD. Readings (g/L)		Particle Size		(%) Percent Finer in Suspension	
				(R_{152})	(R_{152w})	PHI	Diameter		
mm/dd	hh:mm	minutes	(T) °C	Sample	Control	Size	(D) in mm	Total (N)	Retained
4/19	9:42	0	22.0		6.0				
4/19	9:43	1	22.0	27.0	6.0	P+5	0.0382	30.83	**1.47**
4/19	9:44	2	22.0	26.0	6.0	P+5	0.0327	29.36	**2.94**
4/19	9:47	5	22.0	24.0	6.0	P+6	0.0210	26.43	**3.67**
4/19	9:57	15	22.0	21.5	6.0	P+7	0.0123	22.76	**3.67**
4/19	10:12	30	21.0	19.0	6.0	P+7	0.0089	19.09	**1.47**
4/19	10:42	60	21.0	18.0	6.0	P+8	0.0064	17.62	**5.87**
4/19	13:52	250	20.0	14.0	6.0	P+9	0.0032	11.74	**3.67**
4/20	9:42	1440	21.0	11.5	6.0	P+10	0.0013	8.07	**8.07**
								Percent (%) Fines	30.83

(5) SIEVE ANALYSIS CALCULATIONS

PARTICLE SIZE			WEIGHT in grams (g)			(%)
PHI Size	Sieve No.	Opening (mm)	Empty Sieve (C)	Sieve + Dry Sample	Dry Sample Retained	Percent Retained
P <-2	4	4.75	435.92	436.67	0.750	**1.10**
P -2	5	4.00	425.29	426.72	1.430	**2.10**
P -1	10	2.00	401.29	403.21	1.920	**2.82**
P 0	18	1.00	339.17	341.93	2.760	**4.05**
P +1	35	0.500	293.40	299.06	5.660	**8.31**
P +2	60	0.250	275.28	291.29	16.010	**23.51**
P +3	120	0.125	354.29	368.41	14.120	**20.73**
P +4	230	0.0625	344.80	348.33	3.530	**5.18**
					Percent (%) Course	67.80
					TOTAL PERCENT (%) (% Course + % Fines)	98.63

FINES PARTICLE SIZE Reference	
PHI Size	Opening (mm)
P+ 5	0.032
P+ 6	0.016
P+ 7	0.008
P+ 8	0.004
P+ 9	0.002
P+ 10	0.001

CATERGORY RESULTS SUMMARY

6.02	(%) Percent Gravel (<-2, -2, -1)
61.78	(%) Percent Sand (0, +1, +2, +3, +4)
19.09	(%) Percent Silt (+5, +6, +7, +8)
11.74	(%) Percent Clay (+9, =/>+10)
98.63	TOTAL PERCENT (%)= % Gravel + % Sand + % Silt + % Clay

PARTICLE-SIZE DISTRIBUTION (PSD) - ASTM D 422

Hydrometer/Sieve Analysis

04/24/07	Preparation Date	L42276-5	Sample Number
KS	Analyst Initials	423062-100-4	Project Number

(1) For Calc. of Water Content (w)	
2.1156	Dish Weight in grams (g)
35.0657	Spl Wet Weight in grams (g)
29.9302	Dish + Spl Dry Wt in grams (g)

(2) Calc. of Sample Dry Wt. (M_s) for Test	
123.360	Spl Wet Weight in grams (g)
26.07	Water Content (w) in Percent (%)
97.851	Spl Dry Weight (M_s) in grams (g)

(3) Calculation Constants	
Temp in °C	Constant (K) for G_s at Temp
23.0	0.01317
22.0	0.01332
21.0	0.01348
20.0	0.0
2.65	Specific Gravity (G_s)
1.00	α

Hydrometer Calc.	
R_{152} Value	(L_e) Effective Depth in cm
13.0	14.19
12.0	14.35
12.0	14.35
12.0	14.35
11.0	14.52
10.0	14.68
8.5	14.93
8.0	15.02

(4) 152H HYDROMETER ANALYSIS CALCULATIONS

DATE	TIME	Elapsed Time Δt	TEMP	HYD. Readings (g/L)		Particle Size		(%) Percent Finer in Suspension	
				(R_{152})	(R_{152w})	PHI	Diameter		
mm/dd	hh:mm	minutes	(T) °C	Sample	Control	Size	(D) in mm	Total (N)	Retained
4/25	9:14	0	21.0		6.0				
4/25	9:15	1	21.0	13.0	6.0	P+5	0.0423	7.15	**1.02**
4/25	9:16	2	21.0	12.0	6.0	P+5	0.0361	6.13	**0.00**
4/25	9:19	5	21.0	12.0	6.0	P+6	0.0228	6.13	**0.00**
4/25	9:29	15	21.0	12.0	6.0	P+7	0.0132	6.13	**1.02**
4/25	9:44	30	21.0	11.0	6.0	P+7	0.0094	5.11	**1.02**
4/25	10:14	60	21.0	10.0	6.0	P+8	0.0067	4.09	**1.53**
4/25	13:24	250	20.0	8.5	6.0	P+9	0.0033	2.55	**0.51**
4/26	9:14	1440	21.0	8.0	6.0	P+10	0.0014	2.04	**2.04**
								Percent (%) Fines	7.15

(5) SIEVE ANALYSIS CALCULATIONS

Sieve ID: C

PARTICLE SIZE			WEIGHT in grams (g)			(%)
PHI Size	Sieve No.	Opening (mm)	Empty Sieve	Sieve + Dry Sample	Dry Sample Retained	Percent Retained
P <-2	4	4.75	435.92	440.38	4.460	**4.56**
P -2	5	4.00	425.29	428.31	3.020	**3.09**
P -1	10	2.00	401.29	407.74	6.450	**6.59**
P 0	18	1.00	339.17	348.32	9.150	**9.35**
P +1	35	0.500	293.40	310.08	16.680	**17.05**
P +2	60	0.250	275.28	309.03	33.750	**34.49**
P +3	120	0.125	354.29	368.92	14.630	**14.95**
P +4	230	0.0625	344.80	346.99	2.190	**2.24**
					Percent (%) Course	92.31
					TOTAL PERCENT (%) (% Course + % Fines)	99.47

FINES PARTICLE SIZE Reference	
PHI Size	Opening (mm)
P+ 5	0.032
P+ 6	0.016
P+ 7	0.008
P+ 8	0.004
P+ 9	0.002
P+ 10	0.001

CATERGORY RESULTS SUMMARY

14.24	(%) Percent Gravel (<-2, -2, -1)
78.08	(%) Percent Sand (0, +1, +2, +3, +4)
4.60	(%) Percent Silt (+5, +6, +7, +8)
2.55	(%) Percent Clay (+9, =/>+10)
99.47	TOTAL PERCENT (%)= % Gravel + % Sand + % Silt + % Clay

PARTICLE-SIZE DISTRIBUTION (PSD) - ASTM D 422

Hydrometer/Sieve Analysis

04/24/07	Preparation Date
KS	Analyst Initials

L42276-6	Sample Number
423062-100-4	Project Number

(1) For Calc. of Water Content (w)	
2.1073	Dish Weight in grams (g)
38.7524	Spl Wet Weight in grams (g)
33.9918	Dish + Spl Dry Wt in grams (g)

(2) Calc. of Sample Dry Wt. (M_s) for Test	
104.520	Spl Wet Weight in grams (g)
21.54	Water Content (w) in Percent (%)
85.996	Spl Dry Weight (M_s) in grams (g)

(3) Calculation Constants	
Temp in °C	Constant (K) for G_s at Temp
23.0	0.01317
22.0	0.01332
21.0	0.01348
20.0	0.0
2.65	Specific Gravity (G_s)
1.00	α

Hydrometer Calc.	
R_{152} Value	(L_e) Effective Depth in cm
12.0	14.35
10.0	14.68
10.0	14.68
9.0	14.85
8.5	14.93
8.5	14.93
8.5	14.93
7.5	15.10

(4) 152H HYDROMETER ANALYSIS CALCULATIONS

DATE mm/dd	TIME hh:mm	Elapsed Time Δt minutes	TEMP (T) °C	HYD. Readings (g/L) (R_{152}) Sample	(R_{152w}) Control	Particle Size PHI Size	Diameter (D) in mm	(%) Percent Finer in Suspension Total (N)	Retained
4/25	9:21	0	21.0		6.0				
4/25	9:22	1	21.0	12.0	6.0	P+5	0.0426	6.98	2.33
4/25	9:23	2	21.0	10.0	6.0	P+5	0.0365	4.65	0.00
4/25	9:26	5	21.0	10.0	6.0	P+6	0.0231	4.65	1.16
4/25	9:36	15	21.0	9.0	6.0	P+7	0.0134	3.49	0.58
4/25	9:51	30	21.0	8.5	6.0	P+7	0.0095	2.91	0.00
4/25	10:21	60	21.0	8.5	6.0	P+8	0.0067	2.91	0.00
4/25	13:31	250	20.0	8.5	6.0	P+9	0.0033	2.91	1.16
4/26	9:21	1440	21.0	7.5	6.0	P+10	0.0014	1.74	1.74
								Percent (%) Fines	6.98

(5) SIEVE ANALYSIS CALCULATIONS

Sieve ID: D

PARTICLE SIZE PHI Size	Sieve No.	Opening (mm)	WEIGHT in grams (g) Empty Sieve	Sieve + Dry Sample	Dry Sample Retained	(%) Percent Retained
P <-2	4	4.75	440.08	447.56	7.480	8.70
P -2	5	4.00	424.74	429.52	4.780	5.56
P -1	10	2.00	398.75	413.81	15.060	17.51
P 0	18	1.00	337.77	350.60	12.830	14.92
P +1	35	0.500	299.76	313.50	13.740	15.98
P +2	60	0.250	276.60	294.30	17.700	20.58
P +3	120	0.125	352.66	360.60	7.940	9.23
P +4	230	0.0625	337.77	339.11	1.340	1.56
					Percent (%) Course	94.04
					TOTAL PERCENT (%) (% Course + % Fines)	101.02

FINES PARTICLE SIZE Reference	
PHI Size	Opening (mm)
P+ 5	0.032
P+ 6	0.016
P+ 7	0.008
P+ 8	0.004
P+ 9	0.002
P+ 10	0.001

CATERGORY RESULTS SUMMARY

31.77	(%) Percent Gravel (<-2, -2, -1)
62.27	(%) Percent Sand (0, +1, +2, +3, +4)
4.07	(%) Percent Silt (+5, +6, +7, +8)
2.91	(%) Percent Clay (+9, =/>+10)
101.02	TOTAL PERCENT (%)= % Gravel + % Sand + % Silt + % Clay

PARTICLE-SIZE DISTRIBUTION (PSD) - ASTM D 422

Hydrometer/Sieve Analysis

04/24/07	Preparation Date
KS	Analyst Initials

L42276-7	Sample Number
423062-100-4	Project Number

(1) For Calc. of Water Content (w)	
2.1309	Dish Weight in grams (g)
20.9735	Spl Wet Weight in grams (g)
13.4450	Dish + Spl Dry Wt in grams (g)

(2) Calc. of Sample Dry Wt. (M_s) for Test	
100.490	Spl Wet Weight in grams (g)
85.37	Water Content (w) in Percent (%)
54.209	Spl Dry Weight (M_s) in grams (g)

(3) Calculation Constants	
Temp in °C	Constant (K) for G_s at Temp
23.0	0.01317
22.0	0.01332
21.0	0.01348
20.0	0.0
2.65	Specific Gravity (G_s)
1.00	α

Hydrometer Calc.	
R_{152} Value	(L_e) Effective Depth in cm
36.0	10.37
34.0	10.70
31.0	11.20
24.0	12.36
23.0	12.53
20.5	12.94
16.5	13.61
12.5	14.27

(4) 152H HYDROMETER ANALYSIS CALCULATIONS

DATE mm/dd	TIME hh:mm	Elapsed Time Δt minutes	TEMP (T) °C	HYD. Readings (g/L) (R_{152}) Sample	(R_{152w}) Control	Particle Size PHI Size	Diameter (D) in mm	(%) Percent Finer in Suspension Total (N)	Retained
4/25	9:49	0	21.0		6.0				
4/25	9:50	1	21.0	36.0	6.0	P+5	0.0362	55.34	**3.69**
4/25	9:51	2	21.0	34.0	6.0	P+6	0.0312	51.65	**5.53**
4/25	9:54	5	21.0	31.0	6.0	P+6	0.0202	46.11	**12.91**
4/25	10:04	15	21.0	24.0	6.0	P+7	0.0122	33.20	**1.84**
4/25	10:19	30	21.0	23.0	6.0	P+7	0.0087	31.36	**4.61**
4/25	10:49	60	20.0	20.5	6.0	P+8	0.0063	26.75	**7.38**
4/25	13:59	250	20.0	16.5	6.0	P+9	0.0032	19.37	**7.38**
4/26	9:49	1440	20.0	12.5	6.0	P+10	0.0014	11.99	**11.99**
							Percent (%) Fines	55.34	

(5) SIEVE ANALYSIS CALCULATIONS

Sieve ID: C

PARTICLE SIZE PHI Size	Sieve No.	Opening (mm)	WEIGHT in grams (g) Empty Sieve	Sieve + Dry Sample	Dry Sample Retained	(%) Percent Retained
P <-2	4	4.75	435.92	437.14	1.220	**2.25**
P -2	5	4.00	425.29	425.37	0.080	**0.15**
P -1	10	2.00	401.29	401.54	0.250	**0.46**
P 0	18	1.00	339.17	339.63	0.460	**0.85**
P +1	35	0.500	293.40	294.37	0.970	**1.79**
P +2	60	0.250	275.28	281.51	6.230	**11.49**
P +3	120	0.125	354.29	364.64	10.350	**19.09**
P +4	230	0.0625	344.80	348.86	4.060	**7.49**
					Percent (%) Course	43.57
					TOTAL PERCENT (%) (% Course + % Fines)	98.91

FINES PARTICLE SIZE Reference	
PHI Size	Opening (mm)
P+ 5	0.032
P+ 6	0.016
P+ 7	0.008
P+ 8	0.004
P+ 9	0.002
P+ 10	0.001

CATERGORY RESULTS SUMMARY

2.86	(%) Percent Gravel (<-2, -2, -1)
40.71	(%) Percent Sand (0, +1, +2, +3, +4)
35.97	(%) Percent Silt (+5, +6, +7, +8)
19.37	(%) Percent Clay (+9, =/>+10)
98.91	TOTAL PERCENT (%)= % Gravel + % Sand + % Silt + % Clay

PARTICLE-SIZE DISTRIBUTION (PSD) - ASTM D 422

Hydrometer/Sieve Analysis

04/24/07	Preparation Date	L42276-8	Sample Number
KS	Analyst Initials	423062-100-4	Project Number

(1) For Calc. of Water Content (w)	
2.1016	Dish Weight in grams (g)
22.7456	Spl Wet Weight in grams (g)
11.5706	Dish + Spl Dry Wt in grams (g)

(2) Calc. of Sample Dry Wt. (M_s) for Test	
101.040	Spl Wet Weight in grams (g)
140.21	Water Content (w) in Percent (%)
42.063	Spl Dry Weight (M_s) in grams (g)

(3) Calculation Constants	
Temp in °C	Constant (K) for G_s at Temp
23.0	0.01317
22.0	0.01332
21.0	0.01348
20.0	0.0
2.65	Specific Gravity (G_s)
1.00	α

Hydrometer Calc.	
R_{152} Value	(L_e) Effective Depth in cm
41.0	9.54
39.0	9.87
36.0	10.37
33.0	10.87
28.0	11.70
24.5	12.28
18.5	13.27
13.5	14.10

(4) 152H HYDROMETER ANALYSIS CALCULATIONS

DATE mm/dd	TIME hh:mm	Elapsed Time Δt minutes	TEMP (T) °C	HYD. Readings (g/L) (R_{152}) Sample	(R_{152w}) Control	Particle Size PHI Size	Diameter (D) in mm	(%) Percent Finer in Suspension Total (N)	Retained
4/25	9:42	0	21.0		6.0				
4/25	9:43	1	21.0	41.0	6.0	P+5	0.0347	83.20	**4.75**
4/25	9:44	2	21.0	39.0	6.0	P+6	0.0299	78.45	**7.13**
4/25	9:47	5	21.0	36.0	6.0	P+6	0.0194	71.32	**7.13**
4/25	9:57	15	21.0	33.0	6.0	P+7	0.0115	64.19	**11.89**
4/25	10:12	30	21.0	28.0	6.0	P+7	0.0084	52.30	**8.32**
4/25	10:42	60	20.0	24.5	6.0	P+8	0.0062	43.98	**14.26**
4/25	13:52	250	20.0	18.5	6.0	P+9	0.0031	29.72	**11.89**
4/26	9:42	1440	20.0	13.5	6.0	P+10	0.0014	17.83	**17.83**
								Percent (%) Fines	83.20

(5) SIEVE ANALYSIS CALCULATIONS

Sieve ID: A

PARTICLE SIZE PHI Size	Sieve No.	Opening (mm)	WEIGHT in grams (g) Empty Sieve	Sieve + Dry Sample	Dry Sample Retained	(%) Percent Retained
P <-2	4	4.75	435.03	435.75	0.720	**1.71**
P -2	5	4.00	424.33	424.62	0.290	**0.69**
P -1	10	2.00	401.69	402.04	0.350	**0.83**
P 0	18	1.00	338.64	338.82	0.180	**0.43**
P +1	35	0.500	293.31	293.49	0.180	**0.43**
P +2	60	0.250	273.68	274.37	0.690	**1.64**
P +3	120	0.125	349.88	351.43	1.550	**3.68**
P +4	230	0.0625	341.58	343.62	2.040	**4.85**
					Percent (%) Course	14.26
					TOTAL PERCENT (%) (% Course + % Fines)	97.47

FINES PARTICLE SIZE Reference PHI Size	Opening (mm)
P+ 5	0.032
P+ 6	0.016
P+ 7	0.008
P+ 8	0.004
P+ 9	0.002
P+ 10	0.001

CATERGORY RESULTS SUMMARY

3.23	(%) Percent Gravel (<-2, -2, -1)
11.03	(%) Percent Sand (0, +1, +2, +3, +4)
53.49	(%) Percent Silt (+5, +6, +7, +8)
29.72	(%) Percent Clay (+9, =/>+10)
97.47	TOTAL PERCENT (%)= % Gravel + % Sand + % Silt + % Clay

PARTICLE-SIZE DISTRIBUTION (PSD) - ASTM D 422

Hydrometer/Sieve Analysis

04/24/07	Preparation Date
KS	Analyst Initials

L42276-9	Sample Number
423062-100-4	Project Number

(1) For Calc. of Water Content (w)	
2.0859	Dish Weight in grams (g)
20.5978	Spl Wet Weight in grams (g)
10.4827	Dish + Spl Dry Wt in grams (g)

(2) Calc. of Sample Dry Wt. (M_s) for Test	
119.080	Spl Wet Weight in grams (g)
145.31	Water Content (w) in Percent (%)
48.544	Spl Dry Weight (M_s) in grams (g)

(3) Calculation Constants	
Temp in °C	Constant (K) for G_s at Temp
23.0	0.01317
22.0	0.01332
21.0	0.01348
20.0	0.0
2.65	Specific Gravity (G_s)
1.00	α

Hydrometer Calc.	
R_{152} Value	(L_e) Effective Depth in cm
49.0	8.21
47.0	8.54
44.0	9.04
38.5	9.95
34.0	10.70
30.0	11.36
23.0	12.53
16.5	13.61

(4) 152H HYDROMETER ANALYSIS CALCULATIONS

DATE mm/dd	TIME hh:mm	Elapsed Time Δt minutes	TEMP (T) °C	HYD. Readings (g/L) (R_{152}) Sample	HYD. Readings (g/L) (R_{152w}) Control	Particle Size PHI Size	Particle Size Diameter (D) in mm	(%) Percent Finer in Suspension Total (N)	(%) Percent Finer in Suspension Retained
4/25	9:07	0	21.0		6.0				
4/25	9:08	1	21.0	49.0	6.0	P+5	0.0322	88.57	**4.12**
4/25	9:09	2	21.0	47.0	6.0	P+6	0.0278	84.45	**6.18**
4/25	9:12	5	21.0	44.0	6.0	P+6	0.0181	78.27	**11.33**
4/25	9:22	15	21.0	38.5	6.0	P+7	0.0110	66.95	**9.27**
4/25	9:37	30	21.0	34.0	6.0	P+7	0.0081	57.68	**8.24**
4/25	10:07	60	21.0	30.0	6.0	P+8	0.0059	49.44	**14.42**
4/25	13:17	250	20.0	23.0	6.0	P+9	0.0031	35.02	**13.39**
4/26	9:07	1440	21.0	16.5	6.0	P+10	0.0013	21.63	**21.63**
								Percent (%) Fines	88.57

(5) SIEVE ANALYSIS CALCULATIONS

Sieve ID: B

PARTICLE SIZE PHI Size	Sieve No.	Opening (mm)	WEIGHT in grams (g) Empty Sieve	Sieve + Dry Sample	Dry Sample Retained	(%) Percent Retained
P <-2	4	4.75	434.72	435.74	1.020	**2.10**
P -2	5	4.00	423.83	423.84	0.010	**0.02**
P -1	10	2.00	400.34	400.44	0.100	**0.21**
P 0	18	1.00	337.81	337.87	0.060	**0.12**
P +1	35	0.500	295.28	295.42	0.140	**0.29**
P +2	60	0.250	280.00	280.19	0.190	**0.39**
P +3	120	0.125	351.80	352.36	0.560	**1.15**
P +4	230	0.0625	346.73	348.21	1.480	**3.05**
					Percent (%) Course	7.33
					TOTAL PERCENT (%) (% Course + % Fines)	95.91

FINES PARTICLE SIZE Reference	
PHI Size	Opening (mm)
P+ 5	0.032
P+ 6	0.016
P+ 7	0.008
P+ 8	0.004
P+ 9	0.002
P+ 10	0.001

CATERGORY RESULTS SUMMARY

2.33	(%) Percent Gravel (<-2, -2, -1)
5.01	(%) Percent Sand (0, +1, +2, +3, +4)
53.56	(%) Percent Silt (+5, +6, +7, +8)
35.02	(%) Percent Clay (+9, =/>+10)
95.91	TOTAL PERCENT (%)= % Gravel + % Sand + % Silt + % Clay

King County Environmental Laboratory

WORK GROUP REPORT (wk02)

Apr 19 2007, 11:12 am

Work Group: WG91105 (TOTS DuDi Cap 423062-100-4) for Department: 3 - Conventionals

Created: 17-APR-07 PrepDate: Due: Operator: DO

Sample	Project Number	Project Description	PKey	C	Product	Matrix	Stat	UA	Workdate	Duedate
L42276-1	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	TOTS	SALTWTRSED	ANAL	U	03-APR-07	18-MAY-07
L42276-2	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	TOTS	SALTWTRSED	ANAL	U	03-APR-07	18-MAY-07
L42276-3	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	TOTS	SALTWTRSED	ANAL	U	03-APR-07	18-MAY-07
L42276-4	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	TOTS	SALTWTRSED	ANAL	U	03-APR-07	18-MAY-07
L42276-5	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	TOTS	SALTWTRSED	ANAL	U	03-APR-07	18-MAY-07
L42276-6	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	TOTS	SALTWTRSED	ANAL	U	03-APR-07	18-MAY-07
L42276-7	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	TOTS	SALTWTRSED	ANAL	U	03-APR-07	18-MAY-07
L42276-8	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	TOTS	SALTWTRSED	ANAL	U	03-APR-07	18-MAY-07
L42276-9	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	TOTS	SALTWTRSED	ANAL	U	03-APR-07	18-MAY-07
WG91105-1	MB			S	TOTS	OTHR SOLID	ANAL	U	18-APR-07	
WG91105-2	LD		SED	S	TOTS	SALTWTRSED	ANAL	U	18-APR-07	
WG91105-3	LT		SED	S	TOTS	SALTWTRSED	ANAL	U	18-APR-07	

Comments:

L42276-1	3 grab comp, 0-10 cm
L42276-2	3 grab comp, 0-10 cm
L42276-3	3 grab comp, 0-10 cm
L42276-4	3 grab comp, 0-10 cm
L42276-5	0-10 cm, AREP
L42276-6	0-10 cm, FREP
L42276-7	3 grab comp, 0-10 cm
L42276-8	3 grab comp, 0-10 cm
L42276-9	3 grab comp, 0-10 cm
WG91105-1	MB1 070417
WG91105-2	L42276-3
WG91105-3	WG91105-2 L42276-3

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 04/19/07 11:12
Run ID: R119603 Workgroup: WG91105 (TOTS DuDi Cap 423062-100-4)

MB:WG91105-1 Matrix: OTHR SOLID Listtype: CVTOTS Method: SM2540-G (03-01-007-002) Project: Pkey: SED
(Method Blank)

Parameter	Mdl	Rdl	Units	MB Value	Qual
Total Solids	.005	.01	%	<MDL	

LT:WG91105-3 LD:WG91105-2 L42276-3 Matrix: SALTWTRSED Listtype: CVTOTS Method: SM2540-G (03-01-007-002) Project: 423062-100-4 Pkey: SED
(Lab Triplicate, Lab Duplicate)

Parameter	Mdl	Rdl	Units	SampValue	LD Value	LT Value	RSD	Qual	LabLim
Total Solids	.005	.01	%	44.1	44.5	44.4	0		20

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

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

WG91105	CVTOTS	
Sample Number	%	Prep Date
Date Analyzed	04/17/07	
WG91105-1	0.000	04/17/07
L42276-1	74.737	04/17/07
L42276-2	42.974	04/17/07
L42276-3	44.058	04/17/07
WG91105-2	44.458	04/17/07
WG91105-3	44.355	04/17/07
L42276-4	63.130	04/17/07
L42276-5	80.575	04/17/07
L42276-6	82.356	04/17/07
L42276-7	54.485	04/17/07
L42276-8	41.703	04/17/07
L42276-9	41.950	04/17/07

King County Environmental Laboratory

WORK GROUP REPORT (wk02)

May 03 2007, 01:31 pm

Work Group: WG91106 (TOC DuDi Cap 423062-100-4) for Department: 3 - Conventionals

Created: 17-APR-07 PrepDate: Due: Operator: DO

Sample	Project Number	Project Description	PKey	C	Product	Matrix	Stat	UA	Workdate	Duedate
L42276-1	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	TOC	SALTWTRSED	ANAL	U	03-APR-07	19-MAY-07
L42276-2	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	TOC	SALTWTRSED	ANAL	U	03-APR-07	19-MAY-07
L42276-3	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	TOC	SALTWTRSED	ANAL	U	03-APR-07	19-MAY-07
L42276-4	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	TOC	SALTWTRSED	ANAL	U	03-APR-07	19-MAY-07
L42276-5	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	TOC	SALTWTRSED	ANAL	U	03-APR-07	19-MAY-07
L42276-6	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	TOC	SALTWTRSED	ANAL	U	03-APR-07	19-MAY-07
L42276-7	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	TOC	SALTWTRSED	ANAL	U	03-APR-07	19-MAY-07
L42276-8	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	TOC	SALTWTRSED	ANAL	U	03-APR-07	19-MAY-07
L42276-9	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	TOC	SALTWTRSED	ANAL	U	03-APR-07	19-MAY-07
WG91106-1	MB			S	TOC	OTHR SOLID	ANAL	U	17-APR-07	
WG91106-2	SRM			S	TOC	OTHR SOLID	ANAL	U	17-APR-07	
WG91106-3	SB			S	TOC	OTHR SOLID	ANAL	U	17-APR-07	
WG91106-4	LD		SED	S	TOC	SALTWTRSED	ANAL	U	17-APR-07	
WG91106-5	LT		SED	S	TOC	SALTWTRSED	ANAL	U	17-APR-07	
WG91106-6	MS		SED	S	TOC	SALTWTRSED	ANAL	U	17-APR-07	

Comments:

L42276-1	3 grab comp, 0-10 cm
L42276-2	3 grab comp, 0-10 cm
L42276-3	3 grab comp, 0-10 cm
L42276-4	3 grab comp, 0-10 cm
L42276-5	0-10 cm, AREP
L42276-6	0-10 cm, FREP
L42276-7	3 grab comp, 0-10 cm
L42276-8	3 grab comp, 0-10 cm
L42276-9	3 grab comp, 0-10 cm
WG91106-1	MB
WG91106-2	HICONC
WG91106-3	WG91106-1
WG91106-4	L42276-7
WG91106-5	WG91106-4 L42276-7
WG91106-6	L42276-7

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 05/03/07 02:40
Run ID: R119875 Workgroup: WG91106 (TOC DuDi Cap 423062-100-4)

MB:WG91106-1 Matrix: OTHR SOLID Listtype: CVTOC Method: EPA 9060-PSEP96(03-04-002-003) Project: Pkey: SED
(Method Blank)

Parameter	Mdl	Rdl	Units	MB Value	Qual
Total Organic Carbon	500	1000	mg/Kg	<MDL	

SRM:WG91106-2 Matrix: OTHR SOLID Listtype: CVTOC Method: EPA 9060-PSEP96(03-04-002-003) Project: Pkey: SED
(Std Reference Material)

Parameter	Mdl	Rdl	Units	Truevalue	SRM Value	% Rec.	Qual	LabLimit
Total Organic Carbon	2400	4840	mg/Kg	36900	34100	93		80-120

SB:WG91106-3 MB:WG91106-1 Matrix: OTHR SOLID Listtype: CVTOC Method: EPA 9060-PSEP96(03-04-002-003) Project: Pkey: SED
(Spike Blank, Method Blank)

Parameter	Mdl	Rdl	Units	MB Value	Truevalue	SB Value	% Rec.	Qual	LabLimit
Total Organic Carbon	500	1000	mg/Kg	<MDL	2500	2640	105		80-120

LT:WG91106-5 LD:WG91106-4 L42276-7 Matrix: SALTWTRSED Listtype: CVTOC Method: EPA 9060-PSEP96(03-04-002-003) Project: 423062-100-4 Pkey: SED
(Lab Triplicate, Lab Duplicate)

Parameter	Mdl	Rdl	Units	SampValue	LD Value	LT Value	RSD	Qual	LabLi
Total Organic Carbon	1000	2030	mg/Kg	7760	7750	7970	2		2

MS:WG91106-6 L42276-7 Matrix: SALTWTRSED Listtype: CVTOC Method: EPA 9060-PSEP96(03-04-002-003) Project: 423062-100-4 Pkey: SED
(Matrix Spike)

Parameter	Mdl	Rdl	Units	SampValue	Truevalue	MS Value	% Rec.	Qual	LabLimit
Total Organic Carbon	1100	2100	mg/Kg	7760	5258	12900	99		75-125

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

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

TOC Solids Sample Analysis Worksheet

Analyst: D. Osada
Analysis Date: 3-May-07
Workgroup #: WG91106

Load % Solids Data — Help w/ this function?
Load Raw Data — Help w/ this function?
Manual Calculation — Help w/ this function?
Calculator — 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	104.433525	102.683455	102.49323	1	✓103.203	NA	1	1	1	1	NA	NA	NA
RDL CK	108.238025	94.541825	91.878675	9	✓98.220	NA	0.2	0.2	0.2	0.2	NA	NA	NA
MB1 070503	-0.0342405	-0.0454638	-0.0454638	16	✓-0.042	-417.2	200	200	200	200	500	1000	100
SRM1 070503	3.40978313	3.40879611	3.42222091	0	✓3.414	✓34136	40	42.4	41.6	41.33333	2419.4	4838.7	100
SB1 070503	0.25585263	0.27411423	0.26117893	4	✓0.264	✓2637.2	200	200	200	200	500	1000	100
L42276-1	1.29774051	1.45943115	1.33661407	6	1.365	10368.7	50.6	54.9	60.4	55.3	1374	2748.1	76
L42276-2	2.85948665	2.91052414	2.92938283	1	2.900	12492.5	49.8	46.6	46.3	47.56667	905.7	1811.4	43
L42276-3	2.05680781	1.96298703	2.07313771	3	2.031	9041.4	41.6	45.1	42.3	43	1035.3	2070.6	45
L42276-4	1.31452653	1.30451893	1.27301479	2	1.297	8363.6	42.4	45.7	49.7	45.93333	1403.5	2807	64
L42276-5	0.29575753	0.25775488	0.28347255	7	0.279	2211.5	199.9	200	198.9	199.6	397.1	794.2	79
L42276-6	0.27142094	0.28789766	0.28451715	3	0.281	2319.2	198.2	196.9	197.1	197.4	417.7	835.4	82
CCV2	99.487675	100.705115	101.085565	1	✓100.426	NA	1	1	1	1	NA	NA	NA
L42276-7	1.44210099	1.44803083	1.41008676	1	1.433	✓7763.7	50.6	45.9	48.7	48.4	1119.1	2238.1	54
L42276-7LD	1.43307565	1.42274793	1.44144327	1	1.432	✓7745	53.6	50.7	53.5	52.6	1027.9	2055.9	54
L42276-7LT	1.49050155	1.42981499	1.47749621	2	1.466	✓7967.9	54.7	51.7	54.1	53.5	1016	2031.9	54
L42276-7MS	2.412053	2.38659212	2.37110933	1	2.390	✓12944.3	50	52	52.5	51.5	1051.7	2103.4	54
L42276-8	1.98468083	2.02494924	2.00176408	1	2.004	8348.8	54	46.2	49.7	49.96667	833.8	1667.7	42
L42276-9	2.03765033	2.06077083	2.07612442	1	2.058	8523.8	45.8	46.8	47.7	46.76667	885.6	1771.1	41
CCV3	101.313835	102.303005	100.248575	1	✓101.288	NA	1	1	1	1	NA	NA	NA

Comments:

TOC Solid-Matrix Preparation Logbook

Analyst D. Osada
Beginning Prep Date ~~4/17/05~~ 4/17/07
Ending Prep Date 4/19/07

Workgroup # WG491152
Project No. 423062-108-4 DuDi
Project Name DuDi Cap

160791 H^3PO^4 Lot No

Sample Container Tracking

Date	Sample Numbers	Collect Date Jar ID	Initial Login	Transfer to:	Comments	Transfer to:	Comments
4/17/07	L42276-1 to 9		10	LAB	Samples weighed for TOC	10	returned for storage

Prepared Sample Tracking

Date	Sample Numbers	Batch QC (-LD, -LT, -MS)	Initial Storage	Transfer to:	Comments	Transfer to:	Comments	Final Prep Date
4/17/07	L42276-1 to -9	-7 LD, LT, MS	LAB	TOC OVEN	Dried overnight @ 70°C			
4/19/07	L42276-1 to 9	-7 LD, LT, MS	TOC OVEN	DESSICATOR	Weighed for TOC solids	CH	Pulverized + acidified	
↓	↓	↓	CH	TOC OVEN	Dried overnight @ 70°C			
4/19/07	L42276-1 to 9	-7 LD, LT, MS	TOC OVEN	CH	Pulverized + Acidified	TOC OVEN	Dried @ 70°C for 4 hrs	
↓	↓	↓	TOC OVEN	CH	Pulverized + transferred to vials	18	for storage	4/19/07

Cooler 10 / -20 °C
Cooler 18 / -20 °C
Cooler 12 / 4 °C

TOC Oven / 70 °C
Conventionals Hood (CH) / Room Temp

METAL CHEMISTRY QC DATA

King County Environmental Laboratory

WORK GROUP REPORT (wk02)

Jul 12 2007, 06:35 am

Work Group: WG91185 (Du/Di) for Department: 6 - Metals, Trace

Created: 24-APR-07 PrepDate: 23-APR-07 Due: Operator: ST

Sample	Project Number	Project Description	PKey	C	Product	Matrix	Stat	UA	Workdate	Duedate
L42276-1	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	HG-CVAA-M	SALTWTRSED	WKGP	U	01-MAY-07	19-MAY-07
L42276-2	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	HG-CVAA-M	SALTWTRSED	WKGP	U	01-MAY-07	19-MAY-07
L42276-3	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	HG-CVAA-M	SALTWTRSED	WKGP	U	01-MAY-07	19-MAY-07
L42276-4	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	HG-CVAA-M	SALTWTRSED	WKGP	U	01-MAY-07	19-MAY-07
L42276-5	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	HG-CVAA-M	SALTWTRSED	WKGP	U	01-MAY-07	19-MAY-07
L42276-6	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	HG-CVAA-M	SALTWTRSED	WKGP	U	01-MAY-07	19-MAY-07
L42276-7	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	HG-CVAA-M	SALTWTRSED	WKGP	U	01-MAY-07	19-MAY-07
L42276-8	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	HG-CVAA-M	SALTWTRSED	WKGP	U	01-MAY-07	19-MAY-07
L42276-9	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	HG-CVAA-M	SALTWTRSED	WKGP	U	01-MAY-07	19-MAY-07
WG91185-1	SRM		SED	S	HG-CVAA-M	SALTWTRSED	WKGP	U	25-APR-07	
WG91185-2	MB			S	HG-CVAA-M	SOLIDBLANK	WKGP	U	25-APR-07	
WG91185-3	SB			S	HG-CVAA-M	SOLIDBLANK	WKGP	U	25-APR-07	
WG91185-4	MS		SED	S	HG-CVAA-M	SALTWTRSED	WKGP	U	25-APR-07	
WG91185-5	MSD		SED	S	HG-CVAA-M	SALTWTRSED	WKGP	U	25-APR-07	
WG91185-6	LD		SED	S	HG-CVAA-M	SALTWTRSED	WKGP	U	25-APR-07	

Comments:

L42276-1	3 grab comp, 0-10 cm
L42276-2	3 grab comp, 0-10 cm
L42276-3	3 grab comp, 0-10 cm
L42276-4	3 grab comp, 0-10 cm
L42276-5	0-10 cm, AREP
L42276-6	0-10 cm, FREP
L42276-7	3 grab comp, 0-10 cm
L42276-8	3 grab comp, 0-10 cm
L42276-9	3 grab comp, 0-10 cm
WG91185-1	PACS2
WG91185-2	METHOD BLANK
WG91185-3	WG91185-2 HG-SMID
WG91185-4	L42276-8 HG-SMID
WG91185-5	WG91185-4 L42276-8 HG-SMID-MSD
WG91185-6	L42276-8 RPD-SOL

KING COUNTY ENVIRONMENTAL LABORATORY

Trace Metals Section HG-CVAA Preparation Log

Preparation Method: EPA 7471A
Work Group #: WG 91185
Project Number(s): 423062
Analyst: S T
Project Description(s): D ID:
Matrices: SF- Saltwater Sediment
Preparation Date: ~~4/20/07~~ 4/23/07 ST
Preparation: (1st) 2nd 3rd
Temperature: 95.3°C
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	L422760-1	0.988	120			11					
2	-2	1.035				12					
3	-3	1.024				13					
4	-4	1.017				14					
5	-5	1.030				15					
6	-6	1.017				16					
7	-7	1.001				17					
8	-8	1.066		BKG		18					
9	-9	0.988				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	WG 91185-1	PACS-2	0.199	120	MI-11-30			
2	-2	Method Blk	1.05					
3	-3	spike Blank			Hg-07-036	2ppm	50	
4	-4	L422760-8 MS	0.987					
5	-5	L422760-8 MSD	1.013					
6	-6	L422760-8 LD	0.991					
7								
8								
9								

Calibration and Instrument Check Standards

prep date 4/24/07 ST

	Standard Conc. (ppb or ppt)	Cal Std	Inst Chk Std	Aliquot (g or mL)	Final Vol.(mL)	Solution ID #	Solution Conc.	Amount Used (uL)
1								
2								
3								
4	See WG 91181 for info on cal & QC Stds							
5								
6								
7								
8								
9								
10								
11								

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

Reagent Solution ID #'s

$KMnO_4$ Hg-07-042	$K_2S_2O_8$ NA	NH_2OH-HCl Hg-07-026	$SnCl_2$ Hg-07-048

Comments:

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 07/12/07 07:19
Run ID: R121001 Workgroup: WG91185 (Du/Di)

SRM:WG91185-1 Matrix: SALTWTRSED Listtype: MTHG-MIDS 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	.05	.503	mg/Kg	3.04	2.91	96		80-120

MB:WG91185-2 Matrix: SOLIDBLANK Listtype: MTHG-MIDS Method: EPA 7471A (06-01-004-003) Project: Pkey: SED
(Method Blank)

Parameter	Mdl	Rdl	Units	MB Value	Qual
Mercury, Total, CVAA	.0048	.0476	mg/Kg	<MDL	

SB:WG91185-3 MB:WG91185-2 Matrix: SOLIDBLANK Listtype: MTHG-MIDS 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	.0048	.0476	mg/Kg	<MDL	0.0952	.0958	101		85-115

MSD:WG91185-5 MS:WG91185-4 L42276-8 Matrix: SALTWTRSED Listtype: MTHG-MIDS Method: EPA 7471A (06-01-004-003) Project: 423062-100-4 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
Mercury, Total, CVAA	.0049	.0494	mg/Kg	.0694	0.101	.167	96		75-125	0.0987	.178	110		14		20

LD:WG91185-6 L42276-8 Matrix: SALTWTRSED Listtype: MTHG-MIDS Method: EPA 7471A (06-01-004-003) Project: 423062-100-4 Pkey: SED
(Lab Duplicate)

Parameter	Mdl	Rdl	Units	SampValue	LD Value	RPD	Qual	LabLimit
Mercury, Total, CVAA	.0051	.0507	mg/Kg	.0694	.0733	5		20

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

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

WG91185	6-SED	ng/L			
WG91185-1	25-Apr-07	2891.2	0.199	2	100
WG91185-2	25-Apr-07	3.2983	1.05	1	100
WG91185-3	25-Apr-07	1005.4	1.05	1	100
L42276-1	25-Apr-07	582.66	0.988	1	100
L42276-2	25-Apr-07	904.33	1.035	1	100
L42276-3	25-Apr-07	847.72	1.024	1	100
L42276-4	25-Apr-07	642.65	1.017	1	100
L42276-5	25-Apr-07	191.74	1.03	1	100
L42276-6	25-Apr-07	163.54	1.017	1	100
L42276-7	25-Apr-07	906.36	1.001	1	100
L42276-8	25-Apr-07	696.32	1.003	1	100
WG91185-4	25-Apr-07	723.71	~~0.987~~ ~~0.991~~	1 .987	100
WG91185-5	25-Apr-07	1802.1	1.013	1	100
WG91185-6	25-Apr-07	1653.8	~~0.991~~ ~~0.987~~	1 .991	100
L42276-9	25-Apr-07	669.18	0.968	1	100

4/30/07 ST

King County Environmental Laboratory

WORK GROUP REPORT (wk02)

May 07 2007, 07:38 am

Work Group: WG91308 (ICP 5/2/07) for Department: 6 - Metals, Trace

Created: 02-MAY-07 PrepDate: 02-MAY-07 Due: Operator: BDM

Sample	Project Number	Project Description	PKey	C	Product	Matrix	Stat	UA	Workdate	Duedate
L42276-1	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	AL-ICP	SALTWTRSED	WKGP	U	19-MAY-07	19-MAY-07
L42276-1	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	FE-ICP	SALTWTRSED	WKGP	U	19-MAY-07	19-MAY-07
L42276-1	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	MN-ICP	SALTWTRSED	WKGP	U	19-MAY-07	19-MAY-07
L42276-1	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	PP ICP	SALTWTRSED	WKGP	U	19-MAY-07	19-MAY-07
L42276-2	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	AL-ICP	SALTWTRSED	WKGP	U	19-MAY-07	19-MAY-07
L42276-2	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	PP ICP	SALTWTRSED	WKGP	U	19-MAY-07	19-MAY-07
L42276-2	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	MN-ICP	SALTWTRSED	WKGP	U	19-MAY-07	19-MAY-07
L42276-2	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	FE-ICP	SALTWTRSED	WKGP	U	19-MAY-07	19-MAY-07
L42276-3	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	AL-ICP	SALTWTRSED	WKGP	U	19-MAY-07	19-MAY-07
L42276-3	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	FE-ICP	SALTWTRSED	WKGP	U	19-MAY-07	19-MAY-07
L42276-3	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	MN-ICP	SALTWTRSED	WKGP	U	19-MAY-07	19-MAY-07
L42276-3	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	PP ICP	SALTWTRSED	WKGP	U	19-MAY-07	19-MAY-07
L42276-4	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	MN-ICP	SALTWTRSED	WKGP	U	19-MAY-07	19-MAY-07
L42276-4	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	PP ICP	SALTWTRSED	WKGP	U	19-MAY-07	19-MAY-07
L42276-4	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	FE-ICP	SALTWTRSED	WKGP	U	19-MAY-07	19-MAY-07
L42276-4	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	AL-ICP	SALTWTRSED	WKGP	U	19-MAY-07	19-MAY-07
L42276-5	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	AL-ICP	SALTWTRSED	WKGP	U	19-MAY-07	19-MAY-07
L42276-5	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	MN-ICP	SALTWTRSED	WKGP	U	19-MAY-07	19-MAY-07
L42276-5	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	PP ICP	SALTWTRSED	WKGP	U	19-MAY-07	19-MAY-07
L42276-5	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	FE-ICP	SALTWTRSED	WKGP	U	19-MAY-07	19-MAY-07
L42276-6	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	AL-ICP	SALTWTRSED	WKGP	U	19-MAY-07	19-MAY 07
L42276-6	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	PP ICP	SALTWTRSED	WKGP	U	19-MAY-07	19-MAY-07
L42276-6	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	FE-ICP	SALTWTRSED	WKGP	U	19-MAY-07	19-MAY-07
L42276-6	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	MN-ICP	SALTWTRSED	WKGP	U	19-MAY-07	19-MAY-07
L42276-7	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	AL-ICP	SALTWTRSED	WKGP	U	19-MAY-07	19-MAY-07
L42276-7	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	FE-ICP	SALTWTRSED	WKGP	U	19-MAY-07	19-MAY-07
L42276-7	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	MN-ICP	SALTWTRSED	WKGP	U	19-MAY-07	19-MAY-07
L42276-7	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	PP ICP	SALTWTRSED	WKGP	U	19-MAY-07	19-MAY-07
L42276-8	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	AL-ICP	SALTWTRSED	WKGP	U	19-MAY-07	19-MAY-07
L42276-8	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	FE-ICP	SALTWTRSED	WKGP	U	19-MAY-07	19-MAY-07
L42276-8	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	PP ICP	SALTWTRSED	WKGP	U	19-MAY-07	19-MAY-07
L42276-8	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	MN-ICP	SALTWTRSED	WKGP	U	19-MAY-07	19-MAY-07
L42276-9	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	PP ICP	SALTWTRSED	WKGP	U	19-MAY-07	19-MAY-07
L42276-9	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	MN-ICP	SALTWTRSED	WKGP	U	19-MAY-07	19 MAY 07
L42276-9	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	FE-ICP	SALTWTRSED	WKGP	U	19-MAY-07	19-MAY-07
L42276-9	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	AL-ICP	SALTWTRSED	WKGP	U	19-MAY-07	19-MAY-07
WG91308-1	SB			S	PP ICP	SOLIDBLANK	WKGP	U	02-MAY-07	
WG91308-2	SRM		SED	S	PP ICP	SALTWTRSED	WKGP	U	02-MAY-07	
WG91308-3	MB			S	PP ICP	SOLIDBLANK	WKGP	U	02-MAY-07	
WG91308-4	LD		SED	S	PP ICP	SALTWTRSED	WKGP	U	02-MAY-07	
WG91308-5	MS		SED	S	PP ICP	SALTWTRSED	WKGP	U	02-MAY-07	
WG91308-6	LCS			S	PP ICP	SOIL	WKGP	U	02-MAY-07	

Comments:

L42276-1	3 grab comp, 0-10 cm
L42276-2	3 grab comp, 0-10 cm
L42276-3	3 grab comp, 0-10 cm
L42276-4	3 grab comp, 0-10 cm
L42276-5	0-10 cm, AREP
L42276-6	0-10 cm, FREP
L42276-7	3 grab comp, 0-10 cm
L42276-8	3 grab comp, 0-10 cm
L42276-9	3 grab comp, 0-10 cm
WG91308-1	WG91308-3 ICPMARINE SPIKE BLANK
WG91308-2	PACS2
WG91308-3	DIGESTED METHOD BLANK
WG91308-4	L42276-2 RPD-SOL LAB DUPLICATE
WG91308-5	L42276-2 ICPMARINE MATRIX SPIKE
WG91308-6	ERASOIL

KING COUNTY ENVIRONMENTAL LABORATORY

Trace Metals Section ICP Preparation Log

Preparation Method: EPA 3050 B
Project Number(s): 423062
Project Description(s): Duwamish/Diag
Preparation Date: 5-2-07

Work Group #: WG91308
Analyst: Brian Moyle/Jawali
Matrices: Saltwater Sediments
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	L42276-1	1.0028	50			11					
2	-2	1.0000		BKG		12					
3	-3	1.0000				13					
4	-4	1.0027				14					
5	-5	1.0001				15					
6	-6	1.0011				16					
7	-7	1.0008				17					
8	-8	1.0011				18					
9	-9	1.0038				19					
10						20					

Quality Control Samples

	QC Sample Number	QC Sample Description	Aliquot (g or mL)	Final Vol.(mL)	Comments	pH <2
1	WG91308-1	Spike Blank	1.0500	50	ICP MARINE	
2	-2	~~Lab Control Sample~~ SRM	0.2515		PACS2 M1-11-30	
3	-3	Method Blank	1.0500			
4	-4	Lab Duplicate	1.0001		L42276-2	
5	-5	Matrix Spike	1.0020		L42276-2	
6	-6	LAB CONTROL SAMPLE			ERA SOIL M-05-038	
7						
8						
9						
10						

Spike Solution

	Solution Name	Solution ID #	Solution Conc. (mg/L)	Amount Used (uL)
1	Cal 1/2	M-06-011	VARIES	500
2	3	M-06-031	100	1
3	4	M-06-076	5,000	1000
4	K	M-07-011	10,000	500
5	Mn	M-06-049	1,000	200
6	Zn	M-06-048		1
7				

Comments:

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 05/07/07 07:39
Run ID: R119913 Workgroup: WG91308 (ICP 5/2/07)

SB:WG91308-1 MB:WG91308-3 Matrix: SOLIDBLANK Listtype: MTICP-SED Method: EPA3050B/6010B MOD(6-2-04-02) Project: Pkey: SED
(Spike Blank, Method Blank)

Parameter	Mdl	Rdl	Units	MB Value	Truevalue	SB Value	% Rec.	Qual	LabLimit
Silver, Total, ICP	.19	.952	mg/Kg	<MDL	47.6	48.1	101		85-115
Aluminum, Total, ICP	4.8	23.8	mg/Kg	<MDL	4810	4830	100		85-115
Arsenic, Total, ICP	1.2	5.95	mg/Kg	<MDL	47.6	50.3	106		85-115
Beryllium, Total, ICP	.048	.238	mg/Kg	<MDL	47.6	48.9	103		85-115
Cadmium, Total, ICP	.095	.476	mg/Kg	<MDL	47.6	48.7	102		85-115
Chromium, Total, ICP	.14	.714	mg/Kg	<MDL	47.6	49.1	103		85-115
Copper, Total, ICP	.19	.952	mg/Kg	<MDL	47.6	49.1	103		85-115
Iron, Total, ICP	2.4	11.9	mg/Kg	<MDL	4810	4840	101		85-115
Manganese, Total, ICP	.095	.476	mg/Kg	<MDL	238.	237	99		85-115
Nickel, Total, ICP	.24	1.19	mg/Kg	<MDL	47.6	47.8	100		85-115
Lead, Total, ICP	.95	4.76	mg/Kg	<MDL	47.6	48.4	102		85-115
Antimony, Total, ICP	.71	3.57	mg/Kg	<MDL	47.6	51	107		85-115
Selenium, Total, ICP	1.2	5.95	mg/Kg	<MDL	47.6	50.2	105		85-115
Thallium, Total, ICP	1.9	9.52	mg/Kg	<MDL	47.6	48.4	102		85-115
Zinc, Total, ICP	.24	1.19	mg/Kg	<MDL	238.	239	100		85-115

SRM:WG91308-2 Matrix: SALTWTRSED Listtype: MTICP-SED Method: EPA3050B/6010B MOD(6-2-04-02) Project: Pkey: SED
(Std Reference Material)

Parameter	Mdl	Rdl	Units	Truevalue	SRM Value	% Rec.	Qual	LabLimit
Aluminum, Total, ICP	20	99.4	mg/Kg	66200	14400	22		10-43
Chromium, Total, ICP	.6	2.98	mg/Kg	90.7	45.6	50		30-70
Copper, Total, ICP	.8	3.98	mg/Kg	310	300	97		78-118
Iron, Total, ICP	9.9	49.7	mg/Kg	40900	30000	73		55-95
Manganese, Total, ICP	.4	1.99	mg/Kg	440	234	53		35-75
Nickel, Total, ICP	.99	4.97	mg/Kg	39.5	28.2	71		51-91
Lead, Total, ICP	4	19.9	mg/Kg	183	178	98		74-114
Zinc, Total, ICP	.99	4.97	mg/Kg	364	341	94		73-113

MB:WG91308-3 Matrix: SOLIDBLANK Listtype: MTICP-SED Method: EPA3050B/6010B MOD(6-2-04-02) 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	1.2	5.95	mg/Kg	<MDL	
Beryllium, Total, ICP	.048	.238	mg/Kg	<MDL	
Cadmium, Total, ICP	.095	.476	mg/Kg	<MDL	
Chromium, Total, ICP	.14	.714	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	.24	1.19	mg/Kg	<MDL	
Lead, Total, ICP	.95	4.76	mg/Kg	<MDL	
Antimony, Total, ICP	.71	3.57	mg/Kg	<MDL	
Selenium, Total, ICP	1.2	5.95	mg/Kg	<MDL	
Thallium, Total, ICP	1.9	9.52	mg/Kg	<MDL	
Zinc, Total, ICP	.24	1.19	mg/Kg	<MDL	

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 05/07/07 07:39
Run ID: R119913 Workgroup: WG91308 (ICP 5/2/07)

LD:WG91308-4 L42276-2 Matrix: SALTWTRSED Listtype: MTICP-SED Method: EPA3050B/6010B MOD(6-2-04-02) Project: 423062-100-4 Pkey: SED
(Lab Duplicate)

Parameter	Mdl	Rdl	Units	SampValue	LD Value	RPD	Qual	LabLimi
Silver, Total, ICP	.2	1	mg/Kg	<MDL	<MDL			20
Aluminum, Total, ICP	5	25	mg/Kg	11600	11900	2		20
Arsenic, Total, ICP	1.2	6.25	mg/Kg	6.1	5.9			20
Beryllium, Total, ICP	.05	.25	mg/Kg	.261	.263	1		20
Cadmium, Total, ICP	.1	.5	mg/Kg	.24	.23			20
Chromium, Total, ICP	.15	.75	mg/Kg	14.2	14.8	4		20
Copper, Total, ICP	.2	1	mg/Kg	37.4	39.2	5		20
Iron, Total, ICP	2.5	12.5	mg/Kg	15700	16100	3		20
Manganese, Total, ICP	.1	.5	mg/Kg	168	172	3		20
Nickel, Total, ICP	.25	1.25	mg/Kg	10.9	11.4	4		20
Lead, Total, ICP	1	5	mg/Kg	18.1	18.8	4		20
Antimony, Total, ICP	.75	3.75	mg/Kg	<MDL	<MDL			20
Selenium, Total, ICP	1.2	6.25	mg/Kg	<MDL	<MDL			20
Thallium, Total, ICP	2	10	mg/Kg	<MDL	<MDL			20
Zinc, Total, ICP	.25	1.25	mg/Kg	78.2	78.5	0		20

MS WG91308-5 L42276-2 Matrix: SALTWTRSED Listtype: MTICP-SED Method: EPA3050B/6010B MOD(6-2-04-02) Project: 423062-100-4 Pkey: SED
(Matrix Spike)

Parameter	Mdl	Rdl	Units	SampValue	Truevalue	MS Value	% Rec.	Qual	LabLimit
Silver, Total, ICP	.2	.998	mg/Kg	<MDL	49.9	50	100		75-125
Aluminum, Total, ICP	5	25	mg/Kg	11600	5040	18500	137	L	75-125
Arsenic, Total, ICP	1.2	6.24	mg/Kg	6.1	49.9	55.9	100		75-125
Beryllium, Total, ICP	.05	.25	mg/Kg	.261	49.9	51	102		75-125
Cadmium, Total, ICP	.1	.499	mg/Kg	.24	49.9	49.1	98		75-125
Chromium, Total, ICP	.15	.749	mg/Kg	14.2	49.9	64.4	101		75-125
Copper, Total, ICP	.2	.998	mg/Kg	37.4	49.9	87.7	101		75-125
Iron, Total, ICP	2.5	12.5	mg/Kg	15700	5040	20800	101		75-125
Manganese, Total, ICP	.1	.499	mg/Kg	168	250.	405	95		75-125
Nickel, Total, ICP	.25	1.25	mg/Kg	10.9	49.9	58.5	95		75-125
Lead, Total, ICP	1	4.99	mg/Kg	18.1	49.9	65.5	95		75-125
Antimony, Total, ICP	.75	3.74	mg/Kg	<MDL	49.9	11.3	23	G	75-125
Selenium, Total, ICP	1.2	6.24	mg/Kg	<MDL	49.9	49.2	99		75-125
Thallium, Total, ICP	2	9.98	mg/Kg	<MDL	49.9	47.6	95		75-125
Zinc, Total, ICP	.25	1.25	mg/Kg	78.2	250.	318	96		75-125

LCS:WG91308-6 Matrix: SOIL Listtype: MTICP-SED Method: EPA3050B/6010B MOD(6-2-04-02) Project: Pkey: SED
(Lab Control Sample)

Parameter	Mdl	Rdl	Units	Truevalue	LCS Value	% Rec.	Qual	LabLimit
Silver, Total, ICP	.83	4.13	mg/Kg	171	178	104		80-120
Aluminum, Total, ICP	21	103	mg/Kg	7890	6420	81		80-120
Arsenic, Total, ICP	5.2	25.8	mg/Kg	142	144	102		80-120
Beryllium, Total, ICP	.21	1.03	mg/Kg	40.6	40.9	101		80-120
Cadmium, Total, ICP	.41	2.07	mg/Kg	64.5	65.6	102		80-120
Chromium, Total, ICP	.62	3.1	mg/Kg	86.5	82.1	95		80-120
Copper, Total, ICP	.83	4.13	mg/Kg	68.6	64.1	93		80-120
Iron, Total, ICP	10	51.6	mg/Kg	13600	10800	79	*	80-120
Manganese, Total, ICP	.41	2.07	mg/Kg	501	499	100		80-120

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 05/07/07 07:39
Run ID: R119913 Workgroup: WG91308 (ICP 5/2/07)

LCS:WG91308-6 Matrix: SOIL Listtype: MTICP-SED Method: EPA3050B/6010B MOD(6-2-04-02) Project: Pkey: SED
(Lab Control Sample)

Parameter	Mdl	Rdl	Units	Truevalue	LCS Value	% Rec	Qual	LabLimit
Nickel, Total, ICP	1	5.16	mg/Kg	68.4	67.2	98		80-120
Lead, Total, ICP	4.1	20.7	mg/Kg	93.6	94.6	101		80-120
Antimony, Total, ICP	3.1	15.5	mg/Kg	105	78.5	75	*	80-120
Selenium, Total, ICP	5.2	25.8	mg/Kg	124	129	104		80-120
Thallium, Total, ICP	8.3	41.3	mg/Kg	110	123	112		80-120
Zinc, Total, ICP	1	5.16	mg/Kg	296	286	97		80-120

==========

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

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

Trace Metals Data Anomaly Form

Date(s) Occurred: *5-3-2007*

WG #(s): *WG91308*

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

Project #(s): *423062*

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:

[1] ☐ Blank Contamination
[2] ☐ SB Spike Recoveries
[3] ☐ ISTD Recoveries
[4] ☐ LCS/SRM Recoveries
[5] ☒ MS/MSD Spike Recoveries
[6] ☐ MS/MSD RPD
[7] ☐ Sample/LD RPD

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

[8] ☐ Holding time exceeded by:
[9] ☐ Insufficient sample amount.
[10] ☐ Inappropriate storage, container, or preservation.
[11] ☒ Other

Anomaly Description: *Manganese and Zinc failed to meet acceptance limits in the ICSA check standard. They failed above the +/- MDL criteria.*
The following elements in the Matrix Spike failed to meet the +/- 25% acceptance criteria; Al at 137% and Sb at 23%.
The following elements in WG91308-6 (LCS) failed to meet the +/- 20% acceptance criteria; Fe at 79% and Sb at 75%.

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"
☐ Sample(s) re-prepared and re-analyzed
☐ Exposure deleted
☒ Data qualified with the following flags: *Al "L", Sb " G ", WG91308-6 QC report only Fe " * ", Sb " * "*.
☐ Other

Corrective Action Description: *Manganese and Zinc are known contaminants in the CAL4 standard used to make up the ICSA check standard. ICP-MS confirmed the contamination in a separate analysis of the CAL4 solution. The Trace Metals group is currently investigating options to mitigate this contamination.*
The low matrix spike recovery for Sb is related to the 3050 digestion procedure. The spike blank recovery (107%) indicates that the matrix may be affecting antimony during digestion. Sb results will be qualified with a "G". No further corrective action is required for Sb as per the Trace Metals decision dated 8-1-2006.
The spiked amount for Al was not adequate enough to meet the 2 to 3 times higher than the sample concentration guidelines. Al results will be qualified with a "L". The Trace Metals Lab will explore the possibility of increasing the Al spiking concentration for Marine Sediments to a more appropriate level.
There was no definitive reason for the low recoveries for Fe at 79% and Sb at 75% of the LCS (erasoil). Typically the % recoveries of these two elements are within the acceptance ranges. The results for Fe and Sb did not seem to be impacted. All of the Sb results were <MDL and the Fe results were so robust that one could not identify any degradation of concentration. The project planner (Scot Mickelson) was informed of this issue and accepts reporting the data "as is".

VI. Potential Effects on Data Quality:

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

☒ Potential effect explanation (explanation mandatory): *The reported values for Sb may be biased low, as indicated by the low matrix spike recovery.*

	Signatures	Signature Dates
Reported By: *Brian Mazikowski*	Brian Mazikowski	5-14-07
Reviewer: *Susannah Hochstein*	S. Hochstein	5/14/07
Supervisor: *Diane McElhany*		
QA Officer: *Colin Elliott* (For QA1 only)		
cc: LPM:		

ORGANIC CHEMISTRY QC DATA

King County Environmental Laboratory

WORK GROUP REPORT (wk02)

May 15 2007, 01:21 pm

Work Group: WG91190 (pplls#62 pestll) for Department: 7 - Organics, Trace

Created: 24-APR-07 PrepDate: 24-APR-07 Due: Operator: km

Sample	Project Number	Project Description	PKey	C	Product	Matrix	Stat	UA	Workdate	Duedate
L42274-5	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PESTLL	SALTWTRSED	WKGP	U	17-APR-07	19-MAY-07
L42276-4	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	PESTLL	SALTWTRSED	PREP	U	17-APR-07	19-MAY-07
L42276-5	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	PESTLL	SALTWTRSED	PREP	U	17-APR-07	19-MAY-07
L42276-6	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	PESTLL	SALTWTRSED	PREP	U	17-APR-07	19-MAY-07
L42276-7	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	PESTLL	SALTWTRSED	PREP	U	17-APR-07	19-MAY-07
L42276-8	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	PESTLL	SALTWTRSED	PREP	U	17-APR-07	19-MAY-07
L42276-9	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	PESTLL	SALTWTRSED	PREP	U	17-APR-07	19-MAY-07
WG91190-1	MB			S	PESTLL	OTHR SOLID	PREP	U	24-APR-07	
WG91190-2	SB			S	PESTLL	OTHR SOLID	PREP	U	24-APR-07	
WG91190-3	MS		SED	S	PESTLL	SALTWTRSED	PREP	U	24-APR-07	
WG91190-4	MSD		SED	S	PESTLL	SALTWTRSED	PREP	U	24-APR-07	
WG91190-5	SRM			S	PESTLL	OTHR SOLID	PREP	U	24-APR-07	
WG91190-6	LD		SED	S	PESTLL	SALTWTRSED	PREP	U	24-APR-07	

Comments:

L42274-5	Take Minimum Casts
L42276-4	3 grab comp, 0-10 cm
L42276-5	0-10 cm, AREP
L42276-6	0-10 cm, FREP
L42276-7	3 grab comp, 0-10 cm
L42276-8	3 grab comp, 0-10 cm
L42276-9	3 grab comp, 0-10 cm
WG91190-1	MB070424
WG91190-2	WG91190-1
WG91190-3	L42276-4
WG91190-4	WG91190-3 L42276-4
WG91190-5	1944
WG91190-6	L42276-6

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

1:1 MeCL2:ACETONE

PEST-LL WORKGROUP NO.: WG 91190
PCB-LL WORKGROUP NO.: WG 91191
PESTICIDE SURROGATE SPIKE I.D. # 1372
PESTICIDE MATRIX SPIKE I.D. # 1310.1
PCB MATRIX SPIKE I.D. # ~~1375~~ 1402

QC BATCH NO.: PPLLS #62 pestll/pcbll

EPA SW-~~846 EXTRACTON~~ METHOD:
SONICATION EPA 3550 SOXHLET EPA 3540

2.0 ml PCB extract split from 2.5 ml total

Date/ Analyst	Sample Number	Project Number	Sample Description	coc	Initial Amt(g)	Effective Amt. (g) after split		Spike Amt. (uL)	Vf (ml)	CLEANUPS (GPC, AL,TBA)	PCB H+	Pest-LL conc. anlyst	Pest-LL turn in Date	PCB-LL conc. anlyst	PCB-LL turn in Date	Comments
4/24/07	WG91190-1	QC	MB		30.0g		Pest	1372 100µl	2.5	UES			5/3/07			
	WG91190-1		MB				PCB		0.5		Ht					
	WG91190-2		SB (pestll)		30.0g		Pest	1310.1 100µl	2.5							
							PCB		/		/					
	WG91191-2		SB (PCB)		24.0g		Pest	1402 200µl	/							
							PCB		0.5		Ht					
	WG91190-3		pestll ms (L42276-4)		30.0g		Pest	1310.1 100µl	2.5							
							PCB		/		/					
	WG91190-4		pestll msd (L42276-4)		30.0g		Pest		2.5							
							PCB		/		/					
	WG91191-3		pcbll ms (L42276-5)		24.0g		Pest	1402 200µl	/							
							PCB		0.5							
	WG91191-4		pcbll msd (L42276-5)		24.0g		Pest		/							
							PCB		0.5							
	WG91190-5		pestll SRM 1944		3.0g		Pest		2.0							
							PCB		/							
	WG91191-5		pcbll SRM HS2		7.5g		Pest		/							
							PCB		0.5							
	WG91190/91-6		LD (L42276-6)		30.0		Pest		2.5							
							PCB		0.5							
	L42276-4	423062	DU/DI CAP		30.0		Pest		2.5							
							PCB	/	0.5	/		/				

CONT NEXT PAGE

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

1:1 MeCL2:ACETONE

QC BATCH NO.: PPLLS #62 pestll/pcbll

EPA SW-846 EXTRACTON METHOD:
SONICATION EPA 3550 SOXHLET EPA 3540

2.0 ml PCB extract split from 2.5 ml total

PEST-LL WORKGROUP NO.: WG94490
PCB-LL WORKGROUP NO.: WG94491
PESTICIDE SURROGATE SPIKE I.D. # 1372
PESTICIDE MATRIX SPIKE I.D. # 1310.1
PCB MATRIX SPIKE I.D. # 1402

Date/ Analyst	Sample Number	Project Number	Sample Description	coc	Initial Amt(g)	Effective Amt. (g) after split	Spike Amt. (uL)	Vf (ml)	CLEANUPS (GPC, AL, TBA)	PCB H+	Pest-LL conc. anlyst	Pest-LL turn in Date	PCB-LL conc. anlyst	PCB-LL turn in Date	Comments
Km 4/24/07	~~L42276~~-5	423062	DW/DI CHP		30.0g	Pest	1372 100µl	2.5	YES		VV	5/3/07			
		100-004	MONITORING			PCB		0.5		H+					
	-6					Pest		2.5							
						PCB		0.5		H+					
	-7					Pest		2.5							
						PCB		0.5		H+					
	-8					Pest		2.5							
						PCB		0.5		H+					
	-9					Pest		2.5							
						PCB		0.5		H+					
	L42274-5					Pest		2.5							
						PCB		0.5		H+					
						Pest									
						PCB									
						Pest									
						PCB									
						Pest									
						PCB									
						Pest									
						PCB									
						Pest									
						PCB									

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 07/09/07 01:21
Run ID: R120526 Workgroup: WG91190 (pplls#62 pestll)

MB:WG91190-1 Matrix: OTHR SOLID Listtype: ORPESTLL Method: EPA 8081A/8082 (7-3-03-002) Project: Pkey: SED
(Method Blank)

Parameter	Mdl	Rdl	Units	MB Value	Qual
Alpha-BHC	.33	.667	ug/Kg	<MDL	
Beta-BHC	.33	.667	ug/Kg	<MDL	
Delta-BHC	.33	.667	ug/Kg	<MDL	
Gamma-BHC (Lindane)	.33	.667	ug/Kg	<MDL	
Heptachlor	.33	.667	ug/Kg	<MDL	
Aldrin	.67	1.33	ug/Kg	<MDL	
Heptachlor Epoxide	.33	.667	ug/Kg	<MDL	
Endosulfan I	.67	1.33	ug/Kg	<MDL	
Dieldrin	.67	1.33	ug/Kg	<MDL	
4,4'-DDE	.67	1.33	ug/Kg	<MDL	
Endrin	.67	1.33	ug/Kg	<MDL	
Endosulfan II	.67	1.33	ug/Kg	<MDL	
4,4'-DDD	.67	1.33	ug/Kg	<MDL	
Endrin Aldehyde	.67	1.33	ug/Kg	<MDL	
Endosulfan Sulfate	.67	1.33	ug/Kg	<MDL	
4,4'-DDT	.67	1.33	ug/Kg	<MDL	
Methoxychlor	3.3	6.67	ug/Kg	<MDL	
Gamma-Chlordane	.33	.667	ug/Kg	<MDL	
Alpha-Chlordane	.33	.667	ug/Kg	<MDL	
Toxaphene	6.7	13.3	ug/Kg	<MDL	

SB:WG91190-2 MB:WG91190-1 Matrix: OTHR SOLID Listtype: ORPESTLL 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	.33	.667	ug/Kg	<MDL	6.67	4.76	71		20-99
Beta-BHC	.33	.667	ug/Kg	<MDL	6.67	6.25	94		66-102
Delta-BHC	.33	.667	ug/Kg	<MDL	6.67	6.44	97		63-108
Gamma-BHC (Lindane)	.33	.667	ug/Kg	<MDL	6.67	5.24	79		27-130
Heptachlor	.33	.667	ug/Kg	<MDL	6.67	5.1	76		20-137
Aldrin	.67	1.33	ug/Kg	<MDL	6.67	4.76	71		28-113
Heptachlor Epoxide	.33	.667	ug/Kg	<MDL	6.67	6.25	94		59-107
Endosulfan I	.67	1.33	ug/Kg	<MDL	6.67	6.56	98		62-104
Dieldrin	.67	1.33	ug/Kg	<MDL	6.67	7.03	105		58-139
4,4'-DDE	.67	1.33	ug/Kg	<MDL	6.67	6.64	100		75-111
Endrin	.67	1.33	ug/Kg	<MDL	6.67	7.78	117		60-160
Endosulfan II	.67	1.33	ug/Kg	<MDL	6.67	6.7	101		72-109
4,4'-DDD	.67	1.33	ug/Kg	<MDL	6.67	7.03	105		78-121
Endrin Aldehyde	.67	1.33	ug/Kg	<MDL	6.67	1.1	16		10-77
Endosulfan Sulfate	.67	1.33	ug/Kg	<MDL	6.67	5.8	87		61-104
4,4'-DDT	.67	1.33	ug/Kg	<MDL	6.67	7.39	111		57-145
Methoxychlor	3.3	6.67	ug/Kg	<MDL	6.67	8.54	128		72-131

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 07/09/07 01:21
Run ID: R120526 Workgroup: WG91190 (pplls#62 pestll)

Matrix Spike Duplicate Report
MSD:WG91190-4 MS:WG91190-3 L42276-4 Matrix: SALTWTRSED Listtype: ORPESTLL Method: EPA 8081A/8082 (7-3-03-002) Project: 423062-100-4 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	.33	.667	ug/Kg	<MDL	6.67	6.84	103		59-111	6.67	6.98	105		2		35
Beta-BHC	.33	.667	ug/Kg	<MDL	6.67	6.12	92		60-119	6.67	6.23	93		1		35
Delta-BHC	.33	.667	ug/Kg	<MDL	6.67	6.1	92		54-126	6.67	6.34	95		3		35
Gamma-BHC (Lindane)	.33	.667	ug/Kg	<MDL	6.67	6.56	98		61-135	6.67	6.64	100		2		35
Heptachlor	.33	.667	ug/Kg	<MDL	6.67	6.56	98		52-157	6.67	6.8	102		4		35
Aldrin	.67	1.33	ug/Kg	<MDL	6.67	6.25	94		61-119	6.67	6.25	94		0		35
Heptachlor Epoxide	.33	.667	ug/Kg	.704	6.67	6.59	88		61-118	6.67	6.99	94		7		35
Endosulfan I	.67	1.33	ug/Kg	<MDL	6.67	6.45	97		64-118	6.67	6.51	98		1		35
Dieldrin	.67	1.33	ug/Kg	<MDL	6.67	6.66	100		60-139	6.67	6.87	103		3		35
4,4'-DDE	.67	1.33	ug/Kg	<MDL	6.67	6.68	100		59-125	6.67	6.75	101		1		35
Endrin	.67	1.33	ug/Kg	<MDL	6.67	7.56	113		62-166	6.67	7.82	117		3		35
Endosulfan II	.67	1.33	ug/Kg	<MDL	6.67	5.73	86		36-146	6.67	5.96	89		3		35
4,4'-DDD	.67	1.33	ug/Kg	<MDL	6.67	6.65	100		41-157	6.67	7.15	107		7		35
Endrin Aldehyde	.67	1.33	ug/Kg	<MDL	6.67	1.1	16		10-66	6.67	1.1	17		6		35
Endosulfan Sulfate	.67	1.33	ug/Kg	<MDL	6.67	5.32	80		46-113	6.67	5.25	79		1		35
4,4'-DDT	.67	1.33	ug/Kg	<MDL	6.67	8.1	121		50-144	6.67	8.78	132		9		35
Methoxychlor	3.3	6.67	ug/Kg	<MDL	6.67	8.3	125		53-129	6.67	7.47	112		11		35

SRM:WG91190-5 Matrix: OTHR SOLID Listtype: ORPESTLL Method: EPA 8081A/8082 (7-3-03-002) Project: Pkey: SED
(Std Reference Material)

Parameter	Mdl	Rdl	Units	Truevalue	SRM Value	% Rec.	Qual	LabLimit
4,4'-DDT	5.3	10.7	ug/Kg	119.	195	164		10-200
Alpha-Chlordane	2.7	5.33	ug/Kg	16.5	23.7	143		48-144

LD:WG91190-6 L42276-6 Matrix: SALTWTRSED Listtype: ORPESTLL Method: EPA 8081A/8082 (7-3-03-002) Project: Pkey: SED
(Lab Duplicate)

Parameter	Mdl	Rdl	Units	SampValue	LD Value	RPD	Qual	LabLimit
Alpha-BHC	.33	.667	ug/Kg	<MDL	<MDL			35
Beta-BHC	.33	.667	ug/Kg	<MDL	<MDL			35
Delta-BHC	.33	.667	ug/Kg	<MDL	<MDL			35
Gamma-BHC (Lindane)	.33	.667	ug/Kg	<MDL	<MDL			35
Heptachlor	.33	.667	ug/Kg	<MDL	<MDL			35
Aldrin	.67	1.33	ug/Kg	<MDL	<MDL			35
Heptachlor Epoxide	.33	.667	ug/Kg	<MDL	<MDL			35
Endosulfan I	.67	1.33	ug/Kg	<MDL	<MDL			35
Dieldrin	.67	1.33	ug/Kg	<MDL	<MDL			35
4,4'-DDE	.67	1.33	ug/Kg	<MDL	<MDL			35
Endrin	.67	1.33	ug/Kg	<MDL	<MDL			35
Endosulfan II	.67	1.33	ug/Kg	<MDL	<MDL			35
4,4'-DDD	.67	1.33	ug/Kg	<MDL	<MDL			35
Endrin Aldehyde	.67	1.33	ug/Kg	<MDL	<MDL			35
Endosulfan Sulfate	.67	1.33	ug/Kg	<MDL	<MDL			35
4,4'-DDT	.67	1.33	ug/Kg	<MDL	<MDL			35
Methoxychlor	3.3	6.67	ug/Kg	<MDL	<MDL			35
Gamma-Chlordane	.33	.667	ug/Kg	<MDL	<MDL			35
Alpha-Chlordane	.33	.667	ug/Kg	<MDL	<MDL			35

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 07/09/07 01:21
Run ID: R120526 Workgroup: WG91190 (pplls#62 pestll)

LD:WG91190-6 L42276-6 Matrix: SALTWTRSED Listtype: ORPESTLL Method: EPA 8081A/8082 (7-3-03-002) Project: Pkey: SED
(Lab Duplicate)

Parameter	Mdl	Rdl	Units	SampValue	LD Value	RPD	Qual	LabLimit
Toxaphene	6.7	13.3	ug/Kg	<MDL	<MDL			35

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 07/09/07 01:21
Run ID: R120526 Workgroup: WG91190 (pp11s#62 pest11)

Sample #	2,4,5,6-Tetrac-hloro-m-xylene	Decachlorobiph-enyl
(Lab Limits)	30-134	15-155
L42274-5	110	93
L42276-4	104	98
L42276-5	99	97
L42276-6	98	87
L42276-7	104	93
L42276-8	115	103
L42276-9	93	87
WG91190-1	54	106
WG91190-2	61	107
WG91190-3	105	92
WG91190-4	99	88
WG91190-5	98	107
WG91190-6	100	92

==========

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

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

Data File Name	Sample Name	Date Acquired	Vial Numb	Sample Amount	Sample Multiplie	Isodrin (RT)	Isodrin (Height)	Leptophos (RT)	Leptophos (Height)	Isodrin #2 (RT)	Isodrin #2 (Height)	Leptoph (RT)	Leptophos #2 (Height)	Misc Info	Data File Path
COND-01.D	conditioner	09 May 2007 9:39 am	1	0	1										S:\MSDCHEM\2\DATA\070509\
BLANK-01.D	blank	09 May 2007 10:16 am	2	0	1										S:\MSDCHEM\2\DATA\070509\
PPES-01.D	1358 PPES 20 PPB (BREAKDOWWN)	09 May 2007 10:53 am	3	0	1	15.220	121465677	23.544	203105563	12.900	341758537	19.275	557541112		S:\MSDCHEM\2\DATA\070509\
PEST-01.D	1328D PEST 50/100 PPB (DAILY CAL)	09 May 2007 11:29 am	4	0	1	15.218	114574426	23.543	189619712	12.897	331394740	19.272	532584469		S:\MSDCHEM\2\DATA\070509\
TOX-01.D	1367.1 TOXAPHENE 1000 PPB (DAILY (	09 May 2007 12:06 pm	5	0	1	15.216	103542834	23.539	175214100	12.899	305395551	19.275	513047118		S:\MSDCHEM\2\DATA\070509\
WG91190-1.D	MB	09 May 2007 12:43 pm	6	18.75	2.5	15.218	81937249	23.542	138522632	12.898	231195129	19.273	375124855	PPLLS62 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\070509\
WG91190-2.D	SB	09 May 2007 1:19 pm	7	18.75	2.5	15.217	84334710	23.540	141150059	12.898	233648361	19.273	364662163	PPLLS62 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\070509\
WG91190-3.D	MS L42276-4	09 May 2007 1:56 pm	8	18.75	2.5	15.220	69335437	23.549	140942114	12.899	191995375	19.283	361591832	PPLLS62 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\070509\
WG91190-4.D	MSD L42276-4	09 May 2007 2:32 pm	9	18.75	2.5	15.221	64824389	23.554	132642731	12.901	174362548	19.291	321272705	PPLLS62 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\070509\
WG91190-5.D	SRM 1944	09 May 2007 3:09 pm	10	1.875	2	15.228	56525253	23.559	135254336	12.907	167183704	19.301	331212198	PPLLS62 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\070509\
WG91190-6.D	LD L42276-6	09 May 2007 3:46 pm	11	18.75	2.5	15.219	70111824	23.545	149035121	12.898	207711436	19.275	357570287	PPLLS62 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\070509\
L42276-4.D	L42276-4	09 May 2007 4:22 pm	12	18.75	2.5	15.220	69178254	23.551	140534938	12.901	183527450	19.288	360096990	PPLLS62 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\070509\
L42276-5.D	L42276-5	09 May 2007 4:59 pm	13	18.75	2.5	15.220	66534659	23.549	140132452	12.899	197863700	19.281	351653897	PPLLS62 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\070509\
L42276-6.D	L42276-6	09 May 2007 5:36 pm	14	18.75	2.5	15.219	70042611	23.545	142186928	12.899	213419261	19.277	362477689	PPLLS62 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\070509\
L42276-7.D	L42276-7	09 May 2007 6:12 pm	15	18.75	2.5	15.220	71308745	23.549	153351408	12.899	202697175	19.281	379241340	PPLLS62 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\070509\
COND-02.D	conditioner	09 May 2007 6:49 pm	1	0	1										S:\MSDCHEM\2\DATA\070509\
PPES-02.D	1358 PPES 20 PPB (BREAKDOWWN)	09 May 2007 7:25 pm	3	0	1	15.218	102514529	23.543	185034300	12.896	315419999	19.271	499631853		S:\MSDCHEM\2\DATA\070509\
PEST-02.D	1328D PEST 50/100 PPB (DAILY CAL)	09 May 2007 8:02 pm	4	0	1	15.219	108131649	23.543	190830688	12.896	311377723	19.272	513973322		S:\MSDCHEM\2\DATA\070509\
L42276-8.D	L42276-8	09 May 2007 8:39 pm	16	18.75	2.5	15.218	65750130	23.546	137293468	12.897	182344889	19.277	332646796	PPLLS62 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\070509\
L42276-9.D	L42276-9	09 May 2007 9:15 pm	17	18.75	2.5	15.220	73357152	23.547	153150216	12.897	198362361	19.278	373151197	PPLLS62 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\070509\
L42276-0.D	L42274-5	09 May 2007 9:52 pm	18	18.75	2.5	15.219	72806781	23.544	149000114	12.895	197916823	19.272	349766716	PPLLS62 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\070509\
COND-03.D	conditioner	09 May 2007 10:29 pm	1	0	1										S:\MSDCHEM\2\DATA\070509\
PPES-03.D	1358 PPES 20 PPB (BREAKDOWWN)	09 May 2007 11:06 pm	3	0	1	15.218	114029271	23.541	206422175	12.895	314002417	19.269	507783869		S:\MSDCHEM\2\DATA\070509\
PEST-03.D	1328D PEST 50/100 PPB (DAILY CAL)	09 May 2007 11:42 pm	4	0	1	15.218	112478188	23.540	198484860	12.895	305347711	19.271	481344224		S:\MSDCHEM\2\DATA\070509\
					Ave.	15.219	84639188	23.546	160095396	12.898	240347245	19.278	411318732		
					Std. Dev.	0.002	20947542	0.005	25812555	0.003	60903625	0.008	80585941		
					%RSD		25%		16%		25%		20%		

Trace Organics Data Anomaly Form

Date(s) Occurred: *4/9/07,4/4/17/07,4/23/07*

WG #(s): *WG90996, WG91147/48, WG91190/91*

☐ All samples in WKGP(s) or ☒ Sample #(s): *L42274-1 to-3 L42274-6 to -8, L42275-1 to -9, L42276-2,L42276-4 to -9*

Project #(s):

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

I. Analysis/Extraction

☐ BNA ☐ BNALL ☐ EDC ☐ EDC-LVI
☐ CLPESTPCB ☐ PEST ☐ PCB ☐ OPPEST
☐ VOA-GCMS ☐ NWTPH-GX ☐ NWTPH-DX ☐ NWTPH-HCID
☐ BUTYL TIN ☐ AIRTOX ☐ AIR-SULFUR
☒ Other: *BNASMS,PESTLL,PCBLL*
☐ 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: *16: Sample jar L42275-1 cracked upon freezing,samples thawed 4/09/07. Bnasms*

Sample jars L42274-1 to -3, L42274-6 to -8, L42275-1 to -9, L42276-2 cracked upon freezing,samples thawed 4/17/07. pestll/pcbll
Sample jars L42276-4 to -9 cracked upon freezing,samples thawed 4/23/07. pestll/pcbll

17. Sample L42274-5 lost 4/23/07, broken concentrater tube post GPC.

IV. Type of Project Anomaly

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

Anomaly Description:

V. Corrective Action Taken

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

Corrective Action Description: *16. I transferred samples from the broken jars to new clean containers. Results should be flagged with an H. Instrument analyst will make this decision. Problem has been discussed with both TC's and PM.*
17. *Sample L42274-5 was re-extracted in the next workgroup, WG91190/91 pestll/pcbll only. The sample was kept in WG91148 because of limitations within LIMS. Samples can not be linked between workgroups.*

VI. Potential Effects on Data Quality:

- ☒ None; corrective action entirely corrected anomaly (explanation optional):
- ☐ Potential effect explanation (explanation mandatory):

	Signatures	Signature Dates
Reported By:	Ken May	6/12/07
Reviewer: JSF		6-12-07
Supervisor: *Dana Walker*	Dana Walker	6/12/07
QA Officer: *Colin Elliott* (For QA1 only)		
cc: LPM:		

King County Environmental Laboratory

WORK GROUP REPORT (wk02)

May 15 2007, 01:19 pm

Work Group: WG91147 (pplls#61 pestll) for Department: 7 - Organics, Trace

Created: 19-APR-07 PrepDate: 19-APR-07 Due: Operator: km

Sample	Project Number	Project Description	PKey	C	Product	Matrix	Stat	UA	Workdate	Duedate
L42274-1	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PESTLL	SALTWTRSED	PREP	U	17-APR-07	19-MAY-07
L42274-2	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PESTLL	SALTWTRSED	PREP	U	17-APR-07	19-MAY-07
L42274-3	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PESTLL	SALTWTRSED	PREP	U	17-APR-07	19-MAY-07
L42274-4	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PESTLL	SALTWTRSED	PREP	U	17-APR-07	19-MAY-07
L42274-6	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PESTLL	SALTWTRSED	PREP	U	18-APR-07	19-MAY-07
L42274-7	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PESTLL	SALTWTRSED	PREP	U	18-APR-07	19-MAY-07
L42274-8	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PESTLL	SALTWTRSED	PREP	U	18-APR-07	19-MAY-07
L42275-1	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PESTLL	SALTWTRSED	PREP	U	16-APR-07	19-MAY-07
L42275-2	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PESTLL	SALTWTRSED	PREP	U	16-APR-07	19-MAY-07
L42275-3	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PESTLL	SALTWTRSED	PREP	U	16-APR-07	19-MAY-07
L42275-4	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PESTLL	SALTWTRSED	PREP	U	16-APR-07	19-MAY-07
L42275-5	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PESTLL	SALTWTRSED	PREP	U	16-APR-07	19-MAY-07
L42275-6	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PESTLL	SALTWTRSED	PREP	U	16-APR-07	19-MAY-07
L42275-7	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PESTLL	SALTWTRSED	PREP	U	16-APR-07	19-MAY-07
L42275-8	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PESTLL	SALTWTRSED	PREP	U	16-APR-07	19-MAY-07
L42275-9	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PESTLL	SALTWTRSED	PREP	U	18-APR-07	19-MAY-07
L42276-1	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	PESTLL	SALTWTRSED	PREP	U	17-APR-07	19-MAY-07
L42276-2	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	PESTLL	SALTWTRSED	PREP	U	17-APR-07	19-MAY-07
L42276-3	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	PESTLL	SALTWTRSED	PREP	U	17-APR-07	19-MAY-07
WG91147-1	MB			S	PESTLL	OTHR SOLID	PREP	U	19-APR-07	
WG91147-2	SB			S	PESTLL	OTHR SOLID	PREP	U	19-APR-07	
WG91147-3	MS		SED	S	PESTLL	SALTWTRSED	PREP	U	19-APR-07	
WG91147-4	MSD		SED	S	PESTLL	SALTWTRSED	PREP	U	19-APR-07	
WG91147-5	SRM			S	PESTLL	OTHR SOLID	PREP	U	19-APR-07	
WG91147-6	LD		SED	S	PESTLL	SALTWTRSED	PREP	U	19-APR-07	

Comments:

L42274-1	Take Minimum Casts
L42274-2	Take Minimum Casts, AREP
L42274-3	Take Minimum Casts, FREP
L42274-4	Take Minimum Casts
L42274-6	Take Minimum Casts
L42274-7	Take Minimum Casts
L42274-8	Take Minimum Casts
L42275-1	10 Grab Comp, 0-10 cm
L42275-2	10 Grab Comp, 0-10 cm
L42275-3	10 Grab Comp, AREP
L42275-4	10 Grab Comp, FREP
L42275-5	10 Grab Comp, 0-10 cm
L42275-6	10 Grab Comp, 0-10 cm
L42275-7	10 Grab Comp, 0-10 cm
L42275-8	10 Grab Comp, 0-10 cm
L42275-9	10 Grab Comp, 0-10 cm
L42276-1	3 grab comp, 0-10 cm
L42276-2	3 grab comp, 0-10 cm
L42276-3	3 grab comp, 0-10 cm
WG91147-1	MB070419
WG91147-2	WG91147-1
WG91147-3	L42274-4
WG91147-4	WG91147-3 L42274-4
WG91147-5	1944
WG91147-6	L42276-1

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

1:1 MeCL2:ACETONE

QC BATCH NO.: PPLLS #61 pestll | pcbll

EPA SW-846 ~~EXTRACTON METHOD~~:
SONICATION EPA 3550 / SOXHLET EPA 3540

2.0 ml PCB extract split from 2.5 ml total

~~PEST-LL WORKGROUP NO.~~
PCB-LL WORKGROUP NO.
PESTICIDE SURROGATE SPIKE I.D. # 1372
PESTICIDE MATRIX SPIKE I.D. # 1310.1
PCB MATRIX SPIKE I.D. # 1402

Date/ Analyst	Sample Number	Project Number	Sample Description	coc	Initial Amt(g)	Effective Amt. (g) after split	Spike Amt. (uL)	Vf (ml)	CLEANUPS (GPC, AL,TBA)	CLEANUPS PCB H+	Pest-LL conc. anlyst	Pest-LL turn in Date	PCB-LL conc. anlyst	PCB-LL turn in Date	Comments
Kim 4/19/07	WG91147-1	QC	MB		30.0	Pest	1372 100 µl	2.5	ALL	-	Kim	5/1/07			
	WG91147-1					PCB		0.5		H+					
	WG91147-2		SB (Pestll)		30.0	Pest	1310.1 100µl	2.5							
			SB			PCB		/		/					
	WG91148-2		SB (PCBLL)		24.0	Pest	1402 ul 200µl	/							
			pestll			PCB		0.5		H+					
	WG91147-3		MS (L42274-4)		30.0	Pest	1310.1 100µl	2.5							
						PCB		/		~~H+~~					
	WG91147-4		pestll MSD (L42274-4)		30.0	Pest		2.5							
						PCB		/		/					
	WG91148-3		pcbll MS (L42274-5)		24.0	Pest	1402 200 ul	/							
			pcbll			PCB		0.5		H+					
	WG91148-4		MSD (L42274-5)		24.0	Pest		/							
						PCB		0.5		H+					
	WG91147-5		pestll SRM 1944		3.0	Pest		2.0							
			pcbll			PCB		/		/					
	WG91148-5		SRM HS2		7.5	Pest		/							
						PCB		0.5		H+					
	WG91147-6 WG91148-6		LD (L42276-1)		30.0	Pest		2.5							
						PCB		0.5		H+					
	L42274-1	423062	DU/DI TdN LN4SR		30.0	Pest		2.5							
		204-004	C			PCB		0.5		H+					

CONTIN. NEXT PAGE

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

1:1 MeCL2:ACETONE

QC BATCH NO.: PPLLS#61 pestll/pcbll

EPA SW-846 EXTRACTON METHOD:
SONICATION EPA 3550 / SOXHLET EPA 3540

2.0 ml PCB extract split from 2.5 ml total

PEST-LL WORKGROUP NO.: WG 91147
PCB-LL WORKGROUP NO.: WG 91148
PESTICIDE SURROGATE SPIKE I.D. # 1372
PESTICIDE MATRIX SPIKE I.D. # 1310.1
PCB MATRIX SPIKE I.D. # 1402

Date/ Analyst	Sample Number	Project Number	Sample Description	coc	Initial Amt(g)	Effective Amt. (g) after split	Spike Amt. (uL)	Vf (ml)	CLEANUPS (GPC, AL,TBA)	PCB H+	Pest-LL conc. anlyst	Pest-LL turn in Date	PCB-LL conc. anlyst	PCB-LL turn in Date	Comments
Kw 4/19/07	WG 42274-2	423062	Dual Di Diac			Pest	1372 100µl	2.5	ALL		Kw	5/1/07			* possible double s
		200 300	FILTER LOWER CL			PCB		0.5		H+					~~LOST SAMPLE BROK~~
	-3					Pest		2.5							
						PCB		0.5		H+					
	-4					Pest		2.5							
						PCB		0.5		H+					
	-5					Pest		2.5							* LOST SAMPLE 132
						PCB		0.5		H+					
	-6					Pest		2.5							
						PCB		0.5		H+					
	-7					Pest		2.5							
						PCB		0.5		H+					
	-8					Pest		2.5							
						PCB		0.5		H+					
	WG 42275-1					Pest		2.5							
						PCB		0.5		H+					
	-2					Pest		2.5							
						PCB		0.5		H+					
	-3					Pest		2.5							
						PCB		0.5		H+					
	-4					Pest		2.5							
						PCB		0.5		H+					

CONT. NEXT PAGE

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

1:1 MeCL2:ACETONE

QC BATCH NO.: PPLLS #61 pcsll/pcbll

EPA SW-846 EXTRACTON METHOD:
SONICATION EPA 3550 SOXHLET EPA 3540

2.0 ml PCB extract split from 2.5 ml total

PEST-LL WORKGROUP NO.: WG 91147
PCB-LL WORKGROUP NO.: WG 91148
PESTICIDE SURROGATE SPIKE I.D. # 1372
PESTICIDE MATRIX SPIKE I.D. # 1310.1
PCB MATRIX SPIKE I.D. # 1402

Date/ Analyst	Sample Number	Project Number	Sample Description	coc	Initial Amt(g)	Effective Amt. (g) after split	Spike Amt. (uL)	Vf (ml)	CLEANUPS (GPC, AL,TBA)	PCB H+	Pest-LL conc. anlyst	Pest-LL turn in Date	PCB-LL conc. anlyst	PCB-LL turn in Date	Comments
Kim 4/19/07	L42275-5	423062	DW/DI DIAGONAL		30.0	Pest	1372 100µl	2.5	ALL		Kr	5/1/07			
		200 400	THIMERIUM			PCB		0.5		H+					
	-6				30.0	Pest		2.5							
						PCB		0.5		H+					
	-7				30.0	Pest		2.5							
						PCB		0.5		H+					
	-8				30.0	Pest		2.5							
						PCB		0.5		H+					
	-9				30.0	Pest		2.5							
						PCB		0.5		H+					
	L42276-1	423092	DW/DI DIAGONAL		30.0	Pest		2.5							
		100 200	CHIP MONOLITH			PCB		0.5		H+					
	-2				30.0	Pest		2.5							
						PCB		0.5		H+					
	-3				30.0	Pest		2.5							
						PCB		0.5		H+					
						Pest									
						PCB									
						Pest									
						PCB									
						Pest									
						PCB									

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 07/13/07 04:05
Run ID: R121029 Workgroup: WG91147 (pplls#61 pestll)

MB:WG91147-1 Matrix: OTHR SOLID Listtype: ORPESTLL Method: EPA 8081A/8082 (7-3-03-002) Project: Pkey: SED
(Method Blank)

Parameter	Mdl	Rdl	Units	MB Value	Qual
Alpha-BHC	.33	.667	ug/Kg	<MDL	
Beta-BHC	.33	.667	ug/Kg	<MDL	
Delta-BHC	.33	.667	ug/Kg	<MDL	
Gamma-BHC (Lindane)	.33	.667	ug/Kg	<MDL	
Heptachlor	.33	.667	ug/Kg	<MDL	
Aldrin	.67	1.33	ug/Kg	<MDL	
Heptachlor Epoxide	.33	.667	ug/Kg	<MDL	
Endosulfan I	.67	1.33	ug/Kg	<MDL	
Dieldrin	.67	1.33	ug/Kg	<MDL	
4,4'-DDE	.67	1.33	ug/Kg	<MDL	
Endrin	.67	1.33	ug/Kg	<MDL	
Endosulfan II	.67	1.33	ug/Kg	<MDL	
4,4'-DDD	.67	1.33	ug/Kg	<MDL	
Endrin Aldehyde	.67	1.33	ug/Kg	<MDL	
Endosulfan Sulfate	.67	1.33	ug/Kg	<MDL	
4,4'-DDT	.67	1.33	ug/Kg	<MDL	
Methoxychlor	3.3	6.67	ug/Kg	<MDL	
Gamma-Chlordane	.33	.667	ug/Kg	<MDL	
Alpha-Chlordane	.33	.667	ug/Kg	<MDL	
Toxaphene	6.7	13.3	ug/Kg	<MDL	

SB:WG91147-2 MB:WG91147-1 Matrix: OTHR SOLID Listtype: ORPESTLL 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	.33	.667	ug/Kg	<MDL	6.67	3.69	55		20-99
Beta-BHC	.33	.667	ug/Kg	<MDL	6.67	5.53	83		66-102
Delta-BHC	.33	.667	ug/Kg	<MDL	6.67	5.56	83		63-108
Gamma-BHC (Lindane)	.33	.667	ug/Kg	<MDL	6.67	4.05	61		27-130
Heptachlor	.33	.667	ug/Kg	<MDL	6.67	3.7	55		20-137
Aldrin	.67	1.33	ug/Kg	<MDL	6.67	3.41	51		28-113
Heptachlor Epoxide	.33	.667	ug/Kg	<MDL	6.67	5.13	77		59-107
Endosulfan I	.67	1.33	ug/Kg	<MDL	6.67	5.45	82		62-104
Dieldrin	.67	1.33	ug/Kg	<MDL	6.67	6.24	94		58-139
4,4'-DDE	.67	1.33	ug/Kg	<MDL	6.67	6.16	92		75-111
Endrin	.67	1.33	ug/Kg	<MDL	6.67	7.04	106		60-160
Endosulfan II	.67	1.33	ug/Kg	<MDL	6.67	6.2	93		72-109
4,4'-DDD	.67	1.33	ug/Kg	<MDL	6.67	6.9	104		78-121
Endrin Aldehyde	.67	1.33	ug/Kg	<MDL	6.67	1.1	17		10-77
Endosulfan Sulfate	.67	1.33	ug/Kg	<MDL	6.67	5.57	84		61-104
4,4'-DDT	.67	1.33	ug/Kg	<MDL	6.67	6.93	104		57-145
Methoxychlor	3.3	6.67	ug/Kg	<MDL	6.67	7.94	119		72-131

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 07/13/07 04:05
Run ID: R121029 Workgroup: WG91147 (pplls#61 pestll)

Matrix Spike Duplicate Report
MSD:WG91147-4 MS:WG91147-3 L42274-4 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	.33	.667	ug/Kg	<MDL	6.67	6	90		59-111	6.67	5.57	83		8		35
Beta-BHC	.33	.667	ug/Kg	<MDL	6.67	5.9	89		60-119	6.67	6.05	91		2		35
Delta-BHC	.33	.667	ug/Kg	<MDL	6.67	6.24	94	*	54-126	6.67	6.14	92		2		35
Gamma-BHC (Lindane)	.33	.667	ug/Kg	<MDL	6.67	6.15	92		61-135	6.67	5.99	90		2		35
Heptachlor	.33	.667	ug/Kg	<MDL	6.67	6.06	91		52-157	6.67	5.88	88		3		35
Aldrin	.67	1.33	ug/Kg	<MDL	6.67	5.88	88		61-119	6.67	5.74	86		2		35
Heptachlor Epoxide	.33	.667	ug/Kg	<MDL	6.67	6.92	104		61-118	6.67	6.62	99		5		35
Endosulfan I	.67	1.33	ug/Kg	<MDL	6.67	6.17	93		64-118	6.67	6.3	94		1		35
Dieldrin	.67	1.33	ug/Kg	<MDL	6.67	6.69	100		60-139	6.67	6.88	103		3		35
4,4'-DDE	.67	1.33	ug/Kg	<MDL	6.67	6.61	99		59-125	6.67	6.67	100		1		35
Endrin	.67	1.33	ug/Kg	<MDL	6.67	7.22	108		62-166	6.67	7.34	110		2		35
Endosulfan II	.67	1.33	ug/Kg	<MDL	6.67	5.93	89		36-146	6.67	5.75	86		3		35
4,4'-DDD	.67	1.33	ug/Kg	<MDL	6.67	6.74	101		41-157	6.67	7.01	105		4		35
Endrin Aldehyde	.67	1.33	ug/Kg	<MDL	6.67	1.1	16		10-66	6.67	.75	11		37	*	35
Endosulfan Sulfate	.67	1.33	ug/Kg	<MDL	6.67	5.69	85		46-113	6.67	5.31	80		6		35
4,4'-DDT	.67	1.33	ug/Kg	<MDL	6.67	8.61	129		50-144	6.67	7.63	115		11		35
Methoxychlor	3.3	6.67	ug/Kg	<MDL	6.67	7.64	115		53-129	6.67	7.85	118		3		35

SRM:WG91147-5 Matrix: OTHR SOLID Listtype: ORPESTLL Method: EPA 8081A/8082 (7-3-03-002) Project: Pkey: SED
(Std Reference Material)

Parameter	Mdl	Rdl	Units	Truevalue	SRM Value	% Rec.	Qual	LabLimit
4,4'-DDT	5.3	10.7	ug/Kg	119	174	146		10-200
Alpha-Chlordane	2.7	5.33	ug/Kg	16.5	23.6	143		48-144

LD:WG91147-6 L42276-1 Matrix: SALTWTRSED Listtype: ORPESTLL Method: EPA 8081A/8082 (7-3-03-002) Project: 423062-100-4 Pkey: SED
(Lab Duplicate)

Parameter	Mdl	Rdl	Units	SampValue	LD Value	RPD	Qual	LabLimit
Alpha-BHC	.33	.667	ug/Kg	<MDL	<MDL			35
Beta-BHC	.33	.667	ug/Kg	<MDL	<MDL			35
Delta-BHC	.33	.667	ug/Kg	<MDL	<MDL			35
Gamma-BHC (Lindane)	.33	.667	ug/Kg	<MDL	<MDL			35
Heptachlor	.33	.667	ug/Kg	<MDL	<MDL			35
Aldrin	.67	1.33	ug/Kg	<MDL	<MDL			35
Heptachlor Epoxide	.33	.667	ug/Kg	<MDL	<MDL			35
Endosulfan I	.67	1.33	ug/Kg	<MDL	<MDL			35
Dieldrin	.67	1.33	ug/Kg	<MDL	<MDL			35
4,4'-DDE	.67	1.33	ug/Kg	<MDL	<MDL			35
Endrin	.67	1.33	ug/Kg	<MDL	<MDL			35
Endosulfan II	.67	1.33	ug/Kg	<MDL	<MDL			35
4,4'-DDD	.67	1.33	ug/Kg	<MDL	<MDL			35
Endrin Aldehyde	.67	1.33	ug/Kg	<MDL	<MDL			35
Endosulfan Sulfate	.67	1.33	ug/Kg	<MDL	<MDL			35
4,4'-DDT	.67	1.33	ug/Kg	<MDL	<MDL			35
Methoxychlor	3.3	6.67	ug/Kg	<MDL	<MDL			35
Gamma-Chlordane	.33	.667	ug/Kg	<MDL	<MDL			35
Alpha-Chlordane	.33	.667	ug/Kg	<MDL	<MDL			35

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 07/13/07 04:05
Run ID: R121029 Workgroup: WG91147 (pplls#61 pestll)

LD:WG91147-6 L42276-1 Matrix: SALTWTRSED Listtype: ORPESTLL Method: EPA 8081A/8082 (7-3-03-002) Project: 423062-100-4 Pkey: SED
(Lab Duplicate)

Parameter	Mdl	Rdl	Units	SampValue	LD Value	RPD	Qual	LabLimit
Toxaphene	6.7	13.3	ug/Kg	<MDL	<MDL			35

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 07/13/07 04:05
Run ID: R121029 Workgroup: WG91147 (pplls#61 pestll)

Sample # (Lab Limits)	2,4,5,6-Tetrachloro-m-xylene 30-134	Decachlorobiphenyl 15-155
L42274-1	90	80
L42274-2	141 L	143
L42274-3	73	78
L42274-4	72	84
L42274-6	77	80
L42274-7	85	83
L42274-8	79	77
L42275-1	95	83
L42275-2	96	86
L42275-3	97	93
L42275-4	103	95
L42275-5	91	85
L42275-6	84	84
L42275-7	109	91
L42275-8	94	80
L42275-9	116	100
L42276-1	127	105
L42276-2	112	99
L42276-3	83	81
WG91147-1	37	92
WG91147-2	42	89
WG91147-3	72	82
WG91147-4	59	83
WG91147-5	87	100
WG91147-6	123	90

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

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

Data File Name	Sample Name	Date Acquired	Vial Numb	Sample Amount	Sample Multiplie	Isodrin (RT)	Isodrin (Height)	Leptophos (RT)	Leptophos (Height)	Isodrin #2 (RT)	Isodrin #2 (Height)	Leptoph (RT)	Leptophos #2 (Height)	Misc Info	Data File Path
COND-01.D	conditioner	18 May 2007 10:00 am	1	0	1										
BLANK-01.D	blank	18 May 2007 10:37 am	2	0	1										S:\MSDCHEM\2\DATA\070518\
PPES-01.D	1358 PPES 20 PPB (BREAKDOWWN)	18 May 2007 11:13 am	3	0	1	15.232	99570630	23.562	165536302	12.786	263319871	19.117	403742337		S:\MSDCHEM\2\DATA\070518\
PEST-01.D	1328D PEST 50/100 PPB (DAILY CAL)	18 May 2007 11:50 am	4	0	1	15.229	129006013	23.557	217437378	12.785	338704124	19.116	523257450		S:\MSDChem\2\data\070518\
TOX-01.D	1367.1 TOXAPHENE 1000 PPB (DAILY	18 May 2007 12:27 pm	5	0	1	15.230	103520012	23.559	182684192	12.786	283843063	19.117	442785550		S:\MSDCHEM\2\DATA\070518\
WG91147-1.D	MB	18 May 2007 1:03 pm	6	18.75	2.5	15.231	105266155	23.561	171443196	12.785	274672624	19.117	438450121	PPLLS61 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\070518\
WG91147-2.D	SB	18 May 2007 1:40 pm	7	18.75	2.5	15.230	99973567	23.559	172600815	12.786	266926510	19.118	414887856	PPLLS61 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\070518\
WG91147-3.D	MS L42274-4	18 May 2007 2:17 pm	8	18.75	2.5	15.232	90772574	23.563	179214194	12.784	247291338	19.121	415545531	PPLLS61 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\070518\
WG91147-4.D	MSD L42274-4	18 May 2007 2:54 pm	9	18.75	2.5	15.231	86498185	23.563	171359562	12.785	231290438	19.119	400267630	PPLLS61 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\070518\
WG91147-5.D	SRM 1944	18 May 2007 3:30 pm	10	1.875	2	15.242	77851666	23.580	163798589	12.794	172227805	19.144	342740394	PPLLS61 PESTLL DUDI SOIL	S:\MSDChem\2\data\070518\
WG91147-6.D	LD L42276-1	18 May 2007 4:07 pm	11	18.75	2.5	15.238	64798323	23.583	156261880	12.792	162880862	19.149	330943602	PPLLS61 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\070518\
L42274-1.D	L42274-1	18 May 2007 4:44 pm	12	18.75	2.5	15.234	69237225	23.566	148693123	12.784	189071765	19.121	336769744	PPLLS61 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\070518\
L42274-2.D	L42274-2	18 May 2007 5:20 pm	13	18.75	2.5	15.232	72830527	23.563	154823025	12.784	198961098	19.119	331520298	PPLLS61 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\070518\
L42274-3.D	L42274-3	18 May 2007 5:57 pm	14	18.75	2.5	15.233	73372323	23.565	157421373	12.783	210899946	19.116	352171016	PPLLS61 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\070518\
COND-02.D	conditioner	18 May 2007 6:34 pm	1	0	1										S:\MSDCHEM\2\DATA\070518\
PPES-02.D	1358 PPES 20 PPB (BREAKDOWWN)	18 May 2007 7:10 pm	3	0	1	15.229	90792151	23.556	168059433	12.783	264964964	19.112	412927094		S:\MSDChem\2\data\070518\
PEST-02.D	1328D PEST 50/100 PPB (DAILY CAL)	18 May 2007 7:47 pm	4	0	1	15.228	119965697	23.558	210735624	12.781	343784281	19.110	534710304		S:\MSDCHEM\2\DATA\070518\
L42274-4.D	L42274-4	18 May 2007 8:24 pm	15	18.75	2.5	15.229	81230335	23.558	162412787	12.780	224940276	19.112	363326363	PPLLS61 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\070518\
L42274-6.D	L42274-6	18 May 2007 9:00 pm	16	18.75	2.5	15.228	84251298	23.557	172176467	12.781	227549603	19.112	393378863	PPLLS61 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\070518\
L42274-7.D	L42274-7	18 May 2007 9:37 pm	17	18.75	2.5	15.228	75144057	23.559	160860936	12.780	206809048	19.114	358445366	PPLLS61 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\070518\
L42274-8.D	L42274-8	18 May 2007 10:14 pm	18	18.75	2.5	15.228	82492881	23.558	166321178	12.780	225242008	19.111	382892803	PPLLS61 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\070518\
L42275-1.D	L42275-1	18 May 2007 10:50 pm	19	18.75	2.5	15.231	66269660	23.564	162131118	12.782	188051315	19.123	356634511	PPLLS61 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\070518\
L42275-2.D	L42275-2	18 May 2007 11:27 pm	20	18.75	2.5	15.231	72599031	23.564	155784777	12.782	188300878	19.118	340143675	PPLLS61 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\070518\
L42275-3.D	L42275-3	19 May 2007 12:04 am	21	18.75	2.5	15.230	66271056	23.561	150020806	12.782	171775737	19.117	318423939	PPLLS61 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\070518\
L42275-4.D	L42275-4	19 May 2007 12:41 am	22	18.75	2.5	15.231	66034968	23.563	152413094	12.783	168113727	19.119	324854210	PPLLS61 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\070518\
L42275-5.D	L42275-5	19 May 2007 1:17 am	23	18.75	2.5	15.231	71497943	23.562	157763022	12.782	190877388	19.116	356454773	PPLLS61 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\070518\
COND-03.D	conditioner	19 May 2007 1:54 am	1	0	1										S:\MSDCHEM\2\DATA\070518\
PPES-03.D	1358 PPES 20 PPB (BREAKDOWWN)	19 May 2007 2:31 am	3	0	1	15.229	89004126	23.558	165480266	12.781	258431328	19.109	385291858		S:\MSDChem\2\data\070518\
PEST-03.D	1328D PEST 50/100 PPB (DAILY CAL)	19 May 2007 3:07 am	4	0	1	15.226	123142552	23.555	219624076	12.780	332184331	19.109	506953192		S:\MSDCHEM\2\DATA\070518\
L42275-6.D	L42275-6	19 May 2007 3:44 am	24	18.75	2.5	15.230	79123860	23.561	165391431	12.780	205322657	19.112	358717131	PPLLS61 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\070518\
L42275-7.D	L42275-7	19 May 2007 4:21 am	25	18.75	2.5	15.232	73405287	23.567	159470676	12.783	185260434	19.122	340213825	PPLLS61 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\070518\
L42275-8.D	L42275-8	19 May 2007 4:57 am	26	18.75	2.5	15.233	71670041	23.569	161433432	12.783	184645024	19.124	341775105	PPLLS61 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\070518\
L42275-9.D	L42275-9	19 May 2007 5:34 am	27	18.75	2.5	15.231	69659219	23.564	135932884	12.782	158009211	19.119	284838890	PPLLS61 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\070518\
L42276-1.D	L42276-1	19 May 2007 6:11 am	28	18.75	2.5	15.236	67655787	23.580	142027523	12.787	144990772	19.144	283681969	PPLLS61 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\070518\
L42276-2.D	L42276-2	19 May 2007 6:47 am	29	18.75	2.5	15.234	69739281	23.572	146839005	12.783	154961525	19.128	297500632	PPLLS61 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\070518\
L42276-3.D	L42276-3	19 May 2007 7:24 am	30	18.75	2.5	15.231	70845518	23.563	156419113	12.781	189218854	19.115	329075349	PPLLS61 PESTLL DUDI SOIL	S:\MSDCHEM\2\DATA\070518\
COND-04.D	conditioner	19 May 2007 8:01 am	1	0	1										S:\MSDCHEM\2\DATA\070518\
PPES-04.D	1358 PPES 20 PPB (BREAKDOWWN)	19 May 2007 8:38 am	3	0	1	15.228	86578536	23.556	159700089	12.781	247792568	19.108	377510770		S:\MSDCHEM\2\DATA\070518\
PEST-04.D	1328D PEST 50/100 PPB (DAILY CAL)	19 May 2007 9:14 am	4	0	1	15.227	121565690	23.555	211395782	12.781	326190069	19.108	503559195		S:\MSDCHEM\2\DATA\070518\
					Ave.	15.231	84459887	23.563	167166093	12.783	224279566	19.119	378887975		
					Std. Dev.	0.003	18291873	0.007	20181274	0.003	55407518	0.010	64740110		
					%RSD		22%		12%		25%		17%		

King County Environmental Laboratory

WORK GROUP REPORT (wk02)

May 23 2007, 11:22 am

Work Group: WG91191 (pplls#62 pcbll) for Department: 7 - Organics, Trace

Created: 24-APR-07 PrepDate: 24-APR-07 Due: Operator: km

Sample	Project Number	Project Description	PKey	C	Product	Matrix	Stat	UA	Workdate	Duedate
L42276-4	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	PCBLL	SALTWTRSED	PREP	U	17-APR-07	19-MAY-07
L42276-5	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	PCBLL	SALTWTRSED	PREP	U	17-APR-07	19-MAY-07
L42276-6	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	PCBLL	SALTWTRSED	PREP	U	17-APR-07	19-MAY-07
L42276-7	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	PCBLL	SALTWTRSED	PREP	U	17-APR-07	19-MAY-07
L42276-8	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	PCBLL	SALTWTRSED	PREP	U	17-APR-07	19-MAY-07
L42276-9	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	PCBLL	SALTWTRSED	PREP	U	17-APR-07	19-MAY-07
WG91191-1	MB			S	PCBLL	OTHR SOLID	PREP	U	24-APR-07	
WG91191-2	SB			S	PCBLL	OTHR SOLID	PREP	U	24-APR-07	
WG91191-3	MS		SED	S	PCBLL	SALTWTRSED	PREP	U	24-APR-07	
WG91191-4	MSD		SED	S	PCBLL	SALTWTRSED	PREP	U	24-APR-07	
WG91191-5	SRM			S	PCBLL	OTHR SOLID	PREP	U	24-APR-07	
WG91191-6	LD		SED	S	PCBLL	SALTWTRSED	PREP	U	24-APR-07	

Comments:

L42276-4	3 grab comp, 0-10 cm
L42276-5	0-10 cm, AREP
L42276-6	0-10 cm, FREP
L42276-7	3 grab comp, 0-10 cm
L42276-8	3 grab comp, 0-10 cm
L42276-9	3 grab comp, 0-10 cm
WG91191-1	MB070424
WG91191-2	WG91191-1
WG91191-3	L42276-5
WG91191-4	WG91191-3 L42276-5
WG91191-5	HS2
WG91191-6	L42276-6

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

1:1 MeCL2:ACETONE

QC BATCH NO.: PPLLS #62 pestll/pcbll

EPA SW-846 ~~EXTRACTON METHOD~~:
SONICATION EPA 3550 SOXHLET EPA 3540

2.0 ml PCB extract split from 2.5 ml total

PEST-LL WORKGROUP NO.: WG 91190
PCB-LL WORKGROUP NO.: WG 91191
PESTICIDE SURROGATE SPIKE I.D. # 1372
PESTICIDE MATRIX SPIKE I.D. # 1310.1
PCB MATRIX SPIKE I.D. # ~~1375~~ 1402

Date/ Analyst	Sample Number	Project Number	Sample Description	coc	Initial Amt(g)	Effective Amt. (g) after split	Spike Amt. (uL)	Vf (ml)	CLEANUPS (GPC, AL,TBA)	PCB H+	Pest-LL conc. anlyst	Pest-LL turn in Date	PCB-LL conc. anlyst	PCB-LL turn in Date	Comments
FM 4/24/07	WG91190-1	QC	MB		30.0g	Pest	1372 100µl	2.5	UES		Ve	5/3/07			
	WG91190-1		MB			PCB		0.5		H+			Ve	5/4/07	
	WG91190-2		SB (pestll)		30.0g	Pest	1310.1 100µl	2.5							
						PCB		/		/					
	WG91191-2		SB (PCB)		24.0g	Pest	1402 200µl	/							
			pestll			PCB		0.5		H+					
	WG91190-3		ms (L42276-4)		30.0g	Pest	1310.1 100µl	2.5							
			pestll			PCB		/		/					
	WG91190-4		msd (L42276-4)		30.0g	Pest		2.5							
			pcbll			PCB		/		/					
	WG91191-3		ms (L42276-5)		24.0g	Pest	1402 200µl	/							
			pcbll			PCB		0.5							
	WG91191-4		msd (L42276-5)		24.0g	Pest		/							
						PCB		0.5							
	WG91190-5		pestll SRM 1944		3.0g	Pest		2.0							
						PCB		/							
	WG91191-5		pcbll SRM HS2		7.5g	Pest		/							
						PCB		0.5							
	WG91190/91-6	/	LD (L42276-6)		30.0	Pest		2.5							
						PCB		0.5							
	L42276-4	423062	DU/DI CHAD		30.0	Pest		2.5							
		100-004	MONITORING			PCB	/	0.5	/		/		/		

CONT. NEXT PAGE

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

1:1 MeCL2:ACETONE

QC BATCH NO.: PPLLS #62 pestll/pcbll

EPA SW-846 EXTRACTON METHOD:
SONICATION EPA 3550) SOXHLET EPA 3540

2.0 ml PCB extract split from 2.5 ml total

PEST-LL WORKGROUP NO.: WG91190
PCB-LL WORKGROUP NO.: WG91191
PESTICIDE SURROGATE SPIKE I.D. # 1372
PESTICIDE MATRIX SPIKE I.D. # 1310.1
PCB MATRIX SPIKE I.D. # 1402

Date/ Analyst	Sample Number	Project Number	Sample Description	coc	Initial Amt(g)		Effective Amt. (g) after split	Spike Amt. (uL)	Vf (ml)	CLEANUPS (GPC, AL, TBA)	PCB H+	Pest-LL conc. anlyst	Pest-LL turn in Date	PCB-LL conc. anlyst	PCB-LL turn in Date	Comments
Km 4/24/07	~~L76~~ L42276-5	423062	DW/DI CHP		30.0g		Pest	1372 100µl	2.5	YES		VV	5/3/07			
		100-004	MONITORING				PCB		0.5		H+			VM	5/4/07	
	-6						Pest		2.5							
							PCB		0.5		H+					
	-7						Pest		2.5							
							PCB		0.5		H+					
	-8						Pest		2.5							
							PCB		0.5		H+					
	-9						Pest		2.5							
							PCB		0.5		H+					
	L42274-5						Pest		2.5							
							PCB		0.5		H+					
							Pest									
							PCB									
							Pest									
							PCB									
							Pest									
							PCB									
							Pest									
							PCB									
							Pest									
							PCB									

Data File Name	Sample Name	Date Acquired	Vial Numb	Sample Amount	Sample Multiplie	Isodrin (RT)	Isodrin (Height)	Leptophos (RT)	Leptophos (Height)	Isodrin #2 (RT)	Isodrin #2 (Height)	Leptoph (RT)	Leptophos #2 (Height)	Misc Info	Data File Path
COND-01.D	conditioner	5/10/2007 12:07	1	0	1										
BLANK-01.D	blank	5/10/2007 12:43	2	0	1										S:\MSDCHEM\2\DATA\070510\
PCB-01.D	1366D 1016/1260 500/50	5/10/2007 13:20	3	0	1	15.220	104551950	23.544	176494627	12.899	298488687	19.275	475278899		S:\MSDCHEM\2\DATA\070510\
PCB-02.D	1378.1 1248 500/50	5/10/2007 13:57	4	0	1	15.218	122017215	23.543	204837900	12.899	336901205	19.273	541274412		S:\MSDCHEM\2\DATA\070510\
PCB-03.D	1210.2 1254 500/50	5/10/2007 14:33	5	0	1	15.218	107577622	23.542	178420784	12.898	302026863	19.272	492414227		S:\MSDCHEM\2\DATA\070510\
PCB-04.D	1206.2 1221 500/50	5/10/2007 15:10	6	0	1	15.218	109567438	23.541	180464874	12.899	307380023	19.273	496778593		S:\MSDCHEM\2\DATA\070510\
PCB-05.D	1207.2 1232 500/50	5/10/2007 15:47	7	0	1	15.218	111352233	23.543	183702333	12.899	310390978	19.276	496790461		S:\MSDCHEM\2\DATA\070510\
PCB-06.D	1208.2 1242 500/50	5/10/2007 16:23	8	0	1	15.218	112489453	23.543	185356173	12.897	315583866	19.273	504223023		S:\MSDCHEM\2\DATA\070510\
WG91190-1.D	MB	5/10/2007 17:00	9	15	0.5	15.218	88316456	23.542	149373668	12.898	246847522	19.273	390726788	PPLLS62 PCBLL DUWAMISH SOIL	S:\MSDCHEM\2\DATA\070510\
WG91190-2.D	SB	5/10/2007 17:37	10	15	0.5	15.218	88629436	23.543	151222310	12.898	247974026	19.274	407696736	PPLLS62 PCBLL DUWAMISH SOIL	S:\MSDCHEM\2\DATA\070510\
WG91190-3.D	MS L42276-5	5/10/2007 18:13	11	15	0.5	15.219	69611597	23.547	148339430	12.899	202298406	19.280	369663367	PPLLS62 PCBLL DUWAMISH SOIL	S:\MSDCHEM\2\DATA\070510\
WG91190-4.D	MSD L42276-5	5/10/2007 18:50	12	15	0.5	15.220	73695345	23.549	155539069	12.897	208141232	19.278	390182524	PPLLS62 PCBLL DUWAMISH SOIL	S:\MSDCHEM\2\DATA\070510\
WG91190-5.D	SRM HS2	5/10/2007 19:27	13	4.6875	0.5	15.230	76435183	23.557	149039150	12.906	177674773	19.292	381108626	PPLLS62 PCBLL DUWAMISH SOIL	S:\MSDCHEM\2\DATA\070510\
WG91190-6.D	LD L42276-6	5/10/2007 20:03	14	15	0.5	15.220	74580237	23.546	154952559	12.896	221943982	19.276	402914104	PPLLS62 PCBLL DUWAMISH SOIL	S:\MSDCHEM\2\DATA\070510\
L42276-4.D	L42276-4	5/10/2007 20:40	15	15	0.5	15.225	64149409	23.562	146771199	12.901	183904547	19.298	361261770	PPLLS62 PCBLL DUWAMISH SOIL	S:\MSDCHEM\2\DATA\070510\
L42276-5.D	L42276-5	5/10/2007 21:17	16	15	0.5	15.219	63736386	23.546	136821515	12.897	186097614	19.277	365708945	PPLLS62 PCBLL DUWAMISH SOIL	S:\MSDCHEM\2\DATA\070510\
L42276-6.D	L42276-6	5/10/2007 21:53	17	15	0.5	15.219	69588807	23.545	144290901	12.895	200973715	19.272	357648826	PPLLS62 PCBLL DUWAMISH SOIL	S:\MSDCHEM\2\DATA\070510\
BLANK-02.D	blank	5/10/2007 22:30	2	0	1										S:\MSDCHEM\2\DATA\070510\
PCB-07.D	1366D 1016/1260 500/50	5/10/2007 23:07	3	0	1	15.216	102367620	23.540	181165478	12.894	281723655	19.268	464728022		S:\MSDCHEM\2\DATA\070510\
PCB-08.D	1378.1 1248 500/50	5/10/2007 23:43	4	0	1	15.215	118151879	23.538	201576537	12.896	327508851	19.269	513254850		S:\MSDCHEM\2\DATA\070510\
L42276-9.D	L42276-9	5/11/2007 1:33	20	15	0.5	15.224	60811536	23.556	140611941	12.900	180900089	19.288	362430465	PPLLS62 PCBLL DUWAMISH SOIL	S:\MSDCHEM\2\DATA\070510\
L42276-7.D	L42276-7	5/11/2007 12:20	18	15	0.5	15.221	64063189	23.553	144726711	12.898	184475344	19.284	370895613	PPLLS62 PCBLL DUWAMISH SOIL	S:\MSDCHEM\2\DATA\070510\
L42276-8.D	L42276-8	5/11/2007 12:57	19	15	0.5	15.222	65636141	23.551	148259072	12.902	191910946	19.290	380453777	PPLLS62 PCBLL DUWAMISH SOIL	S:\MSDCHEM\2\DATA\070510\
L42274-5.D	L42274-5	5/11/2007 2:10	21	15	0.5	15.219	66998485	23.546	157367645	12.896	197036153	19.277	405331979	PPLLS62 PCBLL DUWAMISH SOIL	S:\MSDCHEM\2\DATA\070510\
BLANK-03.D	blank	5/11/2007 2:47	2	0	1										S:\MSDCHEM\2\DATA\070510\
PCB-09.D	1366D 1016/1260 500/50	5/11/2007 3:23	3	0	1	15.217	100139165	23.540	182820670	12.896	294345989	19.271	474310049		S:\MSDCHEM\2\DATA\070510\
PCB-10.D	1210.2 1254 500/50	5/11/2007 4:00	5	0	1	15.217	99089406	23.539	168504588	12.896	290143505	19.270	471434059		S:\MSDCHEM\2\DATA\070510\
					Ave.	15.220	87546792	23.546	163941701	12.898	247594434	19.277	429413483		
					Std. Dev.	0.003	20683630	0.006	20070499	0.003	56597759	0.006	60366994		
					%RSD		24%		12%		23%		14%		

Data File Name	Sample Name	Date Acquired	Vial Numb	Sample Amount	Sample Multiplie	Isodrin (RT)	Isodrin (Height)	Leptophos (RT)	Leptophos (Height)	Isodrin #2 (RT)	Isodrin #2 (Height)	Leptoph (RT)	Leptophos #2 (Height)	Misc Info	Data File Path
COND-01.D	conditioner	5/10/2007 12:07	1	0	1										S:\MSDCHEM\2\DATA\070510\
BLANK-01.D	blank	5/10/2007 12:43	2	0	1										S:\MSDCHEM\2\DATA\070510\
PCB-01.D	1366D 1016/1260 500/50	5/10/2007 13:20	3	0	1	15.220	104551950	23.544	176494627	12.899	298488687	19.275	475278899		S:\MSDCHEM\2\DATA\070510\
PCB-02.D	1378.1 1248 500/50	5/10/2007 13:57	4	0	1	15.218	122017215	23.543	204837900	12.899	336901205	19.273	541274412		S:\MSDCHEM\2\DATA\070510\
PCB-03.D	1210.2 1254 500/50	5/10/2007 14:33	5	0	1	15.218	107577622	23.542	178420784	12.898	302026863	19.272	492414227		S:\MSDCHEM\2\DATA\070510\
PCB-04.D	1206.2 1221 500/50	5/10/2007 15:10	6	0	1	15.218	109567438	23.541	180464874	12.899	307380023	19.273	496778593		S:\MSDCHEM\2\DATA\070510\
PCB-05.D	1207.2 1232 500/50	5/10/2007 15:47	7	0	1	15.218	111352233	23.543	183702333	12.899	310390978	19.276	496790461		S:\MSDCHEM\2\DATA\070510\
PCB-06.D	1208.2 1242 500/50	5/10/2007 16:23	8	0	1	15.218	112489453	23.543	185356173	12.897	315583866	19.273	504223023		S:\MSDCHEM\2\DATA\070510\
WG91190-1.D	MB	5/10/2007 17:00	9	15	0.5	15.218	88316456	23.542	149373666	12.898	246847522	19.273	390726788	PPLLS62 PCBLL DUWAMISH SOIL	S:\MSDCHEM\2\DATA\070510\
WG91190-2.D	SB	5/10/2007 17:37	10	15	0.5	15.218	88629436	23.543	151222310	12.898	247974026	19.274	407696736	PPLLS62 PCBLL DUWAMISH SOIL	S:\MSDCHEM\2\DATA\070510\
WG91190-3.D	MS L42276-5	5/10/2007 18:13	11	15	0.5	15.219	69611597	23.547	148339430	12.899	202298406	19.280	369663367	PPLLS62 PCBLL DUWAMISH SOIL	S:\MSDCHEM\2\DATA\070510\
WG91190-4.D	MSD L42276-5	5/10/2007 18:50	12	15	0.5	15.220	73695345	23.549	155539069	12.897	208141232	19.278	390182524	PPLLS62 PCBLL DUWAMISH SOIL	S:\MSDCHEM\2\DATA\070510\
WG91190-5.D	SRM HS2	5/10/2007 19:27	13	4.6875	0.5	15.230	76435183	23.557	149039150	12.906	177674773	19.292	381108626	PPLLS62 PCBLL DUWAMISH SOIL	S:\MSDCHEM\2\DATA\070510\
WG91190-6.D	LD L42276-6	5/10/2007 20:03	14	15	0.5	15.220	74580237	23.546	154952559	12.896	221943982	19.276	402914104	PPLLS62 PCBLL DUWAMISH SOIL	S:\MSDCHEM\2\DATA\070510\
L42276-4.D	L42276-4	5/10/2007 20:40	15	15	0.5	15.225	64149409	23.562	146771199	12.901	183904547	19.298	361261770	PPLLS62 PCBLL DUWAMISH SOIL	S:\MSDCHEM\2\DATA\070510\
L42276-5.D	L42276-5	5/10/2007 21:17	16	15	0.5	15.219	63736386	23.546	136821515	12.897	186097614	19.277	365708945	PPLLS62 PCBLL DUWAMISH SOIL	S:\MSDCHEM\2\DATA\070510\
L42276-6.D	L42276-6	5/10/2007 21:53	17	15	0.5	15.219	69588807	23.545	144290901	12.895	200973715	19.272	357648826	PPLLS62 PCBLL DUWAMISH SOIL	S:\MSDCHEM\2\DATA\070510\
BLANK-02.D	blank	5/10/2007 22:30	2	0	1										S:\MSDCHEM\2\DATA\070510\
PCB-07.D	1366D 1016/1260 500/50	5/10/2007 23:07	3	0	1	15.216	102367620	23.540	181165478	12.894	281723655	19.268	464728022		S:\MSDCHEM\2\DATA\070510\
PCB-08.D	1378.1 1248 500/50	5/10/2007 23:43	4	0	1	15.215	118151879	23.538	201576537	12.896	327508851	19.269	513254850		S:\MSDCHEM\2\DATA\070510\
L42276-9.D	L42276-9	5/11/2007 1:33	20	15	0.5	15.224	60811536	23.556	140611941	12.900	180900089	19.288	362430465	PPLLS62 PCBLL DUWAMISH SOIL	S:\MSDCHEM\2\DATA\070510\
L42276-7.D	L42276-7	5/11/2007 12:20	18	15	0.5	15.221	64083189	23.553	144726711	12.898	194475344	19.284	370895613	PPLLS62 PCBLL DUWAMISH SOIL	S:\MSDCHEM\2\DATA\070510\
L42276-8.D	L42276-8	5/11/2007 12:57	19	15	0.5	15.222	65636141	23.551	148259072	12.902	191910946	19.290	380453777	PPLLS62 PCBLL DUWAMISH SOIL	S:\MSDCHEM\2\DATA\070510\
L42274-5.D	L42274-5	5/11/2007 2:10	21	15	0.5	15.219	66998485	23.546	157367645	12.896	197036153	19.277	405331979	PPLLS62 PCBLL DUWAMISH SOIL	S:\MSDCHEM\2\DATA\070510\
BLANK-03.D	blank	5/11/2007 2:47	2	0	1										S:\MSDCHEM\2\DATA\070510\
PCB-09.D	1366D 1016/1260 500/50	5/11/2007 3:23	3	0	1	15.217	100139185	23.540	182820670	12.896	294345989	19.271	474310049		S:\MSDCHEM\2\DATA\070510\
PCB-10.D	1210.2 1254 500/50	5/11/2007 4:00	5	0	1	15.217	99089406	23.539	168504588	12.896	290143505	19.270	471434059		S:\MSDCHEM\2\DATA\070510\
					Ave.	15.220	87546792	23.546	163941701	12.898	247594434	19.277	429413483		
					Std. Dev.	0.003	20683630	0.006	20070499	0.003	56597759	0.008	60366994		
					%RSD		24%		12%		23%		14%		

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 05/23/07 01:49
Run ID: R120076 Workgroup: WG91191 (pplls#62 pcbll)

MB:WG91191-1 Matrix: OTHR SOLID Listtype: ORPCBLL Method: EPA 8081A/8082 (7-3-03-002) Project: Pkey: SED
(Method Blank)

Parameter	Mdl	Rdl	Units	MB Value	Qual
Aroclor 1016	.83	1.67	ug/Kg	<MDL	
Aroclor 1221	1.7	3.33	ug/Kg	<MDL	
Aroclor 1232	1.7	3.33	ug/Kg	<MDL	
Aroclor 1242	.83	1.67	ug/Kg	<MDL	
Aroclor 1248	.83	1.67	ug/Kg	<MDL	
Aroclor 1254	.83	1.67	ug/Kg	<MDL	
Aroclor 1260	.83	1.67	ug/Kg	<MDL	

SB:WG91191-2 MB:WG91191-1 Matrix: OTHR SOLID Listtype: ORPCBLL 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
Aroclor 1016	.83	1.67	ug/Kg	<MDL	25.0	18.3	73		39-121
Aroclor 1260	.83	1.67	ug/Kg	<MDL	25.0	24.4	98		53-140

MSD:WG91191-4 MS:WG91191-3 L42276-5 Matrix: SALTWTRSED Listtype: ORPCBLL Method: EPA 8081A/8082 (7-3-03-002) Project: 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
Aroclor 1016	.83	1.67	ug/Kg	<MDL	25.0	23.1	92		32-164	25.0	23.6	94		2		35
Aroclor 1260	.83	1.67	ug/Kg	9.82	25.0	26.7	68		28-144	25.0	27.3	70		3		35

SRM:WG91191-5 Matrix: OTHR SOLID Listtype: ORPCBLL Method: EPA 8081A/8082 (7-3-03-002) Project: Pkey: SED
(Std Reference Material)

Parameter	Mdl	Rdl	Units	Truevalue	SRM Value	% Rec.	Qual	LabLimit
Aroclor 1254	2.7	5.33	ug/Kg	112.	72.3	65		57-139

LD:WG91191-6 L42276-6 Matrix: SALTWTRSED Listtype: ORPCBLL Method: EPA 8081A/8082 (7-3-03-002) Project: Pkey: SED
(Lab Duplicate)

Parameter	Mdl	Rdl	Units	SampValue	LD Value	RPD	Qual	LabLimit
Aroclor 1016	.97	1.93	ug/Kg	<MDL	<MDL			35
Aroclor 1221	1.7	3.33	ug/Kg	<MDL	<MDL			35
Aroclor 1232	1.7	3.33	ug/Kg	<MDL	<MDL			35
Aroclor 1242	7.1	14.2	ug/Kg	<MDL	<MDL			35
Aroclor 1248	.83	1.67	ug/Kg	2.13	1.69	23		35
Aroclor 1254	.83	1.67	ug/Kg	3.79	2.82	29		35
Aroclor 1260	.83	1.67	ug/Kg	2.44	2.14	13		35

Sample #	2,4,5,6-Tetrac-hloro-m-xylene	Decachlorobiph-enyl
(Lab Limits)	30-134	15-155
L42276-4	75	76
L42276-5	68	75
L42276-6	65	81
L42276-7	76	80
L42276-8	71	79
L42276-9	70	77
WG91191-1	41	81
WG91191-2	58	107
WG91191-3	81	99
WG91191-4	97	104
WG91191-5	92	81
WG91191-6	67	73

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

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

King County Environmental Laboratory

WORK GROUP REPORT (wk02)

May 15 2007, 01:33 pm

Work Group: WG91148 (ppllls#61 pcbll) for Department: 7 - Organics, Trace

Created: 19-APR-07 PrepDate: 19-APR-07 Due: Operator: km

Sample	Project Number	Project Description	PKey	C	Product	Matrix	Stat	UA	Workdate	Duedate
L42274-1	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PCBLL	SALTWTRSED	PREP	U	17-APR-07	19-MAY-07
L42274-2	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PCBLL	SALTWTRSED	PREP	U	17-APR-07	19-MAY-07
L42274-3	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PCBLL	SALTWTRSED	PREP	U	17-APR-07	19-MAY-07
L42274-4	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PCBLL	SALTWTRSED	PREP	U	17-APR-07	19-MAY-07
L42274-6	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PCBLL	SALTWTRSED	PREP	U	18-APR-07	19-MAY-07
L42274-7	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PCBLL	SALTWTRSED	PREP	U	18-APR-07	19-MAY-07
L42274-8	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PCBLL	SALTWTRSED	PREP	U	18-APR-07	19-MAY-07
L42275-1	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PCBLL	SALTWTRSED	PREP	U	16-APR-07	19-MAY-07
L42275-2	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PCBLL	SALTWTRSED	PREP	U	16-APR-07	19-MAY-07
L42275-3	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PCBLL	SALTWTRSED	PREP	U	16-APR-07	19-MAY-07
L42275-4	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PCBLL	SALTWTRSED	PREP	U	16-APR-07	19-MAY-07
L42275-5	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PCBLL	SALTWTRSED	PREP	U	16-APR-07	19-MAY-07
L42275-6	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PCBLL	SALTWTRSED	PREP	U	16-APR-07	19-MAY-07
L42275-7	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PCBLL	SALTWTRSED	PREP	U	16-APR-07	19-MAY-07
L42275-8	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PCBLL	SALTWTRSED	PREP	U	16-APR-07	19-MAY-07
L42275-9	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	PCBLL	SALTWTRSED	PREP	U	18-APR-07	19-MAY-07
L42276-1	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	PCBLL	SALTWTRSED	PREP	U	17-APR-07	19-MAY-07
L42276-2	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	PCBLL	SALTWTRSED	PREP	U	17-APR-07	19-MAY-07
L42276-3	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	PCBLL	SALTWTRSED	PREP	U	17-APR-07	19-MAY-07
WG91148-1	MB			S	PCBLL	OTHR SOLID	PREP	U	19-APR-07	
WG91148-2	SB			S	PCBLL	OTHR SOLID	PREP	U	19-APR-07	
WG91148-3	MS		SED	S	PCBLL	SALTWTRSED	PREP	U	19-APR-07	
WG91148-4	MSD		SED	S	PCBLL	SALTWTRSED	PREP	U	19-APR-07	
WG91148-5	SRM			S	PCBLL	OTHR SOLID	PREP	U	19-APR-07	
WG91148-6	LD		SED	S	PCBLL	SALTWTRSED	PREP	U	19-APR-07	

Comments:

L42274-1	Take Minimum Casts
L42274-2	Take Minimum Casts, AREP
L42274-3	Take Minimum Casts, FREP
L42274-4	Take Minimum Casts
L42274-6	Take Minimum Casts
L42274-7	Take Minimum Casts
L42274-8	Take Minimum Casts
L42275-1	10 Grab Comp, 0-10 cm
L42275-2	10 Grab Comp, 0-10 cm
L42275-3	10 Grab Comp, AREP
L42275-4	10 Grab Comp, FREP
L42275-5	10 Grab Comp, 0-10 cm
L42275-6	10 Grab Comp, 0-10 cm
L42275-7	10 Grab Comp, 0-10 cm
L42275-8	10 Grab Comp, 0-10 cm
L42275-9	10 Grab Comp, 0-10 cm
L42276-1	3 grab comp, 0-10 cm
L42276-2	3 grab comp, 0-10 cm
L42276-3	3 grab comp, 0-10 cm
WG91148-1	MB070419
WG91148-2	WG91148-1
WG91148-3	L42274-5
WG91148-4	WG91148-3 L42274-5
WG91148-5	HS2
WG91148-6	L42276-1

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

1:1 MeCL2:ACETONE

pestll | pcbll

QC BATCH NO.: PPLLS #61

EPA SW-846 ~~EXTRACTION~~ METHOD:
SONICATION EPA 3550 SOXHLET EPA 3540

2.0 ml PCB extract split from 2.5 ml total

PEST-LL WORKGROUP NO.: WG-91148
PCB-LL WORKGROUP NO.: WG-91148
PESTICIDE SURROGATE SPIKE I.D. # 1372
PESTICIDE MATRIX SPIKE I.D. # 1310.1
PCB MATRIX SPIKE I.D. # 1402

Date/ Analyst	Sample Number	Project Number	Sample Description	coc	Initial Amt(g)	Effective Amt. (g) after split	Spike Amt. (uL)	Vf (ml)	CLEANUPS (GPC, AL,TBA)	CLEANUPS PCB H+	Pest-LL conc. anlyst	Pest-LL turn in Date	PCB-LL conc. anlyst	PCB-LL turn in Date	Comments
Km 4/15/07	WG 91147-1	QC	MB		30.0	Pest	1372 100µl	2.5	ALL		Km	5/1/07			
	WG91148-1					PCB		0.5		H+			Km	5/2/07	
	WG91147-2		SR (Pestll)		30.0	Pest	1310.1 100µl	2.5							
			SR			PCB		/		/					
	WG91148-2		SR (PCBll)		24.0	Pest	1402 ul 200µl	/							
			pestll			PCB		0.5		H+					
	WG91147-3		MS (L42274-4)		30.0	Pest	1310.1 100µl	2.5							
						PCB		/		H+					
	WG91147-4		pestll MSD (L42274-4)		30.0	Pest		2.5							
						PCB		/		/					
	WG91148-3		pcbll MS (L42274-5)		24.0	Pest	1402 200 ul	/							
			pcbll			PCB		0.5		H+					
	WG91148-4		MSD (L42274-5)		24.0	Pest		/							
						PCB		0.5		H+					
	WG91147-5		pestll SRM 1944		30.0	Pest		2.0							
			pcbll			PCB		/		/					
	WG91148-5		SRM HS2		7.5	Pest		/							
						PCB		0.5		H+					
	WG91147 WG91148-6		LD (L42276-1)		30.0	Pest		2.5							
						PCB		0.5		H+					
	L42274-1	423062	DU/DI TAN LAYER		30.0	Pest		2.5							
		2007-004	C			PCB		0.5		H+					

CONTIN. NEXT PAGE

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

1:1 MeCL2:ACETONE

pestll/pcbll

QC BATCH NO.: PPLLS#61

EPA SW-846 ~~EXTRACTON~~ METHOD:
SONICATION EPA 3550 SOXHLET EPA 3540

2.0 ml PCB extract split from 2.5 ml total

PEST-LL WORKGROUP NO.: WG 91147
PCB-LL WORKGROUP NO.: WG 91148
PESTICIDE SURROGATE SPIKE I.D. # 1372
PESTICIDE MATRIX SPIKE I.D. # 1310.1
PCB MATRIX SPIKE I.D. # 1402

Date/ Analyst	Sample Number	Project Number	Sample Description	coc	Initial Amt(g)	Effective Amt. (g) after split	Spike Amt. (uL)	Vf (ml)	CLEANUPS (GPC, AL,TBA)	PCB H+	Pest-LL conc. anlyst	Pest-LL turn in Date	PCB-LL conc. anlyst	PCB-LL turn in Date	Comments
Kw 4/19/07	L42274-2	423062	Dil Di DIAC			Pest	1372 100µl	2.5	ALL		Kw	5/1/07			* possible double scan K.41
		200 gm	STILL LAYER C			PCB		0.5		H+			Kw	5/2/07	~~LOST SAMPLE BROKEN~~
	-3					Pest		2.5							
						PCB		0.5		H+					
	-4					Pest		2.5							
						PCB		0.5		H+					
	-5					Pest		2.5							* LOST SAMPLE BROKEN C-TUB
						PCB		0.5		H+					
	-6					Pest		2.5							
						PCB		0.5		H+					
	-7					Pest		2.5							
						PCB		0.5		H+					
	-8					Pest		2.5							
						PCB		0.5		H+					
	L42275-1					Pest		2.5							
						PCB		0.5		H+					
	-2					Pest		2.5							
						PCB		0.5		H+					
	-3					Pest		2.5							
						PCB		0.5		H+					
	-4					Pest		2.5							
						PCB		0.5		H+					

K.41

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

1:1 MeCL2:ACETONE

pcsh11 / pcb11

QC BATCH NO.: PPLLS #61

EPA SW-846 EXTRACTON METHOD:
SONICATION EPA 3550 SOXHLET EPA 3540

2.0 ml PCB extract split from 2.5 ml total

PEST-LL WORKGROUP NO.: WG 91147
PCB-LL WORKGROUP NO.: WG 91148
PESTICIDE SURROGATE SPIKE I.D. # 1372
PESTICIDE MATRIX SPIKE I.D. # 1310.1
PCB MATRIX SPIKE I.D. # 1402

Date/ Analyst	Sample Number	Project Number	Sample Description	coc	Initial Amt(g)	Effective Amt. (g) after split	Spike Amt. (uL)	Vf (ml)	CLEANUPS (GPC, AL,TBA)	PCB H+	Pest-LL conc. anlyst	Pest-LL turn in Date	PCB-LL conc. anlyst	PCB-LL turn in Date	Comments
Kim 4/19/07	L42275-5	423062	DW/DI DIAGONAL		30.0	Pest	1372 100µl	2.5	ALL		Ve	5/1/07			
		200 400	THINNER C			PCB		0.5		H+			Ve	5/2/07	
	-6				30.0	Pest		2.5							
						PCB		0.5		H+					
	-7				30.0	Pest		2.5							
						PCB		0.5		H+					
	-8				30.0	Pest		2.5							
						PCB		0.5		H+					
	-9				30.0	Pest		2.5							
						PCB		0.5		H+					
	L42276-1	423092	DW/DI DIAGONAL		30.0	Pest		2.5							
		200 400	CAP MONITOR			PCB		0.5		H+					
	-2				30.0	Pest		2.5							
						PCB		0.5		H+					
	-3				30.0	Pest		2.5							
						PCB		0.5		H+					
						Pest									
						PCB									
						Pest									
						PCB									
						Pest									
						PCB									

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 06/11/07 01:02
Run ID: R120224 Workgroup: WG91148 (pplls#61 pcbll)

MB:WG91148-1 Matrix: OTHR SOLID Listtype: ORPCBLL Method: EPA 8081A/8082 (7-3-03-002) Project: Pkey: SED
(Method Blank)

Parameter	Mdl	Rdl	Units	MB Value	Qual
Aroclor 1016	.83	1.67	ug/Kg	<MDL	
Aroclor 1221	1.7	3.33	ug/Kg	<MDL	
Aroclor 1232	1.7	3.33	ug/Kg	<MDL	
Aroclor 1242	.83	1.67	ug/Kg	<MDL	
Aroclor 1248	.83	1.67	ug/Kg	<MDL	
Aroclor 1254	.83	1.67	ug/Kg	<MDL	
Aroclor 1260	.83	1.67	ug/Kg	<MDL	

SB:WG91148-2 MB:WG91148-1 Matrix: OTHR SOLID Listtype: ORPCBLL 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
Aroclor 1016	.83	1.67	ug/Kg	<MDL	25.0	13.9	56		39-121
Aroclor 1260	.83	1.67	ug/Kg	<MDL	25.0	27.9	112		53-140

MSD:WG91148-4 MS:WG91148-3 L42274-5 Matrix: SALTWTRSED Listtype: ORPCBLL 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
Aroclor 1016	.83	1.67	ug/Kg	<MDL	25.0	32.2	129		32-164	25.0	21.6	86		40	*	35
Aroclor 1260	.83	1.67	ug/Kg	7.48	25.0	78.4	284	L	28-144	25.0	33.5	104		93	*	35

SRM:WG91148-5 Matrix: OTHR SOLID Listtype: ORPCBLL Method: EPA 8081A/8082 (7-3-03-002) Project: Pkey: SED
(Std Reference Material)

Parameter	Mdl	Rdl	Units	Truevalue	SRM Value	% Rec.	Qual	LabLimit
Aroclor 1254	2.7	5.33	ug/Kg	112.	105	94		57-139

LD:WG91148-6 L42276-1 Matrix: SALTWTRSED Listtype: ORPCBLL Method: EPA 8081A/8082 (7-3-03-002) Project: 423062-100-4 Pkey: SED
(Lab Duplicate)

Parameter	Mdl	Rdl	Units	SampValue	LD Value	RPD	Qual	LabLimit
Aroclor 1016	12	24.9	ug/Kg	<MDL	<MDL			35
Aroclor 1221	1.7	3.33	ug/Kg	<MDL	<MDL			35
Aroclor 1232	1.7	3.33	ug/Kg	<MDL	<MDL			35
Aroclor 1242	30	59.4	ug/Kg	<MDL	<MDL			35
Aroclor 1248	.83	1.67	ug/Kg	18.8	20.3	7		35
Aroclor 1254	.83	1.67	ug/Kg	55.7	39	35		35
Aroclor 1260	.83	1.67	ug/Kg	35.6	22.4	46	E	35

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 06/11/07 01:02
Run ID: R120224 Workgroup: WG91148 (pplls#61 pcbll)

MB:WG91191-1 Matrix: Listtype: ORPCBLL Method: EPA 8081A/8082 (7-3-03-002) Project: Pkey: SED
(Method Blank)

Parameter	Mdl	Rdl	Units	MB Value	Qual
Aroclor 1016	.83	1.67	ug/Kg	<MDL	
Aroclor 1221	1.7	3.33	ug/Kg	<MDL	
Aroclor 1232	1.7	3.33	ug/Kg	<MDL	
Aroclor 1242	.83	1.67	ug/Kg	<MDL	
Aroclor 1248	.83	1.67	ug/Kg	<MDL	
Aroclor 1254	.83	1.67	ug/Kg	<MDL	
Aroclor 1260	.83	1.67	ug/Kg	<MDL	

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 06/11/07 01:02
Run ID: R120224 Workgroup: WG91148 (pplls#61 pcbll)

Sample # (Lab Limits)	2,4,5,6-Tetrachloro-m-xylene 30-134	Decachlorobiphenyl 15-155
L42274-1	65	87
L42274-2	107	167 L
L42274-3	52	79
L42274-4	52	76
L42274-5	80	91
L42274-6	70	92
L42274-7	63	86
L42274-8	66	90
L42275-1	78	93
L42275-2	86	101
L42275-3	75	98
L42275-4	83	102
L42275-5	76	93
L42275-6	71	93
L42275-7	90	97
L42275-8	82	96
L42275-9	103	121
L42276-1	99	87
L42276-2	76	97
L42276-3	70	95
WG91148-1	31	87
WG91148-2	43	111
WG91148-3	67	109
WG91148-4	60	107
WG91148-5	117	134
WG91148-6	88	81

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

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

Data File Name	Sample Name	Date Acquired	Vial Number	Sample Amount	Sample Multiplier	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	5/17/2007 13:17	1	0	1										
BLANK-01.D	blank	5/17/2007 13:54	2	0	1										R:\MSDCHEM\1\DATA\070517\
PCB-01.D	1366D 1016/1260 500/50	5/17/2007 14:31	3	0	1	12.607	620447128	19.639	1055508012	16.720	85971427	26.571	95104283		R:\MSDCHEM\1\DATA\070517\
PCB-02.D	1378.1 1248 500/50	5/17/2007 15:07	4	0	1	12.608	591691343	19.641	1019916190	16.720	84804734	26.571	94766391		R:\MSDCHEM\1\DATA\070517\
PCB-03.D	1210.2 1254 500/50	5/17/2007 15:44	5	0	1	12.609	560981935	19.640	944750574	16.721	81098122	26.572	89657265		R:\MSDCHEM\1\DATA\070517\
PCB-04.D	1206.2 1221 500/50	5/17/2007 16:21	6	0	1	12.609	673034847	19.645	1492194081	16.721	94234826	26.572	105521876		R:\MSDCHEM\1\DATA\070517\
PCB-05.D	1207.2 1232 500/50	5/17/2007 16:57	7	0	1	12.609	668912910	19.636	1484396538	16.720	95280503	26.572	104243703		R:\MSDCHEM\1\DATA\070517\
PCB-06.D	1208.2 1242 500/50	5/17/2007 17:34	8	0	1	12.610	680672275	19.647	1486168133	16.720	98637795	26.572	108562623		R:\MSDCHEM\1\DATA\070517\
WG9' 148-1.D	MB	5/17/2007 18:11	9	15	0.5	12.610	497840018	19.641	844880051	16.719	70306205	26.570	80715708	PPLLS61 PCBLL DUWAMISH SOIL	R:\MSDCHEM\1\DATA\070517\
WG9' 148-2.D	SB	5/17/2007 18:47	10	15	0.5	12.610	532355184	19.646	969017207	16.722	75535653	26.571	85342182	PPLLS61 PCBLL DUWAMISH SOIL	R:\MSDCHEM\1\DATA\070517\
WG9' 148-3.D	MS L42274-5	5/17/2007 19:24	11	15	0.5	12.617	378548265	19.662	817650910	16.723	62175409	26.579	75562249	PPLLS61 PCBLL DUWAMISH SOIL	R:\MSDCHEM\1\DATA\070517\
WG9' 148-4.D	MSD L42274-5	5/17/2007 20:01	12	15	0.5	12.616	430513705	19.661	822062151	16.723	70556260	26.578	83425551	PPLLS61 PCBLL DUWAMISH SOIL	R:\MSDCHEM\1\DATA\070517\
WG9' 148-5.D	SRM HS2	5/17/2007 20:38	13	4.6875	0.5	12.632	286375456	19.689	595651972	16.733	44388141	26.594	62865337	PPLLS61 PCBLL DUWAMISH SOIL	R:\MSDCHEM\1\DATA\070517\
WG9' 148-6.D	LD L42276-1	5/17/2007 21:14	14	15	0.5	12.639	289638296	19.745	570757714	16.739	49440764	26.627	67611781	PPLLS61 PCBLL DUWAMISH SOIL	R:\MSDCHEM\1\DATA\070517\
L42274-1.D	L42274-1	5/17/2007 21:51	15	15	0.5	12.621	348463079	19.673	669201991	16.728	58244983	26.588	72645007	PPLLS61 PCBLL DUWAMISH SOIL	R:\MSDCHEM\1\DATA\070517\
L42274-2.D	L42274-2	5/17/2007 22:28	16	15	0.5	12.619	376404683	19.667	721804696	16.728	62870873	26.584	76427879	PPLLS61 PCBLL DUWAMISH SOIL	R:\MSDCHEM\1\DATA\070517\
L42274-3.D	L42274-3	5/17/2007 23:04	17	15	0.5	12.619	393184328	19.666	746232244	16.727	66020976	26.585	77987215	PPLLS61 PCBLL DUWAMISH SOIL	R:\MSDCHEM\1\DATA\070517\
BLANK-02.D	blank	5/17/2007 23:41	2	0	1										R:\MSDCHEM\1\DATA\070517\
PCB-07.D	1366D 1016/1260 500/50	5/18/2007 12:18	3	0	1	12.617	524979208	19.654	862125768	16.725	80422468	26.579	93809399		R:\MSDCHEM\1\DATA\070517\
PCB-08.D	1378.1 1248 500/50	5/18/2007 12:55	4	0	1	12.617	552127099	19.654	890458188	16.725	78146703	26.577	91615576		R:\MSDCHEM\1\DATA\070517\
L42274-4.D	L42274-4	5/18/2007 1:31	18	15	0.5	12.619	397519101	19.664	731594362	16.725	61752312	26.580	74644976	PPLLS61 PCBLL DUWAMISH SOIL	R:\MSDCHEM\1\DATA\070517\
L42274-6.D	L42274-6	5/18/2007 2:08	19	15	0.5	12.619	402486884	19.667	767683929	16.726	64396965	26.583	79903930	PPLLS61 PCBLL DUWAMISH SOIL	R:\MSDCHEM\1\DATA\070517\
L42274-7.D	L42274-7	5/18/2007 2:45	20	15	0.5	12.621	383049172	19.675	777824041	16.727	63411659	26.587	78384580	PPLLS61 PCBLL DUWAMISH SOIL	R:\MSDCHEM\1\DATA\070517\
L42274-8.D	L42274-8	5/18/2007 3:21	21	15	0.5	12.619	346722292	19.664	655094013	16.725	54894032	26.580	70596110	PPLLS61 PCBLL DUWAMISH SOIL	R:\MSDCHEM\1\DATA\070517\
L42275-1.D	L42275-1	5/18/2007 3:58	22	15	0.5	12.629	303740432	19.703	609701943	16.732	52281575	26.601	68225355	PPLLS61 PCBLL DUWAMISH SOIL	R:\MSDCHEM\1\DATA\070517\
L42275-2.D	L42275-2	5/18/2007 4:35	23	15	0.5	12.625	335238185	19.691	681896556	16.729	55868981	26.595	74304161	PPLLS61 PCBLL DUWAMISH SOIL	R:\MSDCHEM\1\DATA\070517\
L42275-3.D	L42275-3 2X	5/18/2007 5:11	24	15	1	12.621	357082414	19.669	738189666	16.728	56253727	26.584	75845289	PPLLS61 PCBLL DUWAMISH SOIL	R:\MSDCHEM\1\DATA\070517\
L42275-4.D	L42275-4 2X	5/18/2007 5:48	25	15	1	12.622	372784468	19.672	761857746	16.726	54914578	26.582	79432158	PPLLS61 PCBLL DUWAMISH SOIL	R:\MSDCHEM\1\DATA\070517\
BLANK-03.D	blank	5/18/2007 6:25	2	0	1										R:\MSDCHEM\1\DATA\070517\
PCB-09.D	1366D 1016/1260 500/50	5/18/2007 7:01	3	0	1	12.611	569052149	19.645	1030229073	16.719	82120895	26.569	97957768		R:\MSDCHEM\1\DATA\070517\
PCB-10.D	1210.2 1254 500/50	5/18/2007 7:38	5	0	1	12.611	537691327	19.645	833578326	16.719	78947364	26.568	89425603		R:\MSDCHEM\1\DATA\070517\
L42275-5.D	L42275-5 2X	5/18/2007 8:15	26	15	1	12.615	388148708	19.659	797702979	16.722	61185295	26.577	77970987	PPLLS61 PCBLL DUWAMISH SOIL	R:\MSDCHEM\1\DATA\070517\
L42275-6.D	L42275-6	5/18/2007 8:51	27	15	0.5	12.615	367238045	19.665	717921134	16.723	59939000	26.581	75518489	PPLLS61 PCBLL DUWAMISH SOIL	R:\MSDCHEM\1\DATA\070517\
L42275-7.D	L42275-7	5/18/2007 9:28	28	15	0.5	12.620	355099223	19.687	687508536	16.726	47993707	26.593	74182641	PPLLS61 PCBLL DUWAMISH SOIL	R:\MSDCHEM\1\DATA\070517\
L42275-8.D	L42275-8 2X	5/18/2007 10:05	29	15	1	12.619	356330348	19.675	714808648	16.724	54798937	26.586	75975619	PPLLS61 PCBLL DUWAMISH SOIL	R:\MSDCHEM\1\DATA\070517\
L42275-9.D	L42275-9	5/18/2007 10:41	30	15	0.5	12.622	364947973	19.681	788596646	16.728	48582274	26.591	78658731	PPLLS61 PCBLL DUWAMISH SOIL	R:\MSDCHEM\1\DATA\070517\
L42276-1.D	L42276-1	5/18/2007 11:18	31	15	0.5	12.639	289386552	19.758	586702085	16.741	51890104	26.635	73423983	PPLLS61 PCBLL DUWAMISH SOIL	R:\MSDCHEM\1\DATA\070517\
L42276-2.D	L42276-2	5/18/2007 11:55	32	15	0.5	12.628	288369980	19.712	572790684	16.734	50718507	26.608	66249843	PPLLS61 PCBLL DUWAMISH SOIL	R:\MSDCHEM\1\DATA\070517\
L42276-3.D	L42276-3	5/18/2007 12:31	33	15	0.5	12.619	346571331	19.674	679439011	16.728	57921570	26.588	73347444	PPLLS61 PCBLL DUWAMISH SOIL	R:\MSDChem\1\data\070517\
BLANK-04.D	blank	5/18/2007 13:08	2	0	1										R:\MSDCHEM\1\DATA\070517\
PCB-11.D	1366D 1016/1260 500/50	5/18/2007 13:45	3	0	1	12.612	557206320	19.649	990736163	16.723	83215189	26.575	96343900		R:\MSDCHEM\1\DATA\070517\
PCB-12.D	1378.1 1248 500/50	5/18/2007 14:22	4	0	1	12.613	545299349	19.649	873403187	16.723	80764657	26.574	94474972		R:\MSDCHEM\1\DATA\070517\
					Ave.	12.617	450734072	19.664	859451957	16.725	68403198	26.581	82741869		
					Std. Dev.	0.007	121089333	0.023	246838441	0.005	14750529	0.012	11818593		
					%RSD		27%		29%		22%		14%		

Trace Organics Data Anomaly Form

Date(s) Occurred: *5/17/2007*

WG #(s): *WG91148*

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

Project #(s): *423062-100-004*

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

I. Analysis/Extraction

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

II. Instrument

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

III. Type of Sample/Analytical Anomaly

☒ Values Outside of Control Limits:

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

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

Anomaly Description: *3. The MS value for Aroclor 1260 is above the limits off 28%-144%, at 284%. 8. Sample L42274-2 had the DCB surrogate outside the acceptance limits of 15-155%, at 167%. 10. The MS/MSD RPD for both Aroclor 1016 and Aroclor 1260 are outside the lab limits of 35%, at 40% and 93% respectively. 11. The LD and corresponding sample had and RPD outside the acceptance window of 35%, at 46% for Aroclor 1260. 16. Several samples were "H" flagged due to the jars*

cracking upon freezing (see associated prep. DAF). 17. Several MDL/RDL values were raised due to overlapping PCB congeners, these samples had text and TA flags added.

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: *The extraction procedure was changed from an initial 20g sample to a 30g sample. This was done for all NPDES sediments extracted for pesticides and PCBs, due to the large water content of the sample matrix. In order to consistently achieve the project MDLs after correction for dry weight and TOC, a larger initial amount of sample is needed for extraction. The current 2003 SAP is out of date and is due for an update; these new MDL and RDL values will be included in the re-write.*

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: *H & L & TA & E*
☐ Other

Corrective Action Description: *3. The MS is "L" flagged on the QC report. All other MS and MSD values are within the acceptance limits. All samples had Aroclor 1260 "L" flagged. This sample was previously analyzed on 5/16/2007 with similar results showing an interferent. 8. This is due to a conflicting peak in the sample at the same retention time. The QC report is "L" flagged for this sample's surrogate. This doesn't affect the sample as the method states that only one surrogate recovery must be within limits and the other surrogate is within limits. 10. The MS/MSD RPD being out is due to the non-homogeneity of the sample, which presents and obvious and unavoidable matrix interference. 11. The LD high RPD was due to non-homogeneity in the sample matrix. All samples (except L42274-5) were flagged with an "E" for Aroclor 1260.*

VI. Potential Effects on Data Quality:

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

☒ Potential effect explanation (explanation mandatory): *Due to the high recovery in the MS and high RPD in the LD for Aroclor 1260, all data is flagged with an "L" and an "E" on Aroclor 1260. The sample matrix is difficult and non-homogeneous, which is evident in the QC results.*

	Signatures	Signature Dates
Reported By: *Gretchen Nerlin*		6/12/07
Reviewer: *Jim Fiscus*		6-14-07
Supervisor: *Dana Walker*	Dana Walker	6/12/07
QA Officer: *Colin Elliott* **(For QA1 only)**		
cc: LPM: Fritz Grothkopp		

Trace Organics Data Anomaly Form

Date(s) Occurred: *4/9/07,4/4/17/07,4/23/07*

WG #(s): *WG90996, WG91147/48, WG91190/91*

☐ **All samples in WKGP(s)** or ☒ **Sample #(s):** *L42274-1 to-3 L42274-6 to -8, L42275-1 to -9, L42276-2,L42276-4 to -9*

Project #(s):

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

I. Analysis/Extraction

☐ BNA ☐ BNALL ☐ EDC ☐ EDC-LVI
☐ CLPESTPCB ☐ PEST ☐ PCB ☐ OPPEST
☐ VOA-GCMS ☐ NWTPH-GX ☐ NWTPH-DX ☐ NWTPH-HCID
☐ BUTYL TIN ☐ AIRTOX ☐ AIR-SULFUR
☒ Other: *BNASMS,PESTLL,PCBLL*
☐ 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: *16: Sample jar L42275-1 cracked upon freezing,samples thawed 4/09/07. Bnasms*

Sample jars L42274-1 to -3, L42274-6 to -8, L42275-1 to -9, L42276-2 cracked upon freezing,samples thawed 4/17/07. pestll/pcbll
Sample jars L42276-4 to -9 cracked upon freezing,samples thawed 4/23/07. pestll/pcbll

17. Sample L42274-5 lost 4/23/07, broken concentrater tube post GPC.

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:
☒ Other
☐ Sample(s) re-prepared and re-analyzed

Corrective Action Description: *16. I transferred samples from the broken jars to new clean containers. Results should be flagged with an H. Instrument analyst will make this decision. Problem has been discussed with both TC's and PM.*
17. *Sample L42274-5 was re-extracted in the next workgroup, WG91190/91 pestll/pcbll only. The sample was kept in WG91148 because of limitations within LIMS. Samples can not be linked between workgroups.*

VI. Potential Effects on Data Quality:

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

☐ Potential effect explanation (explanation mandatory):

	Signatures	Signature Dates
Reported By:		6/12/07
Reviewer: JSE		6-12-07
Supervisor: *Dana Walker*	Dana Walker	6/12/07
QA Officer: *Colin Elliott* (For QA1 only)		
cc: LPM:		

N/m
5/21/07

King County Environmental Laboratory

WORK GROUP REPORT (wk02)

May 21 2007, 06:56 am

Work Group: WG90997 (bs#242 bnasms) for Department: 7 - Organics, Trace

Created: 09-APR-07 PrepDate: 11-APR-07 Due: Operator: km

Sample	Project Number	Project Description	PKey	C	Product	Matrix	Stat	UA	Workdate	Duedate
L42276-4	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	BNASMS	SALTWTRSED	PREP	U	17-APR-07	19-MAY-07
L42276-5	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	BNASMS	SALTWTRSED	PREP	U	17-APR-07	19-MAY-07
L42276-6	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	BNASMS	SALTWTRSED	PREP	U	17-APR-07	19-MAY-07
L42276-7	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	BNASMS	SALTWTRSED	PREP	U	17-APR-07	19-MAY-07
L42276-8	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	BNASMS	SALTWTRSED	PREP	U	17-APR-07	19-MAY-07
L42276-9	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	BNASMS	SALTWTRSED	PREP	U	17-APR-07	19-MAY-07
WG90997-1	MB			S	BNASMS	OTHR SOLID	PREP	U	09-APR-07	
WG90997-5	SRM		SED	S	BNASMS	SALTWTRSED	PREP	U	11-APR-07	
WG90997-6	LD		SED	S	BNASMS	SALTWTRSED	PREP	U	11-APR-07	
WG90997-7	SB			S	BNASMS	OTHR SOLID	PREP	U	11-APR-07	
WG90997-8	MS		SED	S	BNASMS	SALTWTRSED	PREP	U	11-APR-07	
WG90997-9	MSD		SED	S	BNASMS	SALTWTRSED	PREP	U	11-APR-07	

Comments:

L42276-4	3 grab comp, 0-10 cm
L42276-5	0-10 cm, AREP
L42276-6	0-10 cm, FREP
L42276-7	3 grab comp, 0-10 cm
L42276-8	3 grab comp, 0-10 cm
L42276-9	3 grab comp, 0-10 cm
WG90997-1	MB070411
WG90997-5	1944
WG90997-6	L42276-5
WG90997-7	WG90997-1
WG90997-8	L42276-6
WG90997-9	WG90997-8 L42276-6

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

QC BATCH NO.: BS #243 1:1 Acetone:MeCl2

EPA SW-846 EXTRACTION METHOD: BNA SMS

SONICATION EPA 3550 SOXHLET EPA 3540

WORKGROUP NO.: WG-90997

BNA SURROGATE SPIKE I.D.#: 1376

BNA MATRIX SPIKE I.D.#: 1263A

BNA Surr #1364 Coprostanol:

Caffeine:

Date/ Analyst	Sample Number	Project Number	Sample Description	coc	Init. Amt (g)	Spike Amount (uL)	Vf (mL)	Clean ups (GPC)	Conc. Anal.	Turn Over Date	Comments
Km 4/11/07	WG-90997-1	QC	MB		40.0	1376 100 µl	0.5	YES		4/13/07	
	-2		SB LOW			1263A 100 µl					
	-3		MS LOW (L42276-4)								
	-4		MSD LOW (L42276-4)								
	-5		SRM 1944		3.0 g	1364 100 µl	5.0				
	-6		LD (L42276-5)		40.0 g	1376 100 µl	0.5				
	-7		SB2 HIGH			1263A 300 µl					
	-8		MS2 HIGH (L42276-6)								
	-9		MSD2 HIGH (L42276-6)								
	L42276-4	423662	DW/DI DIAGONAL			376 100 µl					
	-5	100-004	CAP MONITORING			376 100 µl					
	-6										
	-7										
	-8										
	-9										

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 04/25/07 10:13
Run ID: R119712 Workgroup: WG90997 (bs#242 bnasms)

A/M 5/21/07

MB:WG90997-1 Matrix: OTHR SOLID Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-100-4 Pkey: SED
(Method Blank)

Parameter	Mdl	Rdl	Units	MB Value	Qual
Phenol	4	8	ug/Kg	<MDL	
1,3-Dichlorobenzene	.2	.4	ug/Kg	<MDL	
1,4-Dichlorobenzene	.2	.4	ug/Kg	<MDL	
1,2-Dichlorobenzene	.2	.4	ug/Kg	<MDL	
Hexachloroethane	1	2	ug/Kg	<MDL	
2,4-Dimethylphenol	1	2	ug/Kg	<MDL	
1,2,4-Trichlorobenzene	.1	.2	ug/Kg	<MDL	
Naphthalene	2	4	ug/Kg	<MDL	
Hexachlorobutadiene	.5	1	ug/Kg	<MDL	
Acenaphthylene	2	4	ug/Kg	<MDL	
Dimethyl Phthalate	4	8	ug/Kg	<MDL	
Acenaphthene	2	4	ug/Kg	<MDL	
Fluorene	2	4	ug/Kg	<MDL	
Diethyl Phthalate	4	8	ug/Kg	<MDL	
N-Nitrosodiphenylamine	4	8	ug/Kg	<MDL	
Hexachlorobenzene	.1	.2	ug/Kg	<MDL	
Pentachlorophenol	10	20	ug/Kg	<MDL	
Phenanthrene	2	4	ug/Kg	<MDL	
Anthracene	2	4	ug/Kg	<MDL	
Di-N-Butyl Phthalate	4	8	ug/Kg	<MDL	
Fluoranthene	2	4	ug/Kg	<MDL	
Pyrene	2	4	ug/Kg	<MDL	
Benzyl Butyl Phthalate	1	2	ug/Kg	<MDL	
Benzo(a)anthracene	2	4	ug/Kg	<MDL	
Chrysene	2	4	ug/Kg	<MDL	
Bis(2-Ethylhexyl)Phthalate	4	8	ug/Kg	5.6	B
Di-N-Octyl Phthalate	4	8	ug/Kg	<MDL	
Benzo(b)fluoranthene	2	4	ug/Kg	<MDL	
Benzo(k)fluoranthene	2	4	ug/Kg	<MDL	
Benzo(a)pyrene	2	4	ug/Kg	<MDL	
Indeno(1,2,3-Cd)Pyrene	2	4	ug/Kg	<MDL	
Dibenzo(a,h)anthracene	2	4	ug/Kg	<MDL	
Benzo(g,h,i)perylene	2	4	ug/Kg	<MDL	
Benzyl Alcohol	2	4	ug/Kg	<MDL	
2-Methylphenol	2	4	ug/Kg	<MDL	
4-Methylphenol	4	8	ug/Kg	<MDL	
Benzoic Acid	10	20	ug/Kg	<MDL	
2-Methylnaphthalene	2	4	ug/Kg	<MDL	
Dibenzofuran	2	4	ug/Kg	<MDL	
Carbazole	2	4	ug/Kg	<MDL	
Coprostanol	40	80	ug/Kg	<MDL	
Total LPAHs	2	4	ug/Kg	<MDL	
Total HPAHS	2	4	ug/Kg	<MDL	

SRM:WG90997-5 Matrix: SALTWTRSED Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-100-4 Pkey: SED
(Std Reference Material)

Parameter	Mdl	Rdl	Units	Truevalue	SRM Value	% Rec.	Qual	LabLimit
Naphthalene	130	533	ug/Kg	1630	240	15		10-29
Phenanthrene	270	533	ug/Kg	5200	3750	72		51-106

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 04/25/07 10:13
Run ID: R119712 Workgroup: WG90997 (bs#242 bnasms)

SRM:WG90997-5 Matrix: SALTWTRSED Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-100-4 Pkey: SED
(Std Reference Material)

Parameter	Mdl	Rdl	Units	Truevalue	SRM Value	% Rec.	Qual	LabLimit
Anthracene	270	533	ug/Kg	1750	769	44		28-98
Fluoranthene	270	533	ug/Kg	8800	7810	89		45-126
Pyrene	270	533	ug/Kg	9570	7900	82		36-135
Benzo(a)anthracene	270	533	ug/Kg	4660	3880	83		66-124
Chrysene	270	533	ug/Kg	4800	4810	100		77-136
Benzo(b)fluoranthene	270	533	ug/Kg	3820	4410	115		52-190
Benzo(k)fluoranthene	270	533	ug/Kg	2270	2390	105		60-146
Benzo(a)pyrene	270	533	ug/Kg	4240	3470	82		60-116
Indeno(1,2,3-Cd)Pyrene	270	533	ug/Kg	2740	2550	93		33-121
Dibenzo(a,h)anthracene	270	533	ug/Kg	419.	804	192		10-200
Benzo(g,h,i)perylene	270	533	ug/Kg	2800	2360	84		15-121

LD:WG90997-6 L42276-5 Matrix: SALTWTRSED Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-100-4 Pkey: SED
(Lab Duplicate)

Parameter	Mdl	Rdl	Units	SampValue	LD Value	RPD	Qual	LabLimit
Phenol	4	8	ug/Kg	8.19	9.77	18		35
1,3-Dichlorobenzene	.2	.4	ug/Kg	<MDL	<MDL			35
1,4-Dichlorobenzene	.2	.4	ug/Kg	.29	.29			35
1,2-Dichlorobenzene	.2	.4	ug/Kg	<MDL	<MDL			35
Hexachloroethane	1	2	ug/Kg	<MDL	<MDL			35
2,4-Dimethylphenol	1	2	ug/Kg	<MDL	<MDL			35
1,2,4-Trichlorobenzene	.1	.2	ug/Kg	<MDL	<MDL			35
Naphthalene	2	4	ug/Kg	<MDL	<MDL			35
Hexachlorobutadiene	.5	1	ug/Kg	<MDL	<MDL			35
Acenaphthylene	2	4	ug/Kg	<MDL	<MDL			35
Dimethyl Phthalate	4	8	ug/Kg	<MDL	<MDL			35
Acenaphthene	2	4	ug/Kg	<MDL	<MDL			35
Fluorene	2	4	ug/Kg	<MDL	<MDL			35
Diethyl Phthalate	4	8	ug/Kg	<MDL	<MDL			35
N-Nitrosodiphenylamine	4	8	ug/Kg	<MDL	<MDL			35
Hexachlorobenzene	.1	.2	ug/Kg	<MDL	<MDL			35
Pentachlorophenol	10	20	ug/Kg	<MDL	<MDL			35
Phenanthrene	2	4	ug/Kg	17.6	16.3	8		35
Anthracene	2	4	ug/Kg	4.05	4.22	4		35
Di-N-Butyl Phthalate	4	8	ug/Kg	<MDL	<MDL			35
Fluoranthene	2	4	ug/Kg	44.2	42	5		35
Pyrene	2	4	ug/Kg	34.8	35	1		35
Benzyl Butyl Phthalate	1	2	ug/Kg	10.3	10.3	0		35
Benzo(a)anthracene	2	4	ug/Kg	17.9	16.1	11		35
Chrysene	2	4	ug/Kg	23.3	26.4	13		35
Bis(2-Ethylhexyl)Phthalate	4	8	ug/Kg	59.9	59.1	1		35
Di-N-Octyl Phthalate	4	8	ug/Kg	<MDL	<MDL			35
Benzo(b)fluoranthene	2	4	ug/Kg	29.3	26.1	12		35
Benzo(k)fluoranthene	2	4	ug/Kg	15.9	18.9	18		35
Benzo(a)pyrene	2	4	ug/Kg	20.7	21.6	4		35
Indeno(1,2,3-Cd)Pyrene	2	4	ug/Kg	14.9	16.3	9		35
Dibenzo(a,h)anthracene	2	4	ug/Kg	3.7	3.7			35
Benzo(g,h,i)perylene	2	4	ug/Kg	12.8	13.8	7		35
Benzyl Alcohol	2	4	ug/Kg	<MDL	<MDL			35

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 04/25/07 10:13
Run ID: R119712 Workgroup: WG90997 (bs#242 bnasms)

LD:WG90997-6 L42276-5 Matrix: SALTWTRSED Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-100-4 Pkey: SED
(Lab Duplicate)

Parameter	Mdl	Rdl	Units	SampValue	LD Value	RPD	Qual	LabLimi
2-Methylphenol	2	4	ug/Kg	<MDL	<MDL			35
4-Methylphenol	4	8	ug/Kg	<MDL	<MDL			35
Benzoic Acid	10	20	ug/Kg	43.6	53.5	20		35
2-Methylnaphthalene	2	4	ug/Kg	<MDL	<MDL			35
Dibenzofuran	2	4	ug/Kg	<MDL	<MDL			35
Carbazole	2	4	ug/Kg	3.7	4.82	26		35
Coprostanol	40	80	ug/Kg	168	197	16		35

SB:WG90997-7 MB:WG90997-1 Matrix: OTHR SOLID Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-100-4 Pkey: SED
(Spike Blank, Method Blank)

Parameter	Mdl	Rdl	Units	MB Value	Truevalue	SB Value	% Rec.	Qual	LabLimit
Phenol	4	8	ug/Kg	<MDL	300.	77.2	26		10-107
1,3-Dichlorobenzene	.2	.4	ug/Kg	<MDL	300.	82	27		18-95
1,4-Dichlorobenzene	.2	.4	ug/Kg	<MDL	300.	77.6	26		21-99
1,2-Dichlorobenzene	.2	.4	ug/Kg	<MDL	300.	78.8	26		10-116
Hexachloroethane	1	2	ug/Kg	<MDL	300.	70.4	23		17-92
2,4-Dimethylphenol	1	2	ug/Kg	<MDL	300.	6.4	2	*	10-81
1,2,4-Trichlorobenzene	.1	.2	ug/Kg	<MDL	300.	81.7	27		13-110
Naphthalene	2	4	ug/Kg	<MDL	300.	83.1	28		17-94
Hexachlorobutadiene	.5	1	ug/Kg	<MDL	300.	78.7	26		10-97
Acenaphthylene	2	4	ug/Kg	<MDL	300.	93.3	31		31-101
Dimethyl Phthalate	4	8	ug/Kg	<MDL	300.	111	37	*	38-114
Acenaphthene	2	4	ug/Kg	<MDL	300.	99.4	33		29-102
Fluorene	2	4	ug/Kg	<MDL	300.	126	42		39-106
Diethyl Phthalate	4	8	ug/Kg	<MDL	300.	127	42	*	51-118
N-Nitrosodiphenylamine	4	8	ug/Kg	<MDL	300.	112	37		11-148
Hexachlorobenzene	.1	.2	ug/Kg	<MDL	300.	123	41		40-111
Pentachlorophenol	10	20	ug/Kg	<MDL	300.	89.7	30	*	38-124
Phenanthrene	2	4	ug/Kg	<MDL	300.	138	46	*	57-104
Anthracene	2	4	ug/Kg	<MDL	300.	132	44	*	45-114
Di-N-Butyl Phthalate	4	8	ug/Kg	<MDL	300.	145	48		17-180
Fluoranthene	2	4	ug/Kg	<MDL	300.	163	54	*	55-132
Pyrene	2	4	ug/Kg	<MDL	300.	159	53		48-132
Benzyl Butyl Phthalate	1	2	ug/Kg	<MDL	300.	135	45		15-183
Benzo(a)anthracene	2	4	ug/Kg	<MDL	300.	154	51	*	69-117
Chrysene	2	4	ug/Kg	<MDL	300.	147	49	*	69-111
Bis(2-Ethylhexyl)Phthalate	4	8	ug/Kg	5.6	300.	132	42		10-182
Di-N-Octyl Phthalate	4	8	ug/Kg	<MDL	300.	146	49		10-200
Benzo(b)fluoranthene	2	4	ug/Kg	<MDL	300.	163	54		50-121
Benzo(k)fluoranthene	2	4	ug/Kg	<MDL	300.	160	53	*	58-128
Benzo(a)pyrene	2	4	ug/Kg	<MDL	300.	129	43		15-137
Indeno(1,2,3-Cd)Pyrene	2	4	ug/Kg	<MDL	300.	141	47	*	51-132
Dibenzo(a,h)anthracene	2	4	ug/Kg	<MDL	300.	163	54		53-129
Benzo(g,h,i)perylene	2	4	ug/Kg	<MDL	300.	149	50		46-126
Benzyl Alcohol	2	4	ug/Kg	<MDL	300.	74.3	25		10-119
2-Methylphenol	2	4	ug/Kg	<MDL	300.	57	19		16-91
4-Methylphenol	4	8	ug/Kg	<MDL	300.	57.4	19		10-125
Benzoic Acid	10	20	ug/Kg	<MDL	300.	63	21		10-170
2-Methylnaphthalene	2	4	ug/Kg	<MDL	300.	85.2	28		22-99

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 04/25/07 10:13
Run ID: R119712 Workgroup: WG90997 (bs#242 bnasms)

SB:WG90997-7 MB:WG90997-1 Matrix: OTHR SOLID Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-100-4 Pkey: SED
(Spike Blank, Method Blank)

Parameter	Mdl	Rdl	Units	MB Value	Truevalue	SB Value	% Rec.	Qual	LabLimit
Dibenzofuran	2	4	ug/Kg	<MDL	300.	107	36	*	37-97
Carbazole	2	4	ug/Kg	<MDL	300.	255	85		44-179
Coprostanol	40	80	ug/Kg	<MDL	3000	2790	93		10-159
Total LPAHs	2	4	ug/Kg	<MDL	150.	757			
Total HPAHS	2	4	ug/Kg	<MDL	150.	1530			

MSD:WG90997-9 MS:WG90997-8 L42276-6 Matrix: SALTWTRSED Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-100-4 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
Phenol	4	8	ug/Kg	5.2	300.	128	41		10-127	300.	133	43		5		35
1,3-Dichlorobenzene	.2	.4	ug/Kg	<MDL	300.	94.5	32		10-103	300.	103	34		6		35
1,4-Dichlorobenzene	.2	.4	ug/Kg	<MDL	300.	92.6	31		10-104	300.	99.5	33		6		35
1,2-Dichlorobenzene	.2	.4	ug/Kg	<MDL	300.	99.4	33		10-105	300.	107	36		9		35
Hexachloroethane	1	2	ug/Kg	<MDL	300.	86.1	29		10-89	300.	97.6	33		13		35
2,4-Dimethylphenol	1	2	ug/Kg	<MDL	300.	110	37		10-150	300.	133	44		17		35
1,2,4-Trichlorobenzene	.1	.2	ug/Kg	<MDL	300.	119	40		10-115	300.	131	44		10		35
Naphthalene	2	4	ug/Kg	<MDL	300.	121	40		12-97	300.	131	44		10		35
Hexachlorobutadiene	.5	1	ug/Kg	<MDL	300.	114	38		10-97	300.	125	42		10		35
Acenaphthylene	2	4	ug/Kg	<MDL	300.	149	50		27-132	300.	172	57		13		35
Dimethyl Phthalate	4	8	ug/Kg	<MDL	300.	157	52		13-162	300.	186	62		18		35
Acenaphthene	2	4	ug/Kg	<MDL	300.	159	53		25-130	300.	185	62		16		35
Fluorene	2	4	ug/Kg	<MDL	300.	190	63		22-147	300.	222	74		16		35
Diethyl Phthalate	4	8	ug/Kg	<MDL	300.	177	59		31-150	300.	204	68		14		35
N-Nitrosodiphenylamine	4	8	ug/Kg	<MDL	300.	178	59		10-169	300.	208	69		16		35
Hexachlorobenzene	.1	.2	ug/Kg	<MDL	300.	174	58		18-151	300.	208	69		17		35
Pentachlorophenol	10	20	ug/Kg	<MDL	300.	137	46		17-170	300.	176	59		25		35
Phenanthrene	2	4	ug/Kg	8.83	300.	191	61		10-200	300.	221	71		15		35
Anthracene	2	4	ug/Kg	2.8	300.	195	64		10-181	300.	224	74		14		35
Di-N-Butyl Phthalate	4	8	ug/Kg	<MDL	300.	198	66		10-194	300.	226	75		13		35
Fluoranthene	2	4	ug/Kg	22.4	300.	242	73		12-188	300.	265	81		10		35
Pyrene	2	4	ug/Kg	18.7	300.	240	74		20-174	300.	248	76		3		35
Benzyl Butyl Phthalate	1	2	ug/Kg	11.6	300.	201	63		41-145	300.	218	69		9		35
Benzo(a)anthracene	2	4	ug/Kg	9.43	300.	232	74		32-168	300.	237	76		3		35
Chrysene	2	4	ug/Kg	15.4	300.	211	65		14-184	300.	238	74		13		35
Bis(2-Ethylhexyl)Phthalate	4	8	ug/Kg	53.6	300.	234	60		10-189	300.	276	74		21		35
Di-N-Octyl Phthalate	4	8	ug/Kg	<MDL	300.	201	67		52-151	300.	224	75		11		35
Benzo(b)fluoranthene	2	4	ug/Kg	16.7	300.	215	66		10-199	300.	209	64		3		35
Benzo(k)fluoranthene	2	4	ug/Kg	9.92	300.	227	72		10-192	300.	284	91		23		35
Benzo(a)pyrene	2	4	ug/Kg	14.5	300.	189	58		10-200	300.	210	65		11		35
Indeno(1,2,3-Cd)Pyrene	2	4	ug/Kg	11.4	300.	185	58		10-177	300.	209	66		13		35
Dibenzo(a,h)anthracene	2	4	ug/Kg	2.4	300.	210	69		10-166	300.	240	79		14		35
Benzo(g,h,i)perylene	2	4	ug/Kg	9.32	300.	201	64		10-173	300.	233	75		16		35
Benzyl Alcohol	2	4	ug/Kg	<MDL	300.	114	38		10-138	300.	124	41		8		35
2-Methylphenol	2	4	ug/Kg	<MDL	300.	125	42		10-142	300.	135	45		7		35
4-Methylphenol	4	8	ug/Kg	<MDL	300.	123	41		10-163	300.	135	45		9		35

Matrix Spike Duplicate Report
MSD:WG90997-9 MS:WG90997-8 L42276-6 Matrix: SALTWTRSED Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-100-4 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
Benzoic Acid	10	20	ug/Kg	51	300.	159	36		10-158	300.	186	45		22		35
2-Methylnaphthalene	2	4	ug/Kg	<MDL	300.	135	45		22-112	300.	152	51		13		35
Dibenzofuran	2	4	ug/Kg	<MDL	300.	164	55		21-134	300.	193	64		15		35
Carbazole	2	4	ug/Kg	<MDL	300.	343	114		16-200	300.	395	132		15		35
Coprostanol	40	80	ug/Kg	154	3000	3770	120		10-183	3000	4350	140		15		35
Total LPAHs	2	4	ug/Kg	14.3	150.	1140				150.	1310					
Total HPAHS	2	4	ug/Kg	130	150.	2150				150.	2370					

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 04/25/07 10:13
Run ID: R119712 Workgroup: WG90997 (bs#242 bnasms)

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
L42276-4	41	49	50	51	41	63	83	82
L42276-5	32	38	41	40	32	48	81	84
L42276-6	35	42	46	44	34	52	72	76
L42276-7	31	40	42	40	31	52	86	78
L42276-8	36	42	47	46	36	55	76	70
L42276-9	42	45	51	52	38	57	83	76
WG90997-1	29	34	41	35	35	42	28 G	70
WG90997-5	49	62	61	64	49	74	93	98
WG90997-6	31	38	39	39	31	47	64	75
WG90997-7	25	28	29	28	28	29 G	37	53
WG90997-8	36	44	40	42	34	47	58	74
WG90997-9	39	49	44	45	36	53	69	79

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

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

Batch: \\orgizmo\EE\chem\6890j.i\070419.b

#	Smp. #	Injection Time	Wkgp. #	QC #	Project #	Sample Description	Matrix	Amount	DilFac	IS#2-RT	IS#2-Area	Method	Init Cali	Analyst
1	DFTPP-1	19-APR-2007 07:20	SDGa0971	SDGa09		10 NG/UL DFTPP MIX	NONE	0.000	1.0	12.989	117224	DFTPP.m		M.Doubrava
2	CCALI-01	19-APR-2007 07:54	SDGa0282	SDGa02		SS#1354 D 8.0 PPM BNA STD	WATER	0.000	1.0	8.339	375180	8270b1sms.m	17-APR-2007	M.Doubrava
3	BLANK-01	19-APR-2007 08:37	SDGa0282	SDGa02		MECL2 INSTRUMENT BLANK	WATER	0.000	1.0	0.000	0	8270B1.m	20-MAR-2007	M.Doubrava
4	WG90997-1	19-APR-2007 09:20	WG90997	BS#242		WG90997-1 MB DUDI SEDS	SOIL	25.000	0.5	8.339	329232	8270b1sms.m	17-APR-2007	M.Doubrava
5	WG90997-7	19-APR-2007 10:03	WG90997	BS#242		WG90997-7 SB HIGH DUDI SEDS	SOIL	25.000	0.5	8.339	337596	8270b1sms.m	17-APR-2007	M.Doubrava
6	WG90997-8	19-APR-2007 10:46	WG90997	BS#242		WG90997-8 MS HIGH L42276-6 D	SOIL	25.000	0.5	8.338	360163	8270b1sms.m	17-APR-2007	M.Doubrava
7	WG90997-9	19-APR-2007 11:29	WG90997	BS#242		WG90997-9 MS HIGH L42276-6 D	SOIL	25.000	0.5	8.339	384136	8270b1sms.m	17-APR-2007	M.Doubrava
8	WG90997-5	19-APR-2007 12:11	WG90997	BS#242		WG90997-5 SRM 1944 DUDI SEDS	SOIL	1.875	5.0	8.339	331784	8270b1sms.m	17-APR-2007	M.Doubrava
9	WG90997-6	19-APR-2007 12:54	WG90997	BS#242		WG90997-6 LD L42276-5 DUDI S	SOIL	25.000	0.5	8.339	293398	8270b1sms.m	17-APR-2007	M.Doubrava
10	L42276-6	19-APR-2007 13:37	WG90997	BS#242		L42276-6 DUDI SEDS	SOIL	25.000	0.5	8.339	430586	8270b1sms.m	17-APR-2007	M.Doubrava
11	L42276-5	19-APR-2007 14:20	WG90997	BS#242		L42276-5 DUDI SEDS	SOIL	25.000	0.5	8.339	312515	8270b1sms.m	17-APR-2007	M.Doubrava
12	L42276-4	19-APR-2007 15:03	WG90997	BS#242		L42276-4 DUDI SEDS	SOIL	25.000	0.5	8.348	366509	8270b1sms.m	17-APR-2007	M.Doubrava
13	L42276-7	19-APR-2007 15:46	WG90997	BS#242		L42276-7 DUDI SEDS	SOIL	25.000	0.5	8.338	287046	8270b1sms.m	17-APR-2007	M.Doubrava
14	L42276-8	19-APR-2007 16:30	WG90997	BS#242		L42276-8 DUDI SEDS	SOIL	25.000	0.5	8.348	312467	8270b1sms.m	17-APR-2007	M.Doubrava
15	L42276-9	19-APR-2007 17:13	WG90997	BS#242		L42276-9 DUDI SEDS	SOIL	25.000	0.5	8.339	274240	8270b1sms.m	17-APR-2007	M.Doubrava
16	DFTPP-2	19-APR-2007 17:55	SDGa0971	SDGa09		10 NG/UL DFTPP MIX	NONE	0.000	1.0	12.989	85600	DFTPP.m		M.Doubrava
17	CCALI-02	19-APR-2007 18:29	SDGa0282	SDGa02		SS#1354 D 8.0 PPM BNA STD	SOIL	0.000	1.0	8.339	342985	8270b1sms.m	17-APR-2007	M.Doubrava
18	BLANK-02	19-APR-2007 19:12	SDGa0282	SDGa02		MECL2 INSTRUMENT BLANK	SOIL	0.000	1.0	0.000	0	8270B1.m	20-MAR-2007	M.Doubrava

Samples: 7 **QC Samples + Misc.:** 8 **ContinuingCals:** 1 **Tunes:** 2 **Calibrations:** 0

Trace Organics Data Anomaly Form

Date(s) Occurred: *07/04/19*

WG #(s): *WG90997*

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

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

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

I. Analysis/Extraction

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

II. Instrument

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

III. Type of Sample/Analytical Anomaly

☒ Values Outside of Control Limits:

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

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

Anomaly Description:

1. WG90997-1 MB - the extraction blank had a quantitatable level of Bis(2EH)phthalate at 5.6 ug/Kg which was greater than the MDL (4 ug/KG) but less than the RDL (8 ug/Kg). This nominal level is at "normal" lab background contamination for this project . The source of the contamination is most likely from the extraction lab, as the instrument blanks indicated no phthalates were detected.

2. WG90997-2 SB - the spike blank recoveries for 12 of the 41 analytes were asterisked for being outside of the established lad limits. The analyte recoveries and lab limits are presented in the accompanying workgroup QC report. It has been observed in past data sets that the SB recoveries are lower that the MS and MSD recoveries because of an absence of a matrix and samples concentration to 0.5 mls. The lab derived limits for the SB should take this phenomena in to account, however, it's possible to lower recoveries by vigorous concentration, not concentrating to exactly 0.5 mls, or addition of slightly to much ISTD prior to injection.

8. WG90997-1 MB - had low recoveries for surrogate spike 2,4,6-Tribromophenol (28 % recovery vs. lab limit of 29% recovery) WG90997-7 SB had low recoveries for surrogate spike 2-Flurorbiphenyl (29 % recovery vs. lab limit of 31% recovery). Lower surrogate recoveries are typical for blank extractions with absence of matrix. Occasionally a few recoveries exceed low lab limits most likely due to concentration of extract to 0.5 ml final volume. With the absence of sediment matrix, the surrogates are more susceptible to loss during extract concentration.

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: *The current SAP MDL/RDLs are higher due to concentration calculations using 30 grams as the nominal starting amount. The current extraction scheme for QA1 sediments using the BNASAM product is 40 grams as the staring nominal amount. The resulting MDL/ RDLs are lower than in the current SAP.*

V. Corrective Action Taken

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

Corrective Action Description: *The SAP will be updated to reflect the current MDL/ RDLs*

VI. Potential Effects on Data Quality:

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

1. Past phthalate "spikes" have been documented with no real definitive source identified. The sample concentrations of Bis(2EH)phthalate ranged from 10 to 100 times the blank level. Generally, if a value is 10 times or greater than the blank, it should be considered "real" and the data used without bias. All samples were flagged "B" as per QA1 protocols.

2. Since the MS/MSD recoveries and %RPDs were all within QA1 limits with no flags being generated, low recoveries in the SB have no affect on the data and should be used without bias.

8. This has been very typical for sediment projects in the pass. The 2 surrogates were flagged "G" as per QA1 protocols.

☐ Potential effect explanation (explanation mandatory):

	Signatures	Signature Dates
Reported By: *M. Doubrava*		5/18/07
Reviewer:		
Supervisor: *Dana Walker*	Dana Walker	5/18/07
QA Officer: *Colin Elliott* (For QA1 only)		
cc: LPM:		

A/M1
5/22/07

King County Environmental Laboratory

WORK GROUP REPORT (wk02)

May 22 2007, 10:07 am

Work Group: WG90996 (bs#242 bnasms) for Department: 7 - Organics, Trace

Created: 09-APR-07 PrepDate: 10-APR-07 Due: Operator: km

Sample	Project Number	Project Description	PKey	C	Product	Matrix	Stat	UA	Workdate	Duedate
L42274-1	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	BNASMS	SALTWTRSED	PREP	U	17-APR-07	19-MAY-07
L42274-2	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	BNASMS	SALTWTRSED	PREP	U	17-APR-07	19-MAY-07
L42274-3	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	BNASMS	SALTWTRSED	PREP	U	17-APR-07	19-MAY-07
L42274-4	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	BNASMS	SALTWTRSED	PREP	U	17-APR-07	19-MAY-07
L42274-5	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	BNASMS	SALTWTRSED	PREP	U	17-APR-07	19-MAY-07
L42274-6	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	BNASMS	SALTWTRSED	PREP	U	18-APR-07	19-MAY-07
L42274-7	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	BNASMS	SALTWTRSED	PREP	U	18-APR-07	19-MAY-07
L42274-8	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	BNASMS	SALTWTRSED	PREP	U	18-APR-07	19-MAY-07
L42275-1	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	BNASMS	SALTWTRSED	PREP	U	16-APR-07	19-MAY-07
L42275-2	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	BNASMS	SALTWTRSED	PREP	U	16-APR-07	19-MAY-07
L42275-3	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	BNASMS	SALTWTRSED	PREP	U	16-APR-07	19-MAY-07
L42275-4	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	BNASMS	SALTWTRSED	PREP	U	16-APR-07	19-MAY-07
L42275-5	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	BNASMS	SALTWTRSED	PREP	U	16-APR-07	19-MAY-07
L42275-6	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	BNASMS	SALTWTRSED	PREP	U	16-APR-07	19-MAY-07
L42275-7	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	BNASMS	SALTWTRSED	PREP	U	16-APR-07	19-MAY-07
L42275-8	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	BNASMS	SALTWTRSED	PREP	U	16-APR-07	19-MAY-07
L42275-9	423062-200-4	Duwamish Diagonal Thin Layer Cap	SED	S	BNASMS	SALTWTRSED	PREP	U	18-APR-07	19-MAY-07
L42276-1	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	BNASMS	SALTWTRSED	PREP	U	17-APR-07	19-MAY-07
L42276-2	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	BNASMS	SALTWTRSED	PREP	U	17-APR-07	19-MAY-07
L42276-3	423062-100-4	Duwamish Diagonal Cap Monitoring	SED	S	BNASMS	SALTWTRSED	PREP	U	17-APR-07	19-MAY-07
WG90996-1	MB			S	BNASMS	OTHR SOLID	PREP	U	09-APR-07	
WG90996-5	SRM		SED	S	BNASMS	SALTWTRSED	PREP	U	09-APR-07	
WG90996-6	LD		SED	S	BNASMS	SALTWTRSED	PREP	U	09-APR-07	
WG90996-7	SB			S	BNASMS	OTHR SOLID	PREP	U	09-APR-07	
WG90996-8	MS		SED	S	BNASMS	SALTWTRSED	PREP	U	09-APR-07	
WG90996-9	MSD		SED	S	BNASMS	SALTWTRSED	PREP	U	09-APR-07	

Comments:

L42274-1	Take Minimum Casts
L42274-2	Take Minimum Casts, AREP
L42274-3	Take Minimum Casts, FREP
L42274-4	Take Minimum Casts
L42274-5	Take Minimum Casts
L42274-6	Take Minimum Casts
L42274-7	Take Minimum Casts
L42274-8	Take Minimum Casts
L42275-1	10 Grab Comp, 0-10 cm
L42275-2	10 Grab Comp, 0-10 cm
L42275-3	10 Grab Comp, AREP
L42275-4	10 Grab Comp, FREP
L42275-5	10 Grab Comp, 0-10 cm
L42275-6	10 Grab Comp, 0-10 cm
L42275-7	10 Grab Comp, 0-10 cm
L42275-8	10 Grab Comp, 0-10 cm
L42275-9	10 Grab Comp, 0-10 cm
L42276-1	3 grab comp, 0-10 cm
L42276-2	3 grab comp, 0-10 cm
L42276-3	3 grab comp, 0-10 cm
WG90996-1	MB070410
WG90996-5	1944
WG90996-6	L42274-2
WG90996-7	WG90996-1
WG90996-8	L42274-3
WG90996-9	WG90996-8 L42274-3

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

QC BATCH NO.: BS #242 1:1 Acetone:MeCl2

EPA SW-846 EXTRACTION METHOD: BNA SMS

SONICATION EPA 3550 SOXHLET EPA 3540

WORKGROUP NO.: WG90996

LL BNA SURROGATE SPIKE I.D.#: 1376 BNA SURR #1304

LL BNA MATRIX SPIKE I.D.#: 1263A

Coprostanol:

Caffeine:

Date/ Analyst	Sample Number	Project Number	Sample Description	coc	Init. Amt (g)	Spike Amount (uL)	Vf (mL)	Clean ups (GPC)	Conc. Anal.	Turn Over Date	Comments
4/10/07 KM	WG90996-1	QC	MB		40.0g	1376 100µl	0.5	YES	KC	4/12/07	
	-2		SB LOW			1263A 100µl					
	-3		MS LOW (L42274-1)								
	-4		MSD LOW (L42274-1)								
	-5		SRM 1944		3.0g	1304 100µl	5.0				
	-6		LD (L42274-2)		40.0g	1376 100µl					
	-7		SB2HIGH			1263A 300µl					
	-8		MS2HIGH (L42274-3)								
	-9		MSD2HIGH (L42274-3)								
	L42274-1	423062	DUWAMISH DIAGONAL			1376 100µl					
	-2	200-004	THIN LAYER C								
	-3										
	-4										
	-5										
	-6										
	-7										
	-8										
	L42275-1										* BROKEN JAR
	-2										
	-3										
	-4										
	-5										
	-6										
	-7										

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

QC BATCH NO.: BS #242 1:1 Acetone:MeCl2

EPA SW-846 EXTRACTION METHOD: BNA-SMS

SONICATION EPA 3550 SOXHLET EPA 3540

WORKGROUP NO.: WG 90996

BNA SURROGATE SPIKE I.D.#: 1376

BNA MATRIX SPIKE I.D.#: 1243A

BNA SUR #1304 Coprostanol:

Caffeine:

Date/ Analyst	Sample Number	Project Number	Sample Description	coc	Init. Amt (g)	Spike Amount (uL)	Vf (mL)	Clean ups (GPC)	Conc. Anal.	Turn Over Date	Comments
RM 4/10/07	L42275-8	423062	DUWAMISH DIAGONAL		40.0 g	1376 100 µl	0.5	YES	VL	4/12/07	
	1 -9	200-004	THIN LAYER C								
	L422 76-1	423062	DUWAMISH DIAGONAL								oily sheen
	-2	100-004	CAP MONITORING								oily sheen
	-3										

Batch: \\orgizmo\EE\chem\6890j.i\070423.b

#	Smp. #	Injection Time	Wkgp. #	QC #	Project #	Sample Description	Matrix	Amount	DilFac	IS#2-RT	IS#2-Area	Method	Init Cali	Analyst
1	DFTPP-1	23-APR-2007 06:44	SDGa0971	SDGa09		10 NG/UL DFTPP MIX	NONE	0.000	1.0	12.974	145280	DFTPP.m		M.Doubrava
2	CCALI-01	23-APR-2007 07:17	SDGa0282	SDGa02		SS#1354 D 8.0 PPM BNA STD	SOIL	0.000	1.0	8.360	694838	8270B1SMS.m	17-APR-2007	M.Doubrava
3	BLANK-01	23-APR-2007 08:05	SDGa0282	SDGa02		MECL2 INSTRUMENT BLANK	SOIL	0.000	1.0	0.000	0	8270B1SMS.m	17-APR-2007	M.Doubrava
4	WG90996-1	23-APR-2007 08:53	WG90996	BS#242		WG90996-1 MB DUDI SEDS	SOIL	25.000	0.5	8.360	573446	8270b1sms.m	17-APR-2007	M.Doubrava
5	WG90996-7	23-APR-2007 09:42	WG90996	BS#242		WG90996-7 SB DUDI SEDS	SOIL	25.000	0.5	8.360	592112	8270b1sms.m	17-APR-2007	M.Doubrava
6	WG90996-8	23-APR-2007 10:30	WG90996	BS#242		WG90996-8 MS L42274-3 DUDI S	SOIL	25.000	0.5	8.360	513457	8270b1sms.m	17-APR-2007	M.Doubrava
7	WG90996-9	23-APR-2007 11:18	WG90996	BS#242		WG90996-9 MSD L42274-3 DUDI	SOIL	25.000	0.5	8.360	743703	8270b1sms.m	17-APR-2007	M.Doubrava
8	WG90996-5	23-APR-2007 12:06	WG90996	BS#242		WG90996-5 SRM 1944 DUDI SEDS	SOIL	1.875	5.0	8.360	568537	8270b1sms.m	17-APR-2007	M.Doubrava
9	L42274-3	23-APR-2007 12:54	WG90996	BS#242		L42274-3 DUDI SEDS	SOIL	25.000	0.5	8.360	680215	8270b1sms.m	17-APR-2007	M.Doubrava
10	WG90996-6	23-APR-2007 13:42	WG90996	BS#242		WG90996-6 LD L42274-2 DUDI S	SOIL	25.000	0.5	8.360	399943	8270b1sms.m	17-APR-2007	M.Doubrava
11	L42274-2	23-APR-2007 14:31	WG90996	BS#242		L42274-2 DUDI SEDS	SOIL	25.000	0.5	8.360	581890	8270b1sms.m	17-APR-2007	M.Doubrava
12	L42274-1	23-APR-2007 15:19	WG90996	BS#242		L42274-1 DUDI SEDS	SOIL	25.000	0.5	8.360	1004221	8270b1sms.m	17-APR-2007	M.Doubrava
13	L42274-4	23-APR-2007 16:08	WG90996	BS#242		L42274-4 DUDI SEDS	SOIL	25.000	0.5	8.360	466839	8270b1sms.m	17-APR-2007	M.Doubrava
14	L42274-5	23-APR-2007 16:57	WG90996	BS#242		L42274-5 DUDI SEDS	SOIL	25.000	0.5	8.360	519559	8270b1sms.m	17-APR-2007	M.Doubrava
15	L42274-6	23-APR-2007 17:46	WG90996	BS#242		L42274-6 DUDI SEDS	SOIL	25.000	0.5	8.360	478305	8270b1sms.m	17-APR-2007	M.Doubrava
16	L42274-7	23-APR-2007 18:35	WG90996	BS#242		L42274-7 DUDI SEDS	SOIL	25.000	0.5	8.360	487219	8270b1sms.m	17-APR-2007	M.Doubrava
17	L42274-8	23-APR-2007 19:23	WG90996	BS#242		L42274-8 DUDI SEDS	SOIL	25.000	0.5	8.360	556422	8270b1sms.m	17-APR-2007	M.Doubrava
18	DFTPP-2	23-APR-2007 20:12	SDGa0971	SDGa09		10 NG/UL DFTPP MIX	NONE	0.000	1.0	12.974	124112	DFTPP.m		M.Doubrava
19	CCALI-02	23-APR-2007 20:45	SDGa0282	SDGa02		SS#1354 D 8.0 PPM BNA STD	SOIL	0.000	1.0	8.360	601859	8270B1SMS.m	17-APR-2007	M.Doubrava
20	BLANK-02	23-APR-2007 21:34	SDGa0282	SDGa02		MECL2 INSTRUMENT BLANK	SOIL	0.000	1.0	8.069	376	8270B1SMS.m	17-APR-2007	M.Doubrava

Samples: 9 **QC Samples + Misc.:** 8 **ContinuingCals:** 1 **Tunes:** 2 **Calibrations:** 0

Batch: \\orgizmo\EE\chem\6890j.i\070424.b

#	Smp. #	Injection Time	Wkgp. #	QC #	Project #	Sample Description	Matrix	Amount	DilFac	IS#2-RT	IS#2-Area	Method	Init Cali	Analyst
1	DFTPP-1	24-APR-2007 06:41	SDGa0971	SDGa09		10 NG/UL DFTPP MIX	NONE	0.000	1.0	12.965	291904	DFTPP.m		M.Doubrava
2	CCALI-01	24-APR-2007 07:15	SDGa0282	SDGa02		SS#1354 D 8.0 PPM BNA STD	SOIL	0.000	1.0	8.360	1183406	8270B1SMS.m	17-APR-2007	M.Doubrava
3	BLANK-01	24-APR-2007 08:03	SDGa0282	SDGa02		MECL2 INSTRUMENT BLANK	SOIL	0.000	1.0	0.000	0	8270B1SMS.m	17-APR-2007	M.Doubrava
4	L42275-1	24-APR-2007 08:50	WG90996	BS#242		L42275-1 DUDI SEDS	SOIL	25.000	0.5	8.360	644965	8270b1sms.m	17-APR-2007	M.Doubrava
5	L42275-2	24-APR-2007 09:38	WG90996	BS#242		L42275-2 DUDI SEDS	SOIL	25.000	0.5	8.369	1019675	8270B1SMS.m	17-APR-2007	M.Doubrava
6	L42275-3	24-APR-2007 10:26	WG90996	BS#242		L42275-3 DUDI SEDS	SOIL	25.000	0.5	8.360	683216	8270B1SMS.m	17-APR-2007	M.Doubrava
7	L42275-4	24-APR-2007 11:14	WG90996	BS#242		L42275-4 DUDI SEDS	SOIL	25.000	0.5	8.369	835584	8270B1SMS.m	17-APR-2007	M.Doubrava
8	L42275-5	24-APR-2007 12:02	WG90996	BS#242		L42275-5 DUDI SEDS	SOIL	25.000	0.5	8.360	883350	8270B1SMS.m	17-APR-2007	M.Doubrava
9	L42275-6	24-APR-2007 12:50	WG90996	BS#242		L42275-6 DUDI SEDS	SOIL	25.000	0.5	8.360	627261	8270B1SMS.m	17-APR-2007	M.Doubrava
10	L42275-7	24-APR-2007 13:38	WG90996	BS#242		L42275-7 DUDI SEDS	SOIL	25.000	0.5	8.369	705449	8270B1SMS.m	17-APR-2007	M.Doubrava
11	L42275-8	24-APR-2007 14:27	WG90996	BS#242		L42275-8 DUDI SEDS	SOIL	25.000	0.5	8.369	401226	8270B1SMS.m	17-APR-2007	M.Doubrava
12	L42275-9	24-APR-2007 15:15	WG90996	BS#242		L42275-9 DUDI SEDS	SOIL	25.000	0.5	8.369	388928	8270B1SMS.m	17-APR-2007	M.Doubrava
13	L42276-1	24-APR-2007 16:03	WG90996	BS#242		L42276-1 DUDI SEDS	SOIL	25.000	0.5	8.369	407292	8270B1SMS.m	17-APR-2007	M.Doubrava
14	L42276-2	24-APR-2007 16:51	WG90996	BS#242		L42276-2 DUDI SEDS	SOIL	25.000	0.5	8.369	222715	8270B1SMS.m	17-APR-2007	M.Doubrava
15	L42276-3	24-APR-2007 17:40	WG90996	BS#242		L42276-3 DUDI SEDS	SOIL	25.000	0.5	8.378	332918	8270B1SMS.m	17-APR-2007	M.Doubrava
16	DFTPP-2	24-APR-2007 18:28	SDGa0971	SDGa09		10 NG/UL DFTPP MIX	NONE	0.000	1.0	12.979	137344	DFTPP.m		M.Doubrava
17	CCALI-02	24-APR-2007 19:01	SDGa0282	SDGa02		SS#1354 D 8.0 PPM BNA STD	SOIL	0.000	1.0	8.369	645211	8270B1SMS.m	17-APR-2007	M.Doubrava
18	BLANK-02	24-APR-2007 19:49	SDGa0282	SDGa02		MECL2 INSTRUMENT BLANK	SOIL	0.000	1.0	0.000	0	8270B1SMS.m	17-APR-2007	M.Doubrava

Samples: 13 **QC Samples + Misc.: 2** **ContinuingCals: 1** **Tunes: 2** **Calibrations: 0**

Batch: \\orgizmo\EE\chem\6890j.i\070426.b

#	Smp. #	Injection Time	Wkgp. #	QC #	Project #	Sample Description	Matrix	Amount	DilFac	IS#2-RT	IS#2-Area	Method	Init Cali	Analyst
1	DFTPP-1	26-APR-2007 05:35	SDGa0971	SDGa09		10 NG/UL DFTPP MIX	NONE	0.000	1.0	12.946	279040	DFTPP.m		M.Doubrava
2	CCALI-01	26-APR-2007 06:09	SDGa0282	SDGa02		SS#1354 D 8.0 PPM BNA STD	SOIL	0.000	1.0	8.341	1100192	8270B1SMS.m	17-APR-2007	M.Doubrava
3	BLANK-01	26-APR-2007 06:57	SDGa0282	SDGa02		MECL2 INSTRUMENT BLANK	SOIL	0.000	1.0	0.000	0	8270B1SMS.m	17-APR-2007	M.Doubrava
4	L42276-1	26-APR-2007 07:45	WG90996	BS#242		L42276-1 DUDI SEDS	SOIL	25.000	0.5	8.351	631365	8270b1sms.m	17-APR-2007	M.Doubrava
5	L42276-2	26-APR-2007 08:33	WG90996	BS#242		L42276-2 DUDI SEDS	SOIL	25.000	0.5	8.350	613917	8270b1sms.m	17-APR-2007	M.Doubrava
6	L42276-3	26-APR-2007 09:22	WG90996	BS#242		L42276-3 DUDI SEDS	SOIL	25.000	0.5	8.350	781441	8270b1sms.m	17-APR-2007	M.Doubrava
7	L42275-6	26-APR-2007 10:09	WG90996	BS#242		L42275-6 DUDI SEDS	SOIL	25.000	0.5	8.350	608908	8270b1sms.m	17-APR-2007	M.Doubrava
8	L42275-7	26-APR-2007 10:57	WG90996	BS#242		L42275-7 DUDI SEDS	SOIL	25.000	0.5	8.350	552189	8270b1sms.m	17-APR-2007	M.Doubrava
9	L42275-8	26-APR-2007 11:45	WG90996	BS#242		L42275-8 DUDI SEDS	SOIL	25.000	0.5	8.350	588547	8270b1sms.m	17-APR-2007	M.Doubrava
10	L42275-9	26-APR-2007 12:33	WG90996	BS#242		L42275-9 DUDI SEDS	SOIL	25.000	0.5	8.350	657397	8270b1sms.m	17-APR-2007	M.Doubrava

Samples: 7 **QC Samples + Misc.:** 1 **ContinuingCals:** 1 **Tunes:** 1 **Calibrations:** 0

A/M
5/22/07
pm

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 05/02/07 07:43
Run ID: R119803 Workgroup: WG90996 (bs#242 bnasms)

MB:WG90996-1 Matrix: OTHR 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	4	8	ug/Kg	<MDL	
1,3-Dichlorobenzene	.2	.4	ug/Kg	<MDL	
1,4-Dichlorobenzene	.2	.4	ug/Kg	<MDL	
1,2-Dichlorobenzene	.2	.4	ug/Kg	<MDL	
Hexachloroethane	1	2	ug/Kg	<MDL	
2,4-Dimethylphenol	1	2	ug/Kg	<MDL	
1,2,4-Trichlorobenzene	.1	.2	ug/Kg	<MDL	
Naphthalene	2	4	ug/Kg	<MDL	
Hexachlorobutadiene	.5	1	ug/Kg	<MDL	
Acenaphthylene	2	4	ug/Kg	<MDL	
Dimethyl Phthalate	4	8	ug/Kg	<MDL	
Acenaphthene	2	4	ug/Kg	<MDL	
Fluorene	2	4	ug/Kg	<MDL	
Diethyl Phthalate	4	8	ug/Kg	<MDL	
N-Nitrosodiphenylamine	4	8	ug/Kg	<MDL	
Hexachlorobenzene	.1	.2	ug/Kg	<MDL	
Pentachlorophenol	10	20	ug/Kg	<MDL	
Phenanthrene	2	4	ug/Kg	<MDL	
Anthracene	2	4	ug/Kg	<MDL	
Di-N-Butyl Phthalate	4	8	ug/Kg	<MDL	
Fluoranthene	2	4	ug/Kg	<MDL	
Pyrene	2	4	ug/Kg	<MDL	
Benzyl Butyl Phthalate	1	2	ug/Kg	<MDL	
Benzo(a)anthracene	2	4	ug/Kg	<MDL	
Chrysene	2	4	ug/Kg	<MDL	
Bis(2-Ethylhexyl)Phthalate	4	8	ug/Kg	5.4	B
Di-N-Octyl Phthalate	4	8	ug/Kg	<MDL	
Benzo(b)fluoranthene	2	4	ug/Kg	<MDL	
Benzo(k)fluoranthene	2	4	ug/Kg	<MDL	
Benzo(a)pyrene	2	4	ug/Kg	<MDL	
Indeno(1,2,3-Cd)Pyrene	2	4	ug/Kg	<MDL	
Dibenzo(a,h)anthracene	2	4	ug/Kg	<MDL	
Benzo(g,h,i)perylene	2	4	ug/Kg	<MDL	
Benzyl Alcohol	2	4	ug/Kg	<MDL	
2-Methylphenol	2	4	ug/Kg	<MDL	
4-Methylphenol	4	8	ug/Kg	<MDL	
Benzoic Acid	10	20	ug/Kg	<MDL	
2-Methylnaphthalene	2	4	ug/Kg	<MDL	
Dibenzofuran	2	4	ug/Kg	<MDL	
Carbazole	2	4	ug/Kg	<MDL	
Coprostanol	40	80	ug/Kg	<MDL	
Total LPAHs	2	4	ug/Kg	<MDL	
Total HPAHS	2	4	ug/Kg	<MDL	

SRM:WG90996-5 Matrix: SALTWTRSED Listtype: ORBNASMS 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
Naphthalene	270	533	ug/Kg	1630	280	17		10-29
Phenanthrene	270	533	ug/Kg	5200	3450	66		51-106

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 05/02/07 07:43
Run ID: R119803 Workgroup: WG90996 (bs#242 bnasms)

SRM:WG90996-5 Matrix: SALTWTRSED Listtype: ORBNASMS 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
Anthracene	270	533	ug/Kg	1750	688	39		28-98
Fluoranthene	270	533	ug/Kg	8800	7230	82		45-126
Pyrene	270	533	ug/Kg	9570	6940	73		36-135
Benzo(a)anthracene	270	533	ug/Kg	4660	3640	78		66-124
Chrysene	270	533	ug/Kg	4800	4510	94		77-136
Benzo(b)fluoranthene	270	533	ug/Kg	3820	3970	104		52-190
Benzo(k)fluoranthene	270	533	ug/Kg	2270	1980	87		60-146
Benzo(a)pyrene	270	533	ug/Kg	4240	3130	74		60-116
Indeno(1,2,3-Cd)Pyrene	270	533	ug/Kg	2740	2360	86		33-121
Dibenzo(a,h)anthracene	270	533	ug/Kg	419.	641	153		10-200
Benzo(g,h,i)perylene	270	533	ug/Kg	2800	2220	79		15-121

LD:WG90996-6 L42274-2 Matrix: SALTWTRSED Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-200-4 Pkey: SED
(Lab Duplicate)

Parameter	Mdl	Rdl	Units	SampValue	LD Value	RPD	Qual	LabLimit
Phenol	4	8	ug/Kg	<MDL	<MDL			35
1,3-Dichlorobenzene	.2	.4	ug/Kg	<MDL	<MDL			35
1,4-Dichlorobenzene	.2	.4	ug/Kg	<MDL	<MDL			35
1,2-Dichlorobenzene	.2	.4	ug/Kg	<MDL	<MDL			35
Hexachloroethane	1	2	ug/Kg	<MDL	<MDL			35
2,4-Dimethylphenol	1	2	ug/Kg	<MDL	<MDL			35
1,2,4-Trichlorobenzene	.1	.2	ug/Kg	<MDL	<MDL			35
Naphthalene	2	4	ug/Kg	<MDL	2.3			35
Hexachlorobutadiene	.5	1	ug/Kg	<MDL	<MDL			35
Acenaphthylene	2	4	ug/Kg	2.3	2.4			35
Dimethyl Phthalate	4	8	ug/Kg	<MDL	<MDL			35
Acenaphthene	2	4	ug/Kg	2.2	2.1			35
Fluorene	2	4	ug/Kg	2.8	3.9			35
Diethyl Phthalate	4	8	ug/Kg	<MDL	<MDL			35
N-Nitrosodiphenylamine	4	8	ug/Kg	<MDL	<MDL			35
Hexachlorobenzene	.1	.2	ug/Kg	<MDL	<MDL			35
Pentachlorophenol	10	20	ug/Kg	<MDL	<MDL			35
Phenanthrene	2	4	ug/Kg	19.6	27	32		35
Anthracene	2	4	ug/Kg	8.94	12.8	35		35
Di-N-Butyl Phthalate	4	8	ug/Kg	4.6	4.9			35
Fluoranthene	2	4	ug/Kg	58.4	60.5	4		35
Pyrene	2	4	ug/Kg	45	52	14		35
Benzyl Butyl Phthalate	1	2	ug/Kg	11	11.6	6		35
Benzo(a)anthracene	2	4	ug/Kg	24.2	31.4	26		35
Chrysene	2	4	ug/Kg	34.9	41.7	18		35
Bis(2-Ethylhexyl)Phthalate	4	8	ug/Kg	64.6	80.1	21		35
Di-N-Octyl Phthalate	4	8	ug/Kg	<MDL	<MDL			35
Benzo(b)fluoranthene	2	4	ug/Kg	40.9	52.9	26		35
Benzo(k)fluoranthene	2	4	ug/Kg	18.9	22.7	18		35
Benzo(a)pyrene	2	4	ug/Kg	24.1	31.1	25		35
Indeno(1,2,3-Cd)Pyrene	2	4	ug/Kg	17.9	22.6	23		35
Dibenzo(a,h)anthracene	2	4	ug/Kg	4.84	5.27	8		35
Benzo(g,h,i)perylene	2	4	ug/Kg	16.6	21.6	26		35
Benzyl Alcohol	2	4	ug/Kg	<MDL	<MDL			35

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 05/02/07 07:43
Run ID: R119803 Workgroup: WG90996 (bs#242 bnasms)

LD:WG90996-6 L42274-2 Matrix: SALTWTRSED Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-200-4 Pkey: SED
(Lab Duplicate)

Parameter	Mdl	Rdl	Units	SampValue	LD Value	RPD	Qual	LabLimi
2-Methylphenol	2	4	ug/Kg	<MDL	<MDL			35
4-Methylphenol	4	8	ug/Kg	<MDL	<MDL			35
Benzoic Acid	10	20	ug/Kg	45.9	57.9	23		35
2-Methylnaphthalene	2	4	ug/Kg	<MDL	2			35
Dibenzofuran	2	4	ug/Kg	2	2.2			35
Carbazole	2	4	ug/Kg	5.9	8.4	35		35
Coprostanol	40	80	ug/Kg	199	232	15		35

SB:WG90996-7 MB:WG90996-1 Matrix: OTHR SOLID Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-200-4 Pkey: SED
(Spike Blank, Method Blank)

Parameter	Mdl	Rdl	Units	MB Value	Truevalue	SB Value	% Rec.	Qual	LabLimit
Phenol	4	8	ug/Kg	<MDL	300.	101	34		10-107
1,3-Dichlorobenzene	.2	.4	ug/Kg	<MDL	300.	107	36		18-95
1,4-Dichlorobenzene	.2	.4	ug/Kg	<MDL	300.	101	34		21-99
1,2-Dichlorobenzene	.2	.4	ug/Kg	<MDL	300.	106	35		10-116
Hexachloroethane	1	2	ug/Kg	<MDL	300.	94.6	32		17-92
2,4-Dimethylphenol	1	2	ug/Kg	<MDL	300.	3.52	1	*	10-81
1,2,4-Trichlorobenzene	.1	.2	ug/Kg	<MDL	300.	102	34		13-110
Naphthalene	2	4	ug/Kg	<MDL	300.	104	35		17-94
Hexachlorobutadiene	.5	1	ug/Kg	<MDL	300.	93	31		10-97
Acenaphthylene	2	4	ug/Kg	<MDL	300.	119	40		31-101
Dimethyl Phthalate	4	8	ug/Kg	<MDL	300.	134	45		38-114
Acenaphthene	2	4	ug/Kg	<MDL	300.	128	43		29-102
Fluorene	2	4	ug/Kg	<MDL	300.	150	50		39-106
Diethyl Phthalate	4	8	ug/Kg	<MDL	300.	150	50	*	51-118
N-Nitrosodiphenylamine	4	8	ug/Kg	<MDL	300.	133	44		11-148
Hexachlorobenzene	.1	.2	ug/Kg	<MDL	300.	145	48		40-111
Pentachlorophenol	10	20	ug/Kg	<MDL	300.	102	34	*	38-124
Phenanthrene	2	4	ug/Kg	<MDL	300.	162	54	*	57-104
Anthracene	2	4	ug/Kg	<MDL	300.	162	54		45-114
Di-N-Butyl Phthalate	4	8	ug/Kg	<MDL	300.	173	58		17-180
Fluoranthene	2	4	ug/Kg	<MDL	300.	193	64		55-132
Pyrene	2	4	ug/Kg	<MDL	300.	196	65		48-132
Benzyl Butyl Phthalate	1	2	ug/Kg	<MDL	300.	172	57		15-183
Benzo(a)anthracene	2	4	ug/Kg	<MDL	300.	188	63	*	69-117
Chrysene	2	4	ug/Kg	<MDL	300.	175	58	*	69-111
Bis(2-Ethylhexyl)Phthalate	4	8	ug/Kg	5.4	300.	169	55		10-182
Di-N-Octyl Phthalate	4	8	ug/Kg	<MDL	300.	182	61		10-200
Benzo(b)fluoranthene	2	4	ug/Kg	<MDL	300.	190	63		50-121
Benzo(k)fluoranthene	2	4	ug/Kg	<MDL	300.	204	68		58-128
Benzo(a)pyrene	2	4	ug/Kg	<MDL	300.	163	54		15-137
Indeno(1,2,3-Cd)Pyrene	2	4	ug/Kg	<MDL	300.	176	59		51-132
Dibenzo(a,h)anthracene	2	4	ug/Kg	<MDL	300.	198	66		53-129
Benzo(g,h,i)perylene	2	4	ug/Kg	<MDL	300.	186	62		46-126
Benzyl Alcohol	2	4	ug/Kg	<MDL	300.	92.7	31		10-119
2-Methylphenol	2	4	ug/Kg	<MDL	300.	66.7	22		16-91
4-Methylphenol	4	8	ug/Kg	<MDL	300.	62.9	21		10-125
Benzoic Acid	10	20	ug/Kg	<MDL	300.	46.3	15		10-170
2-Methylnaphthalene	2	4	ug/Kg	<MDL	300.	103	34		22-99

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 05/02/07 07:43
Run ID: R119803 Workgroup: WG90996 (bs#242 bnasms)

SB:WG90996-7 MB:WG90996-1 Matrix: OTHR SOLID Listtype: ORBNASMS Method: EPA 3550B/8270C (7-3-01-004) Project: 423062-200-4 Pkey: SED
(Spike Blank, Method Blank)

Parameter	Mdl	Rdl	Units	MB Value	Truevalue	SB Value	% Rec.	Qual	LabLimit
Dibenzofuran	2	4	ug/Kg	<MDL	300.	130	43		37-97
Carbazole	2	4	ug/Kg	<MDL	300.	307	102		44-179
Coprostanol	40	80	ug/Kg	<MDL	3000	3420	114		10-159
Total LPAHs	2	4	ug/Kg	<MDL	150.	926			
Total HPAHS	2	4	ug/Kg	<MDL	150.	1870			

MSD:WG90996-9 MS:WG90996-8 L42274-3 Matrix: SALTWTRSED 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	SampValue	Truevalue	MS Value	% Rec.	Qual	LabLimit	Truevalue	MSD Value	% Rec.	Qual	RPD	Qual	Lablimit
Phenol	4	8	ug/Kg	<MDL	300.	149	50		10-127	300.	114	38		27		35
1,3-Dichlorobenzene	.2	.4	ug/Kg	<MDL	300.	112	37		10-103	300.	96.3	32		14		35
1,4-Dichlorobenzene	.2	.4	ug/Kg	<MDL	300.	107	36		10-104	300.	92.5	31		15		35
1,2-Dichlorobenzene	.2	.4	ug/Kg	<MDL	300.	115	38		10-105	300.	95.5	32		17		35
Hexachloroethane	1	2	ug/Kg	<MDL	300.	106	35		10-89	300.	86.8	29		19		35
2,4-Dimethylphenol	1	2	ug/Kg	<MDL	300.	85.3	28		10-150	300.	53.2	18		43	*	35
1,2,4-Trichlorobenzene	.1	.2	ug/Kg	<MDL	300.	131	44		10-115	300.	108	36		20		35
Naphthalene	2	4	ug/Kg	<MDL	300.	138	46		12-97	300.	113	38		19		35
Hexachlorobutadiene	.5	1	ug/Kg	<MDL	300.	127	42		10-97	300.	103	34		21		35
Acenaphthylene	2	4	ug/Kg	<MDL	300.	164	55		27-132	300.	130	43		24		35
Dimethyl Phthalate	4	8	ug/Kg	<MDL	300.	177	59		13-162	300.	139	46		25		35
Acenaphthene	2	4	ug/Kg	<MDL	300.	177	59		25-130	300.	141	47		23		35
Fluorene	2	4	ug/Kg	2.1	300.	204	67		22-147	300.	163	54		21		35
Diethyl Phthalate	4	8	ug/Kg	<MDL	300.	191	64		31-150	300.	150	50		25		35
N-Nitrosodiphenylamine	4	8	ug/Kg	<MDL	300.	190	63		10-169	300.	149	50		23		35
Hexachlorobenzene	.1	.2	ug/Kg	<MDL	300.	187	62		18-151	300.	151	50		21		35
Pentachlorophenol	10	20	ug/Kg	<MDL	300.	156	52		17-170	300.	124	41		24		35
Phenanthrene	2	4	ug/Kg	16.1	300.	219	68		10-200	300.	176	53		25		35
Anthracene	2	4	ug/Kg	7.29	300.	205	66		10-181	300.	166	53		22		35
Di-N-Butyl Phthalate	4	8	ug/Kg	4.6	300.	225	73		10-194	300.	170	55		28		35
Fluoranthene	2	4	ug/Kg	64.1	300.	291	76		12-188	300.	225	54		34		35
Pyrene	2	4	ug/Kg	43.7	300.	280	79		20-174	300.	211	56		34		35
Benzyl Butyl Phthalate	1	2	ug/Kg	12.4	300.	231	73		41-145	300.	171	53		32		35
Benzo(a)anthracene	2	4	ug/Kg	29.2	300.	261	77		32-168	300.	195	55		33		35
Chrysene	2	4	ug/Kg	40.7	300.	259	73		14-184	300.	192	50		37	*	35
Bis(2-Ethylhexyl)Phthalate	4	8	ug/Kg	60	300.	294	78		10-189	300.	229	56		33		35
Di-N-Octyl Phthalate	4	8	ug/Kg	<MDL	300.	235	78		52-151	300.	174	58		29		35
Benzo(b)fluoranthene	2	4	ug/Kg	48	300.	266	73		10-199	300.	201	51		35		35
Benzo(k)fluoranthene	2	4	ug/Kg	24.3	300.	257	78		10-192	300.	198	58		29		35
Benzo(a)pyrene	2	4	ug/Kg	30.7	300.	214	61		10-200	300.	164	44		32		35
Indeno(1,2,3-Cd)Pyrene	2	4	ug/Kg	20.6	300.	258	79		10-177	300.	200	60		27		35
Dibenzo(a,h)anthracene	2	4	ug/Kg	6.28	300.	238	77		10-166	300.	183	59		26		35
Benzo(g,h,i)perylene	2	4	ug/Kg	19.4	300.	240	74		10-173	300.	177	53		33		35
Benzyl Alcohol	2	4	ug/Kg	<MDL	300.	134	45		10-138	300.	108	36		22		35
2-Methylphenol	2	4	ug/Kg	<MDL	300.	144	48		10-142	300.	110	37		26		35
4-Methylphenol	4	8	ug/Kg	<MDL	300.	139	46		10-163	300.	108	36		24		35

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 05/02/07 07:43
Run ID: R119803 Workgroup: WG90996 (bs#242 bnasms)

Matrix Spike Duplicate Report
MSD:WG90996-9 MS:WG90996-8 L42274-3 Matrix: SALTWTRSED 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	SampValue	Truevalue	MS Value	% Rec.	Qual	LabLimit	Truevalue	MSD Value	% Rec.	Qual	RPD	Qual	Lablimit
Benzoic Acid	10	20	ug/Kg	50.2	300.	128	26		10-158	300.	96	15		54	*	35
2-Methylnaphthalene	2	4	ug/Kg	<MDL	300.	150	50		22-112	300.	124	41		20		35
Dibenzofuran	2	4	ug/Kg	<MDL	300.	180	60		21-134	300.	147	49		20		35
Carbazole	2	4	ug/Kg	4.18	300.	372	123		16-200	300.	299	98		23		35
Coprostanol	40	80	ug/Kg	211	3000	4350	138		10-183	3000	3180	99		33		35
Total LPAHs	2	4	ug/Kg	28.7	150.	1260				150.	1010					
Total HPAHS	2	4	ug/Kg	327	150.	2560				150.	1950					

KING COUNTY METRO ENVIRONMENTAL LABORATORY
Lab QC Report - 05/02/07 07:43
Run ID: R119803 Workgroup: WG90996 (bs#242 bnasms)

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
L42274-1	40	44	48	47	38	51	85	79
L42274-2	38	46	45	48	36	56	75	76
L42274-3	42	50	49	50	39	57	73	81
L42274-4	37	45	46	45	36	56	76	78
L42274-5	45	48	52	49	42	57	80	84
L42274-6	43	51	56	53	43	54	80	82
L42274-7	42	47	51	50	39	60	87	81
L42274-8	43	48	53	50	40	53	72	79
L42275-1	46	56	59	58	44	65	76	73
L42275-2	42	49	53	52	40	59	73	74
L42275-3	41	48	58	52	42	56	85	82
L42275-4	39	41	46	44	38	50	79	77
L42275-5	37	38	47	43	39	49	71	68
L42275-6	35	47	44	47	34	53	78	79
L42275-7	46	55	57	59	48	60	73	80
L42275-8	45	57	60	59	43	65	87	92
L42275-9	30	38	39	38	30	46	77	78
L42276-1	51	64	60	66	51	76	75	83
L42276-2	43	57	53	57	43	68	78	80
L42276-3	40	50	51	51	38	56	73	78
WG90996-1	31	34	37	36	34	37	28 G	54
WG90996-5	65	73	77	77	62	83	87	91
WG90996-6	42	49	49	50	42	50	66	72
WG90996-7	34	37	37	35	36	36	36	66
WG90996-8	45	53	47	49	39	53	61	80
WG90996-9	34	41	39	39	33	42	48	61

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

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

Trace Organics Data Anomaly Form

Date(s) Occurred: *07/04/23, 07/04/24, 07/04/26*

WG #(s): *WG90996*

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

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

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

I. Analysis/Extraction

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

☒ Other: *BNASMS*

☐ Subcontracted:

II. Instrument

GC/ICP/MS: ☐ P

GC/MS: ☐ D ☐ E ☒ J ☐ K ☐ L ☐ M ☐ N

GC: ☐ F ECD ☐ G ECD ☐ H FID ☐ H OI4450PID/FID ☐ I FID

Extraction/Cleanup: ☐ PFE ☐ GPC ☐ Other:

III. Type of Sample/Analytical Anomaly

☒ Values Outside of Control Limits:

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

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

Anomaly Description:

1. WG90996-1 MB - the extraction blank had a quantitatable level of Bis(2EH)phthalate at 5.4 ug/Kg which was greater than the MDL (4 ug/KG) but less than the RDL (8 ug/Kg). This nominal level is at "normal" lab background contamination for this project . The source of the contamination is most likely from the extraction lab, as the instrument blanks indicated no phthalates were detected.

2. WG90996-2 SB - the spike blank recoveries for 6 of the 41 analytes were asterisked for being outside of the established lad limits. The analyte recoveries and lab limits are presented in the accompanying workgroup QC report. It has been observed in past data sets that the SB recoveries are lower that the MS and MSD recoveries because of an absence of a matrix and samples concentration to 0.5 mls. The lab derived limits for the SB should take this phenomena in to account, however, it's possible to lower recoveries by vigorous concentration, not concentrating to exactly 0.5 mls, or addition of slightly to much ISTD prior to injection.

7. L42275-6, -7, -8, -9, L42276-1, -2, -3 exceeded %ISTD limits compared to the daily calibration standard. All the samples were re-analyzed on 07/04/26 and passed % ISTD difference.

8. WG90996-1 MB - had a low recovery for surrogate spike 2,4,6-Tribromophenol (28 % recovery vs. lab limit of 29% recovery). Lower surrogate recoveries are typical for blank extractions with absence of matrix. Occasionally a few recoveries exceed low lab limits most likely due to concentration of extract to 0.5 ml final volume. With the absence of sediment matrix, the surrogates are more susceptible to loss during extract concentration.

17. L42274-1 was doubled spiked with ISTDs. 20 ul was added to the extract instead of 10 ul prior to injection. The amount of ISTD was changed to 8 ng and the analytes and surrogates were quantitated and reported.

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: *The current SAP MDL/RDLs are higher due to concentration calculations using 30 grams as the nominal starting amount. The current extraction scheme for QA1 sediments using the BNASAM product is 40 grams as the staring nominal amount. The resulting MDL/ RDLs are lower than in the current SAP.*

V. Corrective Action Taken

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

Corrective Action Description: *The SAP will be updated to reflect the current MDL/ RDLs*

VI. Potential Effects on Data Quality:

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

1. Past phthalate "spikes" have been documented with no real definitive source identified. The sample concentrations of Bis(2EH)phthalate ranged from 10 to 100 times the blank level. Generally, if a value is 10 times or greater than the blank, it should be considered "real" and the data used without bias. All samples were flagged "B" as per QA1 protocols.

2. Since the MS/MSD recoveries and %RPDs were all within QA1 limits with no flags being generated, low recoveries in the SB have no affect on the data and should be used without bias.

8. This has been very typical for sediment projects in the pass. The surrogate was flagged "G" as per QA1 protocols.

☐ Potential effect explanation (explanation mandatory):

	Signatures	Signature Dates
Reported By: *M. Doubrava*	[signature]	5/22/07
Reviewer:		
Supervisor: *Dana Walker*	Dana Walker	5/22/07
QA Officer: *Colin Elliott* (For QA1 only)		
cc: LPM:		

CHAIN OF CUSTODY FORMS

Login Number: P42276

T_DUD.STAAB,ON

DUDI SEDS, STAS. A,B, ON-CAP

Project Number: 423062-100-4

Personnel: _____

Sample Number	P42276-1	P42276-2	P42276-3
Locator	DUD_1A	DUD_2A	DUD_3A
Short Loc. Desc.	DUD_1A	DUD_2A	DUD_3A
Locator Desc.	CLEANUP AREA A MONITORING LOCATION	CLEANUP AREA A MONITORING LOCATION	CLEANUP AREA A MONITORING LOCATION
Site	DUWAMISH RIVER	DUWAMISH RIVER	DUWAMISH RIVER
Start Date/Time			
End Date/Time			
Sample Depth	5	5	9
Collect Date	4/3/07	4/3/07	4/3/07
Comments	3 grab comp, 0-10 cm 5,8,9	3 grab comp, 0-10 cm 10.5, 13, 13	3 grab comp, 0-10 cm 8,9,12
PERSONNEL	JB,SH,JO,JDD	→	→
SAMP METH	20042		
SED DEPTH	16	12	10
SED SAMP RANGE	0-16 cm	~~0-10~~	~~0-9~~
SED TYPE	34N17	12P37	12N40
TIDE COND	E	E	E
TIDE HT	6.5	5.5	5
TIME	AIS 915	945	1005
Dept., Matrix, Prod			
	3 SALTWTRSED PSD 16 cl wm pp	3 SALTWTRSED PSD	3 SALTWTRSED PSD
	3 SALTWTRSED TOC 16 C wm pp	3 SALTWTRSED TOC	3 SALTWTRSED TOC
	3 SALTWTRSED TOTS	3 SALTWTRSED TOTS	3 SALTWTRSED TOTS
	6 SALTWTRSED AL-ICP	6 SALTWTRSED AL-ICP	6 SALTWTRSED AL-ICP
	6 SALTWTRSED FE-ICP	6 SALTWTRSED FE-ICP	6 SALTWTRSED FE-ICP
	6 SALTWTRSED HG-CVAA	6 SALTWTRSED HG-CVAA	6 SALTWTRSED HG-CVAA
	6 SALTWTRSED MN-ICP	6 SALTWTRSED MN-ICP	6 SALTWTRSED MN-ICP
	6 SALTWTRSED PP ICP	6 SALTWTRSED PP ICP	6 SALTWTRSED PP ICP

-1 First 2 grabs were very sandy 3rd grab was mud & silt w/ plant debris

CHAIN OF CUSTODY

RELINQUISHED BY	Date	Time
John Blume	4/3/07	1530
RECEIVED BY	Date	Time
Lyn Cl	4/3/07	1530

Sam... ...mber(s)

(All)

Data Coords

WG 91296 WG 91241

A&M 5/2/07 A&M 4/26/07

continue ...

DUDI SEDS, STAS. A,B, ON-CAP

Project Number: 423062-100-4 Personnel: _____

Sample Number	P42276-4	P42276-5	P42276-6
Locator	DUD_4A	DUD_5A	DUD_5A
Short Loc. Desc.	DUD_4A	DUD_5A	DUD_5A
Locator Desc.	CLEANUP AREA A MONITORING LOCATION	CLEANUP AREA A MONITORING LOCATION	CLEANUP AREA A MONITORING LOCATION
Site	DUWAMISH RIVER	DUWAMISH RIVER	DUWAMISH RIVER
Start Date/Time			
End Date/Time			
Sample Depth	6	8	8
Collect Date	4/3/07	4/3/07	4/3/07
Comments	3 grab comp, 0-10 cm 7,9,9	0-10 cm, AREP 5,6,5	0-10 cm, FREP 5,6,5
PERSONNEL	JB,SH,JO,JDD	→	→
SAMP METH	20042	→	→
SED DEPTH	8	5	5
SED SAMP RANGE	0-10 cm	0-4	0-4
SED TYPE	13N20	34N21	34N21
TIDE COND	E	E	→
TIDE HT	4	3.5	→
TIME	1038	1055	1055
SAMP FUNC	**********	**********	FREP @ C42276-5
Dept., Matrix, Prod			
	3 |SALTWTRSED|PSD	3 |SALTWTRSED|PSD	3 |SALTWTRSED|PSD
	3 |SALTWTRSED|TOC	3 |SALTWTRSED|TOC	3 |SALTWTRSED|TOC
	3 |SALTWTRSED|TOTS	3 |SALTWTRSED|TOTS	3 |SALTWTRSED|TOTS
	6 |SALTWTRSED|AL-ICP	6 |SALTWTRSED|AL-ICP	6 |SALTWTRSED|AL-ICP
	6 |SALTWTRSED|FE-ICP	6 |SALTWTRSED|FE-ICP	6 |SALTWTRSED|FE-ICP
	6 |SALTWTRSED|HG-CVAA	6 |SALTWTRSED|HG-CVAA	6 |SALTWTRSED|HG-CVAA

continue ...

DUDI SEDS, STAS. A,B, ON-CAP

Project Number: 423062-100-4

Personnel: _____

Sample Number	P42276-7	P42276-8	P42276-9
Locator	DUD_1B	DUD_2B	DUD_3B
Short Loc. Desc.	DUD_1B	DUD_2B	DUD_3B
Locator Desc.	CLEANUP AREA A MONITORING LOCATION	CLEANUP AREA A MONITORING LOCATION	CLEANUP AREA A MONITORING LOCATION
Site	DUWAMISH RIVER	DUWAMISH RIVER	DUWAMISH RIVER
Start Date/Time			
End Date/Time			
Sample Depth	7	6	6
Collect Date	4/3/07	4/3/07	4/3/07
Comments	3 grab comp, 0-10 cm 17,17,11	3 grab comp, 0-10 cm 10,5,10	3 grab comp, 0-10 cm 9,11,12
PERSONNEL	JB,SH,JO,JDD	→	→
SAMP METH	20042	→	→
SED DEPTH	15	8	11
SED SAMP RANGE	0-10 cm	~~0-7~~	~~0-10~~
SED TYPE	13N40	12N30	14N30
TIDE COND	E	S	F
TIDE HT	2.5	0.8	1.5
TIME	1140	1235	1255
Dept., Matrix, Prod			
	3 SALTWTRSED PSD	3 SALTWTRSED PSD	3 SALTWTRSED PSD
	3 SALTWTRSED TOC	3 SALTWTRSED TOC	3 SALTWTRSED TOC
	3 SALTWTRSED TOTS	3 SALTWTRSED TOTS	3 SALTWTRSED TOTS
	6 SALTWTRSED AL-ICP	6 SALTWTRSED AL-ICP	6 SALTWTRSED AL-ICP
	6 SALTWTRSED FE-ICP	6 SALTWTRSED FE-ICP	6 SALTWTRSED FE-ICP
	6 SALTWTRSED HG-CVAA	6 SALTWTRSED HG-CVAA	6 SALTWTRSED HG-CVAA
	6 SALTWTRSED MN-ICP	6 SALTWTRSED MN-ICP	6 SALTWTRSED MN-ICP
	6 SALTWTRSED PP ICP	6 SALTWTRSED PP ICP	6 SALTWTRSED PP ICP

continue ...

LABORATORY WORK ORDER
Chain of Custody

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

Project Name: Duwamish/Diagonal Sediments, On-cap A/B Stations
Project Number: 423062-100-4
Laboratory Project Manager: Fritz Grothkopp/John Blaine
Telephone Number: 684 2327/2384

Note: Use only one Login No. per sheet. Sample Number	Client Locator	Collect Date	Collect Time	TOC/TOTS	PSD	Metals-ICP/HG-CVAA	BNASMS/PESTLL/PCBLL											Number of Containers	Comments
L 42276 1	Dud_1A	03-APR07	0915	1	1	1	1											4	
L 42276-2	Dud_2A		0945	1	1	1	1											4	
L 42276-3	DUD_3A		1005	1	1	1	1											4	
L 42276-4	DUD_4A		1038	1	1	1	1											4	
L 42276-5	DUD_5A		1055	1	1	1	1											4	
L 42276-6	DUD_5A		1055	1	2	1	1											5	FREP, extra PSD
L 42276-7	DUD_1B		1140	1	1	1	1											4	
L 42276-8	DUD_2B		1235	1	1	1	1											4	
L 42276-9	DUD_3B		1255	1	1	1	1											4	
L -																			
L -																			

Analyses

Additional Comments:

Total Number of Containers 37

Sampled By: JO, ODD, SH, JB

Relinquished By:
Signature [signature]
Printed Name John Blaine
Organization King County Environmental Laboratory
Date 4-3-07
Time 1530

Received By:
Signature [signature]
Printed Name Lynne Cox
Organization King County Environmental Laboratory
Date 4/3/07
Time 1530

SOLID SAMPLE RECEIPT RECORD

LOGIN NUMBER(S): 42276 1-9	PROJECT NUMBER: 423062-100-x	SAMPLE SUBCONTRACTING Y (N)
COLLECT DATE(S): 4/3/07	Date Received: 4/3/07	CHANGES: Y (N)

SAMPLE RECEIPT CONDITIONS

	ACCEPTABLE?		Comment ID		ACCEPTABLE?		Comment ID
LABELS/FIELDSHEETS	(Y)	N		VOLUME	(Y)	N	
CONTAINERS	(Y)	N		HOLDING TIMES	(Y)	N	
TEMPERATURE	(Y)	N		Delivery Location	(Y)	N	

PRESERVATION

TOTAL SULFIDE ZN ACETATE Y N

OTHER:

HEADSPACE

	ACCEPTABLE?		Comment ID
VOA	Y	N	
TOTAL SULFIDE	Y	N	

SAMPLE CONTAINER DESCRIPTION AND COUNT

#	DESCRIPTION AND SAMPLE NUMBERS	#	DESCRIPTION AND SAMPLE NUMBERS
	CONVENTIONALS		**METALS**
9	4oz GCWM 1-9	9	4oz PP CWM 1-9
	8oz GCWM		8oz PP CWM
10	16oz GCWM 1-5 (1x), 6 (2x), 7,8,9 (1x)		Other
	Other		**MICROBIOLOGY**
			Specimen Cup
	ORGANICS		
	4oz GCWM		Other
	8oz GCWM		
			AQUATIC TOXICOLOGY
9	16oz GCWM 1-9		2L GCWM
			Other
	Other		

COMMENTS/NOTIFICATIONS

FORWARDED TO: CONVENTIONALS METALS ORGANICS AQUATOX MICROBIOLOGY

SIGNATURE: [signature]

DATE & TIME: 4/3/07 1550