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MEMORANDUM

DATE· 18 January 1999

TO. David Bennett, WAM, U.S. EPA, Region X

FROM. Michelle Turner, Chemist, WESTON, Seattle
RMM Roger McGinnis, Senior Environmental Chemist, WESTON, Seattle

SUBJECT: Validation of Chlorinated Pesticide Data
Laboratory Batch K9805863
Site: Duwamish River

WORK ASSIGNMENT NO: 46-23-0JZZ

WORK ORDER NO.: 4000-019-038-5200-00

DOC. CONTROL NO · 4000-019-038-AAAK

cc: Bruce Woods, RAP-WAM, U.S. EPA, Region X
Dena Hughes, Site Manager, WESTON, Seattle (memo only)
Kevin Mundell-Jackson, Database Management, WESTON, Seattle

The quality assurance review of one sediment sample, laboratory batch K9805863, collected from the Duwamish River has been completed. The sample was analyzed for chlorinated pesticides by Columbia Analytical Services of Kelso, Washington using EPA Method 8081. The sample was numbered:

98354077

Data Qualifications

The following comments refer to the laboratory performance in meeting the quality control criteria described in the technical specifications of the laboratory subcontract The review follows the format described in the *National Functional Guidelines for Organic Data Review* (EPA OSWER Directive 9240 1-05, February 1994).

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1. Timeliness

All samples met holding time criteria of 14 days for sample extraction and 40 additional days for extract analysis.

2. GC/ECD Instrument Performance

i) Retention Time Windows

Retention times of all pesticides were within windows calculated from the initial calibration

ii) DDT/Endrin Breakdown

The percent breakdown for 4,4'-DDT and Endrin was less than 20 percent for each compound and combined breakdown was less than 30 percent on both GC columns

3. Initial Calibration

a) Individual Standard Mixtures

Retention time windows were calculated correctly.

Appropriate standards concentrations were used and peak heights of 50 to 100 percent of full scale were obtained

Calibration factor percent relative standard deviation (%RSD) met QC criteria of 20 percent for pesticides and 30 percent for surrogates.

4 Calibration Verification

Instrument blanks and PEM samples were analyzed at the proper frequency.

The difference between actual and calculated concentrations of individual pesticides was within QC criteria of ±15 percent with the following exceptions·

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Sample	Compound	% Diff	Associated Samples
CCV2	Endrin	18	98354077

Results and quantitation limits for pesticides listed above were qualified as estimated (J).

5. Detection Limits

Instrument detection limits met project required quantitation limits with the following exceptions:

Sample	Compound	QL Goal (µg/Kg)	Reported QL (µg/Kg)
98354077	Toxaphene	10	190

Where quantitation limit goals were exceeded, undetected analytes were qualified (UI) to indicate matrix interference

6. Blanks

a) Laboratory Method Blanks

Laboratory method blank frequency criteria were met.

No target analytes were reported in laboratory method blanks

b) Field Blanks

No field blanks were associated with this laboratory batch.

7. System Monitoring Compounds (Surrogates)

The surrogate compound percent recovery for Tetrachloro-m-xylene met quality control criteria. The surrogate recovery for Decachlorobiphenyl was not calculated due to Aroclor interferences.

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8 Matrix Spike and Matrix Spike Duplicate

Matrix spike (MS) or matrix spike duplicate (MSD) percent recovery for the following compounds were outside QC guidelines (P-project, L-laboratory)

Sample	Compound	% Recovery	QC Limits
K9805842-008MS (Batch QC)	gamma-BHC (Lindane)	37	46-127 (P) 28-123 (L)
K9805842-008MS (Batch QC)	Endrin	30	42-139 (P) 39-130 (L)
K9805842-008DMS (Batch QC)	gamma-BHC (Lindane)	43	46-127 (P) 28-123 (L)
K9805842-008DMS (Batch QC)	Endrin	30	42-139 (P) 39-130 (L)

Relative percent differences (RPD) between the MS and MSD percent recoveries were within QC guidelines for all spiked compounds. No action was based solely on MS/MSD data.

9 Laboratory Control Sample (LCS)

LCS percent recoveries were outside the QC limits (P-project, L-laboratory) for the following compounds·

Sample	Compound	% Recovery	QC Limits
K980909-LCS	gamma-BHC (Lindane)	56	70-130 (P) 40-124 (L)
K980909-LCS	Heptachlor	54	70-130 (P) 40-117 (L)
K980909-LCS	Aldrin	54	70-130 (P) 43-108 (L)

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Sample	Compound	% Recovery	QC Limits
K980909-LCS	Dieldrin	57	70-130 (P) 42-127 (L)
K980909-LCS	Endrin	55	70-130 (P) 46-123 (L)
K980909-LCS	DDT	65	70-130 (P) 46-127 (L)

Results for compounds listed above were qualified as estimated (J). Undetected compounds were also qualified as estimated (UJ).

10. Field Duplicate Analysis

No field duplicates were associated with this SDG.

11 Second Column Confirmation

The percent difference in reported analyte concentration was less than 35 percent for the primary and confirmation column.

12. Sample Analysis

A cursory review of raw data was performed. All laboratory deliverables were present and complete A duplicate analysis of Batch QC sample K9805842-008 was performed; no analytes were detected in the sample or duplicate The case narrative indicated the surrogate recovery for Decachlorobiphenyl in sample 98354077 was not calculated due to Aroclor interference. Since Tetrachloro-m-xylene was within QC limits, no action was taken The case narrative also noted that the MS and MSD recoveries of Endrin were outside the laboratory QC limits because of suspected matrix interference As the LCS was within QC limits, no action was taken. No other problems were noted in the case narrative.

13 Laboratory Contact

No laboratory contact was required

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Data Assessment

Upon consideration of the data qualifications noted above, the data are ACCEPTABLE for use except where flagged with data qualifiers that modify the usefulness of the individual values.

Data Qualifiers

U - The compound was analyzed for, but was not detected.

UJ - The compound was analyzed for, but was not detected The associated quantitation limit is an estimate because quality control criteria were not met.

J - The analyte was positively identified, but the associated numerical value is an estimated quantity because quality control criteria were not met or because concentrations reported are less then CRDL or lowest calibration standard.

R - Quality control indicates that data are unusable (compound may or may not be present). Resampling and reanalysis are necessary for verification.

N - Presumptive evidence of presence of material (tentative identification).

I - Elevated reporting limit due to matrix interference.

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Roy F Weston, Inc	**Service Request:**	K9805863
Project:	Duwamish River/4000-027-001-2019-38	**Date Collected:**	8/27/98
Sample Matrix:	Sediment	**Date Received:**	8/28/98

Organochlorine Pesticides

Sample Name	98354077	Units	ug/Kg (ppb)
Lab Code	K9805863-003	Basis	Dry
Test Notes	D		

Analyte	Prep Method	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
alpha-BHC	EPA 3550A	8081A	5	5	9/9/98	10/2/98	ND	
beta-BHC	EPA 3550A	8081A	5	5	9/9/98	10/2/98	ND	
gamma-BHC (Lindane)	EPA 3550A	8081A	5	5	9/9/98	10/2/98	ND UJ	
Heptachlor	EPA 3550A	8081A	5	5	9/9/98	10/2/98	ND	
Aldrin	EPA 3550A	8081A	5	5	9/9/98	10/2/98	ND	
Heptachlor Epoxide	EPA 3550A	8081A	5	5	9/9/98	10/2/98	ND	
gamma-Chlordane	EPA 3550A	8081A	5	5	9/9/98	10/2/98	ND	
Endosulfan I	EPA 3550A	8081A	5	5	9/9/98	10/2/98	ND	
alpha-Chlordane	EPA 3550A	8081A	5	5	9/9/98	10/2/98	ND	
Dieldrin	EPA 3550A	8081A	10	5	9/9/98	10/2/98	ND UJ	
4,4'-DDE	EPA 3550A	8081A	5	5	9/9/98	10/2/98	ND	
Endrin	EPA 3550A	8081A	10	5	9/9/98	10/2/98	ND UJ	
Endosulfan II	EPA 3550A	8081A	10	5	9/9/98	10/2/98	ND	
4,4'-DDD	EPA 3550A	8081A	10	5	9/9/98	10/2/98	ND	
Endrin Aldehyde	EPA 3550A	8081A	10	5	9/9/98	10/2/98	ND	
Endosulfan Sulfate	EPA 3550A	8081A	10	5	9/9/98	10/2/98	ND	
4,4'-DDT	EPA 3550A	8081A	10	5	9/9/98	10/2/98	ND UJ	
Endrin Ketone	EPA 3550A	8081A	10	5	9/9/98	10/2/98	ND	
Methoxychlor	EPA 3550A	8081A	5	5	9/9/98	10/2/98	ND	
Toxaphene	EPA 3550A	8081A	190	5	9/9/98	10/2/98	ND UJ	~~B~~

B The MRL is elevated because of matrix interferences

D The MRL is elevated because of matrix interferences and because the sample required diluting

Approved By [signature] Date 10/14/98

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