398637

OU7
5e
DATA

ENVIRONMENTAL STANDARDS

Setting the Standards for Innovative Environmental Solutions

QUALITY ASSURANCE REVIEW OF POST-EXCAVATION SOIL AND AQUEOUS BLANK SAMPLES COLLECTED ON SEPTEMBER 21 AND 25, 2001 AND ON OCTOBER 1, 4, AND 15, 2001 FOR PENN ENVIRONMENTAL AND REMEDIATION, INC.

November 2, 2001

Setting the Standards for Innovative
Environmental Solutions

QUALITY ASSURANCE REVIEW OF POST-EXCAVATION SOIL AND AQUEOUS BLANK SAMPLES COLLECTED ON SEPTEMBER 21 AND 25, 2001 AND ON OCTOBER 1, 4, AND 15, 2001 FOR PENN ENVIRONMENTAL AND REMEDIATION, INC.

November 2, 2001

Prepared for:

PENN ENVIRONMENTAL AND REMEDIATION, INC.
2755 Bergey Road
Hatfield, PA 19440

Prepared by:

ENVIRONMENTAL STANDARDS, INC.
1140 Valley Forge Road
P.O. Box 810
Valley Forge, PA 19482-0810

ENVIRONMENTAL STANDARDS
www.EnvStd.com
1140 Valley Forge Road, P.O. Box 810, Valley Forge, PA 19482-0810 ■ 610-935-5577 ■ OffNPL@EnvStd.com
1111 Kennedy Place, Suite 2, Davis, CA 95616 ■ 530-758-1903 ■ ENVSTDWEST@AOL.com
Copper Bend Centre, 956 South 59th Street, Belleville, IL 62223 ■ 618-257-3800 ■ MIDWEST@EnvStd.com

TABLE OF CONTENTS

Introduction

Section 1 **Quality Assurance Review**

A. Organic Data

B. Inorganic Data

C. Conclusions

Section 2 **Analytical Results**

Section 3 **Organic Data Support Documentation**

A. SDG Q2298

B. SDG R2298

C. SDG S2298

D. SDG T2298

E. SDG U2298

F. SDG V2298

G. SDG W2298

Section 4 **Inorganic Data Support Documentation**

A. SDG Q2298

B. SDG S2298

C. SDG T2298

TABLE OF CONTENTS (Cont.)

Section 4 **Inorganic Data Support Documentation (Cont.)**

D. SDG U2298

E. SDG V2298

F. SDG W2298

Section 5 **SDG Narratives and Project Chain-of-Custody Records**

Introduction

This quality assurance (QA) review is based upon a rigorous examination of the organic and inorganic data from the soil and aqueous blank samples collected by Penn Environmental & Remediation, Inc. (Penn E&R) on September 21 and 25, 2001, and on October 1, 4, and 15, 2001, from the Cinder/Slag Fill Area at the LPT Site. The samples included in this QA review are presented on Table 1. The laboratory was requested to prepare detailed data packages to substantiate the reported analytical results. The data packages that were prepared allowed for a fairly comprehensive review to be performed.

This review has been performed in accordance with the United States Environmental Protection Agency (US EPA) "Region III Modifications to the National Functional Guidelines for Organic Data Review Multi-media, Multi-Concentration (OLM01.0-OLM01.9)" (September 1994) and "Region III Modifications to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses" (April 1993).

The reported analytical results are presented in Section 2. Data were examined to determine the usability of the analytical results and compliance relative to the analytical requirements specified by the "USEPA Contract Laboratory Program Statement of Work for Organic Analysis Multi-Media, Multi-Concentration OLM04.2" (CLP SOW OLM04.2, May 1999); "USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis Multi-Media, Multi-Concentration ILM04.0" with "Attachment 1 Statement of Work – Summary of Changes ILM04.1" (CLP SOW ILM04.1, January 2000); and the Sampling and Analysis Plan for the Cinder/Slag Fill Area Located on LPT's 2301 Renaissance Boulevard Property (Section 5.0) of the "Remedial Design/Remedial Action Work Plan for the Cinder/Slag Fill Area Located at 2301 Renaissance Boulevard in Upper Merion Township, Montgomery County, PA" (October 10, 2001). Qualifier codes have been placed next to the results to enable the data user to quickly assess the qualitative and/or quantitative reliability of any result. Details of this QA review are presented in Section 1 of this report. This report was prepared to provide a critical review of the laboratory analyses and reported analytical results. Rigorous QA reviews of laboratory-generated data routinely identify various problems associated with analytical measurements, even from the most experienced and capable laboratories. The nature and extent of problems identified in this critical review should not be interpreted to mean that those results that do not have qualifier codes are less than valid.

TABLE 1

SAMPLES THAT HAVE UNDERGONE A RIGOROUS QUALITY ASSURANCE REVIEW

Penn E&R Sample Number	Laboratory Sample Number(s)	Sample Delivery Group	Matrix	Date of Collection	Parameter(s) Examined
PE1-S-P	Q2298-1	Q2298	Soil	9/21/01	V, S, PP, and M
PE2-S-P (Field Duplicate of PE1-S-P)	Q2298-2	Q2298	Soil	9/21/01	V, S, PP, and M
PE3-S-P	Q2298-3	Q2298	Soil	9/21/01	V, S, PP, and M
PE3-S-P-MS (Matrix Spike)	Q2298-3MS Q2298-3S	Q2298	Soil	9/21/01	V, S, and PP M
PE3-S-P-MSD (Matrix Spike Duplicate/Laboratory Duplicate)	Q2298-3MSD Q2298-3D	Q2298	Soil	9/21/01	V, S, and PP M
PE4-S-P	Q2298-4	Q2298	Soil	9/25/01	V, S, PP, and M
PE5-S-P	Q2298-5	Q2298	Soil	9/25/01	V, S, PP, and M
PE5-S-PDL (Secondary Dilution)	Q2298-5DL	Q2298	Soil	9/25/01	PP
PE6-S-P	Q2298-6	Q2298	Soil	9/25/01	V, S, PP, and M
PE7-S-B	Q2298-7	Q2298	Soil	9/25/01	V, S, PP, and M
PE7-S-BRE (Reanalysis)	Q2298-7RE	Q2298	Soil	9/25/01	V
PE8-S-B	Q2298-8	Q2298	Soil	9/25/01	V, S, PP, and M
PE9-S-B	Q2298-9	Q2298	Soil	9/25/01	V, S, PP, and M
PE9-S-BRE (Reanalysis)	Q2298-9RE	Q2298	Soil	9/25/01	V
PE10-S-B	Q2298-10	Q2298	Soil	9/25/01	V, S, PP, and M
PE10-S-BRE (Reanalysis)	Q2298-10RE	Q2298	Soil	9/25/01	V
PE11-S-B	Q2298-11	Q2298	Soil	9/25/01	V, S, PP, and M
PE12-S-B	Q2298-12	Q2298	Soil	9/25/01	V, S, PP, and M
PE13-S-B	Q2298-13	Q2298	Soil	9/25/01	V, S, PP, and M

TABLE 1 (Cont.)

Penn E&R Sample Number	Laboratory Sample Number(s)	Sample Delivery Group	Matrix	Date of Collection	Parameter(s) Examined
TB-1 (Trip Blank)	R2298-1	R2298	Aq	9/21/01	V
TB-2 (Trip Blank)	R2298-2	R2298	Aq	9/25/01	V
PE14-S-P	S2298-1	S2298	Soil	10/1/01	V, S, PP, and M
PE15-S-P	S2298-2	S2298	Soil	10/4/01	V, S, PP, and M
PE16-S-P	S2298-3	S2298	Soil	10/4/01	V, S, PP, and M
PE17-S-P	S2298-4	S2298	Soil	10/4/01	V, S, PP, and M
PE18-S-P	S2298-5	S2298	Soil	10/4/01	V, S, PP, and M
PE19-S-P	S2298-6	S2298	Soil	10/4/01	V, S, PP, and M
PE20-S-B	S2298-7	S2298	Soil	10/4/01	V, S, PP, and M
PE21-S-B	S2298-8	S2298	Soil	10/4/01	V, S, PP, and M
PE22-S-B	S2298-9	S2298	Soil	10/4/01	V, S, PP, and M
PE23-S-B (Field Duplicate of PE22-S-B)	S2298-10	S2298	Soil	10/4/01	V, S, PP, and M
PE24-S-B	S2298-11	S2298	Soil	10/4/01	V, S, PP, and M
PE25-S-B	S2298-12	S2298	Soil	10/4/01	V, S, PP, and M
PE26-S-B	S2298-13	S2298	Soil	10/4/01	V, S, PP, and M
PE26-S-B-MS (Matrix Spike)	S2298-13MS S2298-13S	S2298	Soil	10/4/01	V, S, and PP M
PE26-S-B-MSD (Matrix Spike Duplicate/Laboratory Duplicate)	S2298-13MSD S2298-13D	S2298	Soil	10/4/01	V, S, and PP M
TRIP BLANK	T2298-1	T2298	Aq	10/1/01	V
FB-1 (Field Blank)	T2298-2	T2298	Aq	10/4/01	V, S, PP, and M
TB-4 (TripBlank)	T2298-3	T2298	Aq	10/401	V
FB-2 (Field Blank)	U2298-1	U2298	Aq	10/15/01	V, S, PP, and M

TABLE 1 (Cont.)

Penn E&R Sample Number	Laboratory Sample Number(s)	Sample Delivery Group	Matrix	Date of Collection	Parameter(s) Examined
FB-3 (Field Blank)	U2298-2	U2298	Aq	10/15/01	V, S, PP, and M
TB-5 (TripBlank)	U2298-3	U2298	Aq	10/1501	V
PE27-S-B	V2298-1	V2298	Soil	10/15/01	V, S, PP, and M
PE28-S-B	V2298-2	V2298	Soil	10/15/01	V, S, PP, and M
PE29-S-B	V2298-3	V2298	Soil	10/15/01	V, S, PP, and M
PE30-S-B	V2298-4	V2298	Soil	10/15/01	V, S, PP, and M
PE31-S-B	V2298-5	V2298	Soil	10/15/01	V, S, PP, and M
PE32-S-B	V2298-6	V2298	Soil	10/15/01	V, S, PP, and M
PE33-S-B	V2298-7	V2298	Soil	10/15/01	V, S, PP, and M
PE34-S-B	V2298-8	V2298	Soil	10/15/01	V, S, PP, and M
PE35-S-B	V2298-9	V2298	Soil	10/15/01	V, S, PP, and M
PE36-S-B	V2298-10	V2298	Soil	10/15/01	V, S, PP, and M
PE37-S-B	V2298-11	V2298	Soil	10/15/01	V, S, PP, and M
PE38-S-B	V2298-12	V2298	Soil	10/15/01	V, S, PP, and M
PE39-S-P	V2298-13	V2298	Soil	10/15/01	V, S, PP, and M
PE40-S-P	V2298-14	V2298	Soil	10/15/01	V, S, PP, and M
PE41-S-P	V2298-15	V2298	Soil	10/15/01	V, S, PP, and M
PE42-S-P	V2298-16	V2298	Soil	10/15/01	V, S, PP, and M
PE49-S-B	V2298-17	V2298	Soil	10/15/01	V, S, PP, and M
PE49-S-BMS (Matrix Spike)	V2298-17MS V2298-17S	V2298	Soil	10/15/01	V, S, and PP M
PE49-S-BMSD (Matrix Spike Duplicate/Laboratory Duplicate)	V2298-17MSD V2298-17D	V2298	Soil	10/15/01	V, S, and PP M
PE50-S-B	V2298-18	V2298	Soil	10/15/01	V, S, PP, and M
PE51-S-B	V2298-19	V2298	Soil	10/15/01	V, S, PP, and M
PE52-S-B	V2298-20	V2298	Soil	10/15/01	V, S, PP, and M
PE43-S-P	W2298-1	W2298	Soil	10/15/01	V, S, PP, and M

TABLE 1 (Cont.)

Penn E&R Sample Number	Laboratory Sample Number(s)	Sample Delivery Group	Matrix	Date of Collection	Parameter(s) Examined
PE43-S-PS (Matrix Spike)	W2298-1S	W2298	Soil	10/15/01	M
PE43-S-PD (Laboratory Duplicate)	W2298-1D	W2298	Soil	10/15/01	M
PE44-S-P	W2298-2	W2298	Soil	10/15/01	V, S, PP, and M
PE45-S-B	W2298-3	W2298	Soil	10/15/01	V, S, PP, and M
PE46-S-B	W2298-4	W2298	Soil	10/15/01	V, S, PP, and M
PE47-S-B (Field Duplicate of PE45-S-B)	W2298-5	W2298	Soil	10/15/01	V, S, PP, and M
PE48-S-B	W2298-6	W2298	Soil	10/15/01	V, S, PP, and M
PE48-S-BMS (Matrix Spike)	W2298-6MS	W2298	Soil	10/15/01	S, PP
PE48-S-BMSD (Matrix Spike Duplicate)	W2298-6MSD	W2298	Soil	10/15/01	S, PP

NOTES:

V - Project-Specific Volatile Organic Compound (Benzene) by the CLP SOW OLM04.2.

S - Project-Specific Semivolatile Organic Compounds (2-Methylnaphthalene, Acenaphthene, Acetophenone, Anthracene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Carbazole, Chrysene, Dibenz(a,h)anthracene, Dibenzofuran, Fluoranthene, Fluorene, Indeno(1,2,3-d)pyrene, Naphthalene, and Pyrene) by the CLP SOW OLM04.2.

PP - Project-Specific Pesticide/PCB Compounds (*alpha*-BHC, Dieldrin, and Aroclor-1254) by the CLP SOW OLM04.2.

M - Project-Specific Total Metals (Antimony, Arsenic, Barium, Cadmium, Chromium, Iron, Lead, Manganese, Selenium, Silver, Thallium, and Zinc) by the CLP SOW ILM04.1.

Aq - Aqueous.

1

Section 1 *Quality Assurance Review*

A. Organic Data

The organic analyses of 64 soil samples (including field and laboratory quality control (QC) samples, secondary dilutions, and reanalyses) and eight aqueous blanks were performed by CompuChem of Cary, North Carolina. Collectively, the samples were analyzed for project-specific volatile, semivolatile, and pesticide/PCB compounds by the CLP SOW OLM04.2. These analyses are specified on Table 1. The analytical results are summarized in Section 2 of this report.

The findings offered in this report are based on a review of the holding times, condition of samples upon laboratory receipt, blank analysis results, surrogate recoveries, laboratory control sample (LCS) recoveries, matrix spike/matrix spike duplicate (MS/MSD) recoveries and precision, field duplicate precision, gas chromatography/mass spectroscopy (GC/MS) system performance checks, calibrations, analytical sequence, internal standard areas, 4,4'-DDT and endrin breakdown checks, gas chromatography (GC) resolution checks, Florisil® cartridge and GPC calibration checks, retention time (RT) windows, target compound matching, the quantitation of positive results, and a critical evaluation of instrumental raw data.

A few deficiencies were identified as detailed below. The Environmental Standards data reviewer has edited the laboratory-reported data and QC summary forms based on the deficiencies and comments listed in this QA review. Furthermore, the Environmental Standards data reviewer has included copies of all relevant raw data, QC forms, and other documentation needed to support these edits in the Organic Data Support Documentation (Section 3) of this review. The following deficiencies and comments do not necessarily affect data usability. Usability is addressed in the subsequent Organic Data Qualifiers section.

Correctable Deficiencies

1. The laboratory reported an incorrect sample weight of 5.28 grams for the volatile analysis sample PE10-S-BRE on the Volatile Organics Analysis Data Sheet (Form I VOA) included in the data package provided for sample delivery group (SDG) Q2298. According to the associated En Core™ Preparation Worksheet, the correct sample weight is 5.27 grams. The reported results were not impacted by this reporting error.

2. In the volatile fraction, the laboratory calculated the MS/MSD relative percent differences (RPDs) reported on the Soil Volatile Matrix Spike/Matrix Spike Duplicate Recovery forms (Forms III VOA) included in the data packages provided for SDGs Q2298, S2298, and V2298 based on the MS/MSD results. According to the CLP SOW OLM04.2 (D-53/VOA, Sect. 12.2.4.2), the RPD is to be calculated using the MS/MSD recoveries. In addition, the RPDs should be calculated based on the MS/MSD recoveries because the

RPDs cannot be calculated using the MS/MSD results when the spike levels are different in the MS and in the MSD. Corrected RPDs were used to evaluate sample results during the data review.

3. The Chain-of-Custody Record and Commercial Receiving Log for sample PE14-S-P were not included in the data package for the volatile fraction of SDG S2298. The data reviewer was able to obtain copies of the aforementioned Chain-of-Custody Record and Commercial Receiving Log from the data package provided for the volatile fraction of SDG T2298; therefore, the data review process was not impacted by this deficiency.

4. According to the SDG Narrative for the volatile fraction of SDG S2298, the samples in the SDG were received at a temperature of 5°C. According to the associated Commercial Receiving Logs, the samples received on October 5, 2001, were received at a temperature of 5°C; however, the sample received on October 2, 2001, was received at a temperature of 4°C. The data review process was not impacted by this reporting error.

5. According to the SDG Narrative for the volatile fraction of SDG S2298, the percent moistures for samples in the SDG ranged from 5% to 14%. According to the Forms I VOA for the samples in SDG S2298, the lowest percent moisture was 4%. The data review process was not impacted by this reporting error.

6. The laboratory did not include Sample Log-In Sheets (Forms DC-1) in any of the data packages provided for the SDGs included in this QA review. According to the CLP SOW OLM04.2 (B-56, Sect. 3.19.1), one original of Form DC-1 is required for each sample shipping container. The majority of the information to be reported on this form was reported on the Commercial Receiving Logs and SDG Narratives included in the data packages provided; however, some of the information (*e.g.*, Custody Seal Numbers and presence or absence of Sample Tags) was not provided on these other forms. The data review process was not significantly impacted by the minor amount of missing information.

7. In SDG Q2298, the laboratory reported the ion abundance criteria for ions 127, 365, and 443 as "40.0-60.0% of mass 198", "Greater than 1.0% of mass 198", and "17.0-23.0% of mass 442", respectively, on the Semivolatile Organic Instrument Performance Check Decafluorotriphenylphosphine (DFTPP) form for the DFTPP tune performed on 8/20/01 at 18:41 on instrument 5972HP70. According to CLP SOW OLM04.2 (Exhibit D, Section 17.0 Tables/Diagrams/Flowcharts [Table 1]), the correct ion abundance criteria for ions 127, 365, and 443 are as "25.0-75.0% of mass 198", "Greater than 0.75% of mass 198", and "15.0-24.0% of mass 442", respectively. All abundance criteria were met; consequently, qualification of data was not warranted due to this issue.

8. In SDG V2298, the laboratory reported the analysis time for initial calibration standard SSTD080X9 as "03:45" on the CompuChem GC/MS Semivolatile Run Log associated with the initial calibration performed on 10/19/01 from 01:20 to 03:43 on instrument 5972HP66. According to the raw data, the correct analysis time for initial calibration standard SSTD080X9 is 03:43. Qualification of data was not warranted due to this issue.

9. In all SDGs, the laboratory did not summarize the instrument blank surrogate recoveries on the Water and Soil Pesticide Surrogate Recovery Summary forms (Forms II Pest-1 and II Pest-2, respectively). According to CLP SOW OLM04.2 (Exhibit D, Section 3.0 Forms Instructions [3.7.1]), the recoveries of the surrogate compounds added to each pesticide/Aroclor sample, blank, matrix spike, and matrix spike duplicate are to be reported on the Form II. The data reviewer was able to evaluate the instrument blank surrogate recoveries based on the raw data. All instrument blank surrogate recoveries were within acceptance criteria; consequently, qualification of data was not warranted due to this issue.

10. In all SDGs, the laboratory incorrectly reported several target and surrogate compound RT windows on the Pesticide Initial Calibration of Single Component Analytes Summary forms (Forms VI-Pest-1). Qualification of data was not warranted due to this issue.

11. In SDG U2298, the laboratory incorrectly reported the percent resolution as "0.0%" on the Individual Standard Mixture A and Individual Standard Mixture B Summary forms (Forms VI Pest-6 and VI Pest-7, respectively) for several compounds, including the target compound *alpha*-BHC. According to the raw data, the correct percent resolution is 100%. The percent resolutions for all compounds in the Individual Standard Mixtures A and B were within acceptance criteria; consequently, qualification of data was not warranted due to this issue.

12. In all SDGs, the laboratory did not summarize the percent differences for the surrogate compounds on the Pesticide Calibration Verification Summary forms (Forms VII-Pest-1) associated with the Performance Evaluation Mixtures. The data reviewer was able to evaluate aforementioned surrogate percent differences based on the raw data provided. All Performance Evaluation Mixture surrogate percent differences were within acceptance criteria; consequently, qualification of data was not warranted due to this issue.

13. In all SDGs, the laboratory did not report the laboratory file identifications on the Pesticide Organics Analysis Data Sheets (Forms I-Pest) and on the Pesticide Method Blank Summary forms (Forms IV Pest). Qualification of data was not warranted due to this issue.

14. In SDG Q2298, the laboratory did not include sample PE5-S-PDL in the associated pesticide/PCB SDG Narrative. According to CLP SOW OLM04.2 (Exhibit B, Section 2.6.1), the SDG Narrative shall contain all EPA sample numbers in the SDG, differentiating between initial analyses and reanalyses.

Noncorrectable Deficiencies

1. According to the GC/MS Volatile Run Logs, method blank VBLKPS of SDG Q2298, method blank VBLKYJ of SDG S2298, and method blank VBLKDB of SDG V2298 were of an aqueous matrix although these method blanks were associated with soil samples. According to the CLP SOW OLM04.2 (D-48/VOA, Sect. 12.1.1.1), a purified solid matrix is to be used for method blanks associated with soil/sediment samples.

2. Sample TRIP BLANK in SDG T2298 was not recorded on a Chain-of-Custody Record. The data reviewer used the collection date recorded by the laboratory (10/1/01) to evaluate the volatile holding time.

3. According to the GC/MS Volatile Run Log associated with sample PE34-S-B in SDG V2298, the sample aliquot used for the reported volatile analysis of sample PE34-S-B was taken from a sample jar instead of from one of the En Core® samplers collected for the volatile analysis of this sample. It appears that the laboratory used the two En Core® samplers that were collected and prepared for the low-level volatile analysis of this sample on prior analyses that were rejected by laboratory personnel. According to the CLP SOW OLM04.2 (D-76/VOA, Sect. 7.1.1), soil samples should be collected in field core/sampling/storage containers (*i.e.*, En Core® or equivalent) or in 60-mL septum-sealed glass vials. The quantitation limit for the volatile target compound benzene has been qualified due to possible loss during storage because of this deficiency as addressed in the subsequent Organic Data Qualifiers.

4. The laboratory did not perform volatile MS/MSD analyses for SDG W2298. According to the CLP SOW OLM04.2 (D-51/VOA, Sect. 12.2.2.1), MS/MSD analyses must be performed for each group of samples of a similar matrix for each SDG, each matrix within an SDG, or each group of samples of a similar concentration level (soils only), whichever is most frequent. The data reviewer could not evaluate possible matrix interference for this SDG.

5. According to the semivolatile SDG Narrative for SDG T2298, 900 mL of raw sample was used in the extraction of sample FB-1. According to SOW OLM04.2 (Exhibit D SVOA, Section 10.0 Sample Preparation [10.1.3.2.3]), 1000 mL of sample must be used for sample extraction. The use of this lower volume of raw sample resulted in slightly higher

quantitation limits. Results above the quantitation limits were not observed in sample FB-1; consequently, qualification of data was not warranted due to this issue.

6. According to the semivolatile SDG Narrative for SDG U2298, 960 mL of raw sample was used in the extraction of sample FB-3. According to SOW OLM04.2 (Exhibit D SVOA, Section 10.0 Sample Preparation [10.1.3.2.3]), 1000 mL of sample must be used for sample extraction. Due to the rounding rules used in SOW OLM04.2, the use of this lower volume of raw sample did not affect the quantitation limits; consequently, qualification of data was not warranted due to this issue.

Comments

1. Samples PE7-S-B, PE9-S-B, and PE10-S-B in SDG Q2298 were reanalyzed for volatiles due to high surrogate recoveries in the initial analyses. In addition, SDG Q2298 sample PE5-S-P was reanalyzed for pesticide/PCB analytes at a five-fold dilution due to chromatographic interferences that caused high recoveries for the surrogate compounds. The data reviewer evaluated the multiple sample results and reported only the "best result" (least qualified or highest positive result or lowest quantitation limit) on Table 1 in Section 2. In order to make the determination of the "best results" of the multiple analyses, a data usability assessment of all reported sample results was required; therefore, the qualifiers presented in this QA review address the validation of all results reported by the laboratory. Sample reanalyses have been distinguished from the original sample analyses in the report text by suffixing "RE" to the original sample identifications. Dilution analyses are distinguished from original analyses with the "DL" suffix. In addition, the results for the field and trip blank analyses are not reported on Table 1 in Section 2. The results for the sample analyses not reported on data summary tables in Section 2 have been presented on Form I's in Section 2.

2. According to a hand-written note on the Chain-of-Custody Record for sample "FB-2" in the data package for SDG R2298, the vials for this sample were labeled as TB-2. The laboratory identified this sample as "FB-2" throughout the data package. The sample was submitted for only volatile analysis and a time of collection was not recorded on the Chain-of-Custody Record for this sample; lack of a collection time and request for volatile analysis only are characteristics of a trip blank. The data reviewer assumed that the sample is actually a trip blank and changed the identification to TB-2 on the Form I VOA in Section 2.

3. According to a hand-written note on the Chain-of-Custody Record for sample PE14-S-P in the data packages for SDGs S2298 and T2298 (refer to Correctable Deficiency No. 3), the storage containers for this sample were labeled as "PE14-S-B." The laboratory

identified this sample as PE14-S-P throughout the data package. The data reviewer has also identified this sample as PE14-S-P throughout this report.

4. According to the GC/MS Volatile Run Logs in the data packages provided for the volatile fraction of SDGs S2298, T2298, U2298, and V2298, the laboratory consecutively analyzed two continuing calibration standards in association with various analytical sequences. The second continuing calibration standard analyses were provided in the data packages and passed the continuing calibration quality control limits stipulated the CLP SOW OLM04.2 for the target compound benzene and the surrogate compounds. According to CLP SOW OLM04.2 (D-28/VOA, Sect. 9.4.6.1), "If the continuing calibration technical acceptance criteria are not met, recalibrate the GC/MS instrument according to Section 9.3.3. It may be necessary to clean the ion source, change the column, or take other corrective actions to achieve the continuing calibration technical acceptance criteria." The lack of a clear understanding of why the first continuing calibration standards were analyzed and what corrective action may have been taken at the time precludes use of the first continuing calibration standards in evaluating the associated sample results.

With regard to data usability, the principal areas of concern are high surrogate recoveries, analysis for benzene using a sample aliquot from a sample jar instead of from an En Core® sampler, and quantitation below the contract-required quantitation limit (CRQL). Based upon a rigorous review of the data packages provided, the following organic data qualifiers are offered. The following data usability issues represent an interpretation of the QC results obtained for the project samples. Quite often, data qualifications address issues relating to sample matrix problems. Similarly, the data validation guidelines routinely specify areas of the data that require qualification, yet the methods used for analysis may not require corrective action by the laboratory. Accordingly, the following data usability issues should <u>not</u> be construed as an indication of laboratory performance.

<u>Organic Data Qualifiers</u>

- The reported quantitation limits for benzene in samples PE7-S-B, PE7-S-BRE, PE9-S-B, PE9-S-BRE, PE10-S-B, and PE10-S-BRE in SDG Q2298 may be inaccurate or imprecise, and the "not-detected" results have been flagged "UJ" on the data summary tables or qualified Form I's. High recoveries (>121%) were observed for the surrogate compound 1,2-dichloroethane-d_4 in the volatile analyses of the aforementioned samples.

- The reported quantitation limit for benzene in sample PE34-S-B in SDG V2298 may be higher than reported, and the "not-detected" result has been flagged "UL" on the data

summary tables. The sample aliquot used for the volatile analysis of the aforementioned sample was taken from a sample jar instead of from an En Core® sampler.

- The reported quantitation limits for chrysene in SDG Q2298 samples PE7-S-B, PE8-S-B, PE9-S-B, PE10-S-B, and PE11-S-B and for indeno(1,2,3-cd)pyrene in SDG T2298 sample FB-1 may be inaccurate or imprecise, and the "not-detected" results have been flagged "UJ" on the data summary tables. High percent differences (>25.0%), coupled with decreases in instrument sensitivity, were obtained for chrysene and indeno(1,2,3-cd)pyrene between the average relative response factors (RRFs) of the initial calibrations and the RRFs in the associated continuing calibrations.

- The three field duplicate pairs listed below were included in this data set and analyzed for organic compounds. Acceptable precision and sample representativeness were demonstrated by the correlation observed between the results in the field duplicate pairs in that positive results were not observed in any of the field duplicate pairs.

SDG	Sample	Field Duplicate Sample
Q2298	PE1-S-P	PE2-S-P
S2298	PE22-S-B	PE23-S-B
W2298	PE45-S-B	PE47-S-B

- Positive results reported below the CRQL but above the laboratory method detection limit (MDL) were qualified as estimated ("J") by the laboratory. The data reviewer agrees with the laboratory, has qualified these results as estimated, and has flagged the results "J" on the data summary tables and qualified Form I's.

A complete support documentation of this organic data QA review is presented in Section 3.

B. Inorganic Data

The inorganic analyses of 60 soil samples (including laboratory QC samples) and three aqueous blanks were performed by CompuChem of Cary, North Carolina. All samples were analyzed for total antimony, arsenic, barium, cadmium, chromium, iron, lead, manganese, selenium, silver, thallium, and zinc by the CLP SOW ILM04.1. These analyses are specified on Table 1. The analytical results are summarized in Section 2 of this report.

The findings offered in this report are based on a review of the holding times, condition of samples upon laboratory receipt, blank analysis results, laboratory control samples (LCS) recoveries, matrix spike (MS) recoveries, laboratory duplicate precision, calibrations, contract-required detection limit

(CRDL) standards, inductively coupled plasma (ICP) interference check sample results, analytical sequence, instrument detection limits (IDLs), ICP linear range, ICP serial dilution results, sample preparation, the quantitation of positive results, and a critical evaluation of instrumental raw data.

A few deficiencies were identified as detailed below. The Environmental Standards data reviewer has edited the laboratory-reported data and QC summary forms based on the deficiencies listed in this QA review. Furthermore, the Environmental Standards data reviewer has included copies of all relevant raw data, QC forms, and other documentation needed to support these edits in the Inorganic Data Support Documentation (Section 4) of this review. The following deficiencies do not necessarily affect data usability. Usability is addressed in the subsequent Inorganic Data Qualifiers section.

Correctable Deficiency

- The Case Narrative for SDG U2298 was incorrectly labeled as "SDG Q2298."

Noncorrectable Deficiency

- In SDGs Q2298, V2298, and W2298, the laboratory reported unacceptable LCS recoveries for antimony. According to CLP SOW ILM04.1 (page E-26), if the results for the solid LCS are outside of the control limits, the analyses must be terminated, the problem corrected, and the samples associated with that LCS redigested and reanalyzed. According to the QAPP, the control limits for the solid LCS are 70-130% (Table 5-2). Qualification of data due to this deficiency is addressed in the subsequent Inorganic Data Qualifiers section.

Comments

1. According to a hand-written note on the Chain-of-Custody Record for sample PE14-S-P in the data package for SDG S2298, the storage containers for this sample were labeled as "PE14-S-B." The laboratory identified this sample as PE14-S-P throughout the data package. The data reviewer has also identified this sample as PE14-S-P throughout this report.

2. The results for the field blank analyses are not reported on the data summary tables in Section 2 of this report; instead, these results are presented on the Form I's for the samples in Section 2.

With regard to data usability, the principal areas of concern are blank contamination, serial dilution analysis results, unacceptable matrix spike and LCS recoveries, instrumental interferences, and CRDL standard recoveries. Based upon a rigorous review of the data packages provided, the following inorganic data qualifiers are offered. The following data usability issues represent an interpretation of the QC results obtained for the project samples. Quite often, data qualifications address issues relating to sample matrix problems. Similarly, the data validation guidelines routinely specify areas of the data that require qualification, yet the methods used for analysis may not require corrective action by the laboratory. Accordingly, the following data usability issues should not be construed as an indication of laboratory performance.

Inorganic Data Qualifiers

- Due to the trace-level presence of the following analytes in the associated laboratory and/or field blanks, the reported positive results for the following analytes in the samples listed below are qualitatively questionable and have been flagged "B" on the data summary tables. It should be noted that sample weights and volumes, dilution factors, and percent solids were taken into consideration when evaluating blank contamination.

Analyte	SDG	Sample(s) With Qualitatively Questionable Results ("B")
cadmium	Q2298	PE6-S-P
chromium	S2298	PE22-S-B and PE23-S-B
zinc	S2298	PE22-S-B, PE23-S-B, and PE26-S-B
lead	V2298	PE33-S-B and PE42-S-P
arsenic	S2298	PE20-S-B, PE21-S-B, PE22-S-B, PE23-S-B, and PE26-S-B
	V2298	PE27-S-B, PE29-S-B, PE31-S-B, and PE33-S-B
	W2298	PE43-S-P, PE45-S-B, PE46-S-B, PE47-S-B, and PE48-S-B
barium	S2298	PE22-S-B and PE26-S-B
	V2298	PE28-S-B, PE31-S-B, PE33-S-B, and PE34-S-B

- The analyses for the antimony in all soil samples in SDG Q2298 should be considered unreliable, and the "not-detected" results have been flagged "R" on the data summary tables. A very low recovery (<30%) was observed for antimony in the associated MS analysis.

- The analyses for the antimony in all soil samples in SDG Q2298 should be considered unreliable, and the "not-detected" results have been flagged "R" on the data summary tables. A very low recovery (<30%) was observed for antimony in the associated LCS analysis.

- The reported positive results for chromium in the SDG S2298 samples listed below should be considered biased low and have been flagged "L" on the data summary tables (unless previously flagged "B"). Chromium was observed to be present in the associated laboratory and/or field blanks at negative concentrations with absolute values greater than two-times the IDL, indicating a possible negative interference. The reported positive results for chromium may be significantly impacted by the negative ICP interferents (instrument level of sample ≤ 5× the absolute value of the observed concentration in the blank).

Samples With Biased Low Positive Results ("L")

PE14-S-P, PE21-S-B, PE22-S-B, PE23-S-B, and PE26-S-B

- The detection limits for the following analytes in the samples listed below may be higher than reported, and the "not-detected" results have been flagged "UL" on the data summary tables. In addition, the reported positive results for the following analytes in the samples listed below should be considered biased low and have been flagged "L" on the data summary tables. Low recoveries (30%≤%R<75%) were observed for these analytes in the associated MS analyses.

Analyte	SDG	Samples With Biased Detection Limits ("UL")	Samples With Biased Low Positive Result ("L")
selenium	Q2298	PE4-S-P, PE9-S-B, PE10-S-B, PE12-S-B, and PE13-S-B	PE1-S-P, PE2-S-P, PE3-S-P, PE5-S-P, PE6-S-P, PE7-S-B, PE8-S-B, and PE11-S-B
antimony	V2298	all samples	-
	W2298	all samples	-
thallium	W2298	all samples	-

- The detection limits for antimony in all soil samples in SDGs V2298 and W2298 may be higher than reported, and the "not-detected" results have been flagged "UL" on the data summary tables. Low recoveries (30%≤%R<70%) were observed for antimony in the associated LCS analyses.

- The reported positive results for lead in all soil samples in SDG W2298 should be considered biased high and have been flagged "K" on the data summary tables. High recoveries (>125%) were observed for lead in the associated MS analysis.

- The reported positive results for zinc in all soil samples in SDG V2298 should be considered estimated and have been flagged "J" on the data summary tables. A high percent difference (>10%) was obtained for zinc in the associated serial dilution analysis.

- The reported positive results for zinc in the samples listed below should be considered biased high and have been flagged "K" on the data summary tables (unless previously flagged "B"). High recoveries (>110%) were observed for zinc in the associated CRDL analyses.

SDG	Samples With Biased High Positive Results ("K")
Q2298	PE3-S-P, PE4-S-P, PE7-S-B, PE8-S-B, PE9-S-B, PE10-S-B, PE11-S-B, PE12-S-B, and PE13-S-B
S2298	PE14-S-P, PE15-S-P, PE17-S-P, PE19-S-P, PE21-S-B, PE22-S-B, PE23-S-B, PE24-S-B, PE25-S-B, and PE26-S-B

- The detection limits for the following analytes in the samples listed below may be higher than reported, and the "not-detected" results have been flagged "UL" on the data summary tables. In addition, any reported positive results for these analytes in the samples listed below should be considered biased low estimated and have been flagged "L" on the data summary tables. Low recoveries (<90%) were observed for these analytes in the associated CRDL analyses.

Analyte	SDG	Sample(s) With Biased Detection Limits ("UL")	Sample(s) With Biased Low Positive Result ("L")
chromium	S2298	-	PE22-S-B, PE23-S-B, and PE26-S-B
	T2298	FB-1	-
antimony	V2298	all soil samples	-
	W2298	all soil samples	-
	U2298	FB-2 and FB-3	-
lead	U2298	FB-2 and FB-3	-

Analyte	SDG	Sample(s) With Biased Detection Limits ("UL")	Sample(s) With Biased Low Positive Result ("L")
selenium	V2298	PE27-S-B, PE28-S-B, PE30-S-B, PE31-S-B, PE32-S-B, PE33-S-B, PE35-S-B, PE36-S-B, PE37-S-B, PE39-S-P, and PE42-S-P	PE29-S-B, PE34-S-B, PE38-S-B, PE40-S-P, PE41-S-P, PE49-S-B, PE50-S-B, PE51-S-B, and PE52-S-B
	W2298	PE43-S-P	-
zinc	W2298	-	PE44-S-P
	U2298	FB-2 and FB-3	-

- The detection limits for the following analytes in the samples listed below may be higher than reported, and the "not-detected" results have been flagged "UL" on the data summary tables. In addition, any reported positive results for these analytes in the samples listed below should be considered biased low estimated and have been flagged "L" on the data summary tables. These analytes were observed to be present in the ICP interference check sample ICSA solution at negative concentrations with absolute values greater than two-times the IDL, indicating a possible negative interference in the presence of high levels of interferents. High levels of ICP interferent (instrument level of interferent > 50% of the true value of the ICSA solution) were observed in these samples. Furthermore, the reported positive results for these analytes may be significantly impacted by the negative ICP interference (instrument level of sample ≤ 5× the absolute value of the observed concentration in the ICSA solution).

Analyte	SDG	Samples With Biased Detection Limits ("UL")	Sample With Biased Low Positive Result ("L")
cadmium	Q2298	PE2-S-P, PE3-S-P, and PE8-S-B	-
	S2298	PE16-S-P	-
	V2298	PE38-S-B and PE50-S-B	-
arsenic	Q2298	-	PE2-S-P
thallium	S2298	PE16-S-P	-
	V2298	PE38-S-B and PE50-S-B	-

Analyte	SDG	Samples With Biased Detection Limits ("UL")	Sample With Biased Low Positive Result ("L")
silver	Q2298	PE3-S-P	-

- The reported positive results for selenium in SDG V2298 samples PE38-S-B and PE50-S-B should be considered biased high and have been flagged "K" on the data summary tables. This analyte was observed to be present in the interference check sample ICSA solutions at concentrations greater than two-times the IDL, indicating an interference in the presence of high levels of interferents. High levels of ICP interferent (instrument level of interferent > 50% of the true value of the ICSA solution) were observed in these samples. Furthermore, the reported positive results for selenium in these samples were less than five-times the levels observed in the ICSA solutions.

- The three field duplicate pairs listed below were included in this data set and were analyzed for the target inorganic analytes. Acceptable precision was demonstrated by the field duplicate pairs with the exception of the results for manganese in SDG S2298 samples PE22-S-B and PE23-S-B and for lead in SDG W2298 samples PE 45-S-B and PE47-S-B. The positive results for lead in samples PE45-S-B and PE23-S-B and for manganese in samples PE22-S-B and PE23-S-B should be considered estimated and have been flagged "J" on the data summary tables. The criteria used to assess field duplicate precision were as follows: if both results were greater than five-times the CRDL, the relative percent difference must not exceed 40%; if one or both of the reported results was less than five-times the CRDL, the difference between the field duplicate results must not be greater than two-times the CRDL.

SDG	Sample	Field Duplicate Sample
Q2298	PE1-S-P	PE2-S-P
S2298	PE22-S-B	PE23-S-B
W2298	PE45-S-B	PE47-S-B

- Sample results that demonstrated both positive bias (initially flagged "K") and negative bias (initially flagged "L") have been flagged "J" on the data summary tables. In addition, results flagged for multiple reasons where the direction of bias could not be determined (*e.g.*, a result flagged both "UJ" and "UL") have been flagged "J" or "UJ" on the data summary tables.

A complete support documentation of this inorganic data QA review is presented in Section 4.

C. Conclusions

Based on this QA review, a small portion of the organic data was qualified due to high surrogate recoveries, analysis for benzene using a sample aliquot from a sample jar instead of from an En Core® sampler, and/or quantitation below the CRQL. In the inorganics analysis, sample results were qualified due to blank contamination, unacceptable LCS and matrix spike recoveries, serial dilution analysis results, instrumental interferences, field duplicate imprecision, and CRDL standard recoveries. In order to use any of the data, the data user should understand the limitations as specified in this QA review. The SDG Narratives and Project Chain-of-Custody Records are presented in Section 5 of this QA review.

Report prepared by:

Steven J. Lennon
Quality Assurance Chemist

Report prepared by:

Eric T. Lahr
Quality Assurance Chemist

Report prepared by:

Meg A. Michell, M.S.
Senior Quality Assurance Chemist III

Report prepared by:

Thomas M. Roberts
Quality Asssurance Chemist

Report reviewed by:

Donald J. Lancaster, M.S.
Senior Quality Assurance Chemist II/
Project Manager

Report reviewed and approved by:

David R. Blye, CEAC
Quality Assurance Specialist/
Principal

ENVIRONMENTAL STANDARDS, INC.
1140 Valley Forge Road
P.O. Box 810
Valley Forge, PA 19482-0810

(610) 935-5577

Date: 11-2-01

w:\penn e & r\dv\y1101698\final\report1.doc

2

SECTION 2

ANALYTICAL RESULTS

Organic Data Qualifiers

U	The compound was analyzed for, but was not detected above the level of the associated value. The associated value is the sample quantitation limit.
B	The compound was not detected substantially above the level reported in a field, equipment, trip, and/or laboratory blank.
R	The result is unreliable. (Note: The compound may or may not be present.)
N	The compound should be considered present but a tentative identification.
J	The compound is present. The reported value may not be accurate or precise.
K	The compound is present. The reported value may be biased high. The actual value is expected to be lower than reported.
L	The compound is present. The reported value may be biased low. The actual value is expected to be higher than reported.
UJ	This compound was analyzed for, but was not detected. The associated quantitation limit may be inaccurate or imprecise.
UL	The compound was not detected, and the quantitation limit is probably higher than reported.
NJ	The qualitiative identification of the compound is questionable due to poor resolution. The compound is presumptively present at approximately the reported value.

Inorganic Data Qualifiers

U	The analyte was analyzed for, but was not detected above the level of the associated value. The associated value is the sample detection limit.
B	The analyte was not detected substantially above the level reported in a field, equipment, and/or laboratory blank.
R	The result is unreliable. (Note: The analyte may or may not be present.)
J	The analyte is present. The reported value may not be accurate or precise.
K	The analyte is present. The reported value may be biased high. The actual value is expected to be lower than reported.
L	The analyte is present. The reported value may be biased low. The actual value is expected to be higher than reported.
UJ	This analyte was analyzed for, but was not detected. The associated detection limit may be inaccurate or imprecise.
UL	The analyte was not detected, and the detection limit is probably higher than reported.

TABLE 1

SUMMARY OF ANALYTICAL RESULTS FOR POST-EXCAVATION SOIL SAMPLES COLLECTED FROM THE CINDER/SLAG FILL AREA

ANALYTICAL[1] PARAMETERS	SAMPLE DESIGNATION/ANALYTICAL RESULTS[2]												
	PE1-S-P	PE2-S-P[5]	PE3-S-P	PE4-S-P	PE5-S-P	PE6-S-P	PE7-S-B	PE8-S-B	PE9-S-B	PE10-S-B	PE11-S-B	PE12-S-B	PE13-S-B
Volatile Organics:													
Benzene	0.010U	0.010U	0.011U	0.011U	0.013U	0.013U	0.011UJ	0.010U	0.010UJ	0.010UJ	0.010U	0.010U	0.010U
Semivolatile Organics:													
2-Methylnaphthalene	0.39U	0.39U	0.39U	0.38U	0.038J	0.39U	0.41U	0.40U	0.37U	0.36U	0.38U	0.38U	0.39U
Acenaphthene	0.39U	0.39U	0.39U	0.38U	0.37U	0.39U	0.41U	0.40U	0.37U	0.36U	0.38U	0.38U	0.39U
Acetophenone	0.39U	0.39U	0.39U	0.38U	0.37U	0.39U	0.41U	0.40U	0.37U	0.36U	0.38U	0.38U	0.39U
Anthracene	0.39U	0.39U	0.39U	0.38U	0.37J	0.16J	0.41U	0.40U	0.37U	0.36U	0.38U	0.38U	0.39U
Benzo(a)anthracene	0.39U	0.39U	0.39U	0.38U	1.3	0.93	0.41U	0.40U	0.37U	0.36U	0.38U	0.38U	0.39U
Benzo(a)pyrene	0.39U	0.39U	0.39U	0.38U	1.3	1.1	0.41U	0.40U	0.37U	0.36U	0.38U	0.38U	0.39U
Benzo(b)fluoranthene	0.39U	0.39U	0.39U	0.38U	1.9	1.6	0.41U	0.40U	0.37U	0.36U	0.38U	0.38U	0.39U
Benzo(k)fluoranthene	0.39U	0.39U	0.39U	0.38U	0.90	0.60	0.41U	0.40U	0.37U	0.36U	0.38U	0.38U	0.39U
Carbazole	0.39U	0.39U	0.39U	0.38U	0.097J	0.057J	0.41U	0.40U	0.37U	0.36U	0.38U	0.38U	0.39U
Chrysene	0.39U	0.39U	0.39U	0.38U	1.1	0.98	0.41UJ	0.40UJ	0.37UJ	0.36UJ	0.38UJ	0.38U	0.39U
Dibenzo(a,h)anthracene	0.39U	0.39U	0.39U	0.38U	0.27J	0.27J	0.41U	0.40U	0.37U	0.36U	0.38U	0.38U	0.39U
Dibenzofuran	0.39U	0.39U	0.39U	0.38U	0.060J	0.39U	0.41U	0.40U	0.37U	0.36U	0.38U	0.38U	0.39U
Fluoranthene	0.39U	0.39U	0.39U	0.38U	2.5	1.3	0.41U	0.40U	0.37U	0.36U	0.38U	0.38U	0.39U
Fluorene	0.39U	0.39U	0.39U	0.38U	0.14J	0.39U	0.41U	0.40U	0.37U	0.36U	0.38U	0.38U	0.39U
Indeno(1,2,3-cd)pyrene	0.39U	0.39U	0.39U	0.38U	0.90	0.92	0.41U	0.40U	0.37U	0.36U	0.38U	0.38U	0.39U
Naphthalene	0.39U	0.39U	0.39U	0.38U	0.14J	0.39U	0.41U	0.40U	0.37U	0.36U	0.38U	0.38U	0.39U
Pyrene	0.39U	0.39U	0.39U	0.38U	2.0	1.2	0.41U	0.40U	0.37U	0.36U	0.38U	0.38U	0.39U
Pesticide/PCBs: [4]													
Alpha-BHC	0.002U	0.002U	0.002U	0.0019U	0.0019U	0.002U	0.0021U	0.002U	0.0019U	0.0019U	0.002U	0.0019U	0.002U
Dieldrin	0.0039U	0.0039U	0.0039U	0.0038U	0.0037U	0.0039U	0.0041U	0.004U	0.0037U	0.0036U	0.0038U	0.0038U	0.0039U
PCB Aroclor-1254	0.039U	0.039U	0.039U	0.038U	0.037U	0.039U	0.041U	0.04U	0.037U	0.036U	0.038U	0.038U	0.039U
Metals:													
Antimony	0.58UR	0.56UR	0.59UR	0.56UR	0.55UR	0.56UR	0.60UR	0.58UR	0.56UR	0.53UR	0.56UR	0.57UR	0.56UR
Arsenic	2.1	3.0L	4.2	0.75	8.9	3.9	2.7	4.8	2.1	0.60U	2.9	2.0	2.1
Barium	41.9	41.7	40.0	6.4	70.4	79.6	36.2	38.5	15.6	10.3	47.6	35.7	28.6
Cadmium	0.094U	0.09UL	0.094UL	0.09U	0.97	0.20B	0.096U	0.092UL	0.089U	0.086U	0.09U	0.091U	0.09U
Chromium	17.9	20.0	25.5	15.0	18.5	16.9	20.4	23.7	11.4	4.0	16.1	15.6	16.1
Iron	21000	23400	25000	20600	17200	12800	17700	24300	10600	2800	14800	14000	13900
Lead	16.2	14.2	9.3	6.2	82.2	64.8	11.6	10.6	6.0	2.5	8.1	8.1	6.7
Manganese	119	88.5	135	21.0	323	224	75.5	109	71.3	44.9	143	85.5	108
Selenium	0.98L	1.1L	1.4L	0.83UL	1.5L	0.89L	0.89L	1.2L	0.83UL	0.79UL	0.95L	0.84UL	0.83UL
Silver	0.16U	0.16U	0.16UL	0.16U	0.15U	0.16U	0.17U	0.16U	0.16U	0.15U	0.16U	0.16U	0.16U
Thallium	0.82U	0.79U	0.83U	0.78U	0.77U	0.79U	0.84U	0.81U	0.78U	0.75U	0.78U	0.79U	0.79U
Zinc	47.0	45.5	37.6K	25.8K	277	112	37.0K	36.2K	19.4K	7.8K	26.8K	26.4K	23.9K

Notes:

(1) - Each sample was analyzed for the Target Compound List (TCL) volatile organic benzene; the TCL semivolatile organics 2-methylnaphthalene, acenaphthene, acetophenone, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, carbazole, chrysene, dibenzo(a,h)anthracene, dibenzofuran, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, napthalene and pyrene; the TCL pesticides alpha-BHC and dieldrin; the TCL PCB aroclor-1254; and the Target Analyte List metals antimony, arsenic, barium, cadmium, chromium, iron, lead, manganese, selenium, silver, thallium and zinc.

(2) - All results are in milligrams per kilogram.

(3) - These are cleanup standards included in the Record of Decision for the Crater site for the Yellow Parcel pipeline

(4) - These are background concentrations developed for other portions of the Crater site that were approved by EPA

(5) - PE2-S-P is a duplicate collected at sample location PE1-S-P

(6) - PE23-S-B is a duplicate collected at sample location PE22-S-B

(7) - PE47-S-B is a duplicate collected at sample location PE45-S-B

TABLE 1 - CONTINUED

SUMMARY OF ANALYTICAL RESULTS FOR
POST-EXCAVATION SOIL SAMPLES COLLECTED
FROM THE CINDER/SLAG FILL AREA

ANALYTICAL[1] PARAMETERS	SAMPLE DESIGNATION/ANALYTICAL RESULTS[2]												
	PE14-S-P	PE15-S-P	PE-16-S-P	PE17-S-P	PE18-S-P	PE19-S-P	PE20-S-B	PE21-S-B	PE22-S-B	PE23-S-B[6]	PE24-S-B	PE25-S-B	PE26-S-B
Volatile Organics:													
Benzene	0.010U	0.012U	0.010U	0.010U	0.010U	0.010U	0.011U	0.011U	0.013U	0.013U	0.011U	0.010U	0.010U
Semivolatile Organics:													
2-Methylnaphthalene	0.38U	0.35U	0.36U	0.35U	0.36U	0.36U	0.37U	0.35U	0.35U	0.35U	0.36U	0.36U	0.34U
Acenaphthene	0.38U	0.35U	0.36U	0.35U	0.36U	0.36U	0.37U	0.35U	0.35U	0.35U	0.36U	0.36U	0.34U
Acetophenone	0.38U	0.35U	0.36U	0.35U	0.36U	0.36U	0.37U	0.35U	0.35U	0.35U	0.36U	0.36U	0.34U
Anthracene	0.38U	0.35U	0.36U	0.067J	0.36U	0.36U	0.37U	0.35U	0.35U	0.35U	0.36U	0.046J	0.34U
Benzo(a)anthracene	0.38U	0.052J	0.36U	0.38	0.067J	0.085J	0.37U	0.35U	0.35U	0.35U	0.36U	0.061J	0.34U
Benzo(a)pyrene	0.38U	0.057J	0.36U	0.42	0.07J	0.093J	0.37U	0.35U	0.35U	0.35U	0.36U	0.047J	0.34U
Benzo(b)fluoranthene	0.38U	0.077J	0.36U	0.55	0.088J	0.12J	0.37U	0.35U	0.35U	0.35U	0.36U	0.064J	0.34U
Benzo(k)fluoranthene	0.38U	0.35U	0.36U	0.19J	0.041J	0.054J	0.37U	0.35U	0.35U	0.35U	0.36U	0.36U	0.34U
Carbazole	0.38U	0.35U	0.36U	0.35U	0.36U	0.36U	0.37U	0.35U	0.35U	0.35U	0.36U	0.36U	0.34U
Chrysene	0.38U	0.050J	0.36U	0.33J	0.058J	0.078J	0.37U	0.35U	0.35U	0.35U	0.36U	0.05J	0.34U
Dibenzo(a,h)anthracene	0.38U	0.35U	0.36U	0.071J	0.36U	0.36U	0.37U	0.35U	0.35U	0.35U	0.36U	0.36U	0.34U
Dibenzofuran	0.38U	0.35U	0.36U	0.35U	0.36U	0.36U	0.37U	0.35U	0.35U	0.35U	0.36U	0.36U	0.34U
Fluoranthene	0.38U	0.055J	0.36U	0.66	0.081J	0.11J	0.37U	0.35U	0.35U	0.35U	0.36U	0.11J	0.34U
Fluorene	0.38U	0.35U	0.36U	0.35U	0.36U	0.36U	0.37U	0.35U	0.35U	0.35U	0.36U	0.36U	0.34U
Indeno(1,2,3-cd)pyrene	0.38U	0.047J	0.36U	0.29J	0.052J	0.069J	0.37U	0.35U	0.35U	0.35U	0.36U	0.36U	0.34U
Naphthalene	0.38U	0.35U	0.36U	0.35U	0.36U	0.36U	0.37U	0.35U	0.35U	0.35U	0.36U	0.36U	0.34U
Pyrene	0.38U	0.045J	0.36U	0.48	0.071J	0.098J	0.37U	0.35U	0.35U	0.35U	0.36U	0.079J	0.34U
Pesticide/PCBs:[4]													
Alpha-BHC	0.002U	0.0018U	0.0018U	0.0018U	0.0018U	0.0019U	0.0019U	0.0018U	0.0018U	0.0018U	0.0018U	0.0019U	0.0018U
Dieldrin	0.0038U	0.0035U	0.0036U	0.0035U	0.0036U	0.0036U	0.0037U	0.0035U	0.0035U	0.0035U	0.0036U	0.0036U	0.0034U
PCB Aroclor-1254	0.038U	0.035U	0.036U	0.035U	0.036U	0.036U	0.037U	0.035U	0.035U	0.035U	0.036U	0.036U	0.034U
Metals:													
Antimony	0.58U	0.52U	0.54U	0.52U	0.52U	0.53U	0.54U	0.51U	0.53U	0.60	0.54U	0.53U	0.52U
Arsenic	0.75	3.4	6.2	2.1	3.0	2.3	0.98B	1.9B	1.1B	1.5B	4.7	5.0	0.74B
Barium	6.8	17.3	35.6	20.2	27.0	24.4	4.8	20.1	3.3B	5.4	37.4	27.7	3.8B
Cadmium	0.092U	0.083U	0.086UL	0.082U	0.084U	0.085U	0.087U	0.082U	0.085U	0.083U	0.087U	0.085U	0.083U
Chromium	5.4L	6.6	18.5	10.6	16.4	15.8	10.5	5.7L	1.5B	1.9B	17.7	16.9	3.1L
Iron	5,650	9,570	21,100	8,320	14,800	14,500	7,550	7,400	6,380	7,500	19,600	18,900	2,620
Lead	3.2	6.5	11.4	6.9	10.2	8.9	7.7	3.9	1.6	1.7	9.7	11.0	2.8
Manganese	5.8	80.8	102	60.9	102	88.5	12.2	68.8	127J	226J	121	93.5	12.4
Selenium	0.85U	0.77U	1.5	0.76U	0.79	0.78U	0.80U	0.76U	0.78U	0.77U	0.81U	0.86	0.77U
Silver	0.16U	0.14U	0.15U	0.14U	0.15U	0.15U	0.15U	0.14U	0.15U	0.14U	0.15U	0.15U	0.14U
Thallium	0.81U	0.73U	0.76UL	0.72U	0.74U	0.74U	0.76U	0.72U	0.74U	0.73U	0.76U	0.74U	0.73U
Zinc	7.2K	17.2K	43.2	18.2K	42.9	39.8K	100	15.5K	4.6B	5.1B	38.6K	32.6K	5.1B

Notes:

(1) - Each sample was analyzed for the Target Compound List (TCL) volatile organic benzene; the TCL semivolatile organics 2-methylnaphthalene, acenaphthene, acetophenone, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, carbazole, chrysene, dibenzo(a,h)anthracene, dibenzofuran, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, napthalene and pyrene; the TCL pesticides alpha-BHC and dieldrin; the TCL PCB aroclor-1254; and the Target Analyte List metals antimony, arsenic, barium, cadmium, chromium, iron, lead, manganese, selenium, silver, thallium and zinc.

(2) - All results are in milligrams per kilogram.

(3) - These are cleanup standards included in the Record of Decision for the Crater site for the Yellow Parcel pipeline

(4) - These are background concentrations developed for other portions of the Crater site that were approved by EPA

(5) - PE2-S-P is a duplicate collected at sample location PE1-S-P

(6) - PE23-S-B is a duplicate collected at sample location PE22-S-B

(7) - PE47-S-B is a duplicate collected at sample location PE45-S-B

TABLE 1 - CONTINUED

SUMMARY OF ANALYTICAL RESULTS FOR
POST-EXCAVATION SOIL SAMPLES COLLECTED
FROM THE CINDER/SLAG FILL AREA

ANALYTICAL[1] PARAMETERS	SAMPLE DESIGNATION/ANALYTICAL RESULTS[2]												
	PE27-S-B	PE28-S-B	PE29-S-B	PE30-S-B	PE31-S-B	PE32-S-B	PE33-S-B	PE34-S-B	PE35-S-B	PE36-S-B	PE37-S-B	PE38-S-B	PE39-S-P
Volatile Organics:													
Benzene	0.002J	0.012U	0.010U	0.015U	0.011U	0.011U	0.013U	0.011UL	0.011U	0.010U	0.011U	0.013U	0.010U
Semivolatile Organics:													
2-Methylnaphthalene	0.37U	0.38U	0.38U	0.49U	0.38U	0.39U	0.35U	0.36U	0.38U	0.39U	0.36U	0.46U	0.35U
Acenaphthene	0.37U	0.38U	0.38U	0.49U	0.38U	0.39U	0.35U	0.36U	0.38U	0.39U	0.36U	0.46U	0.35U
Acetophenone	0.37U	0.38U	0.38U	0.49U	0.38U	0.39U	0.35U	0.36U	0.38U	0.39U	0.36U	0.46U	0.35U
Anthracene	0.37U	0.38U	0.38U	0.49U	0.38U	0.39U	0.35U	0.36U	0.38U	0.39U	0.36U	0.46U	0.35U
Benzo(a)anthracene	0.37U	0.38U	0.38U	0.49U	0.38U	0.39U	0.35U	0.36U	0.38U	0.39U	0.36U	0.46U	0.042J
Benzo(a)pyrene	0.37U	0.38U	0.38U	0.49U	0.38U	0.39U	0.35U	0.36U	0.38U	0.39U	0.36U	0.46U	0.057J
Benzo(b)fluoranthene	0.051J	0.38U	0.38U	0.49U	0.38U	0.39U	0.35U	0.36U	0.38U	0.39U	0.36U	0.062J	0.094J
Benzo(k)fluoranthene	0.37U	0.38U	0.38U	0.49U	0.38U	0.39U	0.35U	0.36U	0.38U	0.39U	0.36U	0.46U	0.046J
Carbazole	0.37U	0.38U	0.38U	0.49U	0.38U	0.39U	0.35U	0.36U	0.38U	0.39U	0.36U	0.46U	0.35U
Chrysene	0.37U	0.38U	0.38U	0.49U	0.38U	0.39U	0.35U	0.36U	0.38U	0.39U	0.36U	0.46U	0.056J
Dibenzo(a,h)anthracene	0.37U	0.38U	0.38U	0.49U	0.38U	0.39U	0.35U	0.36U	0.38U	0.39U	0.36U	0.46U	0.35U
Dibenzofuran	0.37U	0.38U	0.38U	0.49U	0.38U	0.39U	0.35U	0.36U	0.38U	0.39U	0.36U	0.46U	0.35U
Fluoranthene	0.039J	0.38U	0.38U	0.49U	0.38U	0.39U	0.35U	0.36U	0.38U	0.39U	0.36U	0.46U	0.059J
Fluorene	0.37U	0.38U	0.38U	0.49U	0.38U	0.39U	0.35U	0.36U	0.38U	0.39U	0.36U	0.46U	0.35U
Indeno(1,2,3-cd)pyrene	0.37U	0.38U	0.38U	0.49U	0.38U	0.39U	0.35U	0.36U	0.38U	0.39U	0.36U	0.46U	0.053J
Naphthalene	0.37U	0.38U	0.38U	0.49U	0.38U	0.39U	0.35U	0.36U	0.38U	0.39U	0.36U	0.46U	0.35U
Pyrene	0.37U	0.38U	0.38U	0.49U	0.38U	0.39U	0.35U	0.36U	0.38U	0.39U	0.36U	0.46U	0.052J
Pesticide/PCBs:													
Alpha-BHC	0.0019U	0.002U	0.002U	0.0025U	0.002U	0.002U	0.0018U	0.0018U	0.002U	0.002U	0.0018U	0.0024U	0.0018U
Dieldrin	0.0037U	0.0038U	0.0038U	0.0049U	0.0038U	0.0039U	0.0035U	0.0036U	0.0038U	0.0039U	0.0036U	0.0046U	0.0035U
PCB Aroclor-1254	0.037U	0.038U	0.038U	0.049U	0.038U	0.039U	0.035U	0.036U	0.038U	0.039U	0.036U	0.046U	0.035U
Metals:													
Antimony	0.51UL	0.52UL	0.51UL	0.67UL	0.53UL	0.54UL	0.48UL	0.48UL	0.52UL	0.53UL	0.50UL	0.62UL	0.49UL
Arsenic	2.1B	3.4	3.1B	4.5	1.6B	0.71U	0.80B	3.8	1.6	1.9	4.1	7.2	1.9
Barium	19.1	3.4B	18.8	17.7	3.9B	6.0	2.3B	4.3B	6.8	3.8	3.3	29.1	17.0
Cadmium	0.044U	0.045U	0.044U	0.058U	0.046U	0.047U	0.042U	0.042U	0.045U	0.046U	0.044U	0.054UL	0.042U
Chromium	7.8	9.4	12.8	11.1	4.8	9.5	2.3	7.4	7.6	6.3	6.0	18.5	12.5
Iron	6,340	5,450	11,000	10,500	3,690	6,330	1,780	7,720	5,740	4,810	3,180	25,400	7,350
Lead	35.3	3.0	7.9	9.6	2.8	2.2	1.0B	2.4	7.7	2.2	1.4	25.7	13.2
Manganese	61.6	8.9	33.0	37.6	13.6	14.9	14.7	9.1	21.9	4.3	12.0	62.4	58.9
Selenium	0.42UL	0.43UL	0.91L	0.55UL	0.43UL	0.45UL	0.40UL	0.40L	0.43UL	0.44UL	0.41UL	4.0J	0.40UL
Silver	0.16U	0.16U	0.16U	0.20U	0.16U	0.16U	0.14U	0.15U	0.16U	0.16U	0.15U	0.19U	0.15U
Thallium	0.76U	0.77U	0.76U	0.99U	0.78U	0.80U	0.71U	0.71U	0.77U	0.79U	0.74U	0.92UL	0.72U
Zinc	37.7J	4.6J	72.3J	23.5J	6.6J	4.4J	15.5J	5.4J	31.4J	9.0J	35.5J	121J	65.4J

Notes:

(1) - Each sample was analyzed for the Target Compound List (TCL) volatile organic benzene; the TCL semivolatile organics 2-methylnaphthalene, acenaphthene, acetophenone, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, carbazole, chrysene, dibenzo(a,h)anthracene, dibenzofuran, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, napthalene and pyrene; the TCL pesticides alpha-BHC and dieldrin; the TCL PCB aroclor-1254; and the Target Analyte List metals antimony, arsenic, barium, cadmium, chromium, iron, lead, manganese, selenium, silver, thallium and zinc.

(2) - All results are in milligrams per kilogram.

(3) - These are cleanup standards included in the Record of Decision for the Crater site for the Yellow Parcel pipeline

(4) - These are background concentrations developed for other portions of the Crater site that were approved by EPA

(5) - PE2-S-P is a duplicate collected at sample location PE1-S-P

(6) - PE23-S-B is a duplicate collected at sample location PE22-S-B

(7) - PE47-S-B is a duplicate collected at sample location PE45-S-B

TABLE 1 - CONTINUED

SUMMARY OF ANALYTICAL RESULTS FOR
POST-EXCAVATION SOIL SAMPLES COLLECTED
FROM THE CINDER/SLAG FILL AREA

ANALYTICAL[1] PARAMETERS	SAMPLE DESIGNATION/ANALYTICAL RESULTS[2]												
	PE40-S-P	PE41-S-P	PE42-S-P	PE43-S-P	PE44-S-P	PE45-S-B	PE46-S-B	PE47-S-B[7]	PE48-S-B	PE49-S-B	PE50-S-B	PE51-S-B	PE52-S-B
Volatile Organics:													
Benzene	0.011U	0.010U	0.013U	0.010U	0.011U	0.011U	0.010U	0.013U	0.011U	0.011U	0.012U	0.010U	0.010U
Semivolatile Organics:													
2-Methylnaphthalene	0.39U	0.38U	0.35U	0.38U	0.39U	0.36U	0.38U	0.36U	0.36U	0.35U	0.43U	0.38U	0.37U
Acenaphthene	0.39U	0.38U	0.35U	0.38U	0.39U	0.36U	0.38U	0.36U	0.36U	0.35U	0.43U	0.38U	0.37U
Acetophenone	0.39U	0.38U	0.35U	0.38U	0.39U	0.36U	0.38U	0.36U	0.36U	0.35U	0.43U	0.38U	0.37U
Anthracene	0.39U	0.38U	0.35U	0.045J	0.39U	0.36U	0.38U	0.36U	0.36U	0.35U	0.43U	0.090J	0.37U
Benzo(a)anthracene	0.050J	0.38U	0.35U	0.17J	0.39U	0.36U	0.38U	0.36U	0.36U	0.35U	0.43U	0.66	0.37U
Benzo(a)pyrene	0.079J	0.38U	0.35U	0.24J	0.39U	0.36U	0.38U	0.36U	0.36U	0.35U	0.43U	0.54	0.37U
Benzo(b)fluoranthene	0.11J	0.38U	0.35U	0.32J	0.39U	0.36U	0.38U	0.36U	0.36U	0.35U	0.43U	0.72	0.37U
Benzo(k)fluoranthene	0.057J	0.38U	0.35U	0.12J	0.39U	0.36U	0.38U	0.36U	0.36U	0.35U	0.43U	0.67	0.37U
Carbazole	0.39U	0.38U	0.35U	0.044J	0.39U	0.36U	0.38U	0.36U	0.36U	0.35U	0.43U	0.38U	0.37U
Chrysene	0.074J	0.38U	0.35U	0.16J	0.39U	0.36U	0.38U	0.36U	0.36U	0.35U	0.43U	0.64	0.37U
Dibenzo(a,h)anthracene	0.39U	0.38U	0.35U	0.057J	0.39U	0.36U	0.38U	0.36U	0.36U	0.35U	0.43U	0.15J	0.37U
Dibenzofuran	0.39U	0.38U	0.35U	0.38U	0.39U	0.36U	0.38U	0.36U	0.36U	0.35U	0.43U	0.38U	0.37U
Fluoranthene	0.098J	0.38U	0.35U	0.27J	0.39U	0.36U	0.38U	0.36U	0.36U	0.35U	0.43U	0.94	0.37U
Fluorene	0.39U	0.38U	0.35U	0.38U	0.39U	0.36U	0.38U	0.36U	0.36U	0.35U	0.43U	0.38U	0.37U
Indeno(1,2,3-cd)pyrene	0.064J	0.38U	0.35U	0.23J	0.39U	0.36U	0.38U	0.36U	0.36U	0.35U	0.43U	0.40	0.37U
Naphthalene	0.39U	0.38U	0.35U	0.046J	0.39U	0.36U	0.38U	0.36U	0.36U	0.35U	0.43U	0.38U	0.37U
Pyrene	0.075J	0.38U	0.35U	0.21J	0.39U	0.36U	0.38U	0.36U	0.36U	0.35U	0.43U	0.78	0.37U
Pesticide/PCBs:													
Alpha-BHC	0.002U	0.0019U	0.0018U	0.002U	0.002U	0.0018U	0.0019U	0.0019U	0.0018U	0.0018U	0.0022U	0.0019U	0.0019U
Dieldrin	0.0039U	0.0038U	0.0035U	0.0038U	0.0039U	0.0036U	0.0038U	0.0036U	0.0036U	0.0036U	0.0043U	0.0038U	0.0037U
PCB Aroclor-1254	0.039U	0.038U	0.035U	0.038U	0.039U	0.036U	0.038U	0.036U	0.036U	0.036U	0.043U	0.038U	0.037U
Metals:													
Antimony	0.53UL	0.52UL	0.47UL	0.86UL	0.86UL	0.80UL	0.83UL	0.81UL	0.79UL	0.50UL	0.58UL	0.52UL	0.50UL
Arsenic	5.3	2.9	0.62U	2.7B	0.70U	2.1B	1.1B	2.0B	3.8B	2.2	7.0	3.0	2.2
Barium	72.9	42.2	1.4	12.8	3.4	5.8	5.6	3.9	12.5	21.9	45.1	22.7	45.6
Cadmium	0.34	0.045U	0.041U	0.093U	0.093U	0.087U	0.089U	0.087U	0.085	0.043U	0.051UL	0.045U	0.043U
Chromium	26.3	14.2	1.0	11.8	6.4	4.8	12.6	5.5	8.8	12.2	25.2	16.2	10.7
Iron	11,900	12,300	758	10,500	1,330	4,990	9,360	5,550	8,830	10,300	26,500	12,600	9,570
Lead	76.1	10.5	0.9B	12.8K	3.3K	4.7J	3.1K	2.0J	4.4K	5.1	14.4	8.5	6.3
Manganese	368	98.1	19.4	70.6	5.6	10.5	3.8	9.0	77.9	35.4	76.2	74.9	120
Selenium	0.75L	0.69L	0.39UL	1.1UL	1.1U	1.0U	1.1U	1.0U	1.0U	0.88L	2.0J	0.68L	0.68L
Silver	0.16U	0.16U	0.14U	0.23U	0.23U	0.22U	0.22U	0.22U	0.21U	0.15U	0.18U	0.16U	0.15U
Thallium	0.79U	0.77U	0.7U	1.2UL	1.2UL	1.1UL	1.2UL	1.1UL	1.1UL	0.73U	0.86UL	0.77U	0.74U
Zinc	182J	37.9J	4.0J	65.4	6.0L	14.8	16.7	10.0	8.8	15.4J	32.0J	29.8J	25.5J

Notes:

(1) - Each sample was analyzed for the Target Compound List (TCL) volatile organic benzene; the TCL semivolatile organics 2-methylnaphthalene, acenaphthene, acetophenone, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, carbazole, chrysene, dibenzo(a,h)anthracene, dibenzofuran, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, napthalene and pyrene; the TCL pesticides alpha-BHC and dieldrin; the TCL PCB aroclor-1254; and the Target Analyte List metals antimony, arsenic, barium, cadmium, chromium, iron, lead, manganese, selenium, silver, thallium and zinc.

(2) - All results are in milligrams per kilogram.

(3) - These are cleanup standards included in the Record of Decision for the Crater site for the Yellow Parcel pipeline

(4) - These are background concentrations developed for other portions of the Crater site that were approved by EPA

(5) - PE2-S-P is a duplicate collected at sample location PE1-S-P

(6) - PE23-S-B is a duplicate collected at sample location PE22-S-B

(7) - PE47-S-B is a duplicate collected at sample location PE45-S-B

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB-1

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: T2298

Matrix: (soil/water) WATER Lab Sample ID: T2298-2

Sample wt/vol: 5 (g/mL) ML Lab File ID: T2298-2A55

Level: (low/med) LOW Date Received: 10/05/01

% Moisture: not dec. _____ Date Analyzed: 10/09/01

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB-2

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: U2298

Matrix: (soil/water) WATER Lab Sample ID: U2298-1

Sample wt/vol: 5 (g/mL) ML Lab File ID: U2298-1A55

Level: (low/med) LOW Date Received: 10/16/01

% Moisture: not dec. _____ Date Analyzed: 10/17/01

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	10	U

FORM I VOA-1 OLM04.2

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB-3

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: U2298

Matrix: (soil/water) WATER Lab Sample ID: U2298-2

Sample wt/vol: 5 (g/mL) ML Lab File ID: U2298-2A55

Level: (low/med) LOW Date Received: 10/16/01

% Moisture: not dec. _____ Date Analyzed: 10/17/01

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	10	U

FORM I VOA-1 OLM04.2

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-5

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: U2298

Matrix: (soil/water) WATER Lab Sample ID: U2298-3

Sample wt/vol: 5 (g/mL) ML Lab File ID: U2298-3A55

Level: (low/med) LOW Date Received: 10/16/01

% Moisture: not dec. _____ Date Analyzed: 10/17/01

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	10	U

FORM I VOA-1 OLM04.2

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-1

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: R2298

Matrix: (soil/water) WATER Lab Sample ID: R2298-1

Sample wt/vol: 5 (g/mL) ML Lab File ID: R2298-1B55

Level: (low/med) LOW Date Received: 09/22/01

% Moisture: not dec. _____ Date Analyzed: 09/28/01

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-2 ~~FB-2~~

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: R2298

Matrix: (soil/water) WATER Lab Sample ID: R2298-2

Sample wt/vol: 5 (g/mL) ML Lab File ID: R2298-2B55

Level: (low/med) LOW Date Received: 09/26/01

% Moisture: not dec. _____ Date Analyzed: 09/28/01

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIPBLANK

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: T2298

Matrix: (soil/water) WATER Lab Sample ID: T2298-1

Sample wt/vol: 5 (g/mL) ML Lab File ID: T2298-1A55

Level: (low/med) LOW Date Received: 10/02/01

% Moisture: not dec. _____ Date Analyzed: 10/05/01

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-4

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: T2298

Matrix: (soil/water) WATER Lab Sample ID: T2298-3

Sample wt/vol: 5 (g/mL) ML Lab File ID: T2298-3A55

Level: (low/med) LOW Date Received: 10/05/01

% Moisture: not dec. _____ Date Analyzed: 10/09/01

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PE7-S-BRE

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

Matrix: (soil/water) SOIL Lab Sample ID: Q2298-7

Sample wt/vol: 5.70(g/mL) G Lab File ID: Q2298-7RB73

Level: (low/med) LOW Date Received: 09/26/01

% Moisture: not dec. 19 Date Analyzed: 09/28/01

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(ul) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
71-43-2	Benzene	11	U	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PE9-S-BRE

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

Matrix: (soil/water) SOIL Lab Sample ID: Q2298-9

Sample wt/vol: 6.22(g/mL) G Lab File ID: Q2298-9RB73

Level: (low/med) LOW Date Received: 09/26/01

% Moisture: not dec. 11 Date Analyzed: 09/28/01

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(ul) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
71-43-2	Benzene	10	U

UJ

20

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PE10-S-B

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

Matrix: (soil/water) SOIL Lab Sample ID: Q2298-10

Sample wt/vol: 5.03 (g/mL) G Lab File ID: Q2298-10B73

Level: (low/med) LOW Date Received: 09/26/01

% Moisture: not dec. 9 Date Analyzed: 09/28/01

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(ul) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
71-43-2	Benzene	11	U

UJ

FORM I VOA-1 OLM04.2

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FB-1

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: T2298

Matrix: (soil/water) WATER Lab Sample ID: T2298-2

Sample wt/vol: 900 (g/mL) ML Lab File ID: T2298-2A66

Level: (low/med) LOW Date Received: 10/05/01

% Moisture: _____ decanted: (Y/N)___ Date Extracted:10/07/01

Concentrated Extract Volume: 1000(uL) Date Analyzed: 10/08/01

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
98-86-2	Acetophenone	11	U
91-20-3	Naphthalene	11	U
91-57-6	2-Methylnaphthalene	11	U
83-32-9	Acenaphthene	11	U
132-64-9	Dibenzofuran	11	U
86-73-7	Fluorene	11	U
120-12-7	Anthracene	11	U
86-74-8	Carbazole	11	U
206-44-0	Fluoranthene	11	U
129-00-0	Pyrene	11	U
56-55-3	Benzo(a)anthracene	11	U
218-01-9	Chrysene	11	U
205-99-2	Benzo(b)fluoranthene	11	U
207-08-9	Benzo(k)fluoranthene	11	U
50-32-8	Benzo(a)pyrene	11	U
193-39-5	Indeno(1,2,3-cd)pyrene	11	UJ
53-70-3	Dibenzo(a,h)anthracene	11	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB-2

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: U2298

Matrix: (soil/water) WATER Lab Sample ID: U2298-1

Sample wt/vol: 1000 (g/mL) ML Lab File ID: U2298-1B60

Level: (low/med) LOW Date Received: 10/16/01

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 10/16/01

Concentrated Extract Volume: 1000(uL) Date Analyzed: 10/18/01

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ____ Extraction: (Type) CONT

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
98-86-2	Acetophenone	10	U
91-20-3	Naphthalene	10	U
91-57-6	2-Methylnaphthalene	10	U
83-32-9	Acenaphthene	10	U
132-64-9	Dibenzofuran	10	U
86-73-7	Fluorene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB-3

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: U2298

Matrix: (soil/water) WATER Lab Sample ID: U2298-2

Sample wt/vol: 960 (g/mL) ML Lab File ID: U2298-2B60

Level: (low/med) LOW Date Received: 10/16/01

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 10/16/01

Concentrated Extract Volume: 1000(uL) Date Analyzed: 10/18/01

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ____ Extraction: (Type) CONT

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
98-86-2	Acetophenone	10	U
91-20-3	Naphthalene	10	U
91-57-6	2-Methylnaphthalene	10	U
83-32-9	Acenaphthene	10	U
132-64-9	Dibenzofuran	10	U
86-73-7	Fluorene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U

1E

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB-1 ✓

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: T2298

Matrix: (soil/water) WATER Lab Sample ID: T2298-2 ✓

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) _____ Date Received: 10/05/01 ✓

Extraction: (Type) SEPF Date Extracted: 10/08/01 ✓

Concentrated Extract Volume: 10000(uL) Date Analyzed: 10/10/01 ✓

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U ✓
60-57-1	Dieldrin	0.10	U ✓
11097-69-1	Aroclor-1254	1.0	U ✓

1E

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB-2

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: U2298

Matrix: (soil/water) WATER Lab Sample ID: U2298-1

Sample wt/vol: 950.0 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) _____ Date Received: 10/16/01

Extraction: (Type) SEPF Date Extracted: 10/16/01

Concentrated Extract Volume: 10000(uL) Date Analyzed: 10/17/01

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
319-84-6	alpha-BHC	0.053	U
60-57-1	Dieldrin	0.10	U
11097-69-1	Aroclor-1254	1.0	U

1E

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB-3

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: U2298

Matrix: (soil/water) WATER Lab Sample ID: ~~U2298-2~~

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) _____ Date Received: 10/16/01

Extraction: (Type) SEPF Date Extracted: 10/16/01

Concentrated Extract Volume: 10000(uL) Date Analyzed: 10/17/01

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
60-57-1	Dieldrin	0.10	U
11097-69-1	Aroclor-1254	1.0	U

1E

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PE5-S-PDL ✓

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

Matrix: (soil/water) SOIL Lab Sample ID: Q2298-5 ✓

Sample wt/vol: 30.0(g/mL) G Lab File ID:

% Moisture: 11 ✓ Decanted: (Y/N) N Date Received: 09/26/01 ✓

Extraction: (Type) SONC Date Extracted: 09/27/01 ✓

Concentrated Extract Volume: 5000(uL) Date Analyzed: 10/01/01 ✓

Injection Volume: 1.0(uL) Dilution Factor: 5.0 ✓

GPC Cleanup: (Y/N) Y pH: 6.4 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
319-84-6	alpha-BHC	9.6	U	✓
60-57-1	Dieldrin	18	U	✓
11097-69-1	Aroclor-1254	180	U	✓

U. S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB-1

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: T2298 SAS No.: SDG No.: T2298

Matrix (soil/water): WATER Lab Sample ID: T2298-2

Level (low/med): LOW Date Received: 10/05/01

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-36-0	Antimony	2.5	U		P
7440-38-2	Arsenic	2.8	U		P
7440-39-3	Barium	0.85	B		P
7440-43-9	Cadmium	0.40	U		P
7440-47-3	Chromium	0.50	U		P
7439-89-6	Iron	12.4	U		P
7439-92-1	Lead	1.6	U		P
7439-96-5	Manganese	0.20	U		P
7782-49-2	Selenium	3.7	U		P
7440-22-4	Silver	0.70	U		P
7440-28-0	Thallium	3.5	U		P
7440-66-6	Zinc	5.8	U		P
	Cyanide	0.80	U		CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U. S. EPA-CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB-2

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: U2298

Matrix (soil/water): WATER Lab Sample ID: U2298-1

Level (low/med): LOW Date Received: 10/16/01

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7440-36-0	Antimony	3.7	U		P	UL(↓CRDL)
7440-38-2	Arsenic	3.1	B		P	
7440-39-3	Barium	4.5	B		P	
7440-43-9	Cadmium	0.40	U		P	
7440-47-3	Chromium	2.2	B		P	
7439-89-6	Iron	22.6	U		P	
7439-92-1	Lead	2.2	U		P	UL(↓CRDL)
7439-96-5	Manganese	0.66	B		P	
7782-49-2	Selenium	4.8	U		P	
7440-22-4	Silver	1.0	U		P	
7440-28-0	Thallium	5.2	U		P	
7440-66-6	Zinc	1.1	U		P	UL(↓CRDL)
	Cyanide	0.50	U		CA	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U. S. EPA-CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB-3

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: U2298

Matrix (soil/water): WATER Lab Sample ID: U2298-2

Level (low/med): LOW Date Received: 10/16/01

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7440-36-0	Antimony	3.7	U		P	UL(<CRDL)
7440-38-2	Arsenic	3.0	U		P	
7440-39-3	Barium	0.84	B		P	
7440-43-9	Cadmium	0.40	U		P	
7440-47-3	Chromium	0.90	U		P	
7439-89-6	Iron	22.6	U		P	
7439-92-1	Lead	2.2	U		P	UL(<CRDL)
7439-96-5	Manganese	0.21	B		P	
7782-49-2	Selenium	4.8	U		P	
7440-22-4	Silver	1.0	U		P	
7440-28-0	Thallium	5.2	U		P	
7440-66-6	Zinc	1.1	U		P	UL(<CRDL)
	Cyanide	0.50	U		CA	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

3

SECTION 3

ORGANIC DATA SUPPORT DOCUMENTATION

A. SDG Q2298

Organic Analyses Support Documentation

Environmental Standards Project Name: Penn E&R LPTDV
Sample Collection Dates: 9/21 & 25/01
Job Number: Y1101698
Project Manager: Don Lancaster
Laboratory: CompuChem

Reviewed By: Meg Michell
Approved By: W
Completion Date: 10/31/01

Applicable Sample No's.: ☒ Refer to Table 1 in the Quality Assurance Review

Sample No.	Lab. Control No.
SD6 Q2298	

Deliverables: CLP ☒ Tier I ☐ Tier II ☐ Limited ☐ Other ____

The following table indicates criteria which were examined, the identified problems, and support documentation attachments.

	Criteria Examined in Detail: Check (✓) If Yes or Footnote Letter for Comments Below				Problems Identified: Check (✓) If Yes or Footnote Number for Comments Below				Support Documentation Attachments: Check (✓) If Yes -- or Identify Attachment No.			
	VOA Method OLM04.2	BNA Method OLM04.2	PEST / PCB Method OLM04.2	Other Method(s)	VOA Method OLM04.2	BNA Method OLM04.2	PEST / PCB Method OLM04.2	Other Method(s)	VOA Method OLM04.2	BNA Method OLM04.2	PEST / PCB Method OLM04.2	Other Method(s)
Holding Times	X	X	X						X	X	X	
Blank Analysis Results: Target Compounds	X	X	X						X	X	X	
Blank Analysis Results: TICs												
System Mntr. Cmpds. &/or Surrogate Spike Rslts.	X	X	X		X				X	X	X	
Matrix Spike / Matrix Spike Duplicate Results	X	X	X						X	X	X	
Blank Spike Results												
Duplicate Analysis Results ☒ Field ☐ Lab	X	X	X									
Qualitative Identification: Target Compounds	X	X	X									
Qualitative Identification: TICs												
DFTPP & BFB Mass Tuning	X	X							X	X		
GC Instrument Performance			X								X	
Initial Calibrations	X	X	X						X	X	X	
Continuing Calibrations	X	X	X			X			X	X	X	
Quantitation of Results	X	X	X									
DDT / Endrin Breakdown			X								X	
Surrogate Retention Time Shifts	X	X	X								X	
Internal Standards Performance	X	X							X	X		
Resolution Check Standards			X								X	
Analytical Sequence	X	X	X						X	X	X	
Florisil Cartridge Check & GPC Calibration			X								X	
GC Column Agreement			X								X	
Others: Condition upon receipt	X	X	X						X	X	X	

Comments: ____

BLANK ANALYSIS RESULTS FOR TARGET ORGANIC COMPOUNDS

Fraction (1)	Matrix (Aq., S)	Blank Type (2)	Blank Sample Number	Contaminant	Concentration (units)	Qualification Limit 5x	Qualification Limit 10x
V	S-L	MB	VBLKQA	None detected			
			VBLKPS				
	Aq	SB	VHBLKPS				

1 – V = Volatile; S = Semivolatile; P = Pesticide/PCB; O = Other: _____

Aq. = Aqueous; S = Solid

2 – MB = Method Blank; TB = Trip Blank; EB = Equipment Rinse Blank; FB = Field Blank
IB = Instrument Blank; SB = Storage Blank

* = Inferred from instrument printouts and/or supporting data; mass spectra not provided.

+ = Contaminant observed on one column only.

Notes: _____

2B
SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

Level: (low/med) LOW

	EPA SAMPLE NO.	SMC1 (TOL) #	SMC2 (BFB) #	SMC3 (DCE) #	OTHER	TOT OUT
01	VBLKQA	100	98	98		0
02	PE1SP	98	96	104		0
03	PE2SP	101	99	107		0
04	PE3SP	99	98	104		0
05	PE4-S-P	98	99	113		0
06	PE5-S-P	116	84	112		0
07	PE6-S-P	102	95	120		0
08	PE7-S-B	102	106	125*	J/UJ (No⊕)	1
09	PE8-S-B	102	104	121		1
10	PE9-S-B	102	102	125*	J/UJ (No⊕)	1
11	PE10-S-B	104	104	128*	J/UJ (No⊕)	1
12	PE3SPMS	106	104	128*	Not out in original	1
13	PE3SPMSD	103	103	138*		1
14	PE7-S-BRE	103	109	132*	J/UJ	1
15	PE9-S-BRE	104	104	132*	same as original	1
16	PE10-S-BRE	105	102	132*	confirm Matrix effect	1
17	VBLKPS	103	100	100		0
18	PE11-S-B	110	93	98		0
19	PE12-S-B	108	105	96		0
20	PE13-S-B	110	98	98		0
21	VHBLKPS	106	99	98		0
22						
23						
24						
25						
26						
27						
28						
29						
30						

		QC LIMITS
SMC1 (TOL)	= Toluene-d8	(84-138)
SMC2 (BFB)	= Bromofluorobenzene	(59-113)
SMC3 (DCE)	= 1,2-Dichloroethane-d4	(70-121)

Column to be used to flag recovery values

* Values outside of contract required QC limits

FORM 3
SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

Matrix Spike - Sample No.: PE3SP Level:(low/med) LOW

manual integrations performed → o/c

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Benzene	52.15	0.00	62.72	120	66-142

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Benzene	55.92	61.83	110	9	21	66-142

9 → RPD calc'd incorrectly based on concentration. Must be calc'd according to Method (exhibit D 12.2.4.2) based on %R

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

* Values outside of QC limits

RPD: 0 out of 1 outside limits
Spike Recovery: 0 out of 2 outside limits

COMMENTS:

In addition, due to the difference in the spike added - RPD b/t concentrations is meaningless.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PE3SPMS

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

Matrix: (soil/water) SOIL Lab Sample ID: WG13107-4

Sample wt/vol: 5.64 (g/mL) G Lab File ID: WG13107-4B73

Level: (low/med) LOW Date Received: 09/22/01

% Moisture: not dec. 15 Date Analyzed: 09/28/01

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(ul) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
71-43-2	Benzene	63	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PE3SPMSD

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

Matrix: (soil/water) SOIL Lab Sample ID: WG13107-5

Sample wt/vol: 5.26 (g/mL) G Lab File ID: WG13107-5B73

Level: (low/med) LOW Date Received: 09/22/01

% Moisture: not dec. 15 Date Analyzed: 09/28/01

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(ul) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
71-43-2	Benzene	62	

4A
VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLKQA

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

Lab File ID: WG13117-1B73 Lab Sample ID: WG13117-1

Date Analyzed: 09/27/01 Time Analyzed: 1908

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) Y

Instrument ID: 5972HP73

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	PE1SP	Q2298-1	Q2298-1B73	2008
02	PE2SP	Q2298-2	Q2298-2B73	2035
03	PE3SP	Q2298-3	Q2298-3B73	2102
04	PE4-S-P	Q2298-4	Q2298-4B73	2128
05	PE5-S-P	Q2298-5	Q2298-5B73	2155
06	PE6-S-P	Q2298-6	Q2298-6B73	2221
07	PE7-S-B	Q2298-7	Q2298-7B73	2248
08	PE8-S-B	Q2298-8	Q2298-8B73	2314
09	PE9-S-B	Q2298-9	Q2298-9B73	2341
10	PE10-S-B	Q2298-10	Q2298-10B73	0008
11	PE3SPMS	WG13107-4	WG13107-4B73	0155
12	PE3SPMSD	WG13107-5	WG13107-5B73	0221
13	PE7-S-BRE	Q2298-7	Q2298-7RB73	0248
14	PE9-S-BRE	Q2298-9	Q2298-9RB73	0315
15	PE10-S-BRE	Q2298-10	Q2298-10RB73	0341
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

COMMENTS:

page 1 of 1

FORM IV VOA OLM04.2

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKQA

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

Matrix: (soil/water) SOIL Lab Sample ID: WG13117-1

Sample wt/vol: 5.00(g/mL) G Lab File ID: WG13117-1B73

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 09/27/01

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(ul) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
71-43-2	Benzene	10	U

FORM I VOA-1 OLM04.2

4A
VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLKPS

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

Lab File ID: WG13107-1A73 Lab Sample ID: WG13107-1

Date Analyzed: 09/28/01 Time Analyzed: 0951

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) Y

Instrument ID: 5972HP73

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	PE11-S-B	Q2298-11	Q2298-11RA73	1024
02	PE12-S-B	Q2298-12	Q2298-12RA73	1051
03	PE13-S-B	Q2298-13	Q2298-13RA73	1117
04	VHBLKPS	WG13107-6	WG13107-6A73	1150
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

COMMENTS:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKPS

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

Matrix: (soil/water) SOIL states 10ml on Run Log Lab Sample ID: WG13107-1

Sample wt/vol: 5.00(g/mL) G Lab File ID: WG13107-1A73

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 09/28/01

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(ul) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
71-43-2	Benzene	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VHBLKPS

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

Matrix: (soil/water) SOIL Lab Sample ID: WG13107-6

Sample wt/vol: 5.00(g/mL) G Lab File ID: WG13107-6A73

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 09/28/01

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (ul) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
71-43-2	Benzene	10	U

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

Lab File ID: BF010831A73 BFB Injection Date: 08/31/01

Instrument ID: 5972HP73 BFB Injection Time: 1047

GC Column: SPB-624 ID: 0.32 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	19.0
75	30.0 - 66.0% of mass 95	42.5
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.9
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 120.0% of mass 95	56.2
175	4.0 - 9.0% of mass 174	4.0 (7.1)1
176	93.0 - 101.0% of mass 174	54.6 (97.1)1
177	5.0 - 9.0% of mass 176	3.6 (6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD050IT	VSTD050IT	CS010831A73	08/31/01	1113
02	VSTD020IT	VSTD020IT	CT010831A73	08/31/01	1140
03	VSTD010IT	VSTD010IT	CU010831A73	08/31/01	1206
04	VSTD100IT	VSTD100IT	CV010831A73	08/31/01	1232
05	VSTD200IT	VSTD200IT	CW010831A73	08/31/01	1258
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

✓ 12 hr

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

Instrument ID: 5972HP73 Calibration Date(s): 08/31/01 08/31/01

Heated Purge: (Y/N) Y Calibration Times: 1113 1258

GC Column: SPB-624 ID: 0.32(mm)

LAB FILE ID: RRF10 = CU010831A73 RRF20 = CT010831A73
RRF50 = CS010831A73 RRF100= CV010831A73 RRF200= CW010831A73

COMPOUND	RRF10	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Benzene *	2.172	2.359	2.315	1.914	2.083	2.169	8.3*
Toluene-d8	1.686	2.144	2.030	1.509	1.776	1.829	14.1
Bromofluorobenzene *	0.740	0.932	0.896	0.677	0.799	0.809	13.1*
1,2-Dichloroethane-d4	3.491	3.955	3.587	3.021	3.321	3.475	9.9

* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.

COMPUCHEM a division of Liberty Analytical Corp DATE 8 / 31 / 1 INITIAL TIME OF TUNE 1047 SHIFT/S(A) ___ (B) ___

GC/MS VOLATILE RUN LOG TIME TUNE EXPIRES 2247 LINKER /METHOD SolMeOH - NaSO4

COMPUCHEM .LOGBOOK 11 ZZZ 2 (5972hp73)

PREVENTIVE MAINTENANCE None

205 162

	INJECTED	FILE NAME	INTERNAL STD	DATE	TIME	CLIENT ID#	CASE/SDG#	AMOUNT INJECTED	CHEMIST	COMMENTS(ETC.)/DISPOSITION
1		BF010831A73	/	8/31/1	1047	BFB	—	2ml	2429	LCD-SCD
2		CS010831A73	/	/ /	1113	VSTD050 IT	—	10ml		
3		CT010831A73	/	/ /	1140	VSTD020 IT	—			
4		CU010831A73	/	/ /	1206	VSTD010 IT	—			
5		CV010831A73	/	/ /	1232	VSTD100 IT	—			
6		CW010831A73	/	/ /	1258	VSTD200 IT	—			
7		CWG12495-1A73	/	/ /	1519	VBLKMJ	VARIOUS			
8		E0085-1A73	/	/ /	1610	E0085	E0085	5.15		
9		E0085-2A73	/	/ /	1637	E0086		6.23		
10	/	E0085-3A73	SL	/ /	1703	E0087		5.72		
11		E0085-4A73	/	/ /	1729	E0088		5.62		
12	/	E0085-5A73	SL	/ /	1755 MJH 8-31-1	E0089		6.02		
13		E0085-6A73	/	/ /	1822	E0090		5.84		
14		E0085-7A73	/	/ /	1848	E0091		5.07		
15		E0085-8A73	/	/ /	1914	E0092		5.24		
16		E0085-9A73	/	/ /	1940	E0093		5.75		
17		WG12495-4A73	/	/ /	2006	E0093MS		5.73		
18		WG12495-5A73	/	/ /	2033	E0093MSD		5.63		
19		E0085-10A73	/	/ /	2059	E0094		5.19		
20		E0085-11A73	/	/ /	2125	E0095		5.68		
21		E0085-3RA73	X	/ /	~~2151~~ MJH 8-31-01	E0087		4.96		Sample moved to #71
22	/	E0085-5RA73	SL	/ /	2151	E0089		5.00gr	2323	From dry and Sn
23	/	WG12495-6A73	X	OK / /	2218	VHBLKMJ		10mL	2429	Samples remaining
24				/ /						

	Tune	STANDARDS Analytical	Int. Std.
Std. ID #	7009	TN192	
Lot #	~~60120~~ 51853 EC 8-31-1		60120 EC 8-31-1 ~~51850~~

SUPERVISOR APPROVAL ___

DATE 8-31-2001

The presence of the Chemist's employee ID number, or signature, on this run log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist together with the chemist's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation.

5/17/01.doc

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

Lab File ID: BF010927B73 BFB Injection Date: 09/27/01

Instrument ID: 5972HP73 BFB Injection Time: 1813

GC Column: SPB-624 ID: 0.32 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	15.6
75	30.0 - 66.0% of mass 95	39.8
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 120.0% of mass 95	61.4
175	4.0 - 9.0% of mass 174	4.6 (7.5)1
176	93.0 - 101.0% of mass 174	59.4 (96.8)1
177	5.0 - 9.0% of mass 176	3.8 (6.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD050LW	VSTD050LW	GS010927B73	09/27/01	1842
02	VBLKQA	WG13117-1	WG13117-1B73	09/27/01	1908
03	PE1SP	Q2298-1	Q2298-1B73	09/27/01	2008
04	PE2SP	Q2298-2	Q2298-2B73	09/27/01	2035
05	PE3SP	Q2298-3	Q2298-3B73	09/27/01	2102
06	PE4-S-P	Q2298-4	Q2298-4B73	09/27/01	2128
07	PE5-S-P	Q2298-5	Q2298-5B73	09/27/01	2155
08	PE6-S-P	Q2298-6	Q2298-6B73	09/27/01	2221
09	PE7-S-B	Q2298-7	Q2298-7B73	09/27/01	2248
10	PE8-S-B	Q2298-8	Q2298-8B73	09/27/01	2314
11	PE9-S-B	Q2298-9	Q2298-9B73	09/27/01	2341
12	PE10-S-B	Q2298-10	Q2298-10B73	09/28/01	0008
13	PE3SPMS	WG13107-4	WG13107-4B73	09/28/01	0155
14	PE3SPMSD	WG13107-5	WG13107-5B73	09/28/01	0221
15	PE7-S-BRE	Q2298-7	Q2298-7RB73	09/28/01	0248
16	PE9-S-BRE	Q2298-9	Q2298-9RB73	09/28/01	0315
17	PE10-S-BRE	Q2298-10	Q2298-10RB73	09/28/01	0341
18					
19					
20					
21					
22					

12 hrs

7A

VOLATILE CONTINUING CALIBRATION CHECK

Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

Instrument ID: 5972HP73 Calibration Date: 09/27/01 Time: 1842

Lab File ID: GS010927B73 Init. Calib. Date(s): 08/31/01 08/31/01

EPA Sample No.(VSTD050##): VSTD050LW Init. Calib. Times: 1113 1258

Heated Purge: (Y/N) Y

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Benzene	2.169	1.714	0.500	-21.0	25.0
Toluene-d8	1.829	1.628		-11.0	
Bromofluorobenzene	0.809	0.716	0.200	-11.5	25.0
1,2-Dichloroethane-d4	3.475	2.948		-15.2	

All other compounds must meet a minimum RRF of 0.010.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: COMPUCHEM | Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: | SAS No.: SDG No.: Q2298

EPA Sample No. (VSTD050##): VSTD050LW | Date Analyzed: 09/27/01

Lab File ID (Standard): GS010927B73 | Time Analyzed: 1842

Instrument ID: 5972HP73 | Heated Purge: (Y/N) Y

GC Column: SPB-624 ID:0.32(mm)

		IS1(BCM) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CBZ) AREA #	RT #
	12 HOUR STD	65246	9.08	513271	10.28	418935	13.10
	UPPER LIMIT	130492	9.58	1026542	10.78	837870	13.60
	LOWER LIMIT	32623	8.58	256636	9.78	209468	12.60
	EPA SAMPLE						
01	VBLKQA	62219	9.09	462134	10.28	401399	13.09
02	PE1SP	59644	9.09	439975	10.28	371857	13.10
03	PE2SP	58809	9.09	449417	10.28	372448	13.09
04	PE3SP	52885	9.09	403398	10.28	337675	13.09
05	PE4-S-P	55437	9.08	417372	10.28	358028	13.10
06	PE5-S-P	48508	9.09	351555	10.28	249963	13.09
07	PE6-S-P	46406	9.09	354213	10.28	291857	13.09
08	PE7-S-B	45351	9.09	352965	10.28	296783	13.09
09	PE8-S-B	48568	9.09	364573	10.28	311708	13.09
10	PE9-S-B	45370	9.08	344283	10.28	290014	13.09
11	PE10-S-B	43404	9.09	332688	10.28	279389	13.09
12	PE3SPMS	42711	9.08	320161	10.28	267256	13.10
13	PE3SPMSD	42105	9.09	324534	10.28	279179	13.09
14	PE7-S-BRE	42085	9.08	314251	10.27	267931	13.10
15	PE9-S-BRE	42101	9.09	307519	10.28	264942	13.09
16	PE10-S-BRE	40774	9.09	298948	10.28	256474	13.09
17							
18							
19							
20							
21							
22							

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits

COMPUCHEM a division of Liberty Analytical Corp DATE 9/27/2001 INITIAL TIME OF TUNE 1813 SHIFT/S(A) ____ (B) ✓ (C) ____

GC/MS VOLATILE RUN LOG TIME TUNE EXPIRES 0613 LINKER /METHOD Solvent NASH

COMPUCHEM LOGBOOK 11 ZZZ 2 (5972hp73)

PREVENTIVE MAINTENANCE Now

248

170

	REJECTED	FILE NAME	REPORTED	DATE	TIME	CLIENT ID#	CASE/SDG#	AMOUNT INJECTED	CHEMIST	COMMENTS(ETC.)/DISPOSITION
1		BF010927B73	/	9/27/01	1813	BFB	—	2uL	2323	LOD: SIM
2		GSeio927B73	/	/ /	1842	VSIQ0506LW	—	10mL	2429	
3		W613117-1B73	/	/ /	1908	VBLKQA	VARIOUS	5.0mL	2323	
4		EIHEL-1B73	/	/ /	1939	EIHEL	EIHEL	5.64		
5		φ2298-1B73	/	/ /	2008	PE1SP	φ2298	6.06		
6		φ2298-2B73	/	/ /	2035	PE2SP		5.61		
7		φ2298-3B73	/	/ /	2102	PE3SP		5.12		
8		φ2298-4B73	/	/ /	2128	PE4-S-P		5.32		
9		φ2298-5B73	/	/ /	2155	PE5-S-P		4.39		
10		φ2298-6B73	/	/ /	2221	PE6-S-P		4.62		
11	/	φ2298-7B73	SH	/ /	2248	PE7-S-B		5.59		
12		φ2298-8B73	/	/ /	2314	PE8-S-B		5.87		
13	/	φ2298-9B73	SH	/ /	2341	PE9-S-B		6.29		
14	/	φ2298-10B73	SH	9/28/01	0008	PE10-S-B		5.03		
15	/	φ2298-11B73	SH	/ /	0035	PE11-S-B		5.93		
16	/	φ2298-12B73	SH	/ /	0101	PE12-S-B		5.90		
17	/	φ2298-13B73	SH	/ /	0128	PE13-S-B		5.68		
18		W613107-4B73	/	ES / /	0155	PE3SPMS		5.64		
19		W613107-5B73	/	/ /	0221	PE3SPMSD		5.26		
20		φ2298-7RB73	/	ES / /	0248	PE7-S-B RE		5.70		
21		φ2298-9RB73	/	/ /	0315	PE9-S-B RE		6.22		
22		φ2298-10RB73	/	/ /	0341	PE10-S-B RE		5.28		
23				/ /						
24				/ /						

→ Not Reported / provided

	Tune	STANDARDS Analytical	Int. Std.
Std. ID #	7448	TH194	
Lot #	51994		6457

SUPERVISOR APPROVAL Mitchell Cuen 9-28-1

DATE 9-28-1

The presence of the Chemist's employee ID number, or signature, on this run log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist together with the chemist's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation

5/17/01 dee

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

Lab File ID: BF010928A73 BFB Injection Date: 09/28/01

Instrument ID: 5972HP73 BFB Injection Time: 0847

GC Column: SPB-624 ID: 0.32 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	19.6
75	30.0 - 66.0% of mass 95	44.4
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.9
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 120.0% of mass 95	54.5
175	4.0 - 9.0% of mass 174	3.9 (7.1)1
176	93.0 - 101.0% of mass 174	52.7 (96.8)1
177	5.0 - 9.0% of mass 176	3.4 (6.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD050TF	VSTD050TF	CS010928A73	09/28/01	0915
02	VBLKPS	WG13107-1	WG13107-1A73	09/28/01	0951
03	PE11-S-B	Q2298-11	Q2298-11RA73	09/28/01	1024
04	PE12-S-B	Q2298-12	Q2298-12RA73	09/28/01	1051
05	PE13-S-B	Q2298-13	Q2298-13RA73	09/28/01	1117
06	VHBLKPS	WG13107-6	WG13107-6A73	09/28/01	1150
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

12hr

7A

VOLATILE CONTINUING CALIBRATION CHECK

Name: COMPUCHEM | Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: | SAS No.: SDG No.: Q2298

Instrument ID: 5972HP73 | Calibration Date: 09/28/01 Time: 0915

Lab File ID: CS010928A73 | Init. Calib. Date(s): 08/31/01 08/31/01

EPA Sample No.(VSTD050##): VSTD050TF | Init. Calib. Times: 1113 1258

Heated Purge: (Y/N) Y

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Benzene	2.169	2.004	0.500	-7.6	25.0
Toluene-d8	1.829	1.642		-10.2	
Bromofluorobenzene	0.809	0.752	0.200	-7.0	25.0
1,2-Dichloroethane-d4	3.475	3.954		13.8	

All other compounds must meet a minimum RRF of 0.010.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: COMPUCHEM | Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: | SAS No.: SDG No.: Q2298

EPA Sample No. (VSTD050##): VSTD050TF | Date Analyzed: 09/28/01

Lab File ID (Standard): CS010928A73 | Time Analyzed: 0915

Instrument ID: 5972HP73 | Heated Purge: (Y/N) Y

GC Column: SPB-624 ID:0.32(mm)

		IS1(BCM) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CBZ) AREA #	RT #
	12 HOUR STD	43138	9.08	341940	10.27	296716	13.09
	UPPER LIMIT	86276	9.58	683880	10.77	593432	13.59
	LOWER LIMIT	21569	8.58	170970	9.77	148358	12.59
	EPA SAMPLE						
01	VBLKPS	39650	9.08	307408	10.27	263107	13.09
02	PE11-S-B	32334	9.08	282342	10.27	231466	13.09
03	PE12-S-B	34654	9.08	299362	10.27	245154	13.09
04	PE13-S-B	32787	9.08	278972	10.28	229099	13.09
05	VHBLKPS	35113	9.08	287220	10.28	240155	13.09
06							
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits

COMPUCHEM a division of Liberty Analytical Corp DATE 9/28/1 INITIAL TIME OF TUNE 0847 SHIFT/S(A) ___ (B) ___

GC/MS VOLATILE RUN LOG TIME TUNE EXPIRES 2047 LINKER /METHOD SOLMON_NaSO4

COMPUCHEM .LOGBOOK 11 ZZZ 2 (5972hp73)

PREVENTIVE MAINTENANCE None

	REJECTED	FILE NAME	REPORTED	DATE	TIME	CLIENT ID#	CASE/SDG#	AMOUNT INJECTED	CHEMIST	COMMENTS(ETC.)/DISPOSITION
1		BF010928 A73	/	9/28/1	0847	BFB	—	2 ml	2429	LCD-SCD
2		CS010928 A73	/	/ /	0915	VSTD050 ~~LWD~~ JF	—	10 ml		
3		WG13107-1A73	/	/ /	0951	FVBLKPS	VARIOUS	10 ml	?	
4		Q2798-11RA73	/	/ /	1024	PE11-S-B	Q2798	5.74 g		
5		Q2798-12RA73	/	/ /	1051	PE12-S-B		5.93 g		
6		Q2798-13RA73	/	/ /	1117	PE12-S-B		5.8 g		
7		WG13107-6A73	/	/ /	1150	VHBLKPS		10 ml		Storage blk
8				/ /						
9				/ /						
10				/ /						
11				/ /						
12				/ /						
13				/ /						
14				/ /						
15				/ /						
16				/ /						
17				/ /						
18				/ /						
19				/ /						
20				/ /						
21				/ /						
22				/ /						
23				/ /						
24				/ /						

	Tune	STANDARDS Analytical	Int. Std.
Std. ID #	7008	TN194	
Lot #	51994		60157

SUPERVISOR APPROVAL [signature]

DATE 9-28-1

The presence of the Chemist's employee ID number, or signature, on this run log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist together with the chemist's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation.

5/17/01 dce

249

178

all within 48 hrs of collection

COMPUCHEM

a Division of Liberty Analytical

EnCore™ Preparation Worksheet

-238 / -243 / -233

SDG: Q2298 Prepared By: Andrew Walker Date: 9/27/01

	LoginNum	Date	Time	Weight of Jar (g)*	Weight of Jar + Sample (g)	Weight of Sample (g)
1	Q2298-4	09/27/01	0:50	33.28	38.60	5.32 ✓
2	R1		0:52	33.35	38.07	
3	MeOH		0:54	34.61	40.20	
4	Q2298-5		0:56	33.52	37.91	4.39 ✓
5	R1		0:58	33.20	36.79	
6	MeOH		0:59	34.65	39.30	
7	Q2298-6		1:01	33.86	38.48	4.62 ✓
8	R1		1:03	33.16	38.51	
9	MeOH		1:05	35.98	41.40	
10	Q2298-7		1:07	34.08	39.67	5.59 ✓
11	R1		1:08	33.43	39.13	5.70 ✓
12	MeOH		1:10	35.72	41.12	
13	Q2298-8		1:12	33.47	39.34	5.87 ✓
14	R1		1:14	33.58	38.74	
15	MeOH		1:16	35.43	41.45	
16	Q2298-9		1:18	33.24	39.48	6.24 ✓
17	R1		1:20	33.81	40.03	6.22 ✓
18	MeOH		1:22	35.45	41.81	
19	Q2298-10		1:24	33.76	38.79	5.03 ✓
20	R1		1:26	34.20	39.47	5.27 ✓
21	MeOH	↓	1:28	35.64	41.07	

Reported as 5.28 on Form I

Volume of Methanol Added: ~~10~~ 10ml

Lot Numbers of Preservatives: Sodium Bisulfate: T41640 Methanol: CC226

Reviewed By: 10/2/01

Weight of Jar for Sodium Bisulfate preserved Encores is the sum of the weights of the vial, preservative and stir bar

*Weight of Jar for Methanol preserved Encores is the sum of the weights of the vial and preservative

5/20/ dce

within 48 hrs of collection

COMPUCHEM

a Division of Liberty Analytical

EnCore™ Preparation Worksheet

-238 / -243 / -233

SDG: Q2298 Prepared By: Andrew Walker Date: 9/27/01

	LoginNum	Date	Time	Weight of Jar (g)*	Weight of Jar + Sample (g)	Weight of Sample (g)
1	Q2298-11	9/27/01	1:30	34.08	40.01	5.93 ✓
2	R1		1:32	33.97	39.71	5.74 (5.74)
3	MeOH		1:34	35.51	40.93	
4	Q2298-12		1:36	33.32	39.22	5.90 ✓
5	R1		1:38	33.15	39.08	5.93 ✓
6	MeOH		1:40	35.05	40.81	
7	Q2298-13		1:42	33.74	39.42	5.68 ✓
8	R1		1:44	33.54	39.34	5.8 ✓
9	MeOH		1:46	35.15	40.90	
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						

Volume of Methanol Added: 10ml

Lot Numbers of Preservatives: Sodium Bisulfate: T41640 Methanol: CC226

Reviewed By: [illegible] 10/2/01

*Weight of Jar for Sodium Bisulfate preserved Encores is the sum of the weights of the vial, preservative and stir bar

*Weight of Jar for Methanol preserved Encores is the sum of the weights of the vial and preservative

All within 48 hours of collection

COMPUCHEM

a Division of Liberty Analytical

EnCore™ Preparation Worksheet

-238 / -243 / -233

SDG: _____ Prepared By: Andrew Walker Date: 9/22/01

	LoginNum	Date	Time	Weight of Jar (g)*	Weight of Jar + Sample (g)*	Weight of Sample (g)
1	CSFA-092101-PE3-S-3	09/22/01	20:00	34.22	39.86	5.64 ✓
#3 2	R1		20:02	33.44	38.95	
3	MeOH		20:04	29.16	34.29	
4	CSFA-092101-PE3-S-3		20:06	33.10	38.52	5.42 ✓
5	R1		20:08	33.56	38.90	
6	MeOH		20:10	30.93	36.04	
7	CSFA-092101-PE3-S-3		20:12	33.80	39.06	5.26 ✓
8	R1		20:14	33.81	38.54	
9	MeOH		20:16	29.79	35.29	
10	CSFA-092101-PE1-S-P		20:18	33.86	39.92	6.06 ✓
#1 11	R1		20:20	33.75	39.90	
12	MeOH		20:22	30.43	35.85	
13	CSFA-092101-PE2-S-P		20:24	33.42	39.07	5.65 ✓
#2 14	R1		20:26	32.73	38.64	
15	MeOH	✓	20:28	29.98	35.57	
16						
17						
18						
19						
20						
21						

Volume of Methanol Added: 5ml

Lot Numbers of Preservatives: Sodium Bisulfate: _____ Methanol: CC226

Reviewed By: [illegible] 10/2/01

*Weight of Jar for Sodium Bisulfate preserved Encores is the sum of the weights of the vial, preservative and stir bar
*Weight of Jar for Methanol preserved Encores is the sum of the weights of the vial and preservative

Com[illegible]n
a Division of Liberty Analytical Corp.

GC/MS VOA[illegible] Sheet - Soils

Method: SOLM 4

SPP-115[illegible] / -243

Batch #: _____

4

SAMPLENUM	CLIENTID	LOGINNUM	Wt	Time	Date	INST #	Operator	H/T	Volume	Encore Report	Comments
Q2298-1	PE1SP	Q2298	6.06	2008	9-27-01	73	2323			✓	
Q2298-2	PE2SP	Q2298	5.65	2035	↓	↓	↓			✓	
Q2298-3	PE3SP	Q2298	5.42	2102	↓	↓	↓			✓	
WG13107-1	VBLKPS										
WG13107-2	VBLKPT										
WG13107-3	VBLKPU										
WG13107-4	PE3SPMS		5.64		9-27-01	73	2323			✓	ES
WG13107-5	PE3SPMSD		5.26		↓	↓	↓			✓	↓
WG13107-6	VHBLKPS			1150	9-28	77	2429			✓	
Q2298-4	PE4-S-P	Q2298	5.32	2128	9-27-01	73	2323			✓	
Q2298-8	PE8-S-B	Q2298	5.87	2314	↓	↓	↓			✓	
Q2298-10	PE10-S-B	Q2298	5.03		↓	↓	↓			SH	
Q2298-9	PE9-S-B	Q2298	6.24		↓	↓	↓			SH	
Q2298-5	PE5-S-P	Q2298	4.39	2155	↓	↓	↓			✓	
Q2298-6	PE6-S-P	Q2298	4.62	2221	↓	↓	↓			✓	
Q2298-7	PE7-S-B	Q2298	5.54	2248	↓	↓	↓			SH	
Q2298-11	PE11-S-B	Q2298	5.93		↓	↓	↓			SH	
Q2298-12	PE12-S-B	Q2298	5.90		↓	↓	↓			SH	
Q2298-13	PE13-S-B	Q2298	5.68		↓	↓	↓			SH	
Q2298-7R			5.70		9-27-01	73	2323			✓	ES
Q2298-9R			6.22		↓	↓	↓			✓	↓
Q2298-10R			5.28							✓	
Q2298-11A			5.74	1024	9-28	77	2429			✓	
Q2298-12A			5.97	1051	↓	↓	↓			✓	
Q2298-13A			5.8							✓	

Hold 1-3 10/2
4-13 10/6

Due 10/2

closed

RMC 10/2/01

8/27/01.rmh

From metals package:

NUMVALUE	SAMPLENUM	%SOLIDS
6.04	Q2298-1	84.725
6.54	Q2298-2	85.481
5.75	Q2298-3	84.659
6.62	Q2298-4	88.264
7.67	Q2298-5	89.136
6.87	Q2298-6	85.236
8.59	Q2298-7	81.243
6.48	Q2298-8	83.360
10.97	Q2298-9	88.747
7.11	Q2298-10	90.781
7.26	Q2298-11	85.859
6.5	Q2298-12	88.325
6.75	Q2298-13	85.469
5.62	Q2298-3 DUP	83.784
		#DIV/0!
		#DIV/0!

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PE10-S-BRE

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

Matrix: (soil/water) SOIL Lab Sample ID: Q2298-10

Sample wt/vol: ~~5.28~~ (g/mL) G Lab File ID: Q2298-10RB73

Level: (low/med) LOW 5.27 Date Received: 09/26/01

% Moisture: not dec. 9 ✓ Date Analyzed: 09/28/01

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(ul) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
71-43-2	Benzene	10	U	✓ us

FORM I VOA-1 OLM04.2

BLANK ANALYSIS RESULTS FOR TARGET ORGANIC COMPOUNDS

Fraction (1)	Matrix (Aq., S)	Blank Type (2)	Blank Sample Number	Contaminant	Concentration (units)	Qualification Limit 5x	Qualification Limit 10x
S	S	MB	SBLKPH	Semivolatiles - Not Detected	—	—	—
			SBLKZP		—	—	—
			SBLKPZ		—	—	—

1 – V = Volatile; S = Semivolatile; P = Pesticide/PCB; O = Other: _____

Aq. = Aqueous; S = Solid

2 – MB = Method Blank; TB = Trip Blank; EB = Equipment Rinse Blank; FB = Field Blank
IB = Instrument Blank; SB = Storage Blank

* = Inferred from instrument printouts and/or supporting data; mass spectra not provided.

+ = Contaminant observed on one column only.

Notes: _____

2D
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

Level:(low/med) LOW

	EPA SAMPLE NO.	S1 (NBZ)#	S2 (FBP)#	S3 (TPH)#	S4 (PHL)#	S5 (2FP)#	S6 (TBP)#	S7 (2CP)#	S8 (DCB)#	TOT OUT
01	SBLKPH	42	39	41	43	42	42	45	36	0
02	PE1SP	40	38	44	43	42	43	45	32	0
03	PE2SP	42	39	45	45	43	43	48	34	0
04	PE3SP	35	32	38	39	35	33	40	25	0
05	PE3SPMS	37	34	38	39	35	37	40	27	0
06	PE3SPMSD	35	33	38	35	34	36	37	26	0
07	SBLKPZ	73	59	88	72	80	96	82	64	0
08	PE7-S-B	78	64	110	71	90	74	79	57	0
09	PE8-S-B	79	72	84	74	67	81	87	58	0
10	PE9-S-B	72	64	81	72	69	75	84	51	0
11	PE10-S-B	55	49	78	56	61	58	64	46	0
12	PE11-S-B	35	36	66	38	33	42	37	19*	1
13	SBLKZP	59	60	79	62	57	76	67	51	0
14	PE4-S-P	37	37	47	41	37	44	43	27	0
15	PE5-S-P	66	62	72	60	56	60	67	53	0
16	PE6-S-P	57	64	76	64	55	71	69	44	0
17	PE12-S-B	67	73	88	68	67	69	78	53	0
18	PE13-S-B	38	37	47	42	37	38	45	20	0
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										

		QC LIMITS	
S1 (NBZ)	= Nitrobenzene-d5	(23-120)	
S2 (FBP)	= 2-Fluorobiphenyl	(30-115)	
S3 (TPH)	= Terphenyl-d14	(18-137)	
S4 (PHL)	= Phenol-d5	(24-113)	
S5 (2FP)	= 2-Fluorophenol	(25-121)	
S6 (TBP)	= 2,4,6-Tribromophenol	(19-122)	
S7 (2CP)	= 2-Chlorophenol-d4	(20-130)	(advisory)
S8 (DCB)	= 1,2-Dichlorobenzene-d4	(20-130)	(advisory)

Low surrogate recovery; advisory surrogate; Res III FG's dictate action for only one surrogate recovery only; no impact.

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

Matrix Spike - EPA Sample No.: PE3SP Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Acenaphthene	1961	0.00	769.9	39	31-137
Pyrene	1961	0.00	778.8	40	35-142

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Acenaphthene	1961	711.7	36	8	19	31-137
Pyrene	1961	803.1	41	2	36	35-142

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

* Values outside of QC limits

RPD: 0 out of 2 outside limits
Spike Recovery: 0 out of 4 outside limits

COMMENTS:

4B
SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

SBLKPH

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

Lab File ID: WG13069-1A66 Lab Sample ID: WG13069-1

Instrument ID: 5972HP66 Date Extracted: 09/24/01

Matrix: (soil/water) SOIL Date Analyzed: 09/25/01

Level:(low/med) LOW Time Analyzed: 1328

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	PE1SP	Q2298-1	Q2298-1A66	09/25/01
02	PE2SP	Q2298-2	Q2298-2A66	09/25/01
03	PE3SP	Q2298-3	Q2298-3A66	09/25/01
04	PE3SPMS	WG13069-2	WG13069-2A66	09/25/01
05	PE3SPMSD	WG13069-3	WG13069-3A66	09/25/01
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

COMMENTS:

page 1 of 1

FORM IV SV OLM04.2

4B
SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

SBLKZP

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

Lab File ID: WG13122-1JB66 Lab Sample ID: WG13122-1.66

Instrument ID: 5972HP66 Date Extracted: 09/27/01

Matrix: (soil/water) SOIL Date Analyzed: 10/01/01

Level:(low/med) LOW Time Analyzed: 2235

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	PE4-S-P	Q2298-4	Q2298-4JB66	10/01/01
02	PE5-S-P	Q2298-5	Q2298-5JB66	10/01/01
03	PE6-S-P	Q2298-6	Q2298-6JB66	10/02/01
04	PE12-S-B	Q2298-12	Q2298-12JB66	10/02/01
05	PE13-S-B	Q2298-13	Q2298-13JB66	10/02/01
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

COMMENTS:

4B
SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

SBLKPZ

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

Lab File ID: WG13122-1A70 Lab Sample ID: WG13122-1

Instrument ID: 5972HP70 Date Extracted: 09/27/01

Matrix: (soil/water) SOIL Date Analyzed: 09/28/01

Level:(low/med) LOW Time Analyzed: 1334

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	PE7-S-B	Q2298-7	Q2298-7A70	09/28/01
02	PE8-S-B	Q2298-8	Q2298-8A70	09/28/01
03	PE9-S-B	Q2298-9	Q2298-9A70	09/28/01
04	PE10-S-B	Q2298-10	Q2298-10A70	09/28/01
05	PE11-S-B	Q2298-11	Q2298-11A70	09/28/01
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

COMMENTS:

5B
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

Lab File ID: DF010823A66 DFTPP Injection Date: 08/23/01

Instrument ID: 5972HP66 DFTPP Injection Time: 1308

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 80.0% of mass 198	75.8 ✓
68	Less than 2.0% of mass 69	0.0 ✓ (0.0)1 ✓
69	Mass 69 relative abundance	81.2 ✓
70	Less than 2.0% of mass 69	0.6 ✓ (0.7)1 ✓
127	25.0 - 75.0% of mass 198	53.0 ✓
197	Less than 1.0% of mass 198	0.0 ✓
198	Base Peak, 100% relative abundance	100.0 ✓
199	5.0 to 9.0% of mass 198	6.8 ✓
275	10.0 - 30.0% of mass 198	17.8 ✓
365	Greater than 0.75% of mass 198	2.08 ✓
441	Present, but less than mass 443	7.5 ✓
442	40.0 - 110.0% of mass 198	46.8 ✓
443	15.0 - 24.0% of mass 442	8.9 ✓ (18.9)2 ✓

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD050X8	SSTD050X8	HG010823A66	08/23/01	1329
02	SSTD160X8	SSTD160X8	HH010823A66	08/23/01	1409
03	SSTD020X8	SSTD020X8	HI010823A66	08/23/01	1449
04	SSTD120X8	SSTD120X8	HJ010823A66	08/23/01	1531
05	SSTD080X8	SSTD080X8	HK010823A66	08/23/01	1612
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298 10/25/01

Instrument ID: 5972HP66 Calibration Date(s): 08/23/01 / 08/23/01 non-target opd. (N+C)

Calibration Times: 1329 / 1612

LAB FILE ID: RRF20 = HI010823A66 RRF50 = HG010823A66
RRF80 = HK010823A66 RRF120= HJ010823A66 RRF160= HH010823A66

COMPOUND		RRF20	RRF50	RRF80	RRF120	RRF160	$\overline{RRF}$	% RSD
Benzaldehyde		1.444	1.298	0.739	0.525	0.534	0.908	47.8
Phenol	*	1.949	1.836	1.903	1.928	1.903	1.904	2.2*
bis(2-Chloroethyl)ether	*	1.603	1.608	1.596	1.522	1.459	1.558	4.2*
2-Chlorophenol	*	1.337	1.322	1.308	1.282	1.257	1.301	2.5*
2-Methylphenol	*	1.215	1.168	1.179	1.171	1.175	1.182	1.6*
2,2'-oxybis(1-Chloropropane)		3.435	3.223	3.374	3.271	3.092	3.279	4.1
Acetophenone		2.059	2.000	2.023	2.036	1.970	2.018	1.7
4-Methylphenol	*	1.323	1.272	1.230	1.173	1.165	1.233	5.4*
N-Nitroso-di-n-propylamine	*	0.951	0.845	0.922	0.898	0.761	0.875	8.6*
Hexachloroethane	*	0.728	0.706	0.707	0.668	0.652	0.692	4.5*
Nitrobenzene	*	0.502	0.473	0.517	0.500	0.499	0.498	3.1*
Isophorone	*	0.968	0.916	0.907	0.906	0.894	0.918	3.1*
2-Nitrophenol	*	0.214	0.210	0.219	0.210	0.203	0.211	2.8*
2,4-Dimethylphenol	*	0.367	0.363	0.377	0.365	0.364	0.367	1.5*
bis(2-Chloroethoxy)methane	*	0.565	0.540	0.574	0.559	0.542	0.556	2.7*
2,4-Dichlorophenol	*	0.302	0.305	0.307	0.309	0.308	0.306	0.9*
Naphthalene	*	1.037	1.014	0.992	0.968	0.980	0.998	2.8*
4-Chloroaniline		0.455	0.427	0.308	0.323	0.327	0.368	18.4
Hexachlorobutadiene		0.194	0.189	0.190	0.187	0.184	0.189	2.1
Caprolactam		0.141	0.133	0.123	0.137	0.118	0.130	7.3
4-Chloro-3-methylphenol	*	0.366	0.356	0.371	0.357	0.312	0.352	6.7*
2-Methylnaphthalene	*	0.675	0.659	0.663	0.649	0.611	0.651	3.8*
Hexachlorocyclopentadiene		0.286	0.322	0.360	0.375	0.377	0.344	11.4
2,4,6-Trichlorophenol	*	0.384	0.395	0.388	0.389	0.390	0.389	1.0*
2,4,5-Trichlorophenol	*	0.444	0.445	0.441	0.447	0.434	0.442	1.1*
1,1'-Biphenyl		1.441	1.444	1.509	1.465	1.384	1.449	3.1
2-Chloronaphthalene	*	1.164	1.172	1.158	1.100	1.045	1.128	4.8*
2-Nitroaniline		0.596	0.544	0.556	0.553	0.526	0.555	4.7
Dimethylphthalate		1.384	1.393	1.319	1.302	1.275	1.335	3.9
2,6-Dinitrotoluene	*	0.322	0.317	0.335	0.326	0.318	0.324	2.3*
Acenaphthylene	*	1.850	1.847	1.857	1.765	1.679	1.800	4.3*
3-Nitroaniline		0.356	0.347	0.342	0.334	0.320	0.340	4.0
Acenaphthene	*	1.111	1.119	1.078	1.050	1.011	1.074	4.2*
2,4-Dinitrophenol		0.126	0.130	0.184	0.200	0.197	0.167	21.7
4-Nitrophenol		0.226	0.221	0.246	0.253	0.235	0.236	5.5
Dibenzofuran	*	1.568	1.563	1.537	1.494	1.432	1.519	3.7*

* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.

RSD<30%

6D
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

Instrument ID: 5972HP66 Calibration Date(s): 08/23/01 08/23/01

Calibration Times: 1329 1612

EC 10/26/01

LAB FILE ID: RRF20 = HI010823A66 RRF50 = HG010823A66
RRF80 = HK010823A66 RRF120= HJ010823A66 RRF160= HH010823A66

COMPOUND		RRF20	RRF50	RRF80	RRF120	RRF160	$\overline{RRF}$	% RSD
2,4-Dinitrotoluene	*	0.429	0.427	0.463	0.479	0.458	0.451	5.0*
Diethylphthalate		1.515	1.513	1.403	1.494	1.441	1.473	3.4
Fluorene	*	1.203	1.204	1.154	1.168	1.129	1.172	2.8*
4-Chlorophenyl-phenylether	*	0.592	0.583	0.591	0.574	0.555	0.579	2.6*
4-Nitroaniline		0.365	0.350	0.301	0.309	0.301	0.325	9.3
4,6-Dinitro-2-methylphenol		0.133	0.129	0.165	0.180	0.176	0.157	15.3
N-nitrosodiphenylamine (1)		0.574	0.551	0.562	0.558	0.551	0.559	1.7
4-Bromophenyl-phenylether	*	0.218	0.219	0.217	0.213	0.220	0.217	1.3*
Hexachlorobenzene	*	0.260	0.257	0.262	0.273	0.275	0.265	3.0*
Atrazine		0.201	0.127	0.027	0.018	0.022	0.079	103.4
Pentachlorophenol	*	0.150	0.141	0.168	0.173	0.170	0.160	8.6*
Phenanthrene	*	1.137	1.094	1.095	1.095	1.091	1.102	1.8*
Anthracene	*	1.144	1.078	1.075	1.028	0.999	1.065	5.2*
Carbazole		1.065	1.043	0.794	0.822	0.828	0.910	14.5
Di-n-butylphthalate		1.730	1.625	1.773	1.551	1.434	1.623	8.4
Fluoranthene	*	1.215	1.149	1.169	1.106	1.073	1.142	4.8*
Pyrene	*	1.355	1.356	1.349	1.301	1.286	1.329	2.5*
Butylbenzylphthalate		0.894	0.874	0.914	0.818	0.752	0.850	7.7
3,3'-Dichlorobenzidine		0.527	0.495	0.431	0.395	0.387	0.447	13.8
Benzo(a)anthracene	*	1.315	1.258	1.279	1.243	1.217	1.262	2.9*
Chrysene	*	1.236	1.205	1.237	1.258	1.220	1.231	1.6*
bis(2-Ethylhexyl)phthalate		1.307	1.277	1.256	1.241	1.137	1.244	5.2
Di-n-octylphthalate		2.702	2.635	2.633	2.473	2.332	2.555	5.9
Benzo(b)fluoranthene	*	1.645	1.634	1.589	1.661	1.811	1.668	5.1*
Benzo(k)fluoranthene	*	1.573	1.594	1.694	1.615	1.476	1.590	4.9*
Benzo(a)pyrene	*	1.428	1.414	1.394	1.369	1.387	1.398	1.6*
Indeno(1,2,3-cd)pyrene	*	1.350	1.321	1.366	1.327	1.441	1.361	3.6*
Dibenzo(a,h)anthracene	*	1.347	1.329	1.390	1.333	1.392	1.358	2.3*
Benzo(g,h,i)perylene	*	1.378	1.366	1.392	1.361	1.341	1.368	1.4*
Nitrobenzene-d5	*	0.504	0.480	0.506	0.496	0.486	0.494	2.3*
2-Fluorobiphenyl	*	1.281	1.279	1.302	1.291	1.256	1.282	1.3*
Terphenyl-d14	*	0.935	0.952	0.893	0.875	0.901	0.911	3.5*
Phenol-d5	*	1.762	1.706	1.766	1.758	1.720	1.742	1.6*
2-Fluorophenol	*	1.357	1.316	1.386	1.383	1.372	1.363	2.1*
2,4,6-Tribromophenol		0.128	0.124	0.137	0.140	0.138	0.133	5.4
2-Chlorophenol-d4	*	1.227	1.233	1.226	1.175	1.173	1.207	2.5*
1,2-Dichlorobenzene-d4	*	0.899	0.895	0.895	0.849	0.849	0.877	3.0*

(1) Cannot be separated from Diphenylamine
* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.

RSD < 30%

OMPUCHEM a division of Liberty Analytical Corp DATE 8/23/01 INITIAL TIME OF TUNE 1308 SHIFT/S(A) ✓ (B) ___ (C) ___

/MS SEMIVOLATILE RUN LOG TIME TUNE EXPIRES 0108 LINKER /METHOD Q/MOY

MPUCHEM LOGBOOK 4 X(4) 3 (5972hp66)

PREVENTIVE MAINTENANCE Installed new source / Front / Liner / Septa FN 8/24/01

303

269

	FILE NAME		DATE	TIME	CLIENT ID#	CASE/SDG#	AMOUNT INJECTED	CHEMIST	COMMENTS(ETC.)/DISPOSITION
	DF010823A66	/	8/23/01	1308	DFTPP	—	2uL	917	SCD: LCD
	HG010523A66	/	/ /	1329	SSTD050 X8	—			# 51676
	HH010823A66	/	/ /	1409	SSTD160 X8	—			# 51679
	HI010823A66	/	/ /	1449	SSTD020 X8	—			# 51675
	HJ010823A66	/	/ /	1531	SSTD120 X8	—			# 51678
	HK010823A66	/	/ /	1612	SSTD080 X8	—			# 51677
			/ /						
			/ /			MP GOOD			
			/ /						
			/ /						
			/ /						
			/ /						
			/ /						
			/ /			FN 8/23/01			
			/ /						
			/ /						
			/ /						
			/ /						
			/ /						
			/ /						
			/ /						
			/ /						
			/ /						

STANDARDS

	Tune	Analytical	Int. Std.	Column Type
d ID #	7055	SEE COMMENTS	800	RTX-5 SILMS 0.25mm
or #	51435	↓	51818	

SUPERVISOR APPROVAL [signature]

DATE 8-23-01

The presence of the Chemist's employee ID number, or signature, on this run log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist together with the chemist's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation

5/27/01 dcc

5B
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

Lab File ID: DF010925A66 DFTPP Injection Date: 09/25/01

Instrument ID: 5972HP66 DFTPP Injection Time: 0902

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 80.0% of mass 198	53.4✓
68	Less than 2.0% of mass 69	0.0✓(0.0)1✓
69	Mass 69 relative abundance	63.7✓
70	Less than 2.0% of mass 69	0.0✓(0.0)1✓
127	25.0 - 75.0% of mass 198	44.9✓
197	Less than 1.0% of mass 198	0.0✓
198	Base Peak, 100% relative abundance	100.0✓
199	5.0 to 9.0% of mass 198	6.5✓
275	10.0 - 30.0% of mass 198	19.6✓
365	Greater than 0.75% of mass 198	2.06✓
441	Present, but less than mass 443	9.7✓
442	40.0 - 110.0% of mass 198	63.0✓
443	15.0 - 24.0% of mass 442	12.6✓(20.0)2✓

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD050IM	SSTD050IM	HG010925A66	09/25/01	0929
02	SBLKPH	WG13069-1	WG13069-1A66	09/25/01	1328
03	PE1SP	Q2298-1	Q2298-1A66	09/25/01	1407
04	PE2SP	Q2298-2	Q2298-2A66	09/25/01	1447
05	PE3SP	Q2298-3	Q2298-3A66	09/25/01	1527
06	PE3SPMS	WG13069-2	WG13069-2A66	09/25/01	1606
07	PE3SPMSD	WG13069-3	WG13069-3A66	09/25/01	1645
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

Instrument ID: 5972HP66 Calibration Date: 09/25/01 Time: 0929

Lab File ID: HG010925A66 Init. Calib. Date(s): 08/23/01 08/23/01

EPA Sample No.(SSTD050##): SSTD050IM Init. Calib. Times: 1329 1612

GC Column: RTX-5 SILMS ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Benzaldehyde	0.908	0.984		8.4	
Phenol	1.904	1.605	0.800	-15.7	25.0
bis(2-Chloroethyl)ether	1.558	1.315	0.700	-15.6	25.0
2-Chlorophenol	1.301	1.283	0.800	-1.4	25.0
2-Methylphenol	1.182	1.116	0.700	-5.6	25.0
2,2'-oxybis(1-Chloropropane)	3.279	2.372		-27.7	
Acetophenone	2.018	1.745		-13.5	
4-Methylphenol	1.233	1.220	0.600	-1.1	25.0
N-Nitroso-di-n-propylamine	0.875	0.765	0.500	-12.6	25.0
Hexachloroethane	0.692	0.665	0.300	-3.9	25.0
Nitrobenzene	0.498	0.434	0.200	-12.9	25.0
Isophorone	0.918	0.822	0.400	-10.5	25.0
2-Nitrophenol	0.211	0.224	0.100	6.2	25.0
2,4-Dimethylphenol	0.367	0.350	0.200	-4.6	25.0
bis(2-Chloroethoxy)methane	0.556	0.504	0.300	-9.4	25.0
2,4-Dichlorophenol	0.306	0.334	0.200	9.2	25.0
Naphthalene	0.998	1.010	0.700	1.2	25.0
4-Chloroaniline	0.368	0.398		8.2	
Hexachlorobutadiene	0.189	0.232		22.8	
Caprolactam	0.130	0.114		-12.3	
4-Chloro-3-methylphenol	0.352	0.331	0.200	-6.0	25.0
2-Methylnaphthalene	0.651	0.698	0.400	7.2	25.0
Hexachlorocyclopentadiene	0.344	0.386		12.2	
2,4,6-Trichlorophenol	0.389	0.403	0.200	3.6	25.0
2,4,5-Trichlorophenol	0.442	0.455	0.200	2.9	25.0
1,1'-Biphenyl	1.449	1.497		3.3	
2-Chloronaphthalene	1.128	1.108	0.800	-1.8	25.0
2-Nitroaniline	0.555	0.417		-24.9	
Dimethylphthalate	1.335	1.253		-6.1	
2,6-Dinitrotoluene	0.324	0.338	0.200	4.3	25.0
Acenaphthylene	1.800	1.744	0.900	-3.1	25.0
3-Nitroaniline	0.340	0.329		-3.2	
Acenaphthene	1.074	1.118	0.900	4.1	25.0
2,4-Dinitrophenol	0.167	0.176		5.4	
4-Nitrophenol	0.236	0.165		-30.1	
Dibenzofuran	1.519	1.657	0.800	9.1	25.0

All other compounds must meet a minimum RRF of 0.010.

FORM VII SV-1 OLM04.2

%Ds ±25%

7D
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

Instrument ID: 5972HP66 Calibration Date: 09/25/01 Time: 0929

Lab File ID: HG010925A66 Init. Calib. Date(s): 08/23/01 08/23/01

EPA Sample No.(SSTD050##): SSTD050IM Init. Calib. Times: 1329 1612

GC Column: RTX-5 SILMS ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
2,4-Dinitrotoluene	0.451	0.476	0.200	5.5	25.0
Diethylphthalate	1.473	1.275		-13.4	
Fluorene	1.172	1.221	0.900	4.2	25.0
4-Chlorophenyl-phenylether	0.579	0.658	0.400	13.6	25.0
4-Nitroaniline	0.325	0.330		1.5	
4,6-Dinitro-2-methylphenol	0.157	0.169		7.6	
N-nitrosodiphenylamine(1)	0.559	0.511		-8.6	
4-Bromophenyl-phenylether	0.217	0.250	0.100	15.2	25.0
Hexachlorobenzene	0.265	0.320	0.100	20.8	25.0
Atrazine	0.079	0.082		3.8	
Pentachlorophenol	0.160	0.142	0.050	-11.3	25.0
Phenanthrene	1.102	1.075	0.700	-2.5	25.0
Anthracene	1.065	1.053	0.700	-1.1	25.0
Carbazole	0.910	0.928		2.0	
Di-n-butylphthalate	1.623	1.306		-19.5	
Fluoranthene	1.142	1.157	0.600	1.3	25.0
Pyrene	1.329	1.373	0.600	3.3	25.0
Butylbenzylphthalate	0.850	0.698		-17.9	
3,3'-Dichlorobenzidine	0.447	0.414		-7.4	
Benzo(a)anthracene	1.262	1.221	0.800	-3.2	25.0
Chrysene	1.231	1.134	0.700	-7.9	25.0
bis(2-Ethylhexyl)phthalate	1.244	0.863		-30.6	
Di-n-octylphthalate	2.555	1.845		-27.8	
Benzo(b)fluoranthene	1.668	1.481	0.700	-11.2	25.0
Benzo(k)fluoranthene	1.590	1.613	0.700	1.4	25.0
Benzo(a)pyrene	1.398	1.297	0.700	-7.2	25.0
Indeno(1,2,3-cd)pyrene	1.361	1.210	0.500	-11.1	25.0
Dibenzo(a,h)anthracene	1.358	1.248	0.400	-8.1	25.0
Benzo(g,h,i)perylene	1.368	1.245	0.500	-9.0	25.0
Nitrobenzene-d5	0.494	0.442	0.200	-10.5	25.0
2-Fluorobiphenyl	1.282	1.275	0.700	-0.5	25.0
Terphenyl-d14	0.911	1.044	0.500	14.6	25.0
Phenol-d5	1.742	1.545	0.800	-11.3	25.0
2-Fluorophenol	1.363	1.262	0.600	-7.4	25.0
2,4,6-Tribromophenol	0.133	0.168		26.3	
2-Chlorophenol-d4	1.207	1.226	0.800	1.6	25.0
1,2-Dichlorobenzene-d4	0.877	0.884	0.400	0.8	25.0

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

Notes BL 10/22/01

High surrogate %D; no impact. BL 10/22/01

%Ds ±25%

FORM VII SV-2 OLM04.2

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: COMPUCHEM — Contract: OLM04-REVS

Lab Code: LIBRTY — Case No.: — SAS No.: — SDG No.: Q2298

EPA Sample No. (SSTD050##): SSTD050IM — Date Analyzed: 09/25/01

Lab File ID (Standard): HG010925A66 — Time Analyzed: 0929

Instrument ID: 5972HP66 — GC Column: RTX-5 SILMS ID:0.25(mm)

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	149535	6.78	484430	9.03	283357	12.27
	UPPER LIMIT	299070	7.28	968860	9.53	566714	12.77
	LOWER LIMIT	74768	6.28	242215	8.53	141678	11.77
	EPA SAMPLE NO.						
01	SBLKPH	194465	6.77	637711	9.02	369585	12.26
02	PE1SP	203342	6.78	672835	9.03	390922	12.27
03	PE2SP	230171	6.78	771228	9.03	456203	12.27
04	PE3SP	231775	6.78	785209	9.03	447112	12.27
05	PE3SPMS	225162	6.75	738294	9.02	429981	12.28
06	PE3SPMSD	270619	6.75	882180	9.01	516533	12.27
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: COMPUCHEM — Contract: OLM04-REVS

Lab Code: LIBRTY — Case No.: — SAS No.: — SDG No.: Q2298

EPA Sample No. (SSTD050##): SSTD050IM — Date Analyzed: 09/25/01

Lab File ID (Standard): HG010925A66 — Time Analyzed: 0929

Instrument ID: 5972HP66 — GC Column: RTX-5 SILMS ID:0.25(mm)

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	467085	15.02	403975	19.95	313533	22.98
	UPPER LIMIT	934170	15.52	807950	20.45	627066	23.48
	LOWER LIMIT	233542	14.52	201988	19.45	156766	22.48
	EPA SAMPLE NO.						
01	SBLKPH	599562	15.01	558141	19.94	429732	22.98
02	PE1SP	639667	15.02	573426	19.96	425236	22.98
03	PE2SP	744332	15.03	706659	19.96	546902	22.98
04	PE3SP	749279	15.02	664361	19.95	512736	22.98
05	PE3SPMS	691244	15.01	641456	19.94	489487	22.98
06	PE3SPMSD	823092	15.02	739584	19.95	577568	22.99
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits

COMPUCHEM a division of Liberty Analytical Corp DATE 9/25/01 INITIAL TIME OF TUNE 0902 SHIFT/S(A) ✓ (B) ____ (C) ____

GC/MS SEMIVOLATILE RUN LOG TIME TUNE EXPIRES 2102 LINKER /METHOD Olmax

COMPUCHEM .LOGBOOK 4 X(4) 3 (5972hp66)

PREVENTIVE MAINTENANCE Liner / septa

	REJECTED	FILE NAME	REPORTED	DATE	TIME	CLIENT ID#	CASE/SDG#	AMOUNT INJECTED	CHEMIST	COMMENTS(ETC.)/DISPOSITION
1		DF010925A66	/	9/25/01	0902	DFTP	—	2 ul	917	SCD = LCD
2		HG010925A66	/	/ /	0929	SSTD050JM	—			
3	/	WG13066-1A66	SL /	/ /	1009	SBLKPG	VARIOUS			
4	/	D1045-3RA66	SL	/ /	1048	D1053	D1045			} Re-ext
5		WG13069-1A66	/	/ /	1328	SBLKPH	Q2298			
6		Q2298-1A66	/	/ /	1407	PF1SP				
7		Q2298-2A66	/	/ /	1447	PF2SP				
8		Q2298-3A66	/	/ /	1527	PF3SP				
9		WG13069-2A66	/	/ /	1606	↓ MS				
10		WG13069-3A66	/	/ /	1645	↓ MSD				
11		WG13062-1A66	/	/ /	1724	SBLKPC	VARIOUS			
12		JOBL2-1A66	/	/ /	1803	JOBL2	JOBL2		2319	
13		K1067-1A66	/	/ /	1843	SW01CJ	K1067		917	
14		WG13062-4A66	/	/ /	1922	↓ MS				
15		WG13062-5A66	/	/ /	2002	↓ MSD				
16		K1067-2A66	/	/ /	2012	SW01DPCJ				
17				/ /						
18				/ /						
19				/ /						
20				/ /			FN 9/25/01			
21				/ /						
22				/ /						
23				/ /						
24				/ /						

	Tune	STANDARDS Analytical	Int. Std.	Column Type
Std. ID #	7055	2637	800	RTX-5MS 0.25 mm
Lot #	52031	51676	52077	

SUPERVISOR APPROVAL [signature]

DATE 9-25-01

The presence of the Chemist's employee ID number, or signature, on this run log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist together with the chemist's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation.

5/27/01 dcc

5B
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

Lab File ID: DF011001B66 DFTPP Injection Date: 10/01/01

Instrument ID: 5972HP66 DFTPP Injection Time: 2057

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 80.0% of mass 198	49.0
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	57.9
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	25.0 - 75.0% of mass 198	41.2
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.8
275	10.0 - 30.0% of mass 198	20.7
365	Greater than 0.75% of mass 198	2.01
441	Present, but less than mass 443	8.6
442	40.0 - 110.0% of mass 198	56.0
443	15.0 - 24.0% of mass 442	11.3 (20.2)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD050IV	SSTD050IV	HG011001B66	10/01/01	2117
02	SBLKZP	WG13122-1.66	WG13122-1JB66	10/01/01	2235
03	PE4-S-P	Q2298-4	Q2298-4JB66	10/01/01	2313
04	PE5-S-P	Q2298-5	Q2298-5JB66	10/01/01	2352
05	PE6-S-P	Q2298-6	Q2298-6JB66	10/02/01	0031
06	PE12-S-B	Q2298-12	Q2298-12JB66	10/02/01	0110
07	PE13-S-B	Q2298-13	Q2298-13JB66	10/02/01	0148
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

Instrument ID: 5972HP66 Calibration Date: 10/01/01 Time: 2117

Lab File ID: HG011001B66 Init. Calib. Date(s): 08/23/01 08/23/01

EPA Sample No.(SSTD050##): SSTD050IV Init. Calib. Times: 1329 1612

GC Column: RTX-5 SILMS ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Benzaldehyde	0.908	1.049		15.5	
Phenol	1.904	1.719	0.800	-9.7	25.0
bis(2-Chloroethyl)ether	1.558	1.402	0.700	-10.0	25.0
2-Chlorophenol	1.301	1.295	0.800	-0.5	25.0
2-Methylphenol	1.182	1.186	0.700	0.3	25.0
2,2'-oxybis(1-Chloropropane)	3.279	2.705		-17.5	
Acetophenone	2.018	1.945		-3.6	
4-Methylphenol	1.233	1.328	0.600	7.7	25.0
N-Nitroso-di-n-propylamine	0.875	0.745	0.500	-14.9	25.0
Hexachloroethane	0.692	0.708	0.300	2.3	25.0
Nitrobenzene	0.498	0.434	0.200	-12.9	25.0
Isophorone	0.918	0.815	0.400	-11.2	25.0
2-Nitrophenol	0.211	0.218	0.100	3.3	25.0
2,4-Dimethylphenol	0.367	0.344	0.200	-6.3	25.0
bis(2-Chloroethoxy)methane	0.556	0.506	0.300	-9.0	25.0
2,4-Dichlorophenol	0.306	0.335	0.200	9.5	25.0
Naphthalene	0.998	0.994	0.700	-0.4	25.0
4-Chloroaniline	0.368	0.384		4.3	
Hexachlorobutadiene	0.189	0.224		18.5	
Caprolactam	0.130	0.126		-3.1	
4-Chloro-3-methylphenol	0.352	0.343	0.200	-2.6	25.0
2-Methylnaphthalene	0.651	0.726	0.400	11.5	25.0
Hexachlorocyclopentadiene	0.344	0.221		-35.8	
2,4,6-Trichlorophenol	0.389	0.400	0.200	2.8	25.0
2,4,5-Trichlorophenol	0.442	0.440	0.200	-0.5	25.0
1,1'-Biphenyl	1.449	1.397		-3.6	
2-Chloronaphthalene	1.128	1.069	0.800	-5.2	25.0
2-Nitroaniline	0.555	0.439		-20.9	
Dimethylphthalate	1.335	1.290		-3.4	
2,6-Dinitrotoluene	0.324	0.341	0.200	5.2	25.0
Acenaphthylene	1.800	1.736	0.900	-3.6	25.0
3-Nitroaniline	0.340	0.319		-6.2	
Acenaphthene	1.074	1.011	0.900	-5.9	25.0
2,4-Dinitrophenol	0.167	0.140		-16.2	
4-Nitrophenol	0.236	0.149		-36.9	
Dibenzofuran	1.519	1.521	0.800	0.1	25.0

All other compounds must meet a minimum RRF of 0.010.

FORM VII SV-1 OLM04.2

NTCS

%D < ±25% ✓

EL 10/26/01

7D

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

Instrument ID: 5972HP66 Calibration Date: 10/01/01 Time: 2117✓

Lab File ID: HG011001B66 Init. Calib. Date(s): 08/23/01 08/23/01

EPA Sample No.(SSTD050##): SSTD050IV Init. Calib. Times: 1329 ✓ 1612 ✓

GC Column: RTX-5 SILMS ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
2,4-Dinitrotoluene	0.451	0.443	0.200	-1.8	25.0
Diethylphthalate	1.473	1.287		-12.6	
Fluorene	1.172	1.145	0.900	-2.3	25.0
4-Chlorophenyl-phenylether	0.579	0.662	0.400	14.3	25.0
4-Nitroaniline	0.325	0.324		-0.3	
4,6-Dinitro-2-methylphenol	0.157	0.157		0.0	
N-nitrosodiphenylamine(1)	0.559	0.514		-8.1	
4-Bromophenyl-phenylether	0.217	0.227	0.100	4.6	25.0
Hexachlorobenzene	0.265	0.297	0.100	12.1	25.0
Atrazine	0.079	0.082		3.8	
Pentachlorophenol	0.160	0.155	0.050	-3.1	25.0
Phenanthrene	1.102	1.042	0.700	-5.4	25.0
Anthracene	1.065	1.087	0.700	2.1	25.0
Carbazole	0.910	0.933		2.5	
Di-n-butylphthalate	1.623	1.300		-19.9	
Fluoranthene	1.142	1.139	0.600	-0.3	25.0
Pyrene	1.329	1.227	0.600	-7.7	25.0
Butylbenzylphthalate	0.850	0.681		-19.9✓	
3,3'-Dichlorobenzidine	0.447	0.376		-15.9	
Benzo(a)anthracene	1.262	1.184	0.800	-6.2	25.0
Chrysene	1.231	1.192	0.700	-3.2	25.0
bis(2-Ethylhexyl)phthalate	1.244	0.913		-26.6	
Di-n-octylphthalate	2.555	2.015		-21.1	
Benzo(b)fluoranthene	1.668	1.552	0.700	-7.0	25.0
Benzo(k)fluoranthene	1.590	1.524	0.700	-4.2	25.0
Benzo(a)pyrene	1.398	1.314	0.700	-6.0	25.0
Indeno(1,2,3-cd)pyrene	1.361	1.093	0.500	-19.7	25.0
Dibenzo(a,h)anthracene	1.358	1.098	0.400	-19.1	25.0
Benzo(g,h,i)perylene	1.368	1.060	0.500	-22.5	25.0
Nitrobenzene-d5	0.494	0.440	0.200	-10.9	25.0
2-Fluorobiphenyl	1.282	1.243	0.700	-3.0	25.0
Terphenyl-d14	0.911	0.932	0.500	2.3	25.0
Phenol-d5	1.742	1.636	0.800	-6.1	25.0
2-Fluorophenol	1.363	1.248	0.600	-8.4	25.0
2,4,6-Tribromophenol	0.133	0.155		16.5	
2-Chlorophenol-d4	1.207	1.205	0.800	-0.2	25.0
1,2-Dichlorobenzene-d4	0.877	0.904	0.400	3.1	25.0

(1) Cannot be separated from Diphenylamine

All other compounds must meet a minimum RRF of 0.010.

NTC

SC 10/10/01

%Δs ± 25% ✓

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: COMPUCHEM — Contract: OLM04-REVS

Lab Code: LIBRTY — Case No.: — SAS No.: — SDG No.: Q2298

EPA Sample No. (SSTD050##): SSTD050IV — Date Analyzed: 10/01/01

Lab File ID (Standard): HG011001B66 — Time Analyzed: 2117

Instrument ID: 5972HP66 — GC Column: RTX-5 SILMS ID:0.25(mm)

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	179883	6.70	648467	8.94	413760	12.19
	UPPER LIMIT	359766	7.20	1296934	9.44	827520	12.69
	LOWER LIMIT	89942	6.20	324234	8.44	206880	11.69
	EPA SAMPLE NO.						
01	SBLKZP	155729	6.70	557454	8.94	322124	12.17
02	PE4-S-P	168041	6.70	601237	8.94	350692	12.17
03	PE5-S-P	164097	6.70	558624	8.93	334787	12.17
04	PE6-S-P	167378	6.70	597598	8.94	355392	12.17
05	PE12-S-B	166217	6.70	595029	8.94	353132	12.17
06	PE13-S-B	169455	6.70	604043	8.94	352778	12.17
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

EPA Sample No. (SSTD050##): SSTD050IV Date Analyzed: 10/01/01

Lab File ID (Standard): HG011001B66 Time Analyzed: 2117

Instrument ID: 5972HP66 GC Column: RTX-5 SILMS ID:0.25(mm)

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	676928	14.94	637038	19.87	487729	22.84
	UPPER LIMIT	1353856	15.44	1274076	20.37	975458	23.34
	LOWER LIMIT	338464	14.44	318519	19.37	243864	22.34
	EPA SAMPLE NO.						
01	SBLKZP	539804	14.92	509482	19.85	385000	22.83
02	PE4-S-P	582580	14.92	542139	19.85	399300	22.83
03	PE5-S-P	548894	14.93	547937	19.88	411558	22.88
04	PE6-S-P	574853	14.92	563065	19.87	460220	22.86
05	PE12-S-B	582629	14.92	532495	19.85	419970	22.82
06	PE13-S-B	594488	14.92	551327	19.85	407081	22.83
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits

COMPUCHEM a division of Liberty Analytical Corp DATE 10/1/01 INITIAL TIME OF TUNE 2057 SHIFT/S(A) ____ (B) ✓ (C) ____

GC/MS SEMIVOLATILE RUN LOG TIME TUNE EXPIRES 0357 LINKER /METHOD OLMO1

COMPUCHEM LOGBOOK 4 X(4) 3 (5972hp66)

PREVENTIVE MAINTENANCE None

	REJECTED	FILE NAME	REPORTED	DATE	TIME	CLIENT ID#	CASE/SDG#	AMOUNT INJECTED	CHEMIST	COMMENTS(ETC.)/DISPOSITION
1		DF011001B66	/	10/1/01	2057	DFTPP	–	2uL	2319	SXDFKCD
2		HG011001B66	/	/ /	2117	SSTD050IV	–			
3		A11001B66 ✓	/	/ /	2156	ABC GPC #1	–			
4		WG113122-1JB66	/	/ /	2235	SBLKZP	Q2298			
5		Q2298-4JB66	/	/ /	2313	PE4-S-P				
6		Q2298-5JB66	/	/ /	2352	PE5-S-P				
7		Q2298-6JB66	/	10/2/01	0031	PE6-S-P				
8		Q2298-12JB66	/	/ /	0110	PE12-S-B				
9		Q2298-13JB66	/	/ /	0148	PE13-S-B				
10		E1HN7-8B66	/	/ /	0227	E1HP4	E1HN7			
11		E1HN7-1DB66	/	/ /	0307	E1HN7DL				
12		E1HN7-5DB66	/	/ /	0346	E1HP1DL				
13		E1HN7-6DB66	/	/ /	0426	E1HP2DL				
14		WG13195-1B66	/	/ /	0506	SBLKRB	VARIOUS			
15		WG13195-2B66	/	/ /	0546	SRBLCS				
16	/	X02D5-1RB66	DI	/ /	0625	X02D5	X02D5			
17	/	E1HE6-2B66	DI	/ /	0705	E1HE8	E1HE6			
18		WG13197-1B66	/	/ /	0745	SBLKAA	JOBK6			
19	/	JOBK6-9B66	DI	/ /	0824	JOBN5				
20				/ /						
21				/ /						
22				/ /		GM 10-2-01				
23				/ /						
24				/ /						

	Tune	STANDARDS Analytical	Int. Std.	Column Type
Std. ID #	7055	2431	800	KTX-5 5%(M) 0.25mm
Lot #	52031	51676	52-77	

SUPERVISOR APPROVAL [signature]

DATE 10/2/01 MM 10/2/01

The presence of the Chemist's employee ID number, or signature, on this run log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist together with the chemist's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation.

5/27/01:dce

3435

5B
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

Lab File ID: DF010820B70 DFTPP Injection Date: 08/20/01

Instrument ID: 5972HP70 DFTPP Injection Time: 1841

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	59.2
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	71.4
70	Less than 2.0% ~~of mass 69~~	0.0 (0.0)1
127	~~40.0 - 60.0%~~ of mass 198	50.4
197	Less than 1.0% of mass 198 25.0 - 75.0%	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.7
275	10.0 - 30.0% of mass ~~198~~ 0.75%	19.8
365	Greater than ~~1.0%~~ of mass 198	1.78
441	Present, but less than mass 443	8.9
442	40.0 - 110.0% of mass 198	57.2
443	~~17.0 - 23.0%~~ of mass 442	11.0 (19.2)2

1-Value is % mass 69 2-Value is % mass 442

15.0 - 24.0%

EY 10/26/01

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD050Z2	SSTD050Z2	HG010820B70	08/20/01	1900
02	SSTD160Z2	SSTD160Z2	HH010820B70	08/20/01	1939
03	SSTD020Z2	SSTD020Z2	HI010820B70	08/20/01	2013
04	SSTD120Z2	SSTD120Z2	HJ010820B70	08/20/01	2048
05	SSTD080Z2	SSTD080Z2	HK010820B70	08/20/01	2123
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

Instrument ID: 5972HP70 Calibration Date(s): 08/20/01 08/20/01

Calibration Times: 1900 2123

NTC. EL 10/28/01

LAB FILE ID: RRF20 = HI010820B70 RRF50 = HG010820B70
RRF80 = HK010820B70 RRF120= HJ010820B70 RRF160= HH010820B70

COMPOUND		RRF20	RRF50	RRF80	RRF120	RRF160	$\overline{RRF}$	% RSD
Benzaldehyde		1.136	1.137	0.580	0.454	0.467	0.755	46.6
Phenol	*	1.852	1.235	1.518	1.245	1.236	1.417	19.2*
bis(2-Chloroethyl)ether	*	1.231	1.033	0.936	0.883	0.856	0.988	15.4*
2-Chlorophenol	*	1.296	1.190	1.218	1.086	0.994	1.157	10.2*
2-Methylphenol	*	1.406	1.177	1.136	0.870	0.996	1.117	18.1*
2,2'-oxybis(1-Chloropropane)		2.165	2.012	1.842	1.786	1.774	1.916	8.8
Acetophenone		2.050	1.860	1.572	1.632	1.469	1.717	13.7
4-Methylphenol	*	1.438	1.177	1.182	0.820	0.954	1.114	21.3*
N-Nitroso-di-n-propylamine	*	0.737	0.808	0.663	0.632	0.623	0.693	11.3*
Hexachloroethane	*	0.748	0.712	0.620	0.553	0.522	0.631	15.5*
Nitrobenzene	*	0.465	0.412	0.434	0.350	0.383	0.409	10.9*
Isophorone	*	0.881	0.791	0.719	0.695	0.685	0.754	10.8*
2-Nitrophenol	*	0.253	0.252	0.214	0.214	0.219	0.230	8.8*
2,4-Dimethylphenol	*	0.358	0.309	0.386	0.292	0.345	0.338	11.2*
bis(2-Chloroethoxy)methane	*	0.502	0.434	0.399	0.361	0.315	0.402	17.7*
2,4-Dichlorophenol	*	0.324	0.305	0.311	0.320	0.296	0.311	3.6*
Naphthalene	*	1.007	0.998	0.921	0.784	0.986	0.939	9.9*
4-Chloroaniline		0.493	0.451	0.306	0.321	0.308	0.376	23.7
Hexachlorobutadiene		0.195	0.185	0.234	0.211	0.173	0.200	11.9
Caprolactam		0.101	0.115	0.102	0.104	0.112	0.107	5.8
4-Chloro-3-methylphenol	*	0.324	0.306	0.345	0.357	0.300	0.326	7.5*
2-Methylnaphthalene	*	0.765	0.710	0.640	0.629	0.734	0.696	8.5*
Hexachlorocyclopentadiene		0.258	0.310	0.362	0.304	0.303	0.307	12.0
2,4,6-Trichlorophenol	*	0.328	0.331	0.392	0.353	0.354	0.352	7.3*
2,4,5-Trichlorophenol	*	0.319	0.399	0.405	0.348	0.402	0.375	10.4*
1,1'-Biphenyl		1.130	1.177	1.335	0.956	1.202	1.160	11.8
2-Chloronaphthalene	*	1.160	0.960	1.122	1.006	0.900	1.030	10.6*
2-Nitroaniline		0.421	0.323	0.441	0.374	0.424	0.397	12.1
Dimethylphthalate		1.207	1.434	1.219	1.343	1.148	1.270	9.1
2,6-Dinitrotoluene	*	0.380	0.257	0.392	0.288	0.381	0.340	18.3*
Acenaphthylene	*	1.909	1.672	1.599	1.727	1.591	1.700	7.6*
3-Nitroaniline		0.310	0.384	0.326	0.278	0.323	0.324	11.8
Acenaphthene	*	1.098	0.867	1.177	0.821	0.805	0.954	18.0*
2,4-Dinitrophenol		0.107	0.138	0.218	0.181	0.223	0.173	29.2
4-Nitrophenol		0.185	0.211	0.252	0.214	0.233	0.219	11.5
Dibenzofuran	*	1.670	1.365	1.751	1.286	1.453	1.505	13.2*

* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.

RSD < 30% ✓

6D
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

Instrument ID: 5972HP70 Calibration Date(s): 08/20/01 08/20/01

Calibration Times: 1900 2123

LAB FILE ID: RRF20 = HI010820B70 RRF50 = HG010820B70
RRF80 = HK010820B70 RRF120= HJ010820B70 RRF160= HH010820B70

COMPOUND		RRF20	RRF50	RRF80	RRF120	RRF160	$\overline{RRF}$	% RSD
2,4-Dinitrotoluene	*	0.454	0.414	0.426	0.530	0.426	0.450	10.5*
Diethylphthalate		1.545	1.286	1.424	1.329	1.370	1.391	7.2
Fluorene	*	1.322	0.988	1.283	1.002	0.900	1.099	17.3*
4-Chlorophenyl-phenylether	*	0.615	0.536	0.527	0.619	0.544	0.568	7.9*
4-Nitroaniline		0.338	0.378	0.399	0.322	0.309	0.349	11.0
4,6-Dinitro-2-methylphenol		0.107	0.132	0.140	0.146	0.162	0.137	14.7
N-nitrosodiphenylamine (1)		0.657	0.454	0.493	0.552	0.450	0.521	16.5
4-Bromophenyl-phenylether	*	0.270	0.229	0.210	0.244	0.218	0.234	10.2*
Hexachlorobenzene	*	0.252	0.263	0.239	0.239	0.260	0.251	4.4*
Atrazine		0.192	0.108	0.029	0.025	0.021	0.075	99.4
Pentachlorophenol	*	0.141	0.179	0.154	0.197	0.178	0.170	13.1*
Phenanthrene	*	1.195	0.991	1.042	0.948	1.072	1.050	9.0*
Anthracene	*	1.172	1.115	1.020	0.955	0.791	1.011	14.7*
Carbazole		1.032	1.109	0.756	0.983	0.837	0.943	15.3
Di-n-butylphthalate		2.029	1.536	1.707	1.674	1.307	1.651	16.0
Fluoranthene	*	1.400	1.001	1.193	0.946	0.986	1.105	17.2*
Pyrene	*	1.338	1.366	1.282	1.276	1.133	1.279	7.0*
Butylbenzylphthalate		0.801	0.916	0.718	0.677	0.975	0.817	15.5
3,3'-Dichlorobenzidine		0.515	0.430	0.501	0.404	0.418	0.454	11.2
Benzo(a)anthracene	*	1.349	1.237	1.259	1.187	1.275	1.261	4.7*
Chrysene	*	1.197	1.243	1.096	1.051	1.214	1.160	7.1*
bis(2-Ethylhexyl)phthalate		1.187	1.157	1.135	0.969	1.100	1.110	7.7
Di-n-octylphthalate		2.525	2.495	2.490	2.295	2.127	2.386	7.2
Benzo(b)fluoranthene	*	1.691	1.881	1.768	1.815	1.899	1.811	4.7*
Benzo(k)fluoranthene	*	1.592	1.507	1.587	1.448	1.339	1.495	7.1*
Benzo(a)pyrene	*	1.425	1.374	1.356	1.343	1.316	1.363	3.0*
Indeno(1,2,3-cd)pyrene	*	1.287	1.307	1.260	1.284	1.339	1.295	2.3*
Dibenzo(a,h)anthracene	*	1.301	1.251	1.242	1.145	1.120	1.212	6.3*
Benzo(g,h,i)perylene	*	1.283	1.339	1.285	1.237	1.211	1.271	3.9*
Nitrobenzene-d5	*	0.371	0.404	0.395	0.411	0.370	0.390	4.9*
2-Fluorobiphenyl	*	1.270	1.048	1.159	1.193	0.924	1.119	12.1*
Terphenyl-d14	*	0.986	0.792	0.995	0.853	0.870	0.899	9.8*
Phenol-d5	*	1.510	1.355	1.276	1.262	1.234	1.327	8.4*
2-Fluorophenol	*	0.866	1.168	0.923	0.889	0.997	0.969	12.6*
2,4,6-Tribromophenol		0.150	0.125	0.148	0.119	0.128	0.134	10.6
2-Chlorophenol-d4	*	1.225	1.197	1.129	1.034	1.001	1.117	8.8*
1,2-Dichlorobenzene-d4	*	0.906	0.907	0.909	0.860	0.798	0.876	5.5*

(1) Cannot be separated from Diphenylamine
* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.

RSD <30%

COMPUCHEM a division of Liberty Analytical Corp DATE 8 / 20 / 01 INITIAL TIME OF TUNE 1541 SHIFT/S(A) ___ (B) ✓ (C) ___

GC/MS SEMIVOLATILE RUN LOG TIME TUNE EXPIRES 0641 LINKER /METHOD Olmsa / ~~NT~~ FW stable

COMPUCHEM LOGBOOK 4 U(4) 3 (5972hp70)

PREVENTIVE MAINTENANCE None

	REJECTED	FILE NAME	REPORTED	DATE	TIME	CLIENT ID#	CASE/SDG#	AMOUNT INJECTED	CHEMIST	COMMENTS(ETC.)/DISPOSITION
1		DF010820B70	/	8/20/01	1841	DFIPP	—	2uL	2349	SCD=LCD
2		HG010820B70	/	/ /	1900	SSTD0502Z2	—	↓	↓	# 51676
3		HH010820B70	/	/ /	1939	SSTD1602Z2	—			# 51679
4		HI010820B70	/	/ /	2013	SSTD0202Z2	—			# 51675
5		HJ010820B70	/	/ /	2048	SSTD1002Z2	—			# 51678
6		HK010820B70	/	/ /	2123	SSTD0502Z2	—			# 51677 MP Good!
7		WG12587-1B70	/	/ /	2249	SBLKFS	Y1550			
8		WG12587-2B70	/	/ /	2324	SFSLCS	↓			
9	/	Y1550 1B70	IL	/ /	2358	BRIDGE				
10		Y1550 1SB70	/	8/21/01	0040	↓				
11				/ /						
12				/ /						
13				/ /						
14				/ /						
15				/ /						
16				/ /						
17				/ /			FW 8/20/01			
18				/ /						
19				/ /						
20				/ /						
21				/ /						
22				/ /						
23				/ /						
24				/ /						

STANDARDS	Tune	Analytical	Int. Std.	Column Type
Std. ID #	7655	SEE COMMENTS	800	RTX-5ms
Lot #	51435	↓	51515	0.25mm

SUPERVISOR APPROVAL [signature]

DATE 8-20-01

The presence of the Chemist's employee ID number, or signature, on this run log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist together with the chemist's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation.

S-17 01dec

318

363

5B
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

Lab File ID: DF010928A70 DFTPP Injection Date: 09/28/01

Instrument ID: 5972HP70 DFTPP Injection Time: 0939

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 80.0% of mass 198	51.5
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	65.2
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	25.0 - 75.0% of mass 198	47.6
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.1
275	10.0 - 30.0% of mass 198	22.2
365	Greater than 0.75% of mass 198	2.04
441	Present, but less than mass 443	12.1
442	40.0 - 110.0% of mass 198	71.3
443	15.0 - 24.0% of mass 442	13.7 (19.2)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD050PK	SSTD050PK	HG010928A70	09/28/01	1001
02	SBLKPZ	WG13122-1	WG13122-1A70	09/28/01	1334
03	PE7-S-B	Q2298-7	Q2298-7A70	09/28/01	1444
04	PE8-S-B	Q2298-8	Q2298-8A70	09/28/01	1519
05	PE9-S-B	Q2298-9	Q2298-9A70	09/28/01	1555
06	PE10-S-B	Q2298-10	Q2298-10A70	09/28/01	1629
07	PE11-S-B	Q2298-11	Q2298-11A70	09/28/01	1705
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COMPUCHEM — Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: — SAS No.: — SDG No.: Q2298

Instrument ID: 5972HP70 — Calibration Date: 09/28/01 Time: 1001 ✓

Lab File ID: HG010928A70 — Init. Calib. Date(s): 08/20/01 08/20/01

EPA Sample No.(SSTD050##): SSTD050PK — Init. Calib. Times: 1900 ✓ 2123 ✓

GC Column: RTX-5MS ID: 0.25 (mm)

Notes EC 10/26/01

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Benzaldehyde	0.755	0.694		-8.1	
Phenol	1.417	1.231	0.800	-13.1	25.0
bis(2-Chloroethyl)ether	0.988	0.877	0.700	-11.2	25.0
2-Chlorophenol	1.157	1.057	0.800	-8.6	25.0
2-Methylphenol	1.117	0.985	0.700	-11.8	25.0
2,2'-oxybis(1-Chloropropane)	1.916	1.392		-27.3	
Acetophenone	1.717	1.477		-14.0	
4-Methylphenol	1.114	0.775	0.600	-30.4	25.0
N-Nitroso-di-n-propylamine	0.693	0.552	0.500	-20.3	25.0
Hexachloroethane	0.631	0.620	0.300	-1.7	25.0
Nitrobenzene	0.409	0.327	0.200	-20.0	25.0
Isophorone	0.754	0.652	0.400	-13.5	25.0
2-Nitrophenol	0.230	0.186	0.100	-19.1	25.0
2,4-Dimethylphenol	0.338	0.261	0.200	-22.8	25.0
bis(2-Chloroethoxy)methane	0.402	0.311	0.300	-22.6	25.0
2,4-Dichlorophenol	0.311	0.344	0.200	10.6	25.0
Naphthalene	0.939	0.773	0.700	-17.7	25.0
4-Chloroaniline	0.376	0.308		-18.1	
Hexachlorobutadiene	0.200	0.244		22.0	
Caprolactam	0.107	0.071		-33.6	
4-Chloro-3-methylphenol	0.326	0.284	0.200	-12.9	25.0
2-Methylnaphthalene	0.696	0.871	0.400	25.1	25.0
Hexachlorocyclopentadiene	0.307	0.253		-17.6	
2,4,6-Trichlorophenol	0.352	0.369	0.200	4.8	25.0
2,4,5-Trichlorophenol	0.375	0.433	0.200	15.5	25.0
1,1'-Biphenyl	1.160	1.354		16.7	
2-Chloronaphthalene	1.030	1.083	0.800	5.1	25.0
2-Nitroaniline	0.397	0.387		-2.5	
Dimethylphthalate	1.270	1.496		17.8	
2,6-Dinitrotoluene	0.340	0.264	0.200	-22.4	25.0
Acenaphthylene	1.700	1.544	0.900	-9.2	25.0
3-Nitroaniline	0.324	0.279		-13.9	
Acenaphthene	0.954	1.098	0.900	15.1	25.0
2,4-Dinitrophenol	0.173	0.160		-7.5	
4-Nitrophenol	0.219	0.219		0.0	
Dibenzofuran	1.505	1.494	0.800	-0.7	25.0

All other compounds must meet a minimum RRF of 0.010.

FORM VII SV-1 OLM04.2

High %D; sensitivity increase; no impact; expert judgement addressed in Reg III F.Gs. EC 10/26/01

0/0 ≤ ±25% ✓

7D
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

Instrument ID: 5972HP70 Calibration Date: 09/28/01 Time: 1001

Lab File ID: HG010928A70 Init. Calib. Date(s): 08/20/01 08/20/01

EPA Sample No.(SSTD050##): SSTD050PK Init. Calib. Times: 1900 2123

GC Column: RTX-5MS ID: 0.25 (mm)

notes EL 10/26/01

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
2,4-Dinitrotoluene	0.450	0.466	0.200	3.6	25.0
Diethylphthalate	1.391	1.579		13.5	
Fluorene	1.099	1.068	0.900	-2.8	25.0
4-Chlorophenyl-phenylether	0.568	0.660	0.400	16.2	25.0
4-Nitroaniline	0.349	0.266		-23.8	
4,6-Dinitro-2-methylphenol	0.137	0.130		-5.1	
N-nitrosodiphenylamine(1)	0.521	0.451		-13.4	
4-Bromophenyl-phenylether	0.234	0.228	0.100	-2.6	25.0
Hexachlorobenzene	0.251	0.303	0.100	20.7	25.0
Atrazine	0.075	0.056		-25.3	
Pentachlorophenol	0.170	0.205	0.050	20.6	25.0
Phenanthrene	1.050	0.856	0.700	-18.5	25.0
Anthracene	1.011	0.986	0.700	-2.5	25.0
Carbazole	0.943	0.762		-19.2	
Di-n-butylphthalate	1.651	1.256		-23.9	
Fluoranthene	1.105	0.964	0.600	-12.8	25.0
Pyrene	1.279	1.289	0.600	0.8	25.0
Butylbenzylphthalate	0.817	0.644		-21.2	
3,3'-Dichlorobenzidine	0.454	0.341		-24.9	
Benzo(a)anthracene	1.261	1.088	0.800	-13.7	25.0
Chrysene	1.160	0.836	0.700	-27.9	25.0
bis(2-Ethylhexyl)phthalate	1.110	0.812		-26.8	
Di-n-octylphthalate	2.386	1.857		-22.2	
Benzo(b)fluoranthene	1.811	1.458	0.700	-19.5	25.0
Benzo(k)fluoranthene	1.495	1.549	0.700	3.6	25.0
Benzo(a)pyrene	1.363	1.214	0.700	-10.9	25.0
Indeno(1,2,3-cd)pyrene	1.295	1.027	0.500	-20.7	25.0
Dibenzo(a,h)anthracene	1.212	0.993	0.400	-18.1	25.0
Benzo(g,h,i)perylene	1.271	1.102	0.500	-13.3	25.0
Nitrobenzene-d5	0.390	0.361	0.200	-7.4	25.0
2-Fluorobiphenyl	1.119	1.283	0.700	14.7	25.0
Terphenyl-d14	0.899	0.815	0.500	-9.3	25.0
Phenol-d5	1.327	1.313	0.800	-1.1	25.0
2-Fluorophenol	0.969	0.922	0.600	-4.9	25.0
2,4,6-Tribromophenol	0.134	0.169		26.1	
2-Chlorophenol-d4	1.117	1.090	0.800	-2.4	25.0
1,2-Dichlorobenzene-d4	0.876	0.837	0.400	-4.5	25.0

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

FORM VII SV-2 OLM04.2

High %D; sensitivity decrease; flag "UJ". %Ds ≤25% EL 10/26/01

High surrogate %D; no impact. EL 10/26/01

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: COMPUCHEM | Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: | SAS No.: SDG No.: Q2298

EPA Sample No. (SSTD050##): SSTD050PK | Date Analyzed: 09/28/01

Lab File ID (Standard): HG010928A70 | Time Analyzed: 1001

Instrument ID: 5972HP70 | GC Column: RTX-5MS ID:0.25(mm)

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	80104	4.92	277419	6.67	170126	9.14
	UPPER LIMIT	160208	5.42	554838	7.17	340252	9.64
	LOWER LIMIT	40052	4.42	138710	6.17	85063	8.64
	EPA SAMPLE NO.						
01	SBLKPZ	57898	4.94	215983	6.68	146215	9.14
02	PE7-S-B	56323	4.94	193301	6.68	137744	9.14
03	PE8-S-B	65247	4.93	216340	6.67	137272	9.14
04	PE9-S-B	57569	4.93	195485	6.67	121794	9.14
05	PE10-S-B	67264	4.94	229254	6.68	161695	9.14
06	PE11-S-B	65105	4.94	216483	6.68	144020	9.15
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: COMPUCHEM | Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: | SAS No.: SDG No.: Q2298

EPA Sample No. (SSTD050##): SSTD050PK | Date Analyzed: 09/28/01

Lab File ID (Standard): HG010928A70 | Time Analyzed: 1001

Instrument ID: 5972HP70 | GC Column: RTX-5MS ID:0.25(mm)

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	307774	11.17	250190	14.78	173334	16.91
	UPPER LIMIT	615548	11.67	500380	15.28	346668	17.41
	LOWER LIMIT	153887	10.67	125095	14.28	86667	16.41
	EPA SAMPLE NO.						
01	SBLKPZ	249767	11.15	228222	14.79	168273	16.91
02	PE7-S-B	229769	11.16	196808	14.77	153975	16.90
03	PE8-S-B	263086	11.15	236030	14.78	185533	16.91
04	PE9-S-B	238138	11.15	215320	14.78	151895	16.91
05	PE10-S-B	284410	11.15	230739	14.77	180547	16.90
06	PE11-S-B	239871	11.16	190486	14.77	146306	16.92
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits

COMPUCHEM a division of Liberty Analytical Corp DATE 9/28/01 INITIAL TIME OF TUNE 0939 SHIFT/S(A) ✓ (B) ____ (C) ____

GC/MS SEMIVOLATILE RUN LOG TIME TUNE EXPIRES 2139 LINKER /METHOD Olmou

COMPUCHEM LOGBOOK 4 U(4) 3 (5972hp70)

PREVENTIVE MAINTENANCE Front End / Liner / Septa

412

358

	RESTRICTED	FILE NAME	RESTORED	DATE	TIME	CLIENT ID#	CASE/SDG#	AMOUNT INJECTED	CHEMIST	COMMENTS(ETC.)/DISPOSITION
1		DF01092 8A70	/	9/28/01	0939	DFTPP	—	2 ul	917	SCD = LCD
2		HG01092 8A70	/	/ /	1001	SSTD050PK	—			
3		EIHL6-1JA70	/	/ /	1039	EIHL6	EIHL6			
4		WG13115-2JA70	/	/ /	1115	IMS				
5		EIHL6-4JA70	/	/ /	1149	EIHL9				
6		EIHL6-5JA70	/	/ /	1225	EIHM0				
7		EIHL6-6JA70	/	/ /	1259	EIHM1				
8		WG13122-1A70	//	/ /	1334	SBLKP2	Q2298			
9		Q2298-4A70	SL	/ /	1409	PE4-S-P				2° GPC
10		Q2298-7A70	/	/ /	1444	PE7-S-B				
11		Q2298-8A70	/	/ /	1519	PE8-S-B				
12		Q2298-9A70	/	/ /	1555	PE9-S-B				
13		Q2298-10A70	/	/ /	1629	PE10-S-B				
14		Q2298-11A70	/	/ /	1705	PE11-S-B				
15		Q2298-13A70	SL	/ /	1739	PE13-S-B				Re GPC
16		Q2298-12A70	SL	/ /	1815	PE12-S-B				
17		Q2298-5A70	SL	/ /	1850	PE5-S-P				
18		Q2298-6A70	SL	/ /	1925	PE6-S-P				
19		A09028A70	/	/ /	2003	ABC GPC #2	—		2319	
20				/ /						
21				/ /						
22				/ /			FN 9/28/01			
23				/ /						
24				/ /						

STANDARDS

	Tune	Analytical	Int. Std.	Column Type
Std. ID #	7055	2437	800	RTX-5MS 0.25 mm
Lot #	52031	51676	52077	

SUPERVISOR APPROVAL [signature]

DATE 9-28-01

The presence of the Chemist's employee ID number, or signature, on this run log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist together with the chemist's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation.

5/17/01dce

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKPH

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

Matrix: (soil/water) SOIL Lab Sample ID: WG13069-1

Sample wt/vol: 30.0(g/mL) G Lab File ID: WG13069-1A66

Level: (low/med) LOW Date Received: _____

% Moisture: 0 decanted: (Y/N) N Date Extracted: 09/24/01

Concentrated Extract Volume: 500(uL) Date Analyzed: 09/25/01

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____ Extraction: (Type) SONC

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
98-86-2	Acetophenone	330	U
91-20-3	Naphthalene	330	U
91-57-6	2-Methylnaphthalene	330	U
83-32-9	Acenaphthene	330	U
132-64-9	Dibenzofuran	330	U
86-73-7	Fluorene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
56-55-3	Benzo(a)anthracene	330	U
218-01-9	Chrysene	330	U
205-99-2	Benzo(b)fluoranthene	330	U
207-08-9	Benzo(k)fluoranthene	330	U
50-32-8	Benzo(a)pyrene	330	U
193-39-5	Indeno(1,2,3-cd)pyrene	330	U
53-70-3	Dibenzo(a,h)anthracene	330	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKZP

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

Matrix: (soil/water) SOIL Lab Sample ID: WG13122-1.66

Sample wt/vol: 30.0(g/mL) G Lab File ID: WG13122-1JB66

Level: (low/med) LOW Date Received: _____

% Moisture: 0 decanted: (Y/N) N Date Extracted: 09/27/01

Concentrated Extract Volume: 500(uL) Date Analyzed: 10/01/01

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____ Extraction: (Type) SONC

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
98-86-2	Acetophenone	330	U
91-20-3	Naphthalene	330	U
91-57-6	2-Methylnaphthalene	330	U
83-32-9	Acenaphthene	330	U
132-64-9	Dibenzofuran	330	U
86-73-7	Fluorene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
56-55-3	Benzo(a)anthracene	330	U
218-01-9	Chrysene	330	U
205-99-2	Benzo(b)fluoranthene	330	U
207-08-9	Benzo(k)fluoranthene	330	U
50-32-8	Benzo(a)pyrene	330	U
193-39-5	Indeno(1,2,3-cd)pyrene	330	U
53-70-3	Dibenzo(a,h)anthracene	330	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKPZ

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

Matrix: (soil/water) SOIL Lab Sample ID: WG13122-1

Sample wt/vol: 30.0(g/mL) G Lab File ID: WG13122-1A70

Level: (low/med) LOW Date Received: _____

% Moisture: 0 decanted: (Y/N) N Date Extracted: 09/27/01

Concentrated Extract Volume: 500(uL) Date Analyzed: 09/28/01

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____ Extraction: (Type) SONC

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
98-86-2	Acetophenone	330	U
91-20-3	Naphthalene	330	U
91-57-6	2-Methylnaphthalene	330	U
83-32-9	Acenaphthene	330	U
132-64-9	Dibenzofuran	330	U
86-73-7	Fluorene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
56-55-3	Benzo(a)anthracene	330	U
218-01-9	Chrysene	330	U
205-99-2	Benzo(b)fluoranthene	330	U
207-08-9	Benzo(k)fluoranthene	330	U
50-32-8	Benzo(a)pyrene	330	U
193-39-5	Indeno(1,2,3-cd)pyrene	330	U
53-70-3	Dibenzo(a,h)anthracene	330	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PE3SPMS

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

Matrix: (soil/water) SOIL Lab Sample ID: WG13069-2

Sample wt/vol: 30.0(g/mL) G Lab File ID: WG13069-2A66

Level: (low/med) LOW Date Received: 09/22/01

% Moisture: 15 decanted: (Y/N) N Date Extracted: 09/24/01

Concentrated Extract Volume: 500(uL) Date Analyzed: 09/25/01

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.1 Extraction: (Type) SONC

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
98-86-2	Acetophenone	390	U
91-20-3	Naphthalene	390	U
91-57-6	2-Methylnaphthalene	390	U
83-32-9	Acenaphthene	770	
132-64-9	Dibenzofuran	390	U
86-73-7	Fluorene	390	U
120-12-7	Anthracene	390	U
86-74-8	Carbazole	390	U
206-44-0	Fluoranthene	390	U
129-00-0	Pyrene	780	
56-55-3	Benzo(a)anthracene	390	U
218-01-9	Chrysene	390	U
205-99-2	Benzo(b)fluoranthene	390	U
207-08-9	Benzo(k)fluoranthene	390	U
50-32-8	Benzo(a)pyrene	390	U
193-39-5	Indeno(1,2,3-cd)pyrene	390	U
53-70-3	Dibenzo(a,h)anthracene	390	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PE3SPMSD

Lab Name: COMPUCHEM Contract: OLM04-REVS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: Q2298

Matrix: (soil/water) SOIL Lab Sample ID: WG13069-3

Sample wt/vol: 30.0(g/mL) G Lab File ID: WG13069-3A66

Level: (low/med) LOW Date Received: 09/22/01

% Moisture: 15 decanted: (Y/N) N Date Extracted: 09/24/01

Concentrated Extract Volume: 500(uL) Date Analyzed: 09/25/01

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.1 Extraction: (Type) SONC

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
98-86-2	Acetophenone	390	U
91-20-3	Naphthalene	390	U
91-57-6	2-Methylnaphthalene	390	U
83-32-9	Acenaphthene	710	
132-64-9	Dibenzofuran	390	U
86-73-7	Fluorene	390	U
120-12-7	Anthracene	390	U
86-74-8	Carbazole	390	U
206-44-0	Fluoranthene	390	U
129-00-0	Pyrene	800	
56-55-3	Benzo(a)anthracene	390	U
218-01-9	Chrysene	390	U
205-99-2	Benzo(b)fluoranthene	390	U
207-08-9	Benzo(k)fluoranthene	390	U
50-32-8	Benzo(a)pyrene	390	U
193-39-5	Indeno(1,2,3-cd)pyrene	390	U
53-70-3	Dibenzo(a,h)anthracene	390	U

CompuChem
a Division of Liberty Analytical Corp.

GC/MS SEMI-VOA WORKSHEET

LAB INSTRUCTIONS: PPS1018/OLM04.2 VOAs, SVOAs, PEST/PCBs, ILM04.1 METALs/SEE SPECIAL REPORTING LISTS

RECEIPT DATE: 9/22/01 0:00 SAMPLE DATE: 9/21/01 10:15 DUE DATE: 9/28/01 0:00

CASE#: Q2298 SDG: Q2298 **COMPUCHEM #: Q2298-1**

CLIENT ID: PE1SP

ANALYSIS DESCRIPTION: SVOA-LL-OLM04.2

Injection Volume :___2.0_____µL Dilution Prep (if needed)_____

Extraction Date __09___/__24____/__01_____

DFTPP Filename __*DF010925A66*_____

Sample File Name__**Q2298-1 A66**_____

ANALYST (S): Injection_____917_____ Work-up _____917_____

GC/MS DATE REVIEW

CONDITION CODE

[α]

Disposition: [✓] Complete

[ ] Reinjection Required

[ ] Re-extraction Required

[ ] Reinject Neat

[ ] Dilute (X)

Extraneous Peak Search Results:

Number of peaks found: ____N/A____

Number of Hits found: ____0____

Number of Surrogate Outliers: ____0____

Quality Assurance Notice (s)
Number of Notices Required ___0___

Comments:

#GC/MS Review_____ Date__9/26/ /__ Auditor_____Date___/___/___

Final Reportable Package(s):

Q2298-1 A66

_____/_____/_____

CompuChem
a Division of Liberty Analytical Corp.

GC/MS SEMI-VOA WORKSHEET

LAB INSTRUCTIONS: PPS1018/OLM04.2 VOAs, SVOAs, PEST/PCBs, ILM04.1 METALs/SEE SPECIAL REPORTING LISTS

RECEIPT DATE: 9/22/01 0:00 SAMPLE DATE: 9/21/01 10:30 DUE DATE: 9/28/01 0:00

CASE#: Q2298 SDG: Q2298 **COMPUCHEM #: Q2298-2**

CLIENT ID: PE2SP

ANALYSIS DESCRIPTION: SVOA-LL-OLM04.2

Injection Volume : 2.0 µL Dilution Prep (if needed)

Extraction Date 09 / 24 / 01

DFTPP Filename DF010925A66

Sample File Name **Q2298-2 A66**

ANALYST (S): Injection 917 Work-up 917

GC/MS DATE REVIEW

CONDITION CODE

OK

Disposition: [/] Complete

[ ] Reinjection Required

[ ] Re-extraction Required

[ ] Reinject Neat

[ ] Dilute (X)

Extraneous Peak Search Results:

Number of peaks found: NA

Number of Hits found: 0

Number of Surrogate Outliers: 0

Quality Assurance Notice (s)
Number of Notices Required 0

Comments:

#GC/MS Review MCL Date 5/2/01 Auditor Date / /

Final Reportable Package(s):

/ Q2298-2 MC /

SV1 – 6/27/01: PTF

CompuChem
a Division of Liberty Analytical Corp.

GC/MS SEMI-VOA WORKSHEET

LAB INSTRUCTIONS: *USE FOR QC*/PPS1018/OLM04.2 VOAs, SVOAs, PEST/PCBs, ILM04.1 METALs/SEE SPECIAL REPORTING LISTS

RECEIPT DATE: 9/22/01 0:00 SAMPLE DATE: 9/21/01 11:45 DUE DATE: 9/28/01 0:00

CASE#: Q2298 SDG: Q2298 **COMPUCHEM #: Q2298-3**

CLIENT ID: PE3SP

ANALYSIS DESCRIPTION: SVOA-LL-OLM04.2

Injection Volume : 2.0 µL Dilution Prep (if needed)_____

Extraction Date 09 / 24 / 01

DFTPP Filename DF010925A66

Sample File Name **Q2298-3 A66**

ANALYST (S): Injection 917 Work-up 917

GC/MS DATE REVIEW

CONDITION CODE

ok

Disposition: [✓] Complete

[ ] Reinjection Required

[ ] Re-extraction Required

[ ] Reinject Neat

[ ] Dilute (X)

Extraneous Peak Search Results:

Number of peaks found: N/A

Number of Hits found: 0

Number of Surrogate Outliers: 0

Quality Assurance Notice (s)
Number of Notices Required 0

Comments:

#GC/MS Review [signature] Date 9/26/1 Auditor_____ Date___/___/___

Final Reportable Package(s):

Q2298-3A66

CompuChem
a Division of Liberty Analytical Corp.

GC/MS SEMI-VOA WORKSHEET

LAB INSTRUCTIONS:

RECEIPT DATE: 9/24/01 0:00 SAMPLE DATE: DUE DATE:

CASE#: SDG: WG13069 **COMPUCHEM #: WG13069-1**

CLIENT ID: SBLKPH

ANALYSIS DESCRIPTION: SVOA-LL-OLM04.2

Injection Volume :___2.0_____µL Dilution Prep (if needed)_____

Extraction Date __09___/__24____/__01_____

DFTPP Filename __DF010925A66_____

Sample File Name__**WG13069-1 A66**_____

ANALYST (S): Injection_____917_____ Work-up _____ 917 _____

GC/MS DATE REVIEW

CONDITION CODE

[a]

Disposition: [✓] Complete

[ ] Reinjection Required

[ ] Re-extraction Required

[ ] Reinject Neat

[ ] Dilute (X)

Extraneous Peak Search Results:

Number of peaks found: ____N/A___

Number of Hits found: ____0___

Number of Surrogate Outliers: ____0___

Quality Assurance Notice (s)
Number of Notices Required ___0___

Comments:

#GC/MS Review_____ Date_9/26/ / Auditor_____Date___/___/___

Final Reportable Package(s):

_____ / WG13069-1266 / _____

CompuChem
a Division of Liberty Analytical Corp.

GC/MS SEMI-VOA WORKSHEET

LAB INSTRUCTIONS:

RECEIPT DATE: 9/24/01 0:00 SAMPLE DATE: DUE DATE:

CASE#: SDG: WG13069 **COMPUCHEM #: WG13069-2**

CLIENT ID: Matrix Spike

ANALYSIS DESCRIPTION: SVOA-LL-OLM04.2

Injection Volume :___2.0_____µL Dilution Prep (if needed)_____

Extraction Date __09___/__24____/__01_____

DFTPP Filename __DF010925A66_____

Sample File Name__**WG13069-2 A66**_____

ANALYST (S): Injection_____917_____ Work-up _____2319_____

GC/MS DATE REVIEW

CONDITION CODE

[ok]

Disposition: [✓] Complete

[ ] Reinjection Required

[ ] Re-extraction Required

[ ] Reinject Neat

[ ] Dilute (X)

Extraneous Peak Search Results:

Number of peaks found: ___n/a___

Number of Hits found: ___9 2 on dil___

Number of Surrogate Outliers: ___0___

Quality Assurance Notice (s)
Number of Notices Required ___0___

Comments:

#GC/MS Review_____ Date 9/26/1 Auditor_____Date__/__/__

Final Reportable Package(s):

_____/ WG13069-2MS /_____

CompuChem
a Division of Liberty Analytical Corp.

GC/MS SEMI-VOA WORKSHEET

LAB INSTRUCTIONS:

RECEIPT DATE: 9/24/01 0:00 SAMPLE DATE: DUE DATE:

CASE#: SDG: WG13069 **COMPUCHEM #: WG13069-3**

CLIENT ID: Matrix Spike Duplica

ANALYSIS DESCRIPTION: SVOA-LL-OLM04.2

Injection Volume : 2.0 µL Dilution Prep (if needed)

Extraction Date 09 / 24 / 01

DFTPP Filename DF010925A66

Sample File Name **WG13069-3 A66**

ANALYST (S): Injection 917 Work-up 2319

GC/MS DATE REVIEW

CONDITION CODE

Gh

Disposition: [✓] Complete

[ ] Reinjection Required

[ ] Re-extraction Required

[ ] Reinject Neat

[ ] Dilute (X)

Extraneous Peak Search Results:

Number of peaks found: N/A

Number of Hits found: H2 (min wt).

Number of Surrogate Outliers: 0

Quality Assurance Notice (s)
Number of Notices Required 0

Comments:

#GC/MS Review [signature] Date 9/26 / / Auditor Date / /

Final Reportable Package(s):

/ WG13069-3 A66 /

EXTRACTION WORKSHEET

Semi-volatile Low. Level Soil EPA CLP SOW OLM 4.2

ASSIGNED TO Taylor/Rixey EMPLOYEE ID # 2430/2438 DATE EXTRACTED/POSTED 9/24/01

-738 9.25.1

135

Sample Number	Case #	QC SAMPLES TYPE	Sample Weight (g)	Final Volume (ml)	GPC Final Vol (ml)	COMMENTS
Q2298-1			30.0	10.0	0.5	
2			30.0	10.0	0.5	
3			30.0	10.0	0.5	use 3 for SS
W6-13069-2	✓	SS	30.0	10.0	0.5	
L-3		SS	30.0	10.0	0.5	
				~~10.0~~		
				10.0		
				10.0		
				10.0		
				~~10.0~~		
				10.0		
				10.0		
				10.0		
				10.0		
				10.0		
				10.0		
				10.0		
				10.0		
				10.0		
				10.0		
				10.0		
				10.0		
				10.0		
W6-13069-1		BLK	30.0	10.0	0.5	
		LCS		10.0		

CH 9/25/01

GPC Inst # 2

GPC Calib Date A20921

GPC Run Date 9-24-01

FINAL VOLUME VERIFIED: CHaley HJB

REVIEWED BY:

	ID#	AMT	LOT #
SURROGATE	431	0.5 ml	52092
SPIKE	8003	0.5 ml	51757
Date GPC MeC12 Blank Done	9/21/01		

SURR. & SPIKE ADDED BY TB / 9/24/01

INITIALS DATE

Witness KB / 9-24-01

Initials Date

Analysts initials. Extracted TB KD CH N2 MAH Bottle up CH

MANUFACTURER AND LOT NO. OF REAGENTS/SOLVENTS USED CH_2Cl_2 CL082 | NA_2SO_4 411229 | Acetone CB042

5/22/01

CompuChem
a Division of Liberty Analytical Corp.

GC/MS SEMI-VOA WORKSHEET

LAB INSTRUCTIONS: PPS1018/OLM04.2 VOAs, SVOAs, PEST/PCBs, ILM04.1 METALs/SEE SPECIAL REPORTING LISTS

RECEIPT DATE: 9/26/01 0:00 SAMPLE DATE: 9/25/01 12:10 DUE DATE: 10/2/01 0:00

CASE#: Q2298 SDG: Q2298 **COMPUCHEM #: Q2298-4** J

CLIENT ID: PE4-S-P

ANALYSIS DESCRIPTION: SVOA-LL-OLM04.2

Injection Volume : 2 µL Dilution Prep (if needed)_____

Extraction Date 9 / 27 / 01

DFTPP Filename DF011001B66

Sample File Name Q2298-4JB66

ANALYST (S): Injection 2319 Work-up 2319

GC/MS DATE REVIEW

CONDITION CODE

JA
OK

Disposition: [✓] Complete

[ ] Reinjection Required

[ ] Re-extraction Required

[ ] Reinject Neat

[ ] Dilute (X)

Extraneous Peak Search Results:

Number of peaks found: Ø

Number of Hits found: Ø

Number of Surrogate Outliers: Ø

Quality Assurance Notice (s)
Number of Notices Required Ø

Comments:

#GC/MS Review [signature] Date 10/2/01 Auditor_____ Date___/___/___

Final Reportable Package(s):

_____ / Q2298-4JB66 / _____

CompuChem
a Division of Liberty Analytical Corp.

GC/MS SEMI-VOA WORKSHEET

LAB INSTRUCTIONS: PPS1018/OLM04.2 VOAs, SVOAs, PEST/PCBs, ILM04.1 METALs/SEE SPECIAL REPORTING LISTS

RECEIPT DATE: 9/26/01 0:00 SAMPLE DATE: 9/25/01 12:30 DUE DATE: 10/2/01 0:00

CASE#: Q2298 SDG: Q2298 **COMPUCHEM #: Q2298-5** J

CLIENT ID: PE5-S-P

ANALYSIS DESCRIPTION: SVOA-LL-OLM04.2

Injection Volume : 2 µL Dilution Prep (if needed) _____

Extraction Date 9 / 27 / 01

DFTPP Filename DF011001B66

Sample File Name Q2298-5B66

ANALYST (S): Injection 2319 Work-up 2319

GC/MS DATE REVIEW

CONDITION CODE

JA

Disposition: [✓] Complete

[ ] Reinjection Required

[ ] Re-extraction Required

[ ] Reinject Neat

[ ] Dilute (X)

Extraneous Peak Search Results:

Number of peaks found: ~~29~~ NA ~~HBC~~ m101310.

Number of Hits found: ~~20~~ 15

Number of Surrogate Outliers: Ø

Quality Assurance Notice (s)
Number of Notices Required Ø

Comments:

#GC/MS Review Nenpan Date 10/2/01 Auditor _____ Date ___/___/___

Final Reportable Package(s):

_____ / Q2298-5B66 / _____

CompuChem
a Division of Liberty Analytical Corp.

GC/MS SEMI-VOA WORKSHEET

LAB INSTRUCTIONS: PPS1018/OLM04.2 VOAs, SVOAs, PEST/PCBs, ILM04.1 METALs/SEE SPECIAL REPORTING LISTS

RECEIPT DATE: 9/26/01 0:00 SAMPLE DATE: 9/25/01 13:05 DUE DATE: 10/2/01 0:00

CASE#: Q2298 SDG: Q2298 **COMPUCHEM #: Q2298-6** J

CLIENT ID: PE6-S-P

ANALYSIS DESCRIPTION: SVOA-LL-OLM04.2

Injection Volume : 2 µL Dilution Prep (if needed)_____

Extraction Date 9 / 27 / 01

DFTPP Filename DF011001B66

Sample File Name Q2298-6JB66

ANALYST (S): Injection 2319 Work-up 2319

GC/MS DATE REVIEW

CONDITION CODE

JA

Disposition: [✓] Complete

[ ] Reinjection Required

[ ] Re-extraction Required

[ ] Reinject Neat

[ ] Dilute (X)

Extraneous Peak Search Results:

Number of peaks found: ~~[illegible]~~ N/A

Number of Hits found: 15 11 M 10/3/01

Number of Surrogate Outliers: Ø

Quality Assurance Notice (s)
Number of Notices Required Ø

Comments:

#GC/MS Review [signature] Date 10/2/01 Auditor_____ Date___/___/___

Final Reportable Package(s):

/ Q2298-6JB66 /

CompuChem
a Division of Liberty Analytical Corp.

GC/MS SEMI-VOA WORKSHEET

LAB INSTRUCTIONS: PPS1018/OLM04.2 VOAs, SVOAs, PEST/PCBs, ILM04.1 METALs/SEE SPECIAL REPORTING LISTS

RECEIPT DATE: 9/26/01 0:00 SAMPLE DATE: 9/25/01 15:25 DUE DATE: 10/2/01 0:00

CASE#: Q2298 SDG: Q2298 **COMPUCHEM #: Q2298-12** J

CLIENT ID: PE12-S-B

ANALYSIS DESCRIPTION: SVOA-LL-OLM04.2

Injection Volume : 2 µL Dilution Prep (if needed)_____

Extraction Date 9 / 27 / 01

DFTPP Filename DF011001B66

Sample File Name Q2298-12J B66

ANALYST (S): Injection 2319 Work-up 2319

GC/MS DATE REVIEW

CONDITION CODE

JA

Disposition: [✓] Complete

[ ] Reinjection Required

[ ] Re-extraction Required

[ ] Reinject Neat

[ ] Dilute (X)

Extraneous Peak Search Results:

Number of peaks found: 1BLK+2

Number of Hits found: 1

Number of Surrogate Outliers: Ø

Quality Assurance Notice (s)
Number of Notices Required Ø

Comments:

#GC/MS Review Roopan Date 10/2 01 Auditor_____ Date __/__/__

Final Reportable Package(s):

_____ / Q2298-12JB66 / _____

CompuChem
a Division of Liberty Analytical Corp.

GC/MS SEMI-VOA WORKSHEET

LAB INSTRUCTIONS: PPS1018/OLM04.2 VOAs, SVOAs, PEST/PCBs, ILM04.1 METALs/SEE SPECIAL REPORTING LISTS

RECEIPT DATE: 9/26/01 0:00 SAMPLE DATE: 9/25/01 15:35 DUE DATE: 10/2/01 0:00

CASE#: Q2298 SDG: Q2298 **COMPUCHEM #: Q2298-13** J

CLIENT ID: PE13-S-B

ANALYSIS DESCRIPTION: SVOA-LL-OLM04.2

Injection Volume : 2 µL Dilution Prep (if needed)_____

Extraction Date 9 / 27 / 01

DFTPP Filename DF01b01B66

Sample File Name Q2298-13JB66

ANALYST (S): Injection 2319 Work-up 917

GC/MS DATE REVIEW

CONDITION CODE

JQ

Disposition: [✓] Complete

[ ] Reinjection Required

[ ] Re-extraction Required

[ ] Reinject Neat

[ ] Dilute (X)

Extraneous Peak Search Results:

Number of peaks found: 1

Number of Hits found: 1

Number of Surrogate Outliers: Ø

Quality Assurance Notice (s)
Number of Notices Required Ø

Comments:

#GC/MS Review Mespan Date 10/2/01 Auditor_____ Date___/___/___

Final Reportable Package(s):

/ Q2298-13JB66 /

EXTRACTION WORKSHEET
Semi-volatile Low, Low/Soil EPA CLP SOW OLM 4.2
COMPUCHEM

ASSIGNED TO Cassie | NW EMPLOYEE ID # 1151 | 2578
app. C. Pelles 1727

-738

DATE EXTRACTED/POSTED 9/27/01
Butchitt 9-29-1
Rec'd 9/28/01

193

	Sample Number	Case #	QC SAMPLES TYPE	Sample Weight (g)	Final Volume (ml)	GPC Final Vol (ml)	COMMENTS
1	Q2298-4			30.0	10.0	0.1/0.5	
2	Q2298-5			30.0	10.0	0.1/0.5	
3	Q2298-6			30.0	10.0	0.1/0.5	
4	Q2298-11			30.0	10.0	0.1/0.5	Recipe
5	Q2298-12			30.0	10.0	0.1/0.5	
6	Q2298-13			30.0	10.0	0.1/0.5	2nd of samples diluted to 10 ml in CH_2Cl_2
7	L0031-1			30.0	10.0	0.1/0.5	Final volume = 0.1 ml
8	2			30.0	10.0	0.1/0.5	
9	3			30.0	10.0	0.1/0.5	
10	4			30.0	10.0	0.1/0.5	
11	5			30.0	10.0	0.1/0.5	
12	6			30.0	10.0	0.1/0.5	
13	7			30.0	10.0	0.1/0.5	
14	8			30.0	10.0	0.1/0.5	
15	9			30.0	10.0	0.1/0.5	
16	10			30.0	10.0	0.1/0.5	
17	11			30.0	10.0	0.1/0.5	
18	12			30.0	10.0	0.1/0.5	
19	13			30.0	10.0	0.1/0.5	
20	14			30.0	10.0	0.1/0.5	
21	W613136-2		SS	30.0	10.0	0.1/0.5	
22	W613136-3		SS	30.0	10.0	0.1/0.5	
23			BLK		10.0		
24			BCS 9/28/01		10.0		

GPC Instr # 2
GPC Calib Date A 9/28/01
GPC Run Date 9/28/01

FINAL VOLUME VERIFIED

REVIEWED BY

	ID#	AMT	LOT #
SURROGATE	431	0.5 ml	5 2093
SPIKE	8003	0.5 ml	5 2138
Date GPC MeC12 Blank Done	9/28/01		

SURR. & SPIKE ADDED BY
GFB / 9/27/01
INITIALS DATE
Witness NB / 9/27/01
Initials Date

Analysts initials. Extracted GFB KD MC N2 MC Bottle up CB

MANUFACTURER AND LOT NO. OF REAGENTS/SOLVENTS USED CH_2Cl_2 CLOM NA_2SO_4 4 11 2129 Acetone CB042

CompuChem
a Division of Liberty Analytical Corp.

GC/MS SEMI-VOA WORKSHEET

LAB INSTRUCTIONS: PPS1018/OLM04.2 VOAs, SVOAs, PEST/PCBs, ILM04.1 METALs/SEE SPECIAL REPORTING LISTS

RECEIPT DATE: 9/26/01 0:00 SAMPLE DATE: 9/25/01 13:20 DUE DATE: 10/2/01 0:00

CASE#: Q2298 SDG: Q2298 **COMPUCHEM #: Q2298-7**

CLIENT ID: PE7-S-B

ANALYSIS DESCRIPTION: SVOA-LL-OLM04.2

Injection Volume : 2.0 µL Dilution Prep (if needed)

Extraction Date 09 / 27 / 01

DFTPP Filename DF010928A70

Sample File Name **Q2298-7 A70**

ANALYST (S): Injection 917 Work-up 917

GC/MS DATE REVIEW

CONDITION CODE

01

Disposition: [✓] Complete

[ ] Reinjection Required

[ ] Re-extraction Required

[ ] Reinject Neat

[ ] Dilute (X)

Extraneous Peak Search Results:

Number of peaks found: N/A

Number of Hits found: Ø

Number of Surrogate Outliers: Ø

Quality Assurance Notice (s)
Number of Notices Required 0

Comments:

#GC/MS Review [illegible] Date 10 / 1 / 1 Auditor Date / /

Final Reportable Package(s):

Q2298-7 A70

CompuChem
a Division of Liberty Analytical Corp.

GC/MS SEMI-VOA WORKSHEET

LAB INSTRUCTIONS: PPS1018/OLM04.2 VOAs, SVOAs, PEST/PCBs, ILM04.1 METALs/SEE SPECIAL REPORTING LISTS

RECEIPT DATE: 9/26/01 0:00 SAMPLE DATE: 9/25/01 14:00 DUE DATE: 10/2/01 0:00

CASE#: Q2298 SDG: Q2298 **COMPUCHEM #: Q2298-8**

CLIENT ID: PE8-S-B

ANALYSIS DESCRIPTION: SVOA-LL-OLM04.2

Injection Volume : 2.0 µL Dilution Prep (if needed)

Extraction Date 09 / 27 / 01

DFTPP Filename DF010928A70

Sample File Name Q2298-8 A70

ANALYST (S): Injection 917 Work-up 917

GC/MS DATE REVIEW

CONDITION CODE

OK

Disposition: [✓] Complete

[ ] Reinjection Required

[ ] Re-extraction Required

[ ] Reinject Neat

[ ] Dilute (X)

Extraneous Peak Search Results:

Number of peaks found: ~~HTBL~~ N/A

Number of Hits found: 0

Number of Surrogate Outliers: 0

Quality Assurance Notice (s)
Number of Notices Required 9

Comments:

#GC/MS Review [signature] Date 10/1/1 Auditor Date / /

Final Reportable Package(s):

Q2298-8 A70

CompuChem
a Division of Liberty Analytical Corp.

GC/MS SEMI-VOA WORKSHEET

LAB INSTRUCTIONS: PPS1018/OLM04.2 VOAs, SVOAs, PEST/PCBs, ILM04.1 METALs/SEE SPECIAL REPORTING LISTS

RECEIPT DATE: 9/26/01 0:00 SAMPLE DATE: 9/25/01 14:10 DUE DATE: 10/2/01 0:00

CASE#: Q2298 SDG: Q2298 **COMPUCHEM #: Q2298-9**

CLIENT ID: PE9-S-B

ANALYSIS DESCRIPTION: SVOA-LL-OLM04.2

Injection Volume : 2.0 µL Dilution Prep (if needed)_____

Extraction Date 09 / 27 / 01

DFTPP Filename DF010928A70

Sample File Name **Q2298-9 A70**

ANALYST (S): Injection 917 Work-up 2070

GC/MS DATE REVIEW

CONDITION CODE

OK

Disposition: [✓] Complete

[ ] Reinjection Required

[ ] Re-extraction Required

[ ] Reinject Neat

[ ] Dilute (X)

Extraneous Peak Search Results:

Number of peaks found: ~~2~~ N/A

Number of Hits found: Ø

Number of Surrogate Outliers: Ø

Quality Assurance Notice (s)
Number of Notices Required 9

Comments:

#GC/MS Review [signature] Date 10/1/1 Auditor_____ Date___/___/___

Final Reportable Package(s):

_____ / Q2298-9 A70 / _____

CompuChem
a Division of Liberty Analytical Corp.

GC/MS SEMI-VOA WORKSHEET

LAB INSTRUCTIONS: PPS1018/OLM04.2 VOAs, SVOAs, PEST/PCBs, ILM04.1 METALs/SEE SPECIAL REPORTING LISTS

RECEIPT DATE: 9/26/01 0:00 SAMPLE DATE: 9/25/01 14:45 DUE DATE: 10/2/01 0:00

CASE#: Q2298 SDG: Q2298 **COMPUCHEM #: Q2298-10**

CLIENT ID: PE10-S-B

ANALYSIS DESCRIPTION: SVOA-LL-OLM04.2

Injection Volume :___2.0_____µL Dilution Prep (if needed)_____

Extraction Date __09__/__27____/__01_____

DFTPP Filename __DF010928A70_____

Sample File Name__**Q2298-10 A70** _____

ANALYST (S): Injection_____917_____ Work-up 2070

GC/MS DATE REVIEW

CONDITION CODE

OK

Disposition: [✓] Complete

[ ] Reinjection Required

[ ] Re-extraction Required

[ ] Reinject Neat

[ ] Dilute (X)

Extraneous Peak Search Results:

Number of peaks found: N/A ~~HOC~~

Number of Hits found: ϕ

Number of Surrogate Outliers: ϕ

Quality Assurance Notice (s)
Number of Notices Required ϕ

Comments:

#GC/MS Review [signature] Date 10/1/1 Auditor_____Date___/___/___

Final Reportable Package(s):

/ Q2298-10 A70 /

CompuChem
a Division of Liberty Analytical Corp.

GC/MS SEMI-VOA WORKSHEET

LAB INSTRUCTIONS: PPS1018/OLM04.2 VOAs, SVOAs, PEST/PCBs, ILM04.1 METALs/SEE SPECIAL REPORTING LISTS

RECEIPT DATE: 9/26/01 0:00 SAMPLE DATE: 9/25/01 14:55 DUE DATE: 10/2/01 0:00

CASE#: Q2298 SDG: Q2298 **COMPUCHEM #: Q2298-11**

CLIENT ID: PE11-S-B

ANALYSIS DESCRIPTION: SVOA-LL-OLM04.2

Injection Volume : 2.0 µL Dilution Prep (if needed) _____

Extraction Date 09 / 27 / 01

DFTPP Filename DF010928A70

Sample File Name **Q2298-11 A70**

ANALYST (S): Injection 917 Work-up 237

GC/MS DATE REVIEW

CONDITION CODE

[a]

Extraneous Peak Search Results:

Number of peaks found: ~~20~~ ~~18 TIC~~ N/A

Number of Hits found: 0

Number of Surrogate Outliers: ~~0~~ 1

Quality Assurance Notice (s)
Number of Notices Required 0

Disposition: [✓] Complete

[ ] Reinjection Required

[ ] Re-extraction Required

[ ] Reinject Neat

[ ] Dilute (X)

Comments:

#GC/MS Review [signature] Date 10/1/1 Auditor _____ Date / /

Final Reportable Package(s):

/ Q2298-11 A70 /

CompuChem
a Division of Liberty Analytical Corp.

GC/MS SEMI-VOA WORKSHEET

LAB INSTRUCTIONS:

RECEIPT DATE: 9/27/01 0:00 SAMPLE DATE: DUE DATE:

CASE#: SDG: WG13122 **COMPUCHEM #: WG13122-1**

CLIENT ID: SBLKPZ

ANALYSIS DESCRIPTION: SVOA-LL-OLM04.2

Injection Volume :___2.0_____µL Dilution Prep (if needed)_____

Extraction Date __09__/_27___/_01____

DFTPP Filename __DF010928A70_____

Sample File Name__**WG13122-1 A70** _____

ANALYST (S): Injection____917_____ Work-up _____917_____

GC/MS DATE REVIEW

CONDITION CODE

[ok]

Disposition: [✓] Complete

[ ] Reinjection Required

[ ] Re-extraction Required

[ ] Reinject Neat

[ ] Dilute (X)

Extraneous Peak Search Results:

Number of peaks found: ____N/A____

Number of Hits found: ____0____

Number of Surrogate Outliers: ____0____

Quality Assurance Notice (s)
Number of Notices Required ____0____

Comments:

#GC/MS Review_____ Date 10/1/1 Auditor_____Date__/__/__

Final Reportable Package(s):

_____/ WG13122-1 A70 /_____

CompuChem
a Division of Liberty Analytical Corp.

GC/MS SEMI-VOA WORKSHEET

LAB INSTRUCTIONS:

RECEIPT DATE: SAMPLE DATE: DUE DATE:

CASE#: SDG: **COMPUCHEM #:** WG13122-1 J

CLIENT ID: SBLKZP

ANALYSIS DESCRIPTION:

Injection Volume : 2 µL Dilution Prep (if needed)

Extraction Date 9 / 27 / 01

DFTPP Filename DF011001B66

Sample File Name WG13122-1JB66

ANALYST (S): *Injection* 2319 *Work-up* 2319

GC/MS DATE REVIEW

CONDITION CODE

JA

Extraneous Peak Search Results:

Number of peaks found: 2

Number of Hits found: Ø

Number of Surrogate Outliers: Ø

Quality Assurance Notice (s)
Number of Notices Required Ø

Disposition: [✓] Complete

[ ] Reinjection Required

[ ] Re-extraction Required

[ ] Reinject Neat

[ ] Dilute (X)

Comments:

Moved from Inst. #70

#GC/MS Review Wespam Date 10/2/01 Auditor Date / /

Final Reportable Package(s):

/ ~~WG132~~ WG13122-1JB66
M 10/21/01

SV1 – 6/27/01: PTF

Compos [illegible] Soil or Liquid Analysis
EXTR[illegible]ON WORKSHEET
Semi-volatile Low [illegible]el Soil EPA CLP SOW OLM 4.2

ASSIGNED TO Gomez/Novena EMPLOYEE ID # 114 | 2378

DATE EXTRACTED/POSTED 9/27/01
9.28.2

-738

209

	Sample Number	Case #	QC SAMPLES TYPE	Sample Weight (g)	Final Volume (ml)	GPC Final Vol (ml)	COMMENTS
1	Q2248-4			30.0	10.0	0.5	
2	5			30.0	10.0	0.5	
3	6			30.0	10.0	0.5	
4	7			30.0	10.0	0.5	
5	8			30.0	10.0	0.5	
6	9			30.0	10.0	0.5	
7	10			30.0	10.0	0.5	
8	11			30.0	10.0	0.5	
9	12			30.0	10.0	0.5	
10	13			30.0	10.0	0.5	
11	~~WB 13/22.2~~		~~SS~~		~~10.0~~		
12	~~4 3~~		~~SS~~		~~10.0~~		
13					10.0		
14					~~10.0~~		
15					10.0		
16					10.0		
17					10.0		
18					10.0		
19					10.0		
20					10.0		
21					10.0		
22					10.0		HJB 9/28/01
23	WB 13/22.1		BLK	30.0	10.0	0.5	
24			~~LCS~~		10.0		

GPC Inst # 4
GPC Calib Date A 9/26/01
GPC Run Date 9/27/01

FINAL VOLUME VERIFIED: HJB

REVIEWED BY: CHuhy

	ID#	AMT	LOT #
SURROGATE	431	0.5 ml	52092
SPIKE	8003	0.5 ml	52139
Date GPC MeC12 Blank Done	9/26/01		

SURR. & SPIKE ADDED BY
HJB / 9/27/01
INITIALS DATE
Witness NB / 9/27/01
Initials Date

Analysts initials. Extracted GFB/NB KD GFB N2 GFB/GH Bottle up CH/GFB

MANUFACTURER AND LOT NO. OF REAGENTS/SOLVENTS USED CH_2Cl_2 CC080 Na_2SO_4 411227 Acetone CB042

GPC Weekly Calibration Log: ABC #2

Tape a copy of the U/V trace in the space below. Make copies of this page and attach them to the associated extraction sheets. Label each peak on the U/V trace with the compound name. Show resolution calculations.

Date/Time: 9/21/01 8:40am Room Temp: 21.9 Technician Name/ID: C. Hutchison 1787

GPC calibration standards (listed in order of elution)	Time (min) Or (CM)	RSD (%)
Corn oil		
Bis(2-ethylhexyl)phthalate	5.45 ✓	0
Methoxychlor		✓
Perylene	9.25 ✓	0
Sulfur		

Lot No. of GPC Calibration Standard Used 51838

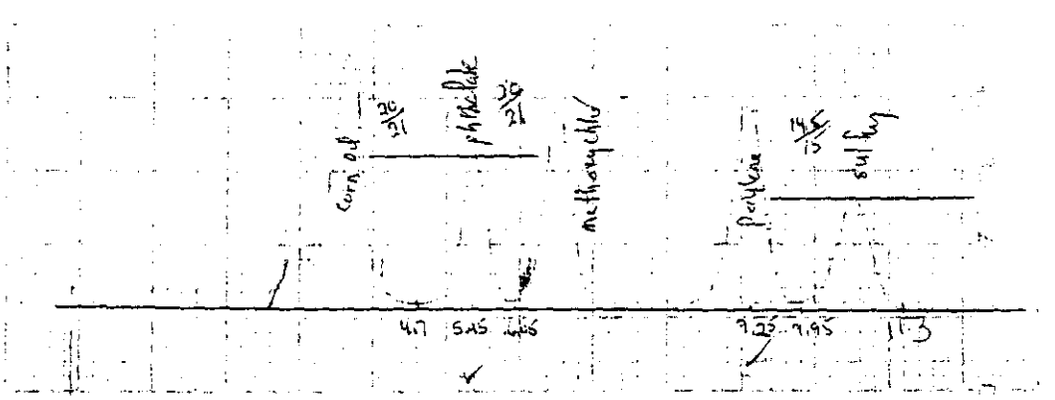
Acceptance criteria: ± 5.0% change from previous calibration (Do not round.)
Retention time criteria met. (Y) N ✓

Calculate and record retention time shift from the previous calibration/UV trace.

Flow Rate: 5.0 ml/min Column: Bio-Beads Chart Speed: 15 cm/hr

Column Pressure: 21 psi

Pest/PCB		Semivolatiles
Dump Time: 24:12 min	> 85% resolution between corn oil and phthalate (Y) N ✓	Dump Time: 18:48 min
Collect Time: 15:36 min	> 85% resolution between phthalate and methoxychlor (Y) N ✓	Collect Time: 21:00 min
Collect Volume: 78 ml	> 90% resolution between perylene and sulfur (Y) N ✓	Collect Volume: 105 ml
Wash Time: 10:00 min		Wash Time: 15:00 min



Reviewed By: W. Brown Date: 9/21/01

6/26/00 mlj

421A

GPC Weekly Calibration Log: ABC #2

Tape a copy of the U/V trace in the space below. Make copies of this page and attach them to the associated extraction sheets. Label each peak on the U/V trace with the compound name. Show resolution calculations.

Date/Time: 9/14/01 9:00AM Room Temp: 21.7 Technician Name/ID: C. Huber / 1787

GPC calibration standards (listed in order of elution)	Time (min) Or (CM)	RSD (%)
Corn oil		
Bis(2-ethylhexyl)phthalate	5.45 ✓	0
Methoxychlor		✓
Perylene	9.25 ✓	0
Sulfur		

Lot No. of GPC Calibration Standard Used 51838

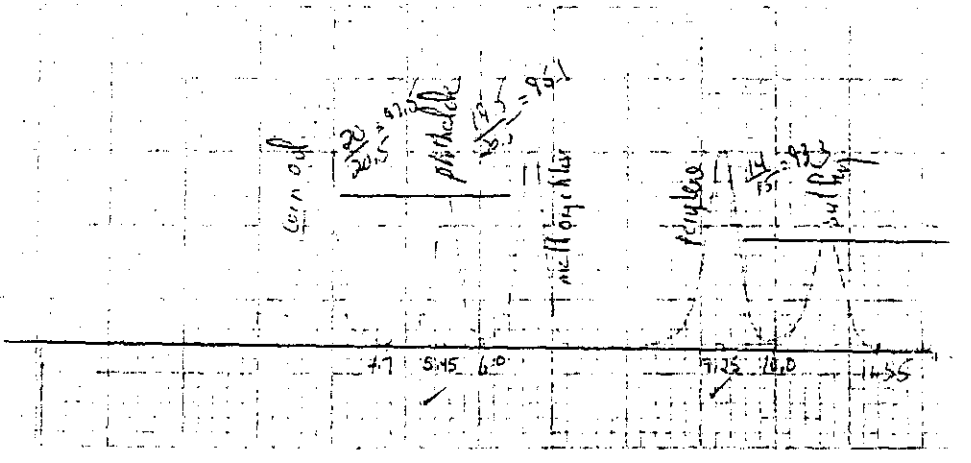
Acceptance criteria: ± 5.0% change from previous calibration (Do not round.)
Retention time criteria met. (Y) N ✓

Calculate and record retention time shift from the previous calibration/UV trace.

Flow Rate: 5.0 ml/min Column: Bio-Beads Chart Speed: 15 cm/hr

Column Pressure: 19 psi

Pest/PCB		Semivolatiles
Dump Time: 24:00 min	> 85% resolution between corn oil and phthalate (Y) N ✓	Dump Time: 18:48 min
Collect Time: 16:00 min	> 85% resolution between phthalate and methoxychlor (Y) N ✓	Collect Time: 21:00 min
Collect Volume: 80 ml	> 90% resolution between perylene and sulfur (Y) N ✓	Collect Volume: 106 ml
Wash Time: 10:00 min		Wash Time: 15:00 min



Reviewed By: DJB Date: 9/14/01

ID 010901357

COMPUCHEM a division of Liberty Analytical Corp.

SEMI-VOLATILE GPC WEEKLY METHYLENE CHLORIDE BLANK

USEPA CLP SOW

TECHNICIAN NAME: Carl Hatley DATE RAN: 9/21/01

EMPLOYEE ID 1757 GPC INSTRUMENT # ABC GPC # 2

SAMPLE ID NUMBER	GPC INJ. VOLUME	FINAL VOLUME	COMMENTS
A 20921 B	5.0 ml	0.5 ml	METHYLENE CHLORIDE BLANK
			MANUFACTURER & LOT # J T Baker V32E04

* COMPLETE SAMPLE ID NUMBER USING GPC COLUMN NUMBER ALONG WITH MONTH AND DATE. (i.e. A10202B)

RUN WEEKLY GPC CALIBRATION THROUGH GPC CLEANUP EVERY SEVEN CALENDAR DAYS AND SUBMIT TO GC MS FOR ANALYSIS

A 20921 B METHYLENE CHLORIDE ONLY

SUPERVISOR REVIEW: Carl A Hatley

FINAL VOLUME VERIFIED:

EXTRACTS RECEIVED BY: Tracy Stange

Sem.VOA\GPC\WEEKLYMethChlorBlank.doc/mlj

COMPUCHEM a division of Liberty Analytical Corp DATE 9/21/01 INITIAL TIME OF TUNE 2135 SHIFT/S(A) (B) ✓ (C)

GC/MS SEMIVOLATILE RUN LOG TIME TUNE EXPIRES 0735 LINKER /METHOD 0401 / ~~Acq~~ FW 9/20/01

COMPUCHEM .LOGBOOK 4 U(4) 3 (5972hp70)

PREVENTIVE MAINTENANCE Front / Liner / Septa FW 9/20/01

	REJECTED	FILE NAME	REPORTED	DATE	TIME	CLIENT ID#	CASE/SDG#	AMOUNT INJECTED	CHEMIST	COMMENTS(ETC.)/DISPOSITION
1		DF010921B70	/	9/21/01	2135	DFTPP	–	2µL	2319	SCD=LCD
2	/	HG010921B70	MS	/ /	2135 FW 9/20/01	SSTD050PH	–			
3		HH010921B70	/	/ /	2231	↓ ✓	–			
4		AJ0921BB70	/	/ /	2306	ABC GPC #2 ✓	—			
5		WG13000-1B70	/	/ /	2341	SBLKPP	B0397			
6		B0397-1B70	/	9/22/01	0015	B0397				
7		B0397-2B70	/	/ /	0050	B039A				
8		WG13000-2B70	/	/ /	0125	↓ MS				
9		WG13000-3B70	/	/ /	0159	↓ MSD				
10		B0397-3B70	/	/ /	0234	B039B				
11		D0226-17B70	/	/ /	0309	D1020	D0226			
12		WG12416-2B70	/	/ /	0344	D1019MS				
13		WG12416-3B70	/	/ /	0419	D1019MSD				
14		D0226-18B70	/	/ /	0454	D1021				
15		D0226-19B70	/	/ /	0529	D1022				
16		D0226-20B70	/	/ /	0604	D1023				
17		D0226-21B70	/	/ /	0639	D1024				
18		D0226-9DB70	/	/ /	0713	D1093				6X
19				/ /						
20				/ /						
21				/ /			FW 9/22/01			
22				/ /						
23				/ /						
24				/ /						

	Tune	STANDARDS Analytical	Int. Std.	Column Type
Std. ID #	7055	2437	800	RTX-5MS 0.25mm
Lot #	52031	51676	52077	

SUPERVISOR APPROVAL [signature]

DATE 9-22-01

The presence of the Chemist's employee ID number, or signature, on this run log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist together with the chemist's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation

5/17/01dcc

GPC Weekly Calibration Log: ABC #4

Tape a copy of the U/V trace in the space below. Make copies of this page and attach them to the associated extraction sheets. Label each peak on the U/V trace with the compound name. Show resolution calculations.

Date/Time: 9/26/01 1:45PM Room Temp: 21.1 Technician Name/ID: C. Hahn/1787

GPC calibration standards (listed in order of elution)	Time (min) Or (CM)	RSD (%)
Corn oil		
Bis(2-ethylhexyl)phthalate	3.65 ✓	1.37 ✓
Methoxychlor		
Perylene	5.65 ✓	0.8 ✓
Sulfur		

Lot No. of GPC Calibration Standard Used S1838

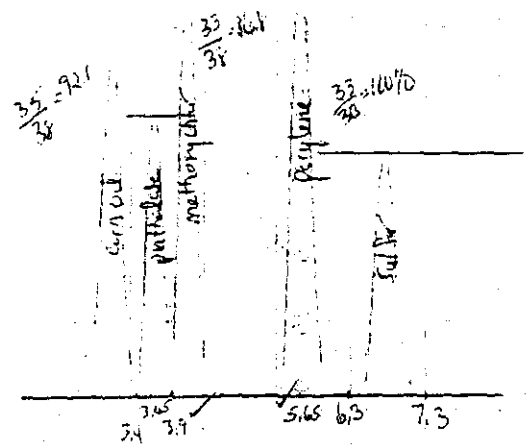
Acceptance criteria: ± 5.0% change from previous calibration (Do not round.)
Retention time criteria met: (Y) N ✓

Calculate and record retention time shift from the previous calibration/UV trace.

Flow Rate: 5.0 ml/min Column: Bio-Beads Chart Speed: 15 cm/hr

Column Pressure: 265 psi

Pest/PCB		Semivolatiles
Dump Time: 15:36 min	> 85% resolution between corn oil and phthalate (Y) N ✓	Dump Time: 13:36 min
Collect Time: 9:36 min	> 85% resolution between phthalate and methoxychlor (Y) N ✓	Collect Time: 11:36 min
Collect Volume: 48 ml	> 90% resolution between perylene and sulfur (Y) N ✓	Collect Volume: 58 ml
Wash Time: 10:00 min		Wash Time: 10:00 min



Reviewed By: [signature] Date: 9/27/01

4485

GPC Weekly Calibration Log: ABC #4

Tape a copy of the U/V trace in the space below. Make copies of this page and attach them to the associated extraction sheets. Label each peak on the U/V trace with the compound name. Show resolution calculations

Date/Time: 9/26/01 i'wpin Room Temp: 21.1 Technician Name/ID: C. Hawkins 1087

GPC calibration standards (listed in order of elution)	Time (min) Or (CM)	RSD (%)
Corn oil		
Bis(2-ethylhexyl)phthalate	3.6 ✓	N/A ✓
Methoxychlor		
Perylene	5.6 ✓	N/A ✓
Sulfur		

Lot No. of GPC Calibration Standard Used: S1838

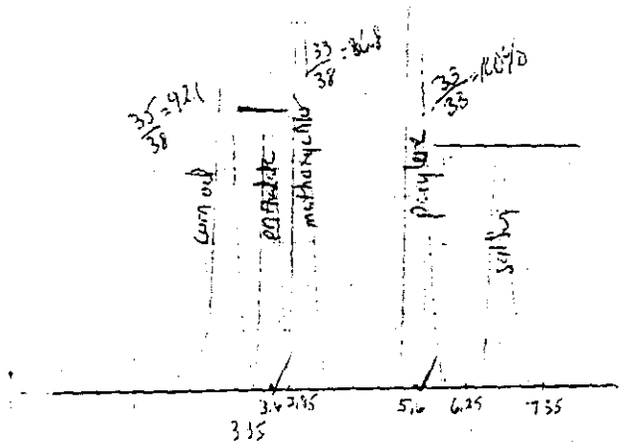
Acceptance criteria: ± 5.0% change from previous calibration (Do not round.)
Retention time criteria met: Y N

Calculate and record retention time shift from the previous calibration/UV trace

Flow Rate: 5.0 ml/min Column: Bio-Beads ~~Chart Speed~~: 15 cm/hr

Column Pressure: 265 psi Leak in column line repaired

Pest/PCB		Semivolatiles
Dump Time: N/A min	> 85% ~~resolution between corn~~ oil and phthalate Y N	Dump Time: N/A min
Collect Time: N/A min	> 85% resolution between phthalate and methoxychlor Y N	Collect Time: N/A min
Collect Volume: N/A ml	> 90% resolution between perylene and sulfur Y N	Collect Volume: N/A ml
Wash Time: 10:00 min		Wash Time: N/A min



Reviewed By: [signature] Date: 9/27/01

COMPUCHEM a division of Liberty Analytical Corp.

SEMI-VOLATILE GPC WEEKLY METHYLENE CHLORIDE BLANK

USEPA CLP SOW

TECHNICIAN NAME: C. Hurley DATE RAN: 4/26/01

EMPLOYEE ID: 1787 GPC INSTRUMENT #: ABC GPC # 4

SAMPLE ID NUMBER	GPC INJ. VOLUME	FINAL VOLUME	COMMENTS
A 4026B	5.0 ml	0.5 ml	METHYLENE CHLORIDE BLANK
			MANUFACTURER & LOT # VS E13

* COMPLETE SAMPLE ID NUMBER USING GPC COLUMN NUMBER ALONG WITH MONTH AND DATE. (i.e. A10202B)

RUN WEEKLY GPC CALIBRATION THROUGH GPC CLEANUP EVERY SEVEN CALENDAR DAYS AND SUBMIT TO GC/MS FOR ANALYSIS.

A 4026 B * METHYLENE CHLORIDE ONLY.

SUPERVISOR REVIEW: CL

FINAL VOLUME VERIFIED: C. Hurley

EXTRACTS RECEIVED BY: Tony Stringer

Semi/VOA/GPC/WklyMethChlorBlank.doc:mj

Compuchem Laboratories, Inc. Liberty Analytical Corporation

COMPUCHEM a division of Liberty Analytical Corp DATE 9/28/01 INITIAL TIME OF TUNE 1013 SHIFT/S(A) ✓ (B) (C)

GC/MS SEMIVOLATILE RUN LOG TIME TUNE EXPIRES 2213 LINKER /METHOD CZ1000

COMPUCHEM LOGBOOK 4 X(4) 3 (5972bp66)

PREVENTIVE MAINTENANCE Front End / Liner / Septa

	PRINTED	FILE NAME	REVIEWED	DATE	TIME	CLIENT ID#	CASE/SDG#	AMOUNT INJECTED	CHEMIST	COMMENTS(ETC.)/DISPOSITION
1		DF010928A66	/	9/28/01	1013	DFTPC	—	2 ul	917	SCD = LCD
2		HG010928A66	/	/ /	1033	SSTD050	—			
3		A40926BA66	/	/ /	1113	A40926B1	GPC			
4		WG13136-1A66	/	/ /	1156	SBLKQF	CoD31			
5	/	CoD31-1A66	SL	/ /	1235	CoD31				RLGPC
6	/	CoD31-2A66	SL	/ /	1314	CoD32				
7	/	CoD31-3A66	SL	/ /	1353	CoD33				
8	/	WG13136-2A66	SF	/ /	1432	LMS				
9	/	WG13136-3A66	SL SF	/ /	1511	LMSD				
10	/	CoD31-4A66	SL	/ /	1550	CoD34				
11		CoD31-5DA66	/	/ /	1629	CoD35				3x
12	/	CoD31-7A66	SL	/ /	1708	CoD37				Re GPC
13	/	CoD31-11A66	SL	/ /	1747	CoD41				
14	/	CoD31-12A66	SL	/ /	1826	CoD42				
15	/	CoD31-13A66	SL	/ /	1905	CoD43				
16	/	CoD31-14A66	SL	/ /	1944	CoD44				
17		CoD31-6DA66	/	/ /	2023	CoD36				3x
18	/	CoD31-10A66	SL	/ /	2102	CoD40				Re GPC.
19				/ /						
20				/ /						
21				/ /			FW 9/28/01			
22				/ /						
23				/ /						
24				/ /						

	Tune	STANDARDS Analytical	Int. Std.	Column Type	SUPERVISOR APPROVAL
Std. ID #	7055	2637	800	7Tx. 5Ms 0.25 mm	DATE 9-28-01
Lot #	52031	51676	52072		

The presence of the Chemist's employee ID number, or signature, on this run log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist together with the chemist's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation.

5/27/01 dce

NUMVALUE	SAMPLENUM	%SOLIDS
6.04	Q2298-1	84.725
6.54	Q2298-2	85.481
5.75	Q2298-3	84.659
6.62	Q2298-4	88.264
7.67	Q2298-5	89.136
6.87	Q2298-6	85.236
8.59	Q2298-7	81.243
6.48	Q2298-8	83.360
10.97	Q2298-9	88.747
7.11	Q2298-10	90.781
7.26	Q2298-11	85.859
6.5	Q2298-12	88.325
6.75	Q2298-13	85.469
5.62	Q2298-3 DUP	83.784
		#DIV/0!
		#DIV/0!

BLANK ANALYSIS RESULTS FOR TARGET ORGANIC COMPOUNDS

SDG Q2298

Fraction (1)	Matrix (Aq., S)	Blank Type (2)	Blank Sample Number	Contaminant	Concentration (units)	Qualification Limit 5x	Qualification Limit 10x
P	S	All	All	Target Pest/PCB compounds	–	–	–
				were not detected in any	–	–	–
				associated blanks	–	–	–

1 – V = Volatile; S = Semivolatile; P = Pesticide/PCB; O = Other: _____

Aq. = Aqueous; S = Solid

2 – MB = Method Blank; TB = Trip Blank; EB = Equipment Rinse Blank; FB = Field Blank
IB = Instrument Blank; SB = Storage Blank

* = Inferred from instrument printouts and/or supporting data; mass spectra not provided.

+ = Contaminant observed on one column only.

Notes: _____

2F
SOIL PESTICIDE SURROGATE RECOVERY

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GC Column(1): CLPEST2 ID: 0.53(mm) GC Column(2): CLPEST ID:0.53 (mm)

	EPA SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	PBLKPI	85	85	100	85			0
02	PE3SPMS	88	88	88	88			0
03	PE3SPMSD	75	100	94	81			0
04	PE1SP	81 ✓	88 ✓	100 ✓	69 ✓			0
05	PE2SP	88 ✓	100 ✓	88 ✓	69 ✓			0
06	PE3SP	88 ✓	94 ✓	94 ✓	88 ✓			0
07	PBLKQA	85	77	100	85			0
08	PE5-S-PDL 5x	180D ✓	80 ✓	107 ✓	227D ✓			0
09	PE4-S-P	93 ✓	80 ✓	127 ✓	87 ✓			0
10	PE5-S-P	87 ✓	80 ✓	240* ✓	240* ✓		"K (±)" only	2
11	PE6-S-P	150 ✓	100 ✓	144 ✓	156 ✓		no(±)'s	1
12	PE7-S-B	75 ✓	88 ✓	75 ✓	69 ✓		no impact.	0
13	PE8-S-B	69 ✓	69 ✓	56 ✓	88 ✓			0
14	PE9-S-B	93 ✓	73 ✓	80 ✓	93 ✓			0
15	PE10-S-B	80 ✓	80 ✓	80 ✓	73 ✓			0
16	PE11-S-B	106 ✓	81 ✓	88 ✓	94 ✓			0
17	PE12-S-B	120 ✓	107 ✓	93 ✓	87 ✓			0
18	PE13-S-B	131 ✓	75 ✓	81 ✓	75 ✓			0
19								
20								
21		Surrogate recoveries for						
22		instrument blanks were						
23		not reported on this form.						
24								
25								
26								
27								
28								
29								
30								

	QC LIMITS
TCX = Tetrachloro-m-xylene	(30-150)
DCB = Decachlorobiphenyl	(30-150)

Advisory limits
60-150 TCMX
60-150 DCB

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate diluted out

Data File: /chem/tracegc84.i/u010924.b/018uPIBLK1415.d
Report Date 09/25/2001 15:45

CompuChem Environmental Corporation

Lab Smp Id : PIBLK14
Sample Type : INSTBLANK
Inj Date : 25-SEP-2001 02:51
Operator : 2461
Method : /chem/tracegc84.i/u010924.b/2ul0LM04_clpest2v3.m

Client Smp Id : PIBLK14
Sublist : all
Inst ID : TRACEGC84

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0
Vt Final Volume: 10000(ul)
Vo Sample Volume: 1000.0(ml)

Uf GPC Unit Factor: 1
Vi Injection Volume: 1(ul)

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED CRQL (ug/L)	FLAGS
2.03			1416						
3.13			575						
3.23			541						
3.84			210						
3.95	3.91	4.01	42569	2123800	Tetrachloro m xylene	0.020044	0.200436		
4.67			621						
4.80			1840						
5.15			269						
5.28			241						
5.68			186						
6.36			1369						
6.53			1227						
6.70			1723						
7.20			629						
7.40			115						
7.64			257						
7.97			185						
8.20			248						
8.46			274						
8.59			220						
8.74			214						
8.99			227						
9.18			642						
9.37			1201						
9.55			125						
9.80			692						
10.15			1073						
10.69			1436						
11.00			169						
11.14			268						
11.80			158						
12.03			1468						
12.38			189						
12.67			225						
12.83			1395						
13.19			322						
13.45			3239						
13.76			991						

0.020 100 90

TMR 11/1/01

KJ 9.25.01

CompuChem Environmental Corporation

Lab Smp Id : PIBLK14 Client Smp Id : PIBLK14
Sample Type : INSTBLANK Sublist : all
Inj Date : 25-SEP-2001 02:51 Inst ID :
Operator : 2461
Method : /chem/tracegc84.i/u010924.b/2ul0LM04_clpest2v3.m

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 10000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 1000.0(ml)

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN Ng.	CONCENTRATIONS FINAL ug/L	ADJUSTED CRQL ug/L	FLAGS
13.97		166						
14.27		1359						
14.41		3234						
14.58		2518						
15.55		222						
16.04		205						
16.62		339						
16.93		516						
17.51	17.40 17.60	46194	2550900	Decachlorobiphenyl	0.018109	0.180000		
18.10		268						
18.46		167						
18.87		126						
19.07		146						
19.23		197						
19.37		156						
19.54		113						

/0.020 91%

TMR 11/1/01

CompuChem Environmental Corporation

Lab Smp Id : PIBLK15 Client Smp Id : PIBLK15
Sample Type : INSTBLANK Sublist : all
Inj Date : 25-SEP-2001 02:51 Inst ID : TRACEGC85
Operator : 2461
Method : /chem/tracegc85.i/u010924.b/2ul0LM04_clpestv3.m

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 10000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 1000.0(ml)

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED CRQL (ug/L)	FLAGS
0.15			659						
0.78			6528						
0.90			8868						
1.23			428						
1.69			1055						
3.04	2.99	3.09	13970	716000	Tetrachloro-m-xylene	0.019511	0.195109	98 %	
8.70			397						
12.02			473			0.020			
12.57			504						
15.04	14.93	15.13	14496	750675	Decachlorobiphenyl	0.019311	0.190000	97 %	

TMR 11/1/01

KJ 9-25-01

CompuChem Environmental Corporation

Lab Smp Id : PIBLK20 Client Smp Id : PIBLK20
Sample Type : INSTBLANK Sublist : all
Inj Date : 29-SEP-2001 04:45 Inst ID : TRACEGC84
Operator : 2401
Method : /chem/tracegc84.i/v010928.b/2ulOLM04_clpest2v3.m

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 10000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 1000.0(ml)

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	CONCENTRATIONS DN-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED CRQL (ug/L)	FLAGS
2.05			1478						
2.51			1030						
2.72			400						
3.11			1454						
3.20			1734						
3.39			290						
3.47			452						
3.72			120						
3.94	3.89	3.99	51338	2426300	Tetrachloro-m-xylene	0.021159	0.211590		
4.32			483						
4.71			1081						
4.78			1195						
5.12			530						
5.39			391						
5.55			607						
5.72			235						
5.91			882						
6.10			1104						
6.36			1310						
6.51			901						
6.67			1127						
6.88			231						
7.19			1510						
7.92			1954						
8.11			701						
8.29			410						
8.44			391						
8.88			335						
9.16			343						
9.35			852						
9.52			159						
9.66			448						
9.79			704						
9.94			376						
10.14			1092						
10.68			1728						
11.02			720						
11.31			128						

/0.020 106 %

-MR 11/1/01

EW 9/29/2001

CompuChem Environmental Corporation

Lab Smp Id : PIBLK20
Sample Type : INSTBLANK
Inj Date : 29-SEP-2001 04:45
Operator : 2401
Method : /chem/tracegc84.i/v010928.b/2ul0LM04_clpest2v3.m

Client Smp Id : PIBLK20
Sublist : all
Inst ID :

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0
Vt Final Volume: 10000(ul)
Vo Sample Volume: 1000.0(ml)

Uf GPC Unit Factor: 1
Vi Injection Volume: 1(ul)

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED CRQL (ug/L)	FLAGS
11.56		180						
11.87		245						
12.01		1626						
12.39		1316						
12.65		482						
12.81		1532						
13.22		573						
13.44		2996						
13.70		331						
13.75		690						
14.35		696						
14.56		2559						
14.87		140						
15.00		153						
15.41		378						
15.51		125						
16.02		631						
[illegible].30		364						
[illegible].93		715						
17.48	17.38 17.58	50872	2745400	Decachlorobiphenyl	0.018530	0.190000		
18.20		145						
18.82		122						
18.96		208						
19.25		178						
19.36		240						
19.55		392						

/0.020

93%

TMR 11/1/01

CompuChem Environmental Corporation

Lab Smp Id : PIBLK21 Client Smp Id : PIBLK21
Sample Type : INSTBLANK Sublist : all
Inj Date : 29-SEP-2001 04:45 Inst ID : TRACEGC85
Operator : 2401
Method : /chem/tracegc85.i/v010928.b/2ulOLM04_clpestv3.m

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 10000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 1000.0(ml)

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	FINAL (ug/L)	ADJUSTED CRQL (ug/L)	FLAGS
0.14			835						
0.74			795						
0.77			7711						
0.90			9177						
1.23			487						
1.66			475						
1.68			814						
3.03	2.99	3.09	14568	712150	Tetrachloro-m-xylene	0.020456	0.204564	102 %	
11.05			468						
12.01			530			0.020			
12.55			568						
15.02	14.91	15.11	15130	767500	Decachlorobiphenyl	0.019713	0.200000	99 %	

TMR 11/1/01

Eur 9/29/2001

Data File: /chem/tracegc84.i/u010924b.b/024uPIBLKYWYX.d
Report Date 09/26/2001 00:36

CompuChem Environmental Corporation

Lab Smp Id : PIBLKYW
Sample Type : INSTBLANK
Inj Date : 25-SEP-2001 23:34
Operator : 2401
Method : /chem/tracegc84.i/u010924b.b/2ul0LM04_clpest2v3.m

Client Smp Id : PIBLKYW
Sublist : all
Inst ID : TRACEGC84

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0
Vt Final Volume: 10000(ul)
Vo Sample Volume: 1000.0(ml)

Uf GPC Unit Factor: 1
Vi Injection Volume: 1(ul)

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED CRQL (ug/L)	FLAGS
2.06			2932						
2.45			1000						
2.63			196						
2.87			921						
3.08			1473						
3.17			1916						
3.30			394						
3.53			813						
3.83			152						
3.94	3.91	4.01	41390	2123800	Tetrachloro-m-xylene	0.019489	0.194888		
4.40			1324						
4.67			1092						
4.77			1903						
5.08			1056						
5.29			566						
5.47			263						
.95			956						
.00			263						
.0			2592						
.36			599						
6.56			340						
6.67			445						
7.26			237						
7.40			620						
7.67			283						
7.80			508						
7.97			508						
8.07			153						
8.27			184						
8.80			1797						
9.07			1525						
9.24			945						
9.35	9.30	9.44	3769	2837750	Heptachlor epoxide	0.001328	0.013000	0.050000	J
9.61			344						
9.71			946						
9.78			984						
10.08			236						
10.23			103						

/0.020 97%

TMR 11/1/01

TMP 9/25/01

CompuChem Environmental Corporation

Lab Smp Id : PIBLKYW Client Smp Id : PIBLKYW
Sample Type : INSTBLANK Sublist : all
Inj Date : 25-SEP-2001 23:34 Inst ID :
Operator : 2401
Method : /chem/tracegc84.i/u010924b.b/2ul0LM04_clpest2v3.m

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 10000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 1000.0(ml)

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED CRQL (ug/L)	FLAGS
10.48		244						
10.70		470						
11.00		346						
11.11		202						
11.80		591						
12.02		1171						
12.12		2311						
12.37		2105						
12.67		117						
12.82		1213						
13.18		429						
13.48		893						
13.66		681						
13.91		319						
14.35		548						
14.59		249						
.75		251						
.99		783						
.5		306						
.56		791						
15.69		710						
15.82		908						
16.62		722						
16.94		661						
17.50	17.40 17.60	39925	2550900	Decachlorobiphenyl	0.015651	0.160000		
18.14		1248						
18.70		522						
19.00		456						
19.58		311						

0.020 78 %

TMR 11/1/01

CompuChem Environmental Corporation

Lab Smp Id : PIBLKYX
Sample Type : INSTBLANK
Inj Date : 25-SEP-2001 23:34
Operator : 2401
Method : /chem/tracegc85.i/u010924b.b/2ul0LM04_clpestv3.m

Client Smp Id : PIBLKYX
Sublist : all
Inst ID : TRACEGC85

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0
Vt Final Volume: 10000(ul)
Vo Sample Volume: 1000.0(ml)

Uf GPC Unit Factor: 1
Vi Injection Volume: 1(ul)

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED CRQL (ug/L)	FLAGS
1.15			1706						
1.77			7259						
1.90			8347						
1.66			888						
3.02	2.99	3.09	12486	716000	Tetrachloro-m-xylene	0.017439	0.174385	87 %	
5.64			960						
15.03	14.93	15.13	12594	750675	Decachlorobiphenyl	0.016777	0.170000	84 %	

0.020

TMR 11/1/01

AMP 9/25/01

Data File: /chem/tracegc84.i/u010924c.b/043uPIBLKZAZB.d
Report Date 09/26/2001 08:08

CompuChem Environmental Corporation

Lab Smp Id : PIBLKZA
Sample Type : INSTBLANK
Inj Date : 26-SEP-2001 07:07
Operator : 2401
Method : /chem/tracegc84.i/u010924c.b/2ulOLM04_clpest2v3.m

Client Smp Id : PIBLKZA
Sublist : all
Inst ID : TRACEGC84

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0
Vt Final Volume: 10000(ul)
Vo Sample Volume: 1000.0(ml)

Uf GPC Unit Factor: 1
Vi Injection Volume: 1(ul)

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED CRQL (ug/L)	FLAGS
2.06			1127						
2.30			346						
2.74			559						
3.09			464						
3.83			163						
3.94	3.91	4.01	45656	2123800	Tetrachloro-m-xylene	0.021497	0.214968	107 %	
4.36			326						
4.55			200						
4.79			747						
5.11			930						
5.50			401						
5.76			201						
5.88			910						
6.01			484						
6.32			468						
6.41			508						
6.68			696						
7.13			359						
7.54			912						
7.80			519						
7.96			478						
8.22			187						
8.68			338						
8.97			179						
9.51			276						
9.60			555						
9.88			270						
10.41			292						
10.72			258						
10.99			1092						
11.40			309						
11.53			111						
11.96			347						
12.37			213						
12.65			289						
13.19			354						
13.63			132						
14.13			242						

0.020

TMa 11/1/01

KJ 9-26-01

CompuChem Environmental Corporation

Lab Smp Id : PIBLKZA Client Smp Id : PIBLKZA
Sample Type : INSTBLANK Sublist : all
Inj Date : 26-SEP-2001 07:07 Inst ID :
Operator : 2401
Method : /chem/tracegc84.i/u010924c.b/2ul0LM04_clpest2v3.m

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 10000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 1000.0(ml)

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED CRQL (ug/L)	FLAGS
14.55		478						
14.88		242						
15.34		287						
15.51		129						
15.67		235						
16.09		696						
16.29		908						
16.47		431						
16.93		454						
17.48	17.40 17.60	44550	2550900	Decachlorobiphenyl	0.017464	0.170000		
18.11		204						
18.39		355						
18.66		267						
19.03		172						
19.13		322						
19.34		242						
19.47		225						

/0.020 875

TMR 11/1/01

Data File: /chem/tracegc85.i/u010924c.b/043uPIBLKZAZB.d
Report Date 09/26/2001 08:10

CompuChem Environmental Corporation

Lab Smp Id : PIBLKZB
Sample Type : INSTBLANK
Inj Date : 26-SEP-2001 07:07
Operator : 2401
Method : /chem/tracegc85.i/u010924c.b/2ulOLM04_clpestv3.m

Client Smp Id : PIBLKZB
Sublist : all
Inst ID : TRACEGC85

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0
Vt Final Volume: 10000(ul)
Vo Sample Volume: 1000.0(ml)

Uf GPC Unit Factor: 1
Vi Injection Volume: 1(ul)

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED CRQL (ug/L)	FLAGS
0.14			531						
0.77			7473						
0.90			9651						
3.03	2.99	3.09	13756	716000	Tetrachloro-m-xylene	0.019213	0.192128	96%	
15.01	14.93	15.13	12822	750675	Decachlorobiphenyl	0.017080	0.170000	85%	

0.020

TMR 11/1/01

KJ 9-26-01

CompuChem Environmental Corporation

Lab Smp Id : PIBLKZC
Sample Type : INSTBLANK
Inj Date : 26-SEP-2001 10:38
Operator : 2485
Method : /chem/tracegc84.i/u010924d.b/2ul0LM04_clpest2v3.m

Client Smp Id : PIBLKZC
Sublist : all
Inst ID : TRACEGC84

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0
Vt Final Volume: 10000(ul)
Vo Sample Volume: 1000.0(ml)

Uf GPC Unit Factor: 1
Vi Injection Volume: 1(ul)

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED CRQL (ug/L)	FLAGS
2.05		1230						
2.46		604						
2.72		350						
2.76		270						
3.10		1196						
3.16		1166						
3.73		138						
3.94	3.91 4.01	44777	2123800	Tetrachloro-m-xylene	0.021083	0.210833		
4.44		904						
4.66		703						
4.78		1813						
5.09		286						
5.36		460						
5.63		263						
5.88		253						
6.32		668						
6.40		1618						
6.55		638						
6.69		2077						
6.87		996						
7.27		427						
7.41		176						
7.56		432						
7.96		869						
8.08		665						
8.36		291						
8.80		165						
9.05		262						
9.31		504						
9.52		158						
9.70		398						
9.91		497						
10.44		298						
10.68		390						
11.04		477						
11.12		403						
11.28		268						
11.54		407						

0.020

105 %

TMR 11/1/01

CVB 9-26-01

CompuChem Environmental Corporation

Lab Smp Id : PIBLKZC
Sample Type : INSTBLANK
Inj Date : 26-SEP-2001 10:38
Operator : 2485
Method : /chem/tracegc84.i/u010924d.b/2ul0LM04_clpest2v3.m

Client Smp Id : PIBLKZC
Sublist : all
Inst ID :

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0
Vt Final Volume: 10000(ul)
Vo Sample Volume: 1000.0(ml)

Uf GPC Unit Factor: 1
Vi Injection Volume: 1(ul)

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED CRQL (ug/L)	FLAGS
11.80		376						
12.08		274						
12.36		482						
12.51		491						
12.66		354						
12.77		177						
12.91		294						
13.04		250						
13.20		385						
13.68		847						
13.85		518						
13.97		547						
14.23		323						
14.70		698						
14.90		258						
15.09		257						
[illegible]36		175						
[illegible].75		808						
16.19		1348						
16.42		750						
16.93		1113						
17.14		935						
17.26		987						
17.48	17.40 17.60	47483	2550900	Decachlorobiphenyl	0.018614	0.190000		
18.05		669						
18.50		330						
18.66		268						
18.85		363						
19.33		108						
19.40		298						

/0.020 93%

TMR 11/1/01

CompuChem Environmental Corporation

Lab Smp Id : PIBLKZD
Sample Type : INSTBLANK
Inj Date : 26-SEP-2001 10:38
Operator : 2485
Method : /chem/tracegc85.i/u010924d.b/2ul0LM04_clpestv3.m

Client Smp Id : PIBLKZD
Sublist : all
Inst ID : TRACEGC85

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0
Vt Final Volume: 10000(ul)
Vo Sample Volume: 1000.0(ml)

Uf GPC Unit Factor: 1
Vi Injection Volume: 1(ul)

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED CRQL (ug/L)	FLAGS
0.15			528						
0.77			7353						
0.90			9925						
3.03	2.99	3.09	13634	716000	Tetrachloro-m-xylene	0.019042	0.190421	95 %	
15.01	14.93	15.13	13102	750675	Decachlorobiphenyl	0.017454	0.170000	87 %	
17.02			549				0.020		

TMR 11/1/01

CV3 9-26-01

CompuChem Environmental Corporation

Lab Smp Id : PIBLK2W
Sample Type : INSTBLANK
Inj Date : 01-OCT-2001 08:55
Operator : 2485
Method : /chem/tracegc84.i/v010928c.b/2ul0LM04_clpest2v3.m

Client Smp Id : PIBLK2W
Sublist : all
Inst ID : TRACEGC84

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0
Vt Final Volume: 10000(ul)
Vo Sample Volume: 1000.0(ml)

Uf GPC Unit Factor: 1
Vi Injection Volume: 1(ul)

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED CRQL (ug/L)	FLAGS
2.05			1575						
2.50			1892						
2.77			2353						
2.89			2118						
3.09			1901						
3.17			1489						
3.31			227						
3.55			310						
3.73			186						
3.94	3.89	3.99	58386	2426300	Tetrachloro-m-xylene	0.024063	0.240634		
4.34			476						
4.67			1685						
4.78			1658						
4.98			156						
5.09			331						
5.36			365						
5.50			723						
.77			489						
.86			858						
6.11			170						
6.36			1174						
6.60			345						
6.68			923						
6.92			407						
7.14			147						
7.26			278						
7.42			365						
7.53			835						
7.80			637						
8.00			424						
8.15			102						
8.26			327						
8.36			429						
8.55			316						
8.76			457						
8.96			522						
9.09			305						
9.18			561						

0.020

120%

TMR 11/1/01

CDB 10-1-01

CompuChem Environmental Corporation

Lab Smp Id : PIBLK2W Client Smp Id : PIBLK2W
Sample Type : INSTBLANK Sublist : all
Inj Date : 01-OCT-2001 08:55 Inst ID :
Operator : 2485
Method : /chem/tracegc84.i/v010928c.b/2ul0LM04_clpest2v3.m

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 10000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 1000.0(ml)

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED CRQL (ug/L)	FLAGS
9.34		974						
9.54		594						
9.63		129						
9.79		567						
10.04		386						
10.12		510						
10.29		167						
10.54		223						
10.68		863						
10.85		1042						
11.00		249						
11.40		314						
11.54		387						
11.79		341						
11.97		804						
2.23		761						
.36		426						
.49		520						
.63		171						
12.81		620						
13.18		3393						
13.43		1049						
13.70		339						
13.86		191						
14.13		472						
14.36		270						
14.57		808						
14.94		275						
15.24		260						
15.49		482						
15.79		453						
16.09		699						
16.18		676						
16.30		437						
16.92		1035						
17.14		486						
17.30		340						
17.50	17.38 17.58	48324	2745400	Decachlorobiphenyl	0.017601	0.180000		

/0.020 88 50

JMR 11/1/01

CompuChem Environmental Corporation

Lab Smp Id : PIBLK2X
Sample Type : INSTBLANK
Inj Date : 01-OCT-2001 08:55
Operator : 2485
Method : /chem/tracegc85.i/v010928c.b/2ulOLM04_clpestv3.m

Client Smp Id : PIBLK2X
Sublist : all
Inst ID : TRACEGC85

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0
Vt Final Volume: 10000(ul)
Vo Sample Volume: 1000.0(ml)

Uf GPC Unit Factor: 1
Vi Injection Volume: 1(ul)

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED CRQL (ug/L)	FLAGS
0.73			705						
0.77			6836						
0.90			19732						
1.22			475						
3.03	2.99	3.09	14680	712150	Tetrachloro-m-xylene	0.020613	0.206135	103 %	
11.39			672						
15.02	14.91	15.11	13192	767500	Decachlorobiphenyl	0.017188	0.170000	86 %	

0.020

TMR 11/1/01

CWB 10-1-01

CompuChem Environmental Corporation

Lab Smp Id : PIBLK2Y
Sample Type : INSTBLANK
Inj Date : 01-OCT-2001 16:11
Operator : 2401
Method : /chem/tracegc84.i/v010928d.b/2ul0LM04_clpest2v3.m

Client Smp Id : PIBLK2Y
Sublist : all
Inst ID : TRACEGC84

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0
Vt Final Volume: 10000(ul)
Vo Sample Volume: 1000.0(ml)

Uf GPC Unit Factor: 1
Vi Injection Volume: 1(ul)

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED CRQL (ug/L)	FLAGS
2.04			903						
2.52			1438						
2.73			413						
3.08			921						
3.20			213						
3.76			214						
3.96	3.89	3.99	47988	2426300	Tetrachloro-m-xylene	0.019778	0.197783		
4.43			1707						
4.66			1845						
4.80			3005						
5.13			717						
5.38			215						
5.53			574						
5.76			274						
5.88			781						
6.36			681						
6.59			184						
6.70			1061						
6.25			213						
7.32			176						
7.55			1539						
7.83			1002						
7.98			552						
8.37			176						
8.68			705						
8.93			390						
9.22			781						
9.53			267						
9.75			644						
10.29			315						
10.47			159						
10.61			170						
10.85			1790						
11.03			1154						
11.72			601						
12.39			462						
12.66			242						
12.81			285						

0.020

99 %

TMR 11/1/01

AMP 10/1/01

CompuChem Environmental Corporation

Lab Smp Id : PIBLK2Y
Sample Type : INSTBLANK
Inj Date : 01-OCT-2001 16:11
Operator : 2401
Method : /chem/tracegc84.i/v010928d.b/2ul0LM04_clpest2v3.m

Client Smp Id : PIBLK2Y
Sublist : all
Inst ID :

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0
Vt Final Volume: 10000(ul)
Vo Sample Volume: 1000.0(ml)

Uf GPC Unit Factor: 1
Vi Injection Volume: 1(ul)

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED CRQL (ug/L)	FLAGS
12.91		648						
13.20		582						
13.63		223						
14.09		4023						
14.21		12037						
14.90		142						
15.30		380						
15.40		251						
15.55		617						
16.12		238						
16.61		280						
16.93		489						
17.09		184						
17.19		316						
17.49	17.38 17.58	47435	2745400	Decachlorobiphenyl	0.017278	0.170000		
18.13		253						
18.40		471						
[illegible]79		220						
[illegible].13		176						

0.020 86 %

TMR 11/1/01

CompuChem Environmental Corporation

Lab Smp Id : PIBLK2Z Client Smp Id : PIBLK2Z
Sample Type : INSTBLANK Sublist : all
Inj Date : 01-OCT-2001 16:11 Inst ID : TRACEGC85
Operator : 2401
Method : /chem/tracegc85.i/v010928d.b/2ul0LM04_clpestv3.m

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0 Uf GPC Unit Factor: 1
Vt Final Volume: 10000(ul) Vi Injection Volume: 1(ul)
Vo Sample Volume: 1000.0(ml)

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED CRQL (ug/L)	FLAGS
0.14			859						
0.75			787						
0.78			5237						
0.91			17560						
3.04	2.99	3.09	14133	712150	Tetrachloro-m-xylene	0.019846	0.198455	99 %	
15.03	14.91	15.11	13362	767500	Decachlorobiphenyl	0.017408	0.170000	87 %	

0.020

TML 11/1/01

AMP 10/1/01

CompuChem Environmental Corporation

Lab Smp Id : PIBLK3K
Sample Type : INSTBLANK
Inj Date : 02-OCT-2001 01:28
Operator : 2401
Method : /chem/tracegc84.i/v010928e.b/2ulOLM04_clpest2v3.m

Client Smp Id : PIBLK3K
Sublist : all
Inst ID : TRACEGC84

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0
Vt Final Volume: 10000(ul)
Vo Sample Volume: 1000.0(ml)

Uf GPC Unit Factor: 1
Vi Injection Volume: 1(ul)

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED CRQL (ug/L)	FLAGS
2.04			1786						
2.46			257						
2.52			745						
2.74			571						
3.10			892						
3.22			1100						
3.43			410						
3.67			308						
3.84			378						
3.95	3.89	3.99	48670	2426300	Tetrachloro-m-xylene	0.020059	0.200592		
4.46			1286						
4.79			6859						
5.14			3916						
5.32			1619						
5.58			114						
5.67			118						
5.84			146						
6.12			2083						
6.36			725						
6.42			455						
6.57			338						
6.69			440						
7.22			489						
7.52			568						
7.65			722						
7.96			333						
8.00			114						
8.17			398						
8.29			171						
8.51			269						
8.73			347						
8.92			488						
9.18			496						
9.57			453						
9.86			550						
9.99			340						
10.14			310						
10.51			284						

0.020

100%

TMR 11/1/01

CDB 10-2-01

Data File: /chem/tracegc84.i/v010928e.b/066vPIBLK3K3L.d
Report Date 10/02/2001 08:11

CompuChem Environmental Corporation

Lab Smp Id : PIBLK3K
Sample Type : INSTBLANK
Inj Date : 02-OCT-2001 01:28
Operator : 2401
Method : /chem/tracegc84.i/v010928e.b/2ul0LM04_clpest2v3.m

Client Smp Id : PIBLK3K
Sublist : all
Inst ID :

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0
Vt Final Volume: 10000(ul)
Vo Sample Volume: 1000.0(ml)

Uf GPC Unit Factor: 1
Vi Injection Volume: 1(ul)

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED CRQL (ug/L)	FLAGS
10.76		480						
10.98		712						
11.10		639						
11.35		326						
11.52		424						
11.65		389						
11.96		391						
12.38		659						
12.48		1817						
12.62		782						
12.81		554						
13.18		321						
13.47		739						
13.72		622						
14.15		349						
14.29		297						
14.42		184						
14.53		290						
14.90		209						
15.07		190						
15.38		297						
15.56		340						
15.78		1169						
16.07		485						
16.19		278						
16.30		580						
16.50		273						
16.64		531						
16.86		198						
16.95		870						
17.07		145						
17.18		756						
17.32		791						
17.49	17.38 17.58	45307	2745400	Decachlorobiphenyl	0.016503	0.170000	83 %	
17.91		147			0.020			
18.01		233						
18.25		147						
18.45		1388						

TMG 11/1/01

CompuChem Environmental Corporation

Lab Smp Id : PIBLK3L
Sample Type : INSTBLANK
Inj Date : 02-OCT-2001 01:28
Operator : 2401
Method : /chem/tracegc85.i/v010928e.b/2ul0LM04_clpestv3.m

Client Smp Id : PIBLK3L
Sublist : all
Inst ID : TRACEGC85

Formula: Conc=(Area/RF) * DF * (Uf * Vt/(Vi * Vo))

DF Dilution Factor: 1.0
Vt Final Volume: 10000(ul)
Vo Sample Volume: 1000.0(ml)

Uf GPC Unit Factor: 1
Vi Injection Volume: 1(ul)

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	CONCENTRATIONS ON-COLUMN (Ng)	CONCENTRATIONS FINAL (ug/L)	ADJUSTED CRQL (ug/L)	FLAGS
0.14			870						
0.73			1169						
0.77			5893						
0.90			18453						
3.04	2.99	3.09	14389	712150	Tetrachloro-m-xylene	0.020205	0.202052	101 %	
15.02	14.91	15.11	13494	767500	Decachlorobiphenyl	0.017582	0.180000	88 %	

0.020

TMR 11/1/01

CDB 10-2-01

3F

SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

Matrix Spike - EPA Sample No.: PE3SP

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Dieldrin	39	0.0	29 ✓	74 ✓	31-134

Soil Advisory limits

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dieldrin	39	30 ✓	77 ✓	4	38 ✓	31-134

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

* Values outside of QC limits

RPD: 0 out of 1 outside limits
Spike Recovery: 0 out of 2 outside limits

COMMENTS: _____

4C

PESTICIDE METHOD BLANK SUMMARY

EPA SAMPLE NO.

PBLKPI ✓

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

Lab Sample ID: WG13070-1 Lab File ID:

Matrix (soil/water) SOIL Extraction:(Type) SONC

Sulfur Cleanup (Y/N) N Date Extracted: 09/24/01 ✓

Date Analyzed (1): 09/26/01 ✓ Date Analyzed (2): 09/26/01 ✓

Time Analyzed (1): 0822 ✓ Time Analyzed (2): 0822 ✓

Instrument ID (1): TRACEGC84 Instrument ID (2): TRACEGC85

GC Column (1): CLPEST2 ID: 0.53(mm) GC Column (2): CLPEST ID: 0.53(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	PE3SPMS ✓	WG13070-2 ✓	09/26/01 ✓	09/26/01 ✓
02	PE3SPMSD ✓	WG13070-3 ✓	09/26/01 ✓	09/26/01 ✓
03	PE1SP ✓	Q2298-1 ✓	09/26/01 ✓	09/26/01 ✓
04	PE2SP ✓	Q2298-2 ✓	09/26/01 ✓	09/26/01 ✓
05	PE3SP ✓	Q2298-3 ✓	09/26/01 ✓	09/26/01 ✓
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				

COMMENTS:

4C

PESTICIDE METHOD BLANK SUMMARY

EPA SAMPLE NO.

PBLKQA ✓

Lab Name: COMPUCHEM | Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 | SAS No.: | SDG No.: Q2298

Lab Sample ID: WG13123-1 | Lab File ID:

Matrix (soil/water) SOIL | Extraction: (Type) SONC

Sulfur Cleanup (Y/N) N | Date Extracted: 09/27/01

Date Analyzed (1): 10/01/01 ✓ | Date Analyzed (2): 10/01/01 ✓

Time Analyzed (1): 2012 ✓ | Time Analyzed (2): 2012 ✓

Instrument ID (1): TRACEGC84 | Instrument ID (2): TRACEGC85

GC Column (1): CLPEST2 ID: 0.53(mm) | GC Column (2): CLPEST ID: 0.53(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	PE5-S-PDL ✓	Q2298-5 ✓	10/01/01 ✓	10/01/01 ✓
02	PE4-S-P ✓	Q2298-4 ✓	10/01/01 ✓	10/01/01 ✓
03	PE5-S-P ✓	Q2298-5 ✓	10/01/01 ✓	10/01/01 ✓
04	PE6-S-P ✓	Q2298-6 ✓	10/01/01 ✓	10/01/01 ✓
05	PE7-S-B ✓	Q2298-7 ✓	10/01/01 ✓	10/01/01 ✓
06	PE8-S-B ✓	Q2298-8 ✓	10/01/01 ✓	10/01/01 ✓
07	PE9-S-B ✓	Q2298-9 ✓	10/01/01 ✓	10/01/01 ✓
08	PE10-S-B ✓	Q2298-10 ✓	10/01/01 ✓	10/01/01 ✓
09	PE11-S-B ✓	Q2298-11 ✓	10/01/01 ✓	10/01/01 ✓
10	PE12-S-B ✓	Q2298-12 ✓	10/01/01 ✓	10/01/01 ✓
11	PE13-S-B ✓	Q2298-13 ✓	10/02/01 ✓	10/02/01 ✓
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				

COMMENTS:

6E

PESTICIDE INITIAL CALIBRATION OF SINGLE COMPONENT ANALYTES

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

Instrument ID: TRACEGC84 Level (x low): low 1.0 mid 4.0 high 16.0

GC Column: CLPEST2 ID: 0.53 (mm) Date(s) Analyzed: 09/24/01 09/25/01

COMPOUND	RT OF STANDARDS LOW	MID	HIGH	MEAN RT	RT WINDOW FROM	TO
alpha-BHC +/- 0.05 *	5.41	5.41	5.41	5.41	5.36	5.46
beta-BHC	6.52	6.52	6.52	6.52	6.47	6.57
delta-BHC	7.20	7.20	7.20	7.20	7.15	7.25
gamma-BHC (Lindane)	6.26	6.26	6.26	6.26	6.21	6.31
Heptachlor	7.26	7.26	7.26	7.26	7.21	7.31
Aldrin	7.98	7.98	7.98	7.98	7.93	8.03
Heptachlor epoxide	9.37	9.36	9.37	9.37	9.30	9.44
Endosulfan I	10.22	10.22	10.22	10.22	10.15	10.30
Dieldrin +/- 0.07 *	10.86	10.86	10.86	10.86	10.79	~~10.90~~ 10.93
4,4'-DDE	10.69	10.69	10.69	10.69	10.62	10.80
Endrin	11.52	11.52	11.52	11.52	11.45	11.60
Endosulfan II	12.03	12.03	12.03	12.03	11.96	12.10
4,4'-DDD	12.01	12.01	12.01	12.01	11.94	12.10
Endosulfan sulfate	13.45	13.45	13.45	13.45	13.38	13.50
4,4'-DDT	12.69	12.69	12.69	12.69	12.62	12.80
Methoxychlor	14.36	14.36	14.35	14.36	14.29	14.40
Endrin ketone	14.57	14.57	14.57	14.57	14.50	14.60
Endrin aldehyde	12.82	12.82	12.83	12.82	12.75	12.90
alpha-Chlordane	10.15	10.15	10.15	10.15	10.08	10.20
gamma-Chlordane	9.80	9.80	9.80	9.80	9.73	9.87
Tetrachloro-m-xylene	3.96	3.96	3.96	3.96	3.91	4.01
Decachlorobiphenyl	17.50	17.50	17.50	17.50	17.40	17.60

Trmk 10/30/01

* Surrogate retention times are measured from Standard Mix A analyses.

Retention time windows are +/- 0.05 minutes for all compounds that elute before Heptachlor epoxide, +/- 0.07 minutes for all other compounds, except +/- 0.10 minutes for Decachlorobiphenyl.

6E

PESTICIDE INITIAL CALIBRATION OF SINGLE COMPONENT ANALYTES

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

Instrument ID: TRACEGC85 Level (x low): low 1.0 mid 4.0 high 16.0

GC Column: CLPEST ID: 0.53 (mm) Date(s) Analyzed: 09/24/01 09/25/01

COMPOUND	RT OF STANDARDS LOW	MID	HIGH	MEAN RT	RT WINDOW FROM	TO
alpha-BHC +/- 0.05 *	4.12	4.11	4.12	4.12	4.07	4.17
beta-BHC	5.02	5.01	5.01	5.01	4.96	5.06
delta-BHC	5.36	5.36	5.36	5.36	5.31	5.41
gamma-BHC (Lindane)	4.78	4.77	4.77	4.77	4.72	4.82
Heptachlor	5.77	5.77	5.77	5.77	5.72	5.82
Aldrin	6.39	6.39	6.39	6.39	6.34	6.44
Heptachlor epoxide	7.77	7.77	7.77	7.77	7.70	7.84
Endosulfan I	8.60	8.60	8.60	8.60	8.53	8.67
Dieldrin +/- 0.07 *	9.14	9.14	9.14	9.14	9.07	9.21
4,4'-DDE	8.70	8.70	8.70	8.70	8.63	8.77
Endrin	9.61	9.61	9.61	9.61	9.54	9.68
Endosulfan II	10.12	10.12	10.12	10.12	10.05	10.20
4,4'-DDD	10.02	10.02	10.02	10.02	9.95	10.10
Endosulfan sulfate	12.03	12.02	12.02	12.02	11.95	12.10
4,4'-DDT	10.63	10.63	10.63	10.63	10.56	10.70
Methoxychlor	11.87	11.87	11.87	11.87	11.80	11.90
Endrin ketone	12.57	12.57	12.57	12.57	12.50	12.60
Endrin aldehyde	11.08	11.07	11.07	11.07	11.00	11.10
alpha-Chlordane	8.35	8.35	8.35	8.35	8.28	8.42
gamma-Chlordane	8.05	8.05	8.05	8.05	7.98	8.12
Tetrachloro-m-xylene	3.04	3.04	3.05	3.04	2.99	3.09
Decachlorobiphenyl	15.03	15.03	15.03	15.03	14.93	15.~~20~~ 13

* Surrogate retention times are measured from Standard Mix A analyses.

Retention time windows are +/- 0.05 minutes for all compounds that elute before Heptachlor epoxide, +/- 0.07 minutes for all other compounds, except +/- 0.10 minutes for Decachlorobiphenyl.

6E

PESTICIDE INITIAL CALIBRATION OF SINGLE COMPONENT ANALYTES

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

Instrument ID: TRACEGC84 Level (x low): low 1.0 mid 4.0 high 16.0

GC Column: CLPEST2 ID: 0.53 (mm) Date(s) Analyzed: 09/28/01 09/29/01

COMPOUND	RT OF STANDARDS LOW	MID	HIGH	MEAN RT	RT WINDOW FROM	TO
alpha-BHC +/-0.05 *	5.39	5.39	5.39	5.39 ✓	5.34 ✓	5.44 ✓
beta-BHC	6.51	6.50	6.51	6.51	6.46	6.56
delta-BHC	7.18	7.18	7.18	7.18	7.13	7.23
gamma-BHC (Lindane)	6.24	6.24	6.24	6.24	6.19	6.29
Heptachlor	7.24	7.24	7.24	7.24	7.19	7.29
Aldrin	7.96	7.96	7.96	7.96	7.91	8.01
Heptachlor epoxide	9.35	9.35	9.35	9.35	9.28	9.42
Endosulfan I	10.21	10.20	10.21	10.21	10.14	10.30
Dieldrin +/- 0.07 *	10.84	10.84	10.84	10.84 ✓	10.77 ✓	~~10.90~~ 10.91
4,4'-DDE	10.67	10.67	10.68	10.67	10.60	10.70
Endrin	11.51	11.50	11.51	11.51	11.44	11.60
Endosulfan II	12.02	12.01	12.02	12.02	11.95	12.10
4,4'-DDD	11.99	11.99	11.99	11.99	11.92	12.10
Endosulfan sulfate	13.43	13.43	13.44	13.43	13.36	13.50
4,4'-DDT	12.68	12.67	12.68	12.68	12.61	12.70
Methoxychlor	14.34	14.34	14.34	14.34	14.27	14.40
Endrin ketone	14.56	14.56	14.56	14.56	14.49	14.60
Endrin aldehyde	12.81	12.81	12.81	12.81	12.74	12.90
alpha-Chlordane	10.13	10.13	10.13	10.13	10.06	10.20
gamma-Chlordane	9.79	9.79	9.79	9.79	9.72	9.86
Tetrachloro-m-xylene	3.94	3.94	3.94	3.94	3.89	3.99
Decachlorobiphenyl	17.49	17.48	17.48	17.48	17.38	17.~~60~~ 58

Tnk initial

* Surrogate retention times are measured from Standard Mix A analyses.

Retention time windows are +/- 0.05 minutes for all compounds that elute before Heptachlor epoxide, +/- 0.07 minutes for all other compounds, except +/- 0.10 minutes for Decachlorobiphenyl.

6E

PESTICIDE INITIAL CALIBRATION OF SINGLE COMPONENT ANALYTES

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

Instrument ID: TRACEGC85 Level (x low): low 1.0 mid 4.0 high 16.0

GC Column: CLPEST ID: 0.53 (mm) Date(s) Analyzed: 09/28/01 09/29/01

COMPOUND	RT OF STANDARDS LOW	MID	HIGH	MEAN RT	RT WINDOW FROM	TO
alpha-BHC +/- 0.05 *	4.10	4.10	4.10	4.10	4.05	4.15
beta-BHC	5.00	5.00	5.00	5.00	4.95	5.05
delta-BHC	5.34	5.34	5.34	5.34	5.29	5.39
gamma-BHC (Lindane)	4.76	4.75	4.76	4.76	4.71	4.81
Heptachlor	5.75	5.75	5.75	5.75	5.70	5.80
Aldrin	6.37	6.37	6.37	6.37	6.32	6.42
Heptachlor epoxide	7.75	7.75	7.75	7.75	7.68	7.82
Endosulfan I	8.58	8.57	8.58	8.58	8.51	8.65
Dieldrin +/- 0.07 *	9.12	9.12	9.12	9.12	9.05	9.19
4,4'-DDE	8.69	8.69	8.69	8.69	8.62	8.76
Endrin	9.59	9.59	9.59	9.59	9.52	9.66
Endosulfan II	10.10	10.10	10.10	10.10	10.03	10.20
4,4'-DDD	10.01	10.01	10.01	10.01	9.94	10.10
Endosulfan sulfate	12.01	12.01	12.01	12.01	11.94	12.10
4,4'-DDT	10.62	10.61	10.61	10.61	10.54	10.70
Methoxychlor	11.86	11.85	11.85	11.85	11.78	11.90
Endrin ketone	12.55	12.55	12.55	12.55	12.48	12.60
Endrin aldehyde	11.05	11.05	11.06	11.05	10.98	11.10
alpha-Chlordane	8.33	8.33	8.33	8.33	8.26	8.40
gamma-Chlordane	8.03	8.03	8.03	8.03	7.96	8.10
Tetrachloro-m-xylene	3.04	3.03	3.04	3.04	2.99	3.09
Decachlorobiphenyl	15.02	15.01	15.01	15.01	14.91	15.~~10~~ 11

* Surrogate retention times are measured from Standard Mix A analyses.

Retention time windows are +/- 0.05 minutes for all compounds that elute before Heptachlor epoxide, +/- 0.07 minutes for all other compounds, except +/- 0.10 minutes for Decachlorobiphenyl.

6F

PESTICIDE INITIAL CALIBRATION OF SINGLE COMPONENT ANALYTES

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

Instrument ID: TRACEGC84 Level (x low): low 1.0 mid 4.0 high 16.0

GC Column: CLPEST2 ID: 0.53 (mm) Date(s) Analyzed: 09/24/01 09/25/01

COMPOUND	CALIBRATION FACTORS LOW	MID	HIGH	MEAN	%RSD
alpha-BHC *	3054600	3746850	3999163	3600204.3	13.6
beta-BHC	1324800	1370800	1365550	1353716.7	1.9
delta-BHC	2576600	3093600	3265238	2978479.3	12.0
gamma-BHC (Lindane)	2540600	3321850	3507200	3123216.7	16.4
Heptachlor	2979200	3346050	3335925	3220391.7	6.5
Aldrin	2798600	3038800	3115213	2984204.3	5.5
Heptachlor epoxide	2618800	2837750	2699550	2718700.0	4.1
Endosulfan I	2420800	2651650	2560888	2544446.0	4.6
Dieldrin *	2228700	2609375	2396775	2411616.7	7.9
4,4'-DDE	2441000	2711675	2630694	2594456.3	5.4
Endrin	1653900	1891825	1727319	1757681.3	6.9
Endosulfan II	2035500	2293975	2071500	2133658.3	6.6
4,4'-DDD	1561300	1875650	1921481	1786143.7	11.0
Endosulfan sulfate	2017100	2236650	2032256	2095335.3	5.9
4,4'-DDT	1572900	1870825	1999869	1814531.3	12.1
Methoxychlor	749260	762815	600816	704297.0	12.8
Endrin ketone	1982300	2026550	1879350	1962733.3	3.8
Endrin aldehyde	1488600	1626650	1491406	1535552.0	5.1
alpha-Chlordane	2606000	2780350	2810213	2732187.7	4.0
gamma-Chlordane	2690000	2900300	2944125	2844808.3	4.8
Tetrachloro-m-xylene	2039200	2123800	2169513	2110837.7	3.1
Decachlorobiphenyl	2331500	2550900	2346575	2409658.3	5.1

* Surrogate calibration factors are measured from Standard Mix A analyses.

6F

PESTICIDE INITIAL CALIBRATION OF SINGLE COMPONENT ANALYTES

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

Instrument ID: TRACEGC85 Level (x low): low 1.0 mid 4.0 high 16.0

GC Column: CLPEST ID: 0.53 (mm) Date(s) Analyzed: 09/24/01 09/25/01

COMPOUND	CALIBRATION FACTORS LOW	MID	HIGH	MEAN	%RSD	
alpha-BHC *	863400	989250	1039400	964016.7	9.4	✓
beta-BHC	387800	438000	401575	409125.0	6.3	
delta-BHC	758600	843300	890063	830654.3	8.0	
gamma-BHC (Lindane)	852000	945850	970075	922641.7	6.8	
Heptachlor	936600	975200	904913	938904.3	3.7	
Aldrin	849000	848450	806750	834733.3	2.9	
Heptachlor epoxide	799400	791100	719288	769929.3	5.7	
Endosulfan I	746200	775450	699213	740287.7	5.2	
Dieldrin *	728200	762400	672806	721135.3	6.3	✓
4,4'-DDE	755400	757550	693669	735539.7	4.9	
Endrin	594700	598775	521725	571733.3	7.6	
Endosulfan II	587600	649300	575731	604210.3	6.5	
4,4'-DDD	482400	535075	530294	515923.0	5.6	
Endosulfan sulfate	625700	623975	544075	597916.7	7.8	
4,4'-DDT	565300	624875	583269	591148.0	5.2	
Methoxychlor	291240	281055	209403	260566.0	17.1	
Endrin ketone	658900	654450	577388	630246.0	7.3	
Endrin aldehyde	521400	495350	433075	483275.0	9.4	
alpha-Chlordane	796400	790450	738463	775104.3	4.1	
gamma-Chlordane	816800	803100	756950	792283.3	4.0	
Tetrachloro-m-xylene	646400	716000	651425	671275.0	5.8	✓
Decachlorobiphenyl	822300	750675	627875	733616.7	13.4	✓

* Surrogate calibration factors are measured from Standard Mix A analyses.

6F

PESTICIDE INITIAL CALIBRATION OF SINGLE COMPONENT ANALYTES

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

Instrument ID: TRACEGC84 Level (x low): low 1.0 mid 4.0 high 16.0

GC Column: CLPEST2 ID: 0.53 (mm) Date(s) Analyzed: 09/28/01 09/29/01

COMPOUND	CALIBRATION FACTORS LOW	MID	HIGH	MEAN	%RSD
alpha-BHC *	3756600	4018550	4415900	4063683.3	8.2
beta-BHC	1602600	1595750	1562038	1586796.0	1.4
delta-BHC	3196600	3511000	3015588	3241062.7	7.7
gamma-BHC (Lindane)	3438200	3807250	4100175	3781875.0	8.8
Heptachlor	3608400	3779400	3739700	3709166.7	2.4
Aldrin	3592000	3480000	3540963	3537654.3	1.6
Heptachlor epoxide	3198200	3230550	3063363	3164037.7	2.8
Endosulfan I	2974000	3068400	2901863	2981421.0	2.8
Dieldrin *	2695900	2932600	2668769	2765756.3	5.2
4,4'-DDE	3073200	3099800	2950813	3041271.0	2.6
Endrin	2245600	2237100	2025456	2169385.3	5.7
Endosulfan II	2245200	2572575	2343275	2387016.7	7.0
4,4'-DDD	2120200	2113700	2153056	2128985.3	1.0
Endosulfan sulfate	2486100	2507100	2357700	2450300.0	3.3
4,4'-DDT	1813100	2066550	2183556	2021068.7	9.4
Methoxychlor	871380	856540	650853	792924.3	15.5
Endrin ketone	2304000	2245700	2073963	2207887.7	5.4
Endrin aldehyde	1770300	1785000	1694531	1749943.7	2.8
alpha-Chlordane	3145600	3178500	3153363	3159154.3	0.5
gamma-Chlordane	3194200	3301800	3345038	3280346.0	2.4
Tetrachloro-m-xylene	2389200	2426300	2474513	2430004.3	1.8
Decachlorobiphenyl	2786600	2745400	2528213	2686737.7	5.2

* Surrogate calibration factors are measured from Standard Mix A analyses.

6F

PESTICIDE INITIAL CALIBRATION OF SINGLE COMPONENT ANALYTES

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

Instrument ID: TRACEGC85 Level (x low): low 1.0 mid 4.0 high 16.0

GC Column: CLPEST ID: 0.53 (mm) Date(s) Analyzed: 09/28/01 09/29/01

COMPOUND	CALIBRATION FACTORS LOW	MID	HIGH	MEAN	%RSD
alpha-BHC *	874000	1000750	1061738	978829.3	9.8
beta-BHC	417000	438500	408075	421191.7	3.7
delta-BHC	765600	856750	912638	844996.0	8.8
gamma-BHC (Lindane)	885600	955600	990313	943837.7	5.7
Heptachlor	959800	981750	924600	955383.3	3.0
Aldrin	901800	881550	844413	875921.0	3.3
Heptachlor epoxide	831800	822300	754588	802896.0	5.2
Endosulfan I	781600	790550	732288	768146.0	4.1
Dieldrin *	761100	788475	709244	752939.7	5.3
4,4'-DDE	784000	781575	727313	764296.0	4.2
Endrin	635000	659600	585800	626800.0	6.0
Endosulfan II	616200	684325	602500	634341.7	6.9
4,4'-DDD	483800	554875	553281	530652.0	7.6
Endosulfan sulfate	654100	655775	575519	628464.7	7.3
4,4'-DDT	575500	626725	606481	602902.0	4.3
Methoxychlor	316380	295310	209836	273842.0	20.6
Endrin ketone	685500	690275	607456	661077.0	7.0
Endrin aldehyde	532300	508900	441913	494371.0	9.5
alpha-Chlordane	847000	824900	771750	814550.0	4.7
gamma-Chlordane	846200	826200	790350	820916.7	3.4
Tetrachloro-m-xylene	661400	712150	665238	679596.0	4.2
Decachlorobiphenyl	849400	767500	646381	754427.0	13.5

* Surrogate calibration factors are measured from Standard Mix A analyses.

6G

PESTICIDE INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

Instrument ID: TRACEGC84 Date(s) Analyzed: 09/24/01 09/25/01

GC Column: CLPEST2 ID: 0.53 (mm)

+/- 0.07

COMPOUND	AMOUNT (ng)	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR
Toxaphene	0.50	1	12.23	12.16	12.30	84556
		2	12.85	12.78	12.92	87226
		3	13.00	12.93	13.07	91500
		4	13.94	13.87	14.01	130696
		5	14.81	14.74	14.88	82746
Aroclor-1016	0.10	1	5.11	5.04	5.18	40300
		2	6.05	5.98	6.12	76890
		3	7.10	7.03	7.17	174640
		4	7.41	7.34	7.48	74960
		5	8.50	8.43	8.57	57850
Aroclor-1221	0.20	1	3.21	3.13	3.27	8170
		2	4.66	4.59	4.73	19415
		3	4.98	4.91	5.05	11660
		4	5.12	5.05	5.19	50985
		5				
Aroclor-1232	0.10	1	5.11	5.04	5.18	44760
		2	6.04	5.97	6.12	38140
		3	7.10	7.03	7.17	77390
		4	8.49	8.42	8.56	23600
		5	9.38	9.31	9.45	23500
Aroclor-1242	0.10	1	5.11	5.04	5.18	36710
		2	6.05	5.98	6.12	63580
		3	7.10	7.03	7.17	149510
		4	7.41	7.34	7.48	59490
		5	9.37	9.30	9.44	56750
Aroclor-1248	0.10	1	7.10	7.03	7.17	92900
		2	8.50	8.43	8.57	76590
		3	9.38	9.31	9.45	97780
		4	10.94	10.87	11.01	51390
		5	11.46	11.39	11.53	59650
Aroclor-1254	0.10	1	9.46	9.39	9.53	89360
		2	9.91	9.84	9.98	130970
		3	10.94	10.87	11.01	149710
		4	11.47	11.40	11.54	179390
		5	12.66	12.59	12.73	198080
Aroclor-1260	0.10	1	11.88	11.81	11.95	253400
		2	12.88	12.81	12.95	169250
		3	14.11	14.04	14.18	340820
		4	14.91	14.84	14.98	192250
		5	16.23	16.16	16.30	67220

1 At least 3 peaks for each column are required for identification of multicomponent analytes.

6G

PESTICIDE INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

Instrument ID: TRACEGC85 Date(s) Analyzed: 09/24/01 09/25/01

GC Column: CLPEST ID: 0.53 (mm)

+/- 0.07

COMPOUND	AMOUNT (ng)	1 PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR
Toxaphene	0.50	1	10.27	10.20	10.34	20916
		2	11.31	11.24	11.38	32134
		3	11.76	11.69	11.83	31858
		4	12.52	12.45	12.59	20324
		5	12.91	12.84	12.98	11876
Aroclor-1016	0.10	1	3.76	3.69	3.83	14940
		2	4.47	4.40	4.54	28430
		3	5.44	5.37	5.51	61900
		4	5.72	5.65	5.79	24160
		5	6.61	6.54	6.68	27110
Aroclor-1221	0.20	1	2.25	2.18	2.32	8870
		2	3.40	3.33	3.47	8630
		3	3.68	3.61	3.75	3665
		4	3.76	3.69	3.83	21510
		5				
Aroclor-1232	0.10	1	3.76	3.69	3.83	19070
		2	4.47	4.40	4.54	13040
		3	5.44	5.37	5.51	26670
		4	6.61	6.54	6.67	10690
		5	7.54	7.47	7.61	6860
Aroclor-1242	0.10	1	3.76	3.69	3.83	14010
		2	4.47	4.40	4.54	22740
		3	5.44	5.37	5.51	48700
		4	7.59	7.52	7.66	17500
		5	8.02	7.95	8.09	12610
Aroclor-1248	0.10	1	6.15	6.08	6.22	33890
		2	6.61	6.54	6.68	34500
		3	7.54	7.47	7.62	30160
		4	8.02	7.95	8.09	27690
		5	8.88	8.81	8.95	16530
Aroclor-1254	0.10	1	7.44	7.37	7.51	27180
		2	8.03	7.96	8.10	39920
		3	8.88	8.81	8.95	48760
		4	9.91	9.85	9.98	43190
		5	10.52	10.45	10.59	56030
Aroclor-1260	0.10	1	9.92	9.85	9.99	97370
		2	11.31	11.24	11.38	38520
		3	12.02	11.95	12.09	104940
		4	12.62	12.55	12.69	39310
		5	14.02	13.95	14.09	22350

1 At least 3 peaks for each column are required for identification of multicomponent analytes.

6G

PESTICIDE INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

Instrument ID: TRACEGC84 Date(s) Analyzed: 09/28/01 09/29/01

GC Column: CLPEST2 ID: 0.53 (mm)

+/- 0.05

COMPOUND	AMOUNT (ng)	1 PEAK	RT	RT WINDOW FROM	RT WINDOW TO		CALIBRATION FACTOR
Toxaphene	0.50	1	12.21	12.14	12.28	✓	100508
		2	12.82	12.75	12.89	✓	102570
		3	12.98	12.91	13.05	✓	111858
		4	13.92	13.85	13.99	✓	142606
		5	14.79	14.72	14.86	✓	84414
Aroclor-1016	0.10	1	5.09	5.02	5.16	✓	45980
		2	6.04	5.97	6.11	✓	101480
		3	7.08	7.01	7.15	✓	216330
		4	7.39	7.32	7.46	✓	91800
		5	8.48	8.41	8.55	✓	66630
Aroclor-1221	0.20	1	4.64	4.57	4.71	✓	27010
		2	4.96	4.89	5.03	✓	13015
		3	5.10	5.03	5.17	✓	60545
		4					
		5					
Aroclor-1232	0.10	1	5.09	5.02	5.16	✓	52860
		2	6.04	5.97	6.11	✓	56470
		3	7.09	7.02	7.16	✓	85940
		4	8.48	8.41	8.55	✓	28250
		5	9.36	9.29	9.43	✓	29700
Aroclor-1242	0.10	1	5.10	5.03	5.17	✓	39940
		2	6.04	5.97	6.11	✓	89140
		3	7.08	7.01	7.15	✓	172660
		4	7.39	7.32	7.46	✓	71370
		5	9.36	9.29	9.43	✓	68700
Aroclor-1248	0.10	1	7.08	7.01	7.15	✓	106730
		2	8.48	8.41	8.55	✓	84270
		3	9.36	9.29	9.43	✓	105200
		4	10.92	10.85	10.99	✓	71980
		5	11.45	11.38	11.52	✓	75310
Aroclor-1254	0.10	1	9.44	9.37	9.51	✓	98530
		2	9.89	9.82	9.96	✓	150530
		3	10.92	10.85	10.99	✓	179020
		4	11.45	11.38	11.52	✓	220100
		5	12.65	12.58	12.72	✓	240780
Aroclor-1260	0.10	1	11.86	11.79	11.93	✓	295160
		2	12.86	12.79	12.93	✓	197760
		3	14.09	14.02	14.16	✓	412810
		4	14.89	14.82	14.96	✓	240090
		5	16.21	16.14	16.28	✓	84090

1 At least 3 peaks for each column are required for identification of multicomponent analytes.

6G

PESTICIDE INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

Instrument ID: TRACEGC85 Date(s) Analyzed: 09/28/01 09/29/01

GC Column: CLPEST ID: 0.53 (mm)

+/- 0.07

COMPOUND	AMOUNT (ng)	1 PEAK	RT	RT WINDOW FROM	RT WINDOW TO		CALIBRATION FACTOR
Toxaphene	0.50	1	10.24	10.17	10.31	✓	21758
		2	11.29	11.22	11.36	✓	33838
		3	11.73	11.66	11.80	✓	32870
		4	12.51	12.44	12.58	✓	20798
		5	12.89	12.82	12.96	✓	11284
Aroclor-1016	0.10	1	3.74	3.67	3.81	✓	11710
		2	4.46	4.39	4.53	✓	27900
		3	5.43	5.36	5.50	✓	66310
		4	5.71	5.64	5.78	✓	25520
		5	6.59	6.52	6.66	✓	24330
Aroclor-1221	0.20	1	2.21	2.14	2.28	✓	3240
		2	3.38	3.31	3.45	✓	7485
		3	3.66	3.59	3.73	✓	3450
		4	3.74	3.67	3.81	✓	20680
		5					
Aroclor-1232	0.10	1	3.74	3.67	3.81	✓	16620
		2	4.46	4.39	4.53	✓	10190
		3	5.42	5.35	5.49	✓	26980
		4	6.59	6.52	6.66	✓	9880
		5	7.53	7.46	7.60	✓	6090
Aroclor-1242	0.10	1	3.75	3.68	3.82	✓	13370
		2	4.46	4.39	4.53	✓	25840
		3	5.42	5.35	5.49	✓	51080
		4	7.52	7.45	7.59	✓	16530
		5	8.00	7.93	8.07	✓	14830
Aroclor-1248	0.10	1	6.13	6.06	6.20	✓	34740
		2	6.59	6.52	6.66	✓	33840
		3	7.53	7.46	7.60	✓	29370
		4	8.00	7.93	8.07	✓	26250
		5	8.87	8.80	8.94	✓	16250
Aroclor-1254	0.10	1	7.42	7.35	7.49	✓	27150
		2	8.01	7.94	8.08	✓	40410
		3	8.87	8.80	8.94	✓	51210
		4	9.90	9.83	9.97	✓	47750
		5	10.51	10.44	10.58	✓	62860
Aroclor-1260	0.10	1	9.90	9.83	9.97	✓	95480
		2	11.29	11.22	11.36	✓	38740
		3	12.00	11.93	12.07	✓	106480
		4	12.61	12.54	12.68	✓	40620
		5	14.00	13.93	14.07	✓	18510

1 At least 3 peaks for each column are required for identification of multicomponent analytes.

6H

PESTICIDE ANALYTE RESOLUTION SUMMARY

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GC Column (1): CLPEST2 ID: 0.53 (mm) Instrument ID (1): TRACEGC84

EPA Sample No. (RESC##): RESC14 Lab Sample ID (1): RESC14

Date Analyzed (1): 09/24/01 Time Analyzed (1): 2111 ✓

	ANALYTE	RT	RESOLUTION (%)
01	Tetrachloro-m-xylene	3.96	100.0
02	gamma-Chlordane	9.81	100.0
03	Endosulfan I	10.23	100.0
04	4,4'-DDE	10.69	97.0
05	Dieldrin	10.86	100.0 ✓
06	Endosulfan sulfate	13.45	100.0
07	Methoxychlor	14.36	94.4
08	Endrin ketone	14.58	100.0
09	Decachlorobiphenyl	17.50	

GC Column (2): CLPEST ID: 0.53 (mm) Instrument ID (2): TRACEGC85

EPA Sample No. (RESC##): RESC14 Lab Sample ID (2): RESC14

Date Analyzed (2): 09/24/01 Time Analyzed (2): 2111

	ANALYTE	RT	RESOLUTION (%)
01	Tetrachloro-m-xylene	3.05	100.0
02	gamma-Chlordane	8.05	100.0
03	Endosulfan I	8.60	80.7
04	4,4'-DDE	8.70	100.0
05	Dieldrin	9.14	100.0 ✓
06	Methoxychlor	11.87	80.5
07	Endosulfan sulfate	12.03	100.0
08	Endrin ketone	12.57	100.0
09	Decachlorobiphenyl	15.03	

6H

PESTICIDE ANALYTE RESOLUTION SUMMARY

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GC Column (1): CLPEST2 ID: 0.53 (mm) Instrument ID (1): TRACEGC84

EPA Sample No. (RESC##): RESC20 Lab Sample ID (1): RESC20

Date Analyzed (1): 09/28/01 Time Analyzed (1): 2306 ✓

	ANALYTE	RT	RESOLUTION (%)
01	Tetrachloro-m-xylene	3.95	100.0
02	gamma-Chlordane	9.79	100.0
03	Endosulfan I	10.21	100.0
04	4,4'-DDE	10.68	96.1
05	Dieldrin	10.84	100.0 ✓
06	Endosulfan sulfate	13.44	100.0
07	Methoxychlor	14.34	94.8
08	Endrin ketone	14.56	100.0
09	Decachlorobiphenyl	17.48	

GC Column (2): CLPEST ID: 0.53 (mm) Instrument ID (2): TRACEGC85

EPA Sample No. (RESC##): RESC20 Lab Sample ID (2): RESC20

Date Analyzed (2): 09/28/01 Time Analyzed (2): 2306

	ANALYTE	RT	RESOLUTION (%)
01	Tetrachloro-m-xylene	3.04	100.0
02	gamma-Chlordane	8.04	100.0
03	Endosulfan I	8.58	83.3
04	4,4'-DDE	8.69	100.0
05	Dieldrin	9.12	100.0 ✓
06	Methoxychlor	11.86	79.4
07	Endosulfan sulfate	12.01	100.0
08	Endrin ketone	12.55	100.0
09	Decachlorobiphenyl	15.02	

6I
PERFORMACE EVALUATION MIXTURE (PEM)

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GC Column (1): CLPEST2 ID: 0.53 (mm) Instrument ID (1): TRACEGC84

EPA Sample No. (PEM##): PEM14 Lab Sample ID (1): PEM14

Date Analyzed (1): 09/24/01 Time Analyzed (1): 2134 ✓

	ANALYTE	RT	RESOLUTION (%)
01	Tetrachloro-m-xylene	3.96	100.0
02	alpha-BHC	5.41	100.0 ✓
03	gamma-BHC (Lindane)	6.26	100.0
04	beta-BHC	6.52	100.0
05	Endrin	11.52	100.0
06	4,4'-DDT	12.69	100.0
07	Methoxychlor	14.36	100.0
08	Decachlorobiphenyl	17.50	

GC Column (2): CLPEST ID: 0.53 (mm) Instrument ID (2): TRACEGC85

EPA Sample No. (PEM##): PEM14 Lab Sample ID (2): PEM14

Date Analyzed (2): 09/24/01 Time Analyzed (2): 2134

	ANALYTE	RT	RESOLUTION (%)
01	Tetrachloro-m-xylene	3.05	100.0
02	alpha-BHC	4.12	100.0 ✓
03	gamma-BHC (Lindane)	4.77	100.0
04	beta-BHC	5.02	100.0
05	Endrin	9.61	100.0
06	4,4'-DDT	10.63	100.0
07	Methoxychlor	11.87	100.0
08	Decachlorobiphenyl	15.03	

6I

PERFORMACE EVALUATION MIXTURE (PEM)

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GC Column (1): CLPEST2 ID: 0.53 (mm) Instrument ID (1): TRACEGC84

EPA Sample No. (PEM##): PEM15 Lab Sample ID (1): PEM15

Date Analyzed (1): 09/25/01 Time Analyzed (1): 0314 ✓

	ANALYTE	RT	RESOLUTION (%)
01	Tetrachloro-m-xylene	3.96	100.0
02	alpha-BHC	5.41	100.0 ✓
03	gamma-BHC (Lindane)	6.26	100.0
04	beta-BHC	6.52	100.0
05	Endrin	11.52	100.0
06	4,4'-DDT	12.69	100.0
07	Methoxychlor	14.36	100.0
08	Decachlorobiphenyl	17.50	

GC Column (2): CLPEST ID: 0.53 (mm) Instrument ID (2): TRACEGC85

EPA Sample No. (PEM##): PEM15 Lab Sample ID (2): PEM15

Date Analyzed (2): 09/25/01 Time Analyzed (2): 0314 ✓

	ANALYTE	RT	RESOLUTION (%)
01	Tetrachloro-m-xylene	3.04	100.0
02	alpha-BHC	4.11	100.0 ✓
03	gamma-BHC (Lindane)	4.77	100.0
04	beta-BHC	5.01	100.0
05	Endrin	9.61	100.0
06	4,4'-DDT	10.63	100.0
07	Methoxychlor	11.87	100.0
08	Decachlorobiphenyl	15.03	

6I

PERFORMACE EVALUATION MIXTURE (PEM)

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GC Column (1): CLPEST2 ID: 0.53 (mm) Instrument ID (1): TRACEGC84

EPA Sample No. (PEM##): PEMYX Lab Sample ID (1): PEMYX

Date Analyzed (1): 09/25/01 Time Analyzed (1): 2355 ✓

	ANALYTE	RT	RESOLUTION (%)
01	Tetrachloro-m-xylene	3.94	100.0
02	alpha-BHC	5.39	100.0 ✓
03	gamma-BHC (Lindane)	6.24	100.0
04	beta-BHC	6.50	100.0
05	Endrin	11.51	100.0
06	4,4'-DDT	12.68	100.0
07	Methoxychlor	14.34	100.0
08	Decachlorobiphenyl	17.49	

GC Column (2): CLPEST ID: 0.53 (mm) Instrument ID (2): TRACEGC85

EPA Sample No. (PEM##): PEMYX Lab Sample ID (2): PEMYX

Date Analyzed (2): 09/25/01 Time Analyzed (2): 2355 ✓

	ANALYTE	RT	RESOLUTION (%)
01	Tetrachloro-m-xylene	3.03	100.0
02	alpha-BHC	4.10	100.0 ✓
03	gamma-BHC (Lindane)	4.75	100.0
04	beta-BHC	4.99	100.0
05	Endrin	9.59	100.0
06	4,4'-DDT	10.61	100.0
07	Methoxychlor	11.85	100.0
08	Decachlorobiphenyl	15.02	

6I
PERFORMACE EVALUATION MIXTURE (PEM)

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GC Column (1): CLPEST2 ID: 0.53 (mm) Instrument ID (1): TRACEGC84

EPA Sample No. (PEM##): PEMZD Lab Sample ID (1): PEMZD

Date Analyzed (1): 09/26/01 Time Analyzed (1): 1101 ✓

	ANALYTE	RT	RESOLUTION (%)
01	Tetrachloro-m-xylene	3.94	100.0
02	alpha-BHC	5.39	100.0 ✓
03	gamma-BHC (Lindane)	6.24	100.0
04	beta-BHC	6.50	100.0
05	Endrin	11.50	100.0
06	4,4'-DDT	12.67	100.0
07	Methoxychlor	14.34	100.0
08	Decachlorobiphenyl	17.48	

GC Column (2): CLPEST ID: 0.53 (mm) Instrument ID (2): TRACEGC85

EPA Sample No. (PEM##): PEMZD Lab Sample ID (2): PEMZD

Date Analyzed (2): 09/26/01 Time Analyzed (2): 1101

	ANALYTE	RT	RESOLUTION (%)
01	Tetrachloro-m-xylene	3.03	100.0
02	alpha-BHC	4.09	100.0 ✓
03	gamma-BHC (Lindane)	4.75	100.0
04	beta-BHC	4.99	100.0
05	Endrin	9.59	100.0
06	4,4'-DDT	10.61	100.0
07	Methoxychlor	11.85	100.0
08	Decachlorobiphenyl	15.01	

6I

PERFORMACE EVALUATION MIXTURE (PEM)

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GC Column (1): CLPEST2 ID: 0.53 (mm) Instrument ID (1): TRACEGC84

EPA Sample No. (PEM##): PEM20 Lab Sample ID (1): PEM20

Date Analyzed (1): 09/28/01 Time Analyzed (1): 2328 ✓

	ANALYTE	RT	RESOLUTION (%)
01	Tetrachloro-m-xylene	3.94	100.0
02	alpha-BHC	5.39	100.0 ✓
03	gamma-BHC (Lindane)	6.24	100.0
04	beta-BHC	6.50	100.0
05	Endrin	11.51	100.0
06	4,4'-DDT	12.68	100.0
07	Methoxychlor	14.34	100.0
08	Decachlorobiphenyl	17.48	

GC Column (2): CLPEST ID: 0.53 (mm) Instrument ID (2): TRACEGC85

EPA Sample No. (PEM##): PEM20 Lab Sample ID (2): PEM20

Date Analyzed (2): 09/28/01 Time Analyzed (2): 2328

	ANALYTE	RT	RESOLUTION (%)
01	Tetrachloro-m-xylene	3.04	100.0
02	alpha-BHC	4.10	100.0 ✓
03	gamma-BHC (Lindane)	4.76	100.0
04	beta-BHC	5.00	100.0
05	Endrin	9.60	100.0
06	4,4'-DDT	10.61	100.0
07	Methoxychlor	11.86	100.0
08	Decachlorobiphenyl	15.02	

6I
PERFORMACE EVALUATION MIXTURE (PEM)

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GC Column (1): CLPEST2 ID: 0.53 (mm) Instrument ID (1): TRACEGC84

EPA Sample No. (PEM##): PEM21 Lab Sample ID (1): PEM21 ✓

Date Analyzed (1): 09/29/01 Time Analyzed (1): 0508 ✓

	ANALYTE	RT	RESOLUTION (%)
01	Tetrachloro-m-xylene	3.95	100.0
02	alpha-BHC	5.39	100.0 ✓
03	gamma-BHC (Lindane)	6.25	100.0
04	beta-BHC	6.51	100.0
05	Endrin	11.51	100.0
06	4,4'-DDT	12.68	100.0
07	Methoxychlor	14.35	100.0
08	Decachlorobiphenyl	17.49	

GC Column (2): CLPEST ID: 0.53 (mm) Instrument ID (2): TRACEGC85

EPA Sample No. (PEM##): PEM21 Lab Sample ID (2): PEM21

Date Analyzed (2): 09/29/01 Time Analyzed (2): 0508

	ANALYTE	RT	RESOLUTION (%)
01	Tetrachloro-m-xylene	3.04	100.0
02	alpha-BHC	4.10	100.0 ✓
03	gamma-BHC (Lindane)	4.76	100.0
04	beta-BHC	5.00	100.0
05	Endrin	9.60	100.0
06	4,4'-DDT	10.61	100.0
07	Methoxychlor	11.86	100.0
08	Decachlorobiphenyl	15.02	

6I
PERFORMACE EVALUATION MIXTURE (PEM)

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GC Column (1): CLPEST2 ID: 0.53 (mm) Instrument ID (1): TRACEGC84

EPA Sample No. (PEM##): PEM2X Lab Sample ID (1): PEM2X ✓

Date Analyzed (1): 10/01/01 Time Analyzed (1): 0916 ✓

	ANALYTE	RT	RESOLUTION (%)
01	Tetrachloro-m-xylene	3.95	100.0
02	alpha-BHC	5.39	100.0 ✓
03	gamma-BHC (Lindane)	6.25	100.0
04	beta-BHC	6.51	100.0
05	Endrin	11.51	100.0
06	4,4'-DDT	12.68	100.0
07	Methoxychlor	14.34	100.0
08	Decachlorobiphenyl	17.49	

GC Column (2): CLPEST ID: 0.53 (mm) Instrument ID (2): TRACEGC85

EPA Sample No. (PEM##): PEM2X Lab Sample ID (2): PEM2X

Date Analyzed (2): 10/01/01 Time Analyzed (2): 0916

	ANALYTE	RT	RESOLUTION (%)
01	Tetrachloro-m-xylene	3.04	100.0
02	alpha-BHC	4.10	100.0 ✓
03	gamma-BHC (Lindane)	4.76	100.0
04	beta-BHC	5.00	100.0
05	Endrin	9.60	100.0
06	4,4'-DDT	10.62	100.0
07	Methoxychlor	11.86	100.0
08	Decachlorobiphenyl	15.02	

6I
PERFORMACE EVALUATION MIXTURE (PEM)

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GC Column (1): CLPEST2 ID: 0.53 (mm) Instrument ID (1): TRACEGC84

EPA Sample No. (PEM##): PEM3L Lab Sample ID (1): PEM3L ✓

Date Analyzed (1): 10/02/01 Time Analyzed (1): 0151 ✓

	ANALYTE	RT	RESOLUTION (%)
01	Tetrachloro-m-xylene	3.95	100.0
02	alpha-BHC	5.39	100.0 ✓
03	gamma-BHC (Lindane)	6.25	100.0
04	beta-BHC	6.51	100.0
05	Endrin	11.51	100.0
06	4,4'-DDT	12.68	100.0
07	Methoxychlor	14.35	100.0
08	Decachlorobiphenyl	17.49	

GC Column (2): CLPEST ID: 0.53 (mm) Instrument ID (2): TRACEGC85

EPA Sample No. (PEM##): PEM3L Lab Sample ID (2): PEM3L

Date Analyzed (2): 10/02/01 Time Analyzed (2): 0151

	ANALYTE	RT	RESOLUTION (%)
01	Tetrachloro-m-xylene	3.04	100.0
02	alpha-BHC	4.11	100.0 ✓
03	gamma-BHC (Lindane)	4.76	100.0
04	beta-BHC	5.00	100.0
05	Endrin	9.60	100.0
06	4,4'-DDT	10.62	100.0
07	Methoxychlor	11.86	100.0
08	Decachlorobiphenyl	15.02	

6J
INDIVIDUAL STANDARD MIXTURE A

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GC Column (1): CLPEST2 ID: 0.53 (mm) Instrument ID (1): TRACEGC84

EPA Sample No. (INDAM##): INDAM14 Lab Sample ID (1): INDAM14 ✓

Date Analyzed (1): 09/25/01 Time Analyzed (1): 0121 ✓

	ANALYTE	RT	RESOLUTION (%)
01	Tetrachloro-m-xylene	3.96	100.0
02	alpha-BHC	5.41	100.0 ✓
03	gamma-BHC (Lindane)	6.26	100.0
04	Heptachlor	7.26	100.0
05	Endosulfan I	10.22	100.0
06	Dieldrin	10.86	100.0 ✓
07	Endrin	11.52	100.0
08	4,4'-DDD	12.01	100.0
09	4,4'-DDT	12.69	100.0
10	Methoxychlor	14.36	100.0
11	Decachlorobiphenyl	17.50	

GC Column (2): CLPEST ID: 0.53 (mm) Instrument ID (2): TRACEGC85

EPA Sample No. (INDAM##): INDAM14 Lab Sample ID (2): INDAM14

Date Analyzed (2): 09/25/01 Time Analyzed (2): 0121

	ANALYTE	RT	RESOLUTION (%)
01	Tetrachloro-m-xylene	3.04	100.0
02	alpha-BHC	4.11	100.0 ✓
03	gamma-BHC (Lindane)	4.77	100.0
04	Heptachlor	5.77	100.0
05	Endosulfan I	8.60	100.0
06	Dieldrin	9.14	100.0 ✓
07	Endrin	9.61	100.0
08	4,4'-DDD	10.02	100.0
09	4,4'-DDT	10.63	100.0
10	Methoxychlor	11.87	100.0
11	Decachlorobiphenyl	15.03	

6J
INDIVIDUAL STANDARD MIXTURE A

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GC Column (1): CLPEST2 ID: 0.53 (mm) Instrument ID (1): TRACEGC84

EPA Sample No. (INDAM##): INDAM20 Lab Sample ID (1): INDAM20

Date Analyzed (1): 09/29/01 Time Analyzed (1): 0315 ✓

	ANALYTE	RT	RESOLUTION (%)
01	Tetrachloro-m-xylene	3.94	100.0
02	alpha-BHC	5.39	100.0 ✓
03	gamma-BHC (Lindane)	6.24	100.0
04	Heptachlor	7.24	100.0
05	Endosulfan I	10.20	100.0
06	Dieldrin	10.84	100.0 ✓
07	Endrin	11.50	100.0
08	4,4'-DDD	11.99	100.0
09	4,4'-DDT	12.67	100.0
10	Methoxychlor	14.34	100.0
11	Decachlorobiphenyl	17.48	

GC Column (2): CLPEST ID: 0.53 (mm) Instrument ID (2): TRACEGC85

EPA Sample No. (INDAM##): INDAM20 Lab Sample ID (2): INDAM20

Date Analyzed (2): 09/29/01 Time Analyzed (2): 0315

	ANALYTE	RT	RESOLUTION (%)
01	Tetrachloro-m-xylene	3.03	100.0
02	alpha-BHC	4.10	100.0 ✓
03	gamma-BHC (Lindane)	4.75	100.0
04	Heptachlor	5.75	100.0
05	Endosulfan I	8.57	100.0
06	Dieldrin	9.12	100.0 ✓
07	Endrin	9.59	100.0
08	4,4'-DDD	10.01	100.0
09	4,4'-DDT	10.61	100.0
10	Methoxychlor	11.85	100.0
11	Decachlorobiphenyl	15.01	

6K
INDIVIDUAL STANDARD MIXTURE B

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GC Column (1): CLPEST2 ID: 0.53 (mm) Instrument ID (1): TRACEGC84

EPA Sample No. (INDBM##): INDBM14 Lab Sample ID (1): INDBM14

Date Analyzed (1): 09/25/01 Time Analyzed (1): 0143

	ANALYTE	RT	RESOLUTION (%)
01	Tetrachloro-m-xylene	3.96	100.0
02	beta-BHC	6.52	100.0
03	delta-BHC	7.20	100.0
04	Aldrin	7.98	100.0
05	Heptachlor epoxide	9.36	100.0
06	gamma-Chlordane	9.80	100.0
07	alpha-Chlordane	10.15	100.0
08	4,4'-DDE	10.69	100.0
09	Endosulfan II	12.03	100.0
10	Endrin aldehyde	12.82	100.0
11	Endosulfan sulfate	13.45	100.0
12	Endrin ketone	14.57	100.0
13	Decachlorobiphenyl	17.50	

No targets.
Not evaluated

GC Column (2): CLPEST ID: 0.53 (mm) Instrument ID (2): TRACEGC85

EPA Sample No. (INDBM##): INDBM14 Lab Sample ID (2): INDBM14

Date Analyzed (2): 09/25/01 Time Analyzed (2): 0143

	ANALYTE	RT	RESOLUTION (%)
01	Tetrachloro-m-xylene	3.05	100.0
02	beta-BHC	5.01	100.0
03	delta-BHC	5.36	100.0
04	Aldrin	6.39	100.0
05	Heptachlor epoxide	7.77	100.0
06	gamma-Chlordane	8.05	100.0
07	alpha-Chlordane	8.35	100.0
08	4,4'-DDE	8.70	100.0
09	Endosulfan II	10.12	100.0
10	Endrin aldehyde	11.07	100.0
11	Endosulfan sulfate	12.02	100.0
12	Endrin ketone	12.57	100.0
13	Decachlorobiphenyl	15.03	

6K
INDIVIDUAL STANDARD MIXTURE B

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GC Column (1): CLPEST2 ID: 0.53 (mm) Instrument ID (1): TRACEGC84

EPA Sample No. (INDBM##): INDBM20 Lab Sample ID (1): INDBM20

Date Analyzed (1): 09/29/01 Time Analyzed (1): 0337

	ANALYTE	RT	RESOLUTION (%)
01	Tetrachloro-m-xylene	3.94	100.0
02	beta-BHC	6.50	100.0
03	delta-BHC	7.18	100.0
04	Aldrin	7.96	100.0
05	Heptachlor epoxide	9.35	100.0
06	gamma-Chlordane	9.79	100.0
07	alpha-Chlordane	10.13	100.0
08	4,4'-DDE	10.67	100.0
09	Endosulfan II	12.01	100.0
10	Endrin aldehyde	12.81	100.0
11	Endosulfan sulfate	13.43	100.0
12	Endrin ketone	14.56	100.0
13	Decachlorobiphenyl	17.48	

No Targets
Not evaluated.

GC Column (2): CLPEST ID: 0.53 (mm) Instrument ID (2): TRACEGC85

EPA Sample No. (INDBM##): INDBM20 Lab Sample ID (2): INDBM20

Date Analyzed (2): 09/29/01 Time Analyzed (2): 0337

	ANALYTE	RT	RESOLUTION (%)
01	Tetrachloro-m-xylene	3.03	100.0
02	beta-BHC	5.00	100.0
03	delta-BHC	5.34	100.0
04	Aldrin	6.37	100.0
05	Heptachlor epoxide	7.75	100.0
06	gamma-Chlordane	8.03	100.0
07	alpha-Chlordane	8.33	100.0
08	4,4'-DDE	8.69	100.0
09	Endosulfan II	10.10	100.0
10	Endrin aldehyde	11.05	100.0
11	Endosulfan sulfate	12.01	100.0
12	Endrin ketone	12.55	100.0
13	Decachlorobiphenyl	15.01	

7E

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GC Column: CLPEST2 ID: 0.53 (mm) Init. Calib. Date(s): 09/24/01 09/25/01

EPA Sample No.(PIBLK##): _____ Date Analyzed : _____

Lab Sample ID (PIBLK) : _____ Time Analyzed : _____

EPA Sample No.(PEM##) : PEM14 Date Analyzed : 09/24/01

Lab Sample ID (PEM) : PEM14 ✓ Time Analyzed : 2134 ✓

PEM COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
alpha-BHC 7-0.05	5.41	5.36	5.46 ✓	0.0094	0.010	-6.0
beta-BHC	6.52	6.47	6.57	0.010	0.010	0.0
gamma-BHC (Lindane)	6.26	6.21	6.31	0.0092	0.010	-8.0
Endrin	11.52	11.45	11.59	0.054	0.050	8.0
4,4'-DDT	12.69	12.62	12.76	0.105	0.10	5.0
Methoxychlor	14.36	14.29	14.43	0.233	0.25	-6.8

4,4'-DDT % Breakdown (1): 1.43 ✓ Endrin % Breakdown (1): 18.03 ✓

Combined % Breakdown (1): 19.46 ✓

TCMX and DCB not reported on this form.

CompuChem Environmental Corporation

Lab Smp Id : PEM14
Sample Type : PEM
Inj Date : 24-SEP-2001 21:34
Operator : 2461
Method : /chem/tracegc84.i/u010924.b/2ul0LM04_clpest2v3.m

Client Smp Id : PEM14
Sublist : PEM
Inst ID : TRACEGC84
Spike Sublist : PEM

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	CALC AMT ON-COLUMN (Ng)	%D	%D LIMIT	FLAGS
2.08			1707							
2.46			276							
2.88			1127							
3.13			1646							
3.18			2904							
3.84			291							
3.96 ✓	3.91	4.01	43571	2123800	Tetrachloro-m-xylene	0.020000	0.020515	2.6 ✓	25.0	
4.66			1539							
4.80			2142							
5.14			946							
5.41	5.36	5.46	35400	3746850	alpha-BHC	0.010000	0.009448	-5.5	25.0	
5.76			507							
5.93			1186							
6.16			154							
6.26	6.21	6.31	30399	3321850	gamma-BHC (Lindane)	0.010000	0.009151	-8.5	25.0	
6.52	6.47	6.57	13902	1370800	beta-BHC	0.010000	0.010141	1.4	25.0	
6.70			524							
6.97			220							
7.14			217							
7.42			420							
7.81			716							
7.98			572							
8.50			251							
8.80			223							
9.18			286							
10.02			114							
10.35			372							
10.69	10.62	10.76	2275	2711675	4,4'-DDE	0.000000	0.000839			J
11.37			163							
11.52	11.45	11.59	102133	1891825	Endrin	0.050000	0.053986	8.0	25.0	M 2
11.79			982							
12.03	11.94	12.08	1110	1875650	4,4'-DDD	0.000000	0.000591			J
12.34			598							
12.69	12.62	12.76	196021	1870825	4,4'-DDT	0.100000	0.104778	4.8	25.0	
12.83	12.75	12.89	8630	1626650	Endrin aldehyde	0.000000	0.005305			J
12.98			3434							
13.26			4686							
13.45			185							
13.64			982							
14.01			542							
14.36	14.29	14.43	177686	762815	Methoxychlor	0.250000	0.232933	-6.8	25.0	
14.57	14.50	14.64	7518	2026550	Endrin ketone	0.000000	0.003709			JM 2
14.70			1650							

KJ 9-25-01

CompuChem Environmental Corporation

Lab Smp Id : PEM14
Sample Type : PEM
Inj Date : 24-SEP-2001 21:34
Operator : 2461
Method : /chem/tracegc84.i/u010924.b/2ul0LM04_clpest2v3.m

Client Smp Id : PEM14
Sublist : PEM
Inst ID :
Spike Sublist : PEM

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	CALC AMT ON-COLUMN (Ng)	%D	%D LIMIT	FLAGS
16.06		687							
16.31		565							
16.75		179							
16.92		693							
17.50	17.40 17.60	48756	2550905	Decachlorobiphenyl	0.020000	0.019113	-4.4	25.0	
18.16		346							
18.46		334							
19.33		230							

7E

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GC Column: CLPEST ID: 0.53 (mm) Init. Calib. Date(s): 09/24/01 09/25/01

EPA Sample No.(PIBLK##): _____ Date Analyzed : _____

Lab Sample ID (PIBLK) : _____ Time Analyzed : _____

EPA Sample No.(PEM##) : PEM14 Date Analyzed : 09/24/01

Lab Sample ID (PEM) : PEM14 ✓ Time Analyzed : 2134 ✓

PEM COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
alpha-BHC %0.05	4.12	4.07	4.17 ✓	0.0095	0.010	-5.0
beta-BHC	5.02	4.96	5.06	0.0091	0.010	-9.0
gamma-BHC (Lindane)	4.77	4.72	4.82	0.0093	0.010	-7.0
Endrin	9.61	9.54	9.68	0.053	0.050	6.0
4,4'-DDT	10.63	10.56	10.70	0.089	0.10	-11.0
Methoxychlor	11.87	11.80	11.94	0.217	0.25	-13.2

4,4'-DDT % Breakdown (1): 0.00 ✓ Endrin % Breakdown (1): 11.99 ✓

Combined % Breakdown (1): 11.99 ✓

TCMX and DCB not reported on this form.

CompuChem Environmental Corporation

Lab Smp Id : PEM14
Sample Type : PEM
Inj Date : 24-SEP-2001 21:34
Operator : 2461
Method : /chem/tracegc85.i/u010924.b/2ul0LM04_clpestv3.m

Client Smp Id : PEM14
Sublist : PEM
Inst ID : TRACEGC85
Spike Sublist : PEM

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	CALC AMT ON-COLUMN (Ng)	%D	%D LIMIT	FLAGS
0.15			798							
0.78			558896							
1.68			613							
3.05	2.99	3.09	13795	716000	Tetrachloro-m-xylene	0.020000	0.019267	-3.7	25.0	
4.12	4.07	4.17	9359	989250	alpha-BHC	0.010000	0.009461	-5.4	25.0	
4.77	4.72	4.82	8765	945850	gamma-BHC (Lindane)	0.010000	0.009266	-7.3	25.0	
5.02	4.96	5.06	4000	438000	beta-BHC	0.010000	0.009130	-8.7	25.0	
9.61	9.54	9.68	31562	598775	Endrin	0.050000	0.052709	5.4	25.0	
10.63	10.56	10.70	55652	624875	4,4'-DDT	0.100000	0.089061	10.9	25.0	M 2
10.75			1468							
11.08	11.00	11.14	1773	495350	Endrin aldehyde	0.000000	0.003577			J
11.87	11.80	11.94	61019	281055	Methoxychlor	0.250000	0.217103	-13.2	25.0	M 2
12.11			486							
12.57	12.50	12.64	1581	654450	Endrin ketone	0.000000	0.002416			J
15.03	14.93	15.13	15523	750675	Decachlorobiphenyl	0.020000	0.020677	3.4	25.0	

KJ 9.25 01

7E

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GC Column: CLPEST2 ID: 0.53 (mm) Init. Calib. Date(s): 09/24/01 09/25/01

EPA Sample No.(PIBLK##): PIBLK14 Date Analyzed : 09/25/01

Lab Sample ID (PIBLK) : PIBLK14 Time Analyzed : 0251

EPA Sample No.(PEM##) : PEM15 Date Analyzed : 09/25/01

Lab Sample ID (PEM) : PEM15 ✓ Time Analyzed : 0314 ✓

PEM COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
alpha-BHC +/-0.05	5.41	5.36	5.46 ✓	0.0090	0.010	-10.0
beta-BHC	6.52	6.47	6.57	0.010	0.010	0.0
gamma-BHC (Lindane)	6.26	6.21	6.31	0.0093	0.010	-7.0
Endrin	11.52	11.45	11.59	0.054	0.050	8.0
4,4'-DDT	12.69	12.62	12.76	0.105	0.10	5.0
Methoxychlor	14.36	14.29	14.43	0.233	0.25	-6.8

4,4'-DDT % Breakdown (1): 2.11 ✓ Endrin % Breakdown (1): 18.38 ✓

Combined % Breakdown (1): 20.49 ✓

TCMX and DCB not reported on this form

CompuChem Environmental Corporation

Lab Smp Id : PEM15 Client Smp Id : PEM15
Sample Type : PEM Sublist : PEM
Inj Date : 25-SEP-2001 03:14 Inst ID : TRACEGC84
Operator : 2461 Spike Sublist : PEM
Method : /chem/tracegc84.i/u010924.b/2ul0LM04_clpest2v3.m

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	CALC AMT ON-COLUMN (Ng)	%D	%D LIMIT	FLAGS
2.03			2593							
2.08			1939							
2.13			4091							
2.24			6596							
2.54			1955							
2.66			338							
2.89			676							
3.12			875							
3.22			507							
3.52			333							
3.74			239							
3.96 ✓	3.91	4.01	42554	2123800	Tetrachloro-m-xylene	0.020000	0.020037	0.2 ✓	25.0	
4.51			271							
4.69			549							
4.80			788							
5.14			580							
5.41	5.36	5.46	33647	3746850	alpha-BHC	0.010000	0.008980	10.2	25.0	
5.69			178							
5.92			1498							
6.26	6.21	6.31	30821	3321850	gamma-BHC (Lindane)	0.010000	0.009278	7.2	25.0	
6.52	6.47	6.57	13754	1370800	beta-BHC	0.010000	0.010033	0.3	25.0	M 2
6.69			340							
7.09			303							
7.34			136							
7.43			479							
7.96			126							
8.48			276							
8.70			291							
9.56			607							
9.83			686							
10.12			269							
10.28			185							
10.69	10.62	10.76	1827	2711675	4,4'-DDE	0.000000	0.000673			J
10.99			457							
11.18			337							
11.34			243							
11.52	11.45	11.59	101612	1891825	Endrin	0.050000	0.053711	7.4	25.0	
11.79			1820							
12.03	11.94	12.08	2702	1875650	4,4'-DDD	0.000000	0.001440			J
12.33			909							
12.69	12.62	12.76	196299	1872825	4,4'-DDT	0.100000	0.104926	4.9	25.0	M 2
12.82	12.75	12.89	9116	1626650	Endrin aldehyde	0.000000	0.005604			JM 2
12.97			3749							

KJ 9-25-01

CompuChem Environmental Corporation

Lab Smp Id : PEM15 Client Smp Id : PEM15
Sample Type : PEM Sublist : PEM
Inj Date : 25-SEP-2001 03:14 Inst ID :
Operator : 2461 Spike Sublist : PEM
Method : /chem/tracegc84.i/u010924.b/2ul0LM04_clpest2v3.m

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN Ng	CALC AMT ON-COLUMN Ng	%D	%D LIMIT	FLAGS
13.26		4478							
13.64		813							
13.96		433							
14.36	14.29 14.43	177761	762815	Methoxychlor	0.250000	0.233033	-6.8	25.0	
14.57	14.50 14.64	7263	2026550	Endrin ketone	0.000000	0.003584			JM ?
14.70		1222							
15.68		153							
16.08		229							
16.31		379							
16.68		439							
16.95		492							
17.50 ✓	17.40 17.60	43863	2859900	Decachlorobiphenyl	0.020000	0.019155	-4.2 ✓	25.0	
18.83		263							
19.18		125							
19.34		356							

KJ 9.25.01

7E
PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GC Column: CLPEST ID: 0.53 (mm) Init. Calib. Date(s): 09/24/01 09/25/01

EPA Sample No.(PIBLK##): PIBLK15 Date Analyzed : 09/25/01

Lab Sample ID (PIBLK) : PIBLK15 Time Analyzed : 0251

EPA Sample No.(PEM##) : PEM15 Date Analyzed : 09/25/01

Lab Sample ID (PEM) : PEM15 ✓ Time Analyzed : 0314 ✓

PEM COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
alpha-BHC +/- 0.05	4.11	4.07	4.17 ✓	0.0097	0.010	-3.0
beta-BHC	5.01	4.96	5.06	0.0099	0.010	-1.0
gamma-BHC (Lindane)	4.77	4.72	4.82	0.0095	0.010	-5.0
Endrin	9.61	9.54	9.68	0.053	0.050	6.0
4,4'-DDT	10.63	10.56	10.70	0.091	0.10	-9.0
Methoxychlor	11.87	11.80	11.94	0.214	0.25	-14.4

4,4'-DDT % Breakdown (1): 0.00 ✓ Endrin % Breakdown (1): 12.13 ✓

Combined % Breakdown (1): 12.13 ✓

TCMX and DCB not reported on this form

Data File: /chem/tracegc85.i/u010924.b/019uPEM15.d
Report Date 09/25/2001 15:35

CompuChem Environmental Corporation

Lab Smp Id : PEM15
Sample Type : PEM
Inj Date : 25-SEP-2001 03:14
Operator : 2461
Method : /chem/tracegc85.i/u010924.b/2ul0LM04_clpestv3.m

Client Smp Id : PEM15
Sublist : PEM
Inst ID : TRACEGC85
Spike Sublist : PEM

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	CALC AMT ON-COLUMN (Ng)	%D	%D LIMIT	FLAGS
0.78			576668							
3.04	2.99	3.09	13972	716000	Tetrachloro-m-xylene	0.020000	0.019514	-2.4	25.0	
4.11	4.07	4.17	9570	989250	alpha-BHC	0.010000	0.009674	-3.3	25.0	
4.77	4.72	4.82	8989	945850	gamma-BHC (Lindane)	0.010000	0.009504	-5.0	25.0	
5.02	4.96	5.06	4343	438000	beta-BHC	0.010000	0.009913	-0.9	25.0	
9.61	9.54	9.68	31736	598775	Endrin	0.050000	0.053002	6.0	25.0	
10.63	10.56	10.70	56602	624875	4,4'-DDT	0.100000	0.090580	-9.4	25.0	M
10.75			1414							J
11.08	11.00	11.14	1842	495350	Endrin aldehyde	0.000000	0.003719			
11.87	11.80	11.94	60123	281055	Methoxychlor	0.250000	0.213919	-14.4	25.0	
12.58	12.50	12.64	1537	654450	Endrin ketone	0.000000	0.002347			J
15.03	14.93	15.13	15845	750675	Decachlorobiphenyl	0.020000	0.021106	5.5	25.0	

KJ 9-25-01

7E

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GC Column: CLPEST2 ID: 0.53 (mm) Init. Calib. Date(s): 09/28/01 09/29/01

EPA Sample No.(PIBLK##): _____ Date Analyzed : _____

Lab Sample ID (PIBLK) : _____ Time Analyzed : _____

EPA Sample No.(PEM##) : PEM20 Date Analyzed : 09/28/01

Lab Sample ID (PEM) : PEM20 ✓ Time Analyzed : 2328 ✓

PEM COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
alpha-BHC +/- 0.05	5.39	5.34	5.44 ✓	0.011	0.010	10.0
beta-BHC	6.50	6.46	6.56	0.011	0.010	10.0
gamma-BHC (Lindane)	6.24	6.19	6.29	0.0097	0.010	-3.0
Endrin	11.51	11.44	11.58	0.055	0.050	10.0
4,4'-DDT	12.68	12.61	12.75	0.107	0.10	7.0
Methoxychlor	14.34	14.27	14.41	0.238	0.25	-4.8

4,4'-DDT % Breakdown (1): 2.25 ✓ Endrin % Breakdown (1): 12.44 ✓

Combined % Breakdown (1): 14.69 ✓

TCMX and DCB not reported on this form.

CompuChem Environmental Corporation

Lab Smp Id : PEM20
Sample Type : PEM
Inj Date : 28-SEP-2001 23:28
Operator : 2401
Method : /chem/tracegc84.i/v010928.b/2ul0LM04_clpest2v3.m

Client Smp Id : PEM20
Sublist : PEM
Inst ID : TRACEGC84
Spike Sublist : PEM

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	CALC AMT ON-COLUMN (Ng)	%D	%D LIMIT	FLAGS
2.05			1855							
2.46			624							
2.67			227							
2.88			231							
3.08			622							
3.12			249							
3.21			1262							
3.40			801							
3.60			992							
3.94	3.89	3.99	50234	2426300	Tetrachloro-m-xylene	0.020000	0.020704	3.5	25.0	
4.30			899							
4.50			683							
4.66			2365							
4.79			3119							
4.97			1993							
5.10			1864							
5.25			2247							
5.39	5.34	5.44	42426	4018550	alpha-BHC	0.010000	0.010558	5.6	25.0	
5.66			259							
5.80			278							
5.92			1876							
6.08			593							
[illegible].24	6.19	6.29	37061	3807250	gamma-BHC (Lindane)	0.010000	0.009734	-2.7	25.0	
[illegible].50	6.46	6.56	17587	1595750	beta-BHC	0.010000	0.011021	10.2	25.0	
7.04			2154							
7.13			688							
7.29			356							
7.45			3329							
7.61			8033							
7.68			299							
7.74			1971							
8.01			971							
8.09			320							
8.25			159							
8.37			331							
8.63			347							
8.79			632							
9.54			257							
9.87			213							
10.50			456							
10.67	10.60	10.74	2468	3099800	4,4'-DDE	0.000000	0.000796			J
10.98			187							
11.51	11.44	11.58	122852	2237100	Endrin	0.050000	0.054916	9.8	25.0	

SM 9/28/2001

CompuChem Environmental Corporation

Lab Smp Id : PEM20
Sample Type : PEM
Inj Date : 28-SEP-2001 23:28
Operator : 2401
Method : /chem/tracegc84.i/v010928.b/2ul0LM04_clpest2v3.m

Client Smp Id : PEM20
Sublist : PEM
Inst ID :
Spike Sublist : PEM

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	CALC AMT ON-COLUMN (Ng)	%D	%D LIMIT	FLAGS
11.77		1401							
12.02	11.92 12.06	3085	2113700	4,4'-DDD	0.000000	0.001459			J
12.34		847							
12.54		185							
12.68	12.61 12.75	220302	2066550	4,4'-DDT	0.100000	0.106604	6.6	25.0	M 2
12.80	12.74 12.88	5906	1785000	Endrin aldehyde	0.000000	0.003309			JM
13.24		5096							
13.42		963							
13.66		402							
13.95		595							
14.34	14.27 14.41	204164	856540	Methoxychlor	0.250000	0.238359	-4.7	25.0	2
14.56	14.49 14.63	6536	2245700	Endrin ketone	0.000000	0.002910			JM
14.69		2882							
15.43		1008							
16.12		339							
16.92		1088							
17.23		300							
17.48	17.38 17.58	56576	2745400	Decachlorobiphenyl	0.020000	0.020607	3.0	25.0	
18.20		329							
18.44		477							
18.62		458							
18.87		385							
[illegible]18		158							
[illegible]32		242							
[illegible].44		277							
19.60		373							

Em 9/29/2001

7E

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GC Column: CLPEST ID: 0.53 (mm) Init. Calib. Date(s): 09/28/01 09/29/01

EPA Sample No.(PIBLK##): _____ Date Analyzed : _____

Lab Sample ID (PIBLK) : _____ Time Analyzed : _____

EPA Sample No.(PEM##) : PEM20 Date Analyzed : 09/28/01

Lab Sample ID (PEM) : PEM20 ✓ Time Analyzed : 2328 ✓

PEM COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
alpha-BHC +/- 0.05	4.10	4.05	4.15 ✓	0.0093	0.010	-7.0
beta-BHC	5.00	4.95	5.05	0.0094	0.010	-6.0
gamma-BHC (Lindane)	4.76	4.71	4.81	0.0096	0.010	-4.0
Endrin	9.60	9.52	9.66	0.052	0.050	4.0
4,4'-DDT	10.61	10.54	10.68	0.092	0.10	-8.0
Methoxychlor	11.86	11.78	11.92	0.222	0.25	-11.2

4,4'-DDT % Breakdown (1): 0.60 ✓ Endrin % Breakdown (1): 6.32 ✓

Combined % Breakdown (1): 6.93 ✓

tcmx and OCB not reported on this form.

CompuChem Environmental Corporation

Lab Smp Id : PEM20
Sample Type : PEM
Inj Date : 28-SEP-2001 23:28
Operator : 2401
Method : /chem/tracegc85.i/v010928.b/2ul0LM04_clpestv3.m

Client Smp Id : PEM20
Sublist : PEM
Inst ID : TRACEGC85
Spike Sublist : PEM

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	CALC AMT ON-COLUMN (Ng)	%D	%D LIMIT	FLAGS
0.14			1776							
0.51			1043							
0.78			590489							
1.69			1134							
1.76			473							
3.04	2.99	3.09	13895	712150	Tetrachloro-m-xylene	0.020000	0.019510	-2.5	25.0	
4.10	4.05	4.15	9267	1000750	alpha-BHC	0.010000	0.009260	-7.4	25.0	
4.44			476							
4.76	4.71	4.81	9170	955600	gamma-BHC (Lindane)	0.010000	0.009595	-4.0	25.0	
5.00	4.95	5.05	4137	438500	beta-BHC	0.010000	0.009432	-5.7	25.0	
7.64			3525							
8.69	8.62	8.76	273	781575	4,4'-DDE	0.000000	0.000349			JM
9.60	9.52	9.66	34543	659600	Endrin	0.050000	0.052370	4.7	25.0	
10.02	9.94	10.08	142	554875	4,4'-DDD	0.000000	0.000254			JM
10.61	10.54	10.68	57998	626725	4,4'-DDT	0.100000	0.092541	-7.5	25.0	
10.73			3101							
11.07	10.98	11.12	953	508900	Endrin aldehyde	0.000000	0.001873			J
11.86	11.78	11.92	65687	295310	Methoxychlor	0.250000	0.222431	-11.0	25.0	M
12.09			2155							
12.56	12.48	12.62	891	690275	Endrin ketone	0.000000	0.001289			J
15.02	14.91	15.11	15803	767500	Decachlorobiphenyl	0.020000	0.020590	3.0	25.0	

KT 10/01/01

7E

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GC Column: CLPEST2 ID: 0.53 (mm) Init. Calib. Date(s): 09/28/01 09/29/01

EPA Sample No.(PIBLK##): PIBLK20 Date Analyzed : 09/29/01

Lab Sample ID (PIBLK) : PIBLK20 Time Analyzed : 0445

EPA Sample No.(PEM##) : PEM21 Date Analyzed : 09/29/01

Lab Sample ID (PEM) : PEM21 ✓ Time Analyzed : 0508 ✓

PEM COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
alpha-BHC +/-0.05	5.39	5.34	5.44 ✓	0.0099	0.010	-1.0
beta-BHC	6.51	6.46	6.56	0.010	0.010	0.0
gamma-BHC (Lindane)	6.25	6.19	6.29	0.0092	0.010	-8.0
Endrin	11.51	11.44	11.58	0.053	0.050	6.0
4,4'-DDT	12.68	12.61	12.75	0.104	0.10	4.0
Methoxychlor	14.35	14.27	14.41	0.234	0.25	-6.4

4,4'-DDT % Breakdown (1): 1.11 ✓ Endrin % Breakdown (1): 15.81 ✓

Combined % Breakdown (1): 16.92 ✓

TCMX and DCB not reported on this form

CompuChem Environmental Corporation

Lab Smp Id : PEM21
Sample Type : PEM
Inj Date : 29-SEP-2001 05:08
Operator : 2401
Method : /chem/tracegc84.i/v010928.b/2ul0LM04_clpest2v3.m

Client Smp Id : PEM21
Sublist : PEM
Inst ID : TRACEGC84
Spike Sublist : PEM

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	CALC AMT ON-COLUMN (Ng)	%D	%D LIMIT	FLAGS
2.03			1798							
2.52			1295							
2.74			771							
3.19			4398							
3.56			1088							
3.84			362							
3.95	3.89	3.99	48649	2426300	Tetrachloro-m-xylene	0.020000	0.020050	0.3	25.0	
4.66			1457							
4.79			2024							
5.39	5.34	5.44	39787	4018550	alpha-BHC	0.010000	0.009901	-1.0	25.0	
5.74			409							
5.91			2934							
6.13			486							
6.25	6.19	6.29	35132	3807250	gamma-BHC (Lindane)	0.010000	0.009228	-7.7	25.0	
6.51	6.46	6.56	16486	1595750	beta-BHC	0.010000	0.010331	3.3	25.0	
7.03			413							
7.24			327							
7.42			686							
7.98			388							
8.05			581							
8.33			442							
8.45			479							
[illegible]73			231							
[illegible]87			899							
9.13			502							
9.56			912							
9.81			143							
10.32			467							
10.52			614							
10.68	10.60	10.74	1588	3099800	4,4'-DDE	0.000000	0.000512			J
10.99			348							
11.51	11.44	11.58	119067	2237100	Endrin	0.050000	0.053223	6.4	25.0	M 2
11.76			1121							
12.02	11.92	12.06	1264	2113700	4,4'-DDD	0.000000	0.000598			J
12.33			845							
12.68	12.61	12.75	215904	2066550	4,4'-DDT	0.100000	0.104476	4.5	25.0	M 2
12.80	12.74	12.88	7578	1785000	Endrin aldehyde	0.000000	0.004245			JM 2
12.96			1751							
13.25			2756							
13.69			696							
13.96			798							
14.34	14.27	14.41	200808	856540	Methoxychlor	0.250000	0.234440	-6.2	25.0	2
14.55	14.49	14.63	8219	2245700	Endrin ketone	0.000000	0.003660			JM

Em 9/29/2001

Data File: /chem/tracegc84.i/v010928.b/019vPEM21.d
Report Date 09/29/2001 11:42

CompuChem Environmental Corporation

Lab Smp Id : PEM21
Sample Type : PEM
Inj Date : 29-SEP-2001 05:08
Operator : 2401
Method : /chem/tracegc84.i/v010928.b/2ul0LM04_clpest2v3.m

Client Smp Id : PEM21
Sublist : PEM
Inst ID :
Spike Sublist : PEM

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	CALC AMT ON-COLUMN (Ng)	%D	%D LIMIT	FLAGS
14.70		2715							
14.91		574							
15.31		203							
15.46		166							
16.05		770							
16.32		397							
16.92		624							
17.49 ✓	17.38 17.58	55083	2745400	Decachlorobiphenyl	0.020000	0.020063	0.3 ✓	25.0	
18.13		321							
18.86		301							
19.14		154							
19.33		105							
19.56		156							

7E

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GC Column: CLPEST ID: 0.53 (mm) Init. Calib. Date(s): 09/28/01 09/29/01

EPA Sample No.(PIBLK##): PIBLK21 Date Analyzed : 09/29/01

Lab Sample ID (PIBLK) : PIBLK21 Time Analyzed : 0445

EPA Sample No.(PEM##) : PEM21 Date Analyzed : 09/29/01

Lab Sample ID (PEM) : PEM21 ✓ Time Analyzed : 0508 ✓

PEM COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
alpha-BHC +/- 0.05	4.10	4.05	4.15 ✓	0.0097	0.010	-3.0
beta-BHC	5.00	4.95	5.05	0.010	0.010	0.0
gamma-BHC (Lindane)	4.76	4.71	4.81	0.0095	0.010	-5.0
Endrin	9.60	9.52	9.66	0.053	0.050	6.0
4,4'-DDT	10.61	10.54	10.68	0.095	0.10	-5.0
Methoxychlor	11.86	11.78	11.92	0.229	0.25	-8.4

4,4'-DDT % Breakdown (1): 0.37 ✓ Endrin % Breakdown (1): 8.79 ✓

Combined % Breakdown (1): 9.16 ✓

TCMX and DCB not reported on this form

Data File: /chem/tracegc85.i/v010928.b/019vPEM21.d
Report Date 10/01/2001 16:28

CompuChem Environmental Corporation

Lab Smp Id : PEM21
Sample Type : PEM
Inj Date : 29-SEP-2001 05:08
Operator : 2401
Method : /chem/tracegc85.i/v010928.b/2ul0LM04_clpestv3.m

Client Smp Id : PEM21
Sublist : PEM
Inst ID : TRACEGC85
Spike Sublist : PEM

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	CALC AMT ON-COLUMN (Ng)	%D	%D LIMIT	FLAGS
0.14			1022							
0.78			598104							
3.04 ✓	2.99	3.09	14381	712150	Tetrachloro-m-xylene	0.020000	0.020194	1.0 ✓	25.0	
4.10	4.05	4.15	9692	1000750	alpha-BHC	0.010000	0.009685	-3.2	25.0	
4.76	4.71	4.81	9060	955600	gamma-BHC (Lindane)	0.010000	0.009480	-5.2	25.0	
5.00	4.95	5.05	4410	438500	beta-BHC	0.010000	0.010057	0.6	25.0	
8.69	8.62	8.76	288	781575	4,4'-DDE	0.000000	0.000368			JM
9.60	9.52	9.66	34692	659600	Endrin	0.050000	0.052594	5.2	25.0	
10.61	10.54	10.68	59543	626725	4,4'-DDT	0.100000	0.095007	-5.0	25.0	M
10.73			2576							
11.06	10.98	11.12	1348	508900	Endrin aldehyde	0.000000	0.002647			J
11.86	11.78	11.92	67527	295310	Methoxychlor	0.250000	0.228665	-8.5	25.0	
12.56	12.48	12.62	1209	690275	Endrin ketone	0.000000	0.001750			J
15.02 ✓	14.91	15.11	16291	767500	Decachlorobiphenyl	0.020000	0.021226	6.1 ✓	25.0	

KT 10/01/01

7E

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GC Column: CLPEST2 ID: 0.53 (mm) Init. Calib. Date(s): 09/28/01 09/29/01

EPA Sample No.(PIBLK##): PIBLK2W Date Analyzed : 10/01/01

Lab Sample ID (PIBLK) : PIBLK2W Time Analyzed : 0855

EPA Sample No.(PEM##) : PEM2X Date Analyzed : 10/01/01

Lab Sample ID (PEM) : PEM2X ✓ Time Analyzed : 0916 ✓

PEM COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
alpha-BHC +/- 0.05	5.39	5.34	5.44 ✓	0.011	0.010	10.0
beta-BHC	6.51	6.46	6.56	0.011	0.010	10.0
gamma-BHC (Lindane)	6.25	6.19	6.29	0.010	0.010	0.0
Endrin	11.51	11.44	11.58	0.059	0.050	18.0
4,4'-DDT	12.68	12.61	12.75	0.110	0.10	10.0
Methoxychlor	14.34	14.27	14.41	0.241	0.25	-3.6

4,4'-DDT % Breakdown (1): 1.04 ✓ Endrin % Breakdown (1): 11.88 ✓

Combined % Breakdown (1): 12.92 ✓

TCMX and DCB not reported on this form

CompuChem Environmental Corporation

Lab Smp Id : PEMYX
Sample Type : PEM
Inj Date : 25-SEP-2001 23:55
Operator : 2401
Method : /chem/tracegc84.i/u010924b.b/2ulOLM04_clpest2v3.m

Client Smp Id : PEMYX
Sublist : PEM
Inst ID : TRACEGC84
Spike Sublist : PEM

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	CALC AMT ON-COLUMN (Ng)	%D	%D LIMIT	FLAGS
2.06			2006							
2.45			564							
2.75			342							
3.10			863							
3.18			437							
3.41			361							
3.62			205							
3.94 ✓	3.91	4.01	38562	2123800	Tetrachloro-m-xylene	0.020000	0.018157	-9.2 ✓	25.0	
4.39			732							
4.66			4439							
4.76			6589							
4.82			9385							
4.96			5900							
5.05			3466							
5.10			7512							
5.21			6369							
5.39	5.36	5.46	33368	3746850	alpha-BHC	0.010000	0.008906	-10.9	25.0	M 2
5.78			4043							
5.91			7857							
6.11			2199							
6.24	6.21	6.31	28984	3321850	gamma-BHC (Lindane)	0.010000	0.008725	-12.8	25.0	M 2
6.50	6.47	6.57	13409	1370800	beta-BHC	0.010000	0.009782	-2.2	25.0	M 2
[illegible]80			536							
[illegible]7			906							
[illegible].13			312							
7.24			529							
7.42			393							
8.00			922							
8.11			858							
8.24			627							
8.52			194							
8.89			716							
9.08			576							
9.53			352							
9.63			923							
9.72			382							
10.07			186							
10.34			632							
10.68	10.62	10.76	2411	2711675	4,4'-DDE	0.000000	0.000889			J
11.01			350							
11.26			353							
11.81	11.45	11.59	105076	1891825	Endrin	0.050000	0.055542	11.1	25.0	M 2
11.77			1472							

[illegible] 9/25/01

CompuChem Environmental Corporation

Lab Smp Id : PEMYX
Sample Type : PEM
Inj Date : 25-SEP-2001 23:55
Operator : 2401
Method : /chem/tracegc84.i/u010924b.b/2ul0LM04_clpest2v3.m

Client Smp Id : PEMYX
Sublist : PEM
Inst ID :
Spike Sublist : PEM

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	CALC AMT ON-COLUMN (Ng)	%D	%D LIMIT	FLAGS
12.00	11.94 12.08	725	1875650	4,4'-DDD	0.000000	0.000386			JM
12.32		327							
12.68	12.62 12.76	197890	1870825	4,4'-DDT	0.100000	0.105777	5.8	25.0	M
12.81	12.75 12.89	7148	1626650	Endrin aldehyde	0.000000	0.004394			JM2
13.24		4609							
13.66		363							
14.34	14.29 14.43	182735	762815	Methoxychlor	0.250000	0.239552	-4.2	25.0	
14.55	14.50 14.64	5583	2026550	Endrin ketone	0.000000	0.002754			JM2
14.69		2466							
14.90		793							
15.13		414							
15.86		180							
16.50		1090							
16.91		514							
17.18		577							
17.48	17.40 17.60	48704	2550900	Decachlorobiphenyl	0.020000	0.019093	-4.5	25.0	M2
18.37		1333							

AMM 9/25/01

7E

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GC Column: CLPEST ID: 0.53 (mm) Init. Calib. Date(s): 09/28/01 09/29/01

EPA Sample No.(PIBLK##): PIBLK2X Date Analyzed : 10/01/01

Lab Sample ID (PIBLK) : PIBLK2X Time Analyzed : 0855

EPA Sample No.(PEM##) : PEM2X Date Analyzed : 10/01/01

Lab Sample ID (PEM) : PEM2X ✓ Time Analyzed : 0916 ✓

PEM COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
alpha-BHC +/- 0.05	4.10	4.05	4.15 ✓	0.010	0.010	0.0
beta-BHC	5.00	4.95	5.05	0.0097	0.010	-3.0
gamma-BHC (Lindane)	4.76	4.71	4.81	0.0097	0.010	-3.0
Endrin	9.60	9.52	9.66	0.054	0.050	8.0
4,4'-DDT	10.62	10.54	10.68	0.095	0.10	-5.0
Methoxychlor	11.86	11.78	11.92	0.225	0.25	-10.0

4,4'-DDT % Breakdown (1): 0.73 ✓ Endrin % Breakdown (1): 9.43 ✓

Combined % Breakdown (1): 10.16 ✓

TCMX and DCB not reported on this form

Data File: /chem/tracegc85.i/u010924b.b/025uPEMYX.d
Report Date 09/26/2001 00:36

CompuChem Environmental Corporation

Lab Smp Id : PEMYX
Sample Type : PEM
Inj Date : 25-SEP-2001 23:55
Operator : 2401
Method : /chem/tracegc85.i/u010924b.b/2ul0LM04_clpestv3.m

Client Smp Id : PEMYX
Sublist : PEM
Inst ID : TRACEGC85
Spike Sublist : PEM

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	CALC AMT ON-COLUMN (Ng)	%D	%D LIMIT	FLAGS
0.16			518							
0.78			587368							
1.68			489							
3.03 ✓	2.99	3.09	13152	716000	Tetrachloro-m-xylene	0.020000	0.018369	-8.2 ✓	25.0	
4.10	4.07	4.17	5239	989250	alpha-BHC	0.010000	0.009339	-6.6	25.0	
4.75	4.72	4.82	8323	945850	gamma-BHC (Lindane)	0.010000	0.008799	-12.0	25.0	
4.99	4.96	5.06	4028	438000	beta-BHC	0.010000	0.009194	-8.1	25.0	
8.68	8.63	8.77	216	757550	4,4'-DDE	0.000000	0.000285			JM 2
9.59	9.54	9.68	33087	598775	Endrin	0.050000	0.055256	10.5	25.0	
10.61	10.56	10.70	56655	624875	4,4'-DDT	0.100000	0.090666	-9.3	25.0	
10.73			2496							J
11.06	11.00	11.14	923	495350	Endrin aldehyde	0.000000	0.001861			M2
11.85	11.80	11.94	63860	281055	Methoxychlor	0.250000	0.227215	-9.1	25.0	
12.10			1437							
12.22			252							J
12.55	12.50	12.64	892	654450	Endrin ketone	0.000000	0.001361			
15.02 ✓	14.93	15.13	14784	750675	Decachlorobiphenyl	0.020000	0.019693	-1.5 ✓	25.0	

JMW 9/25/01

7E

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GC Column: CLPEST2 ID: 0.53 (mm) Init. Calib. Date(s): 09/28/01 09/29/01

EPA Sample No.(PIBLK##): PIBLK3K Date Analyzed : 10/02/01

Lab Sample ID (PIBLK) : PIBLK3K Time Analyzed : 0128

EPA Sample No.(PEM##) : PEM3L Date Analyzed : 10/02/01

Lab Sample ID (PEM) : PEM3L ✓ Time Analyzed : 0151 ✓

PEM COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
alpha-BHC +/- 0.05	5.39	5.34	5.44 ✓	0.010	0.010	0.0
beta-BHC	6.51	6.46	6.56	0.010	0.010	0.0
gamma-BHC (Lindane)	6.25	6.19	6.29	0.0088	0.010	-12.0
Endrin	11.51	11.44	11.58	0.055	0.050	10.0
4,4'-DDT	12.68	12.61	12.75	0.101	0.10	1.0
Methoxychlor	14.35	14.27	14.41	0.228	0.25	-8.8

4,4'-DDT % Breakdown (1): 2.68 ✓ Endrin % Breakdown (1): 13.01 ✓

Combined % Breakdown (1): 15.69 ✓

TCMX and DCB not reported on this form

CompuChem Environmental Corporation

Lab Smp Id : PEMZD
Sample Type : PEM
Inj Date : 26-SEP-2001 11:01
Operator : 2485
Method : /chem/tracegc84.i/u010924d.b/2ul0LM04_clpest2v3.m

Client Smp Id : PEMZD
Sublist : PEM
Inst ID : TRACEGC84
Spike Sublist : PEM

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	CALC AMT ON-COLUMN (Ng)	%D	%D LIMIT	FLAGS
2.04			1839							
2.46			518							
2.75			662							
3.09			1118							
3.82			202							
3.94	3.91	4.01	45289	2123800	Tetrachloro-m-xylene	0.020000	0.021324	6.6	25.0	
4.34			181							
4.66			540							
4.79			941							
5.05			124							
5.10			779							
5.39	5.36	5.46	35970	3746850	alpha-BHC	0.010000	0.009600	-4.0	25.0	
5.72			183							
5.91			2010							
6.24	6.21	6.31	33046	3321850	gamma-BHC (Lindane)	0.010000	0.009948	-0.5	25.0	
6.50	6.47	6.57	15428	1370800	beta-BHC	0.010000	0.011255	12.5	25.0	
6.67			724							
6.84			508							
7.30			119							
7.40			632							
[illegible]80			479							
[illegible]94			419							
[illegible].22			302							
8.43			385							
8.87			522							
9.01			338							
9.18			284							
9.60			1883							
9.87			470							
10.10			120							
10.33			345							
10.67	10.62	10.76	2394	2711675	4,4'-DDE	0.000000	0.000882			J
10.98			206							
11.15			333							
11.50	11.45	11.59	111250	1891825	Endrin	0.050000	0.058806	17.6	25.0	M 2
11.77			1937							
12.00	11.94	12.08	4068	1875650	4,4'-DDD	0.000000	0.002168			J
12.32			677							
12.52			103							
12.67	12.62	12.76	208776	1870825	4,4'-DDT	0.100000	0.111596	11.6	25.0	M 2
12.80	12.75	12.89	7343	1626650	Endrin aldehyde	0.000000	0.004514			JM 2
12.95			2383							
13.24			5394							

CD 9-26-01

KJ 9-26-01

434

CompuChem Environmental Corporation

Lab Smp Id : PEMZD
Sample Type : PEM
Inj Date : 26-SEP-2001 11:01
Operator : 2485
Method : /chem/tracegc84.i/u010924d.b/2ul0LM04_clpest2v3.m

Client Smp Id : PEMZD
Sublist : PEM
Inst ID :
Spike Sublist : PEM

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	CALC AMT ON-COLUMN (Ng)	%D	%D LIMIT	FLAGS
13.94		221							
14.34	14.29 14.43	194580	762815	Methoxychlor	0.250000	0.255080	2.0	25.0	
14.55	14.50 14.64	7161	2026550	Endrin ketone	0.000000	0.003533			JM 2
14.69		2355							
15.13		203							
15.33		476							
15.46		317							
15.74		172							
16.00		336							
16.29		382							
16.94		838							
17.14		333							
17.30		338							
17.48	17.40 17.60	53424	2550900	Decachlorobiphenyl	0.020000	0.020943	4.7	25.0	
18.19		437							
18.49		235							
18.78		129							
18.88		231							

COB 9-26-01

KJ 9 26 01

7E

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GC Column: CLPEST ID: 0.53 (mm) Init. Calib. Date(s): 09/28/01 09/29/01

EPA Sample No.(PIBLK##): PIBLK3L Date Analyzed : 10/02/01

Lab Sample ID (PIBLK) : PIBLK3L Time Analyzed : 0128

EPA Sample No.(PEM##) : PEM3L Date Analyzed : 10/02/01

Lab Sample ID (PEM) : PEM3L ✓ Time Analyzed : 0151 ✓

PEM COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
alpha-BHC +/- 0.06	4.11	4.05	4.15 ✓	0.0098	0.010	-2.0
beta-BHC	5.00	4.95	5.05	0.0091	0.010	-9.0
gamma-BHC (Lindane)	4.76	4.71	4.81	0.0095	0.010	-5.0
Endrin	9.60	9.52	9.66	0.053	0.050	6.0
4,4'-DDT	10.62	10.54	10.68	0.094	0.10	-6.0
Methoxychlor	11.86	11.78	11.92	0.222	0.25	-11.2

4,4'-DDT % Breakdown (1): 0.35 ✓ Endrin % Breakdown (1): 7.42 ✓

Combined % Breakdown (1): 7.77 ✓

TCMX and DCB not reported on this form

Data File: /chem/tracegc85.i/u010924d.b/053uPEMZD.d
Report Date 09/26/2001 12:34

CompuChem Environmental Corporation

Lab Smp Id : PEMZD
Sample Type : PEM
Inj Date : 26-SEP-2001 11:01
Operator : 2485
Method : /chem/tracegc85.i/u010924d.b/2ul0LM04_clpestv3.m

Client Smp Id : PEMZD
Sublist : PEM
Inst ID : TRACEGC85
Spike Sublist : PEM

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	CALC AMT ON-COLUMN (Ng)	%D	%D LIMIT	FLAGS
0.77			602361							
3.03	2.99	3.09	13758	716000	Tetrachloro-m-xylene	0.020000	0.019214	-3.9	25.0	
4.09	4.07	4.17	9303	989250	alpha-BHC	0.010000	0.009403	-6.0	25.0	
4.75	4.72	4.82	8680	945850	gamma-BHC (Lindane)	0.010000	0.009176	-8.2	25.0	
4.99	4.96	5.06	4271	438000	beta-BHC	0.010000	0.009751	-2.5	25.0	M 2
8.68	8.63	8.77	350	757550	4,4'-DDE	0.000000	0.000461			JM 2
9.59	9.54	9.68	33586	598775	Endrin	0.050000	0.056091	12.2	25.0	
9.85			144							
10.02	9.95	10.09	444	535075	4,4'-DDD	0.000000	0.000830			JM 2
10.20			289							
10.30			292							
10.60	10.56	10.70	58900	624875	4,4'-DDT	0.100000	0.094259	-5.7	25.0	
10.73			3078							
11.06	11.00	11.14	1411	495350	Endrin aldehyde	0.000000	0.002848			J
11.85	11.80	11.94	66536	281055	Methoxychlor	0.250000	0.236733	-5.3	25.0	M 2
12.09			1966							
12.22			961							
12.55	12.50	12.64	1268	654450	Endrin ketone	0.000000	0.001936			J
15.01	14.93	15.13	15480	750675	Decachlorobiphenyl	0.020000	0.020620	3.1	25.0	

CDB 9-26-01

KJ 9-26-01

7E

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GC Column: CLPEST2 ID: 0.53 (mm) Init. Calib. Date(s): 09/24/01 09/25/01

EPA Sample No.(PIBLK##): PIBLKYW Date Analyzed : 09/25/01

Lab Sample ID (PIBLK) : PIBLKYW Time Analyzed : 2334

EPA Sample No.(PEM##) : PEMYX Date Analyzed : 09/25/01

Lab Sample ID (PEM) : PEMYX ✓ Time Analyzed : 2355 ✓

PEM COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
alpha-BHC *1-0.05	5.39	5.36	5.46 ✓	0.0089	0.010	-11.0
beta-BHC	6.50	6.47	6.57	0.0098	0.010	-2.0
gamma-BHC (Lindane)	6.24	6.21	6.31	0.0087	0.010	-13.0
Endrin	11.51	11.45	11.59	0.056	0.050	12.0
4,4'-DDT	12.68	12.62	12.76	0.106	0.10	6.0
Methoxychlor	14.34	14.29	14.43	0.240	0.25	-4.0

4,4'-DDT % Breakdown (1): 1.27 ✓ Endrin % Breakdown (1): 14.30 ✓

Combined % Breakdown (1): 15.57 ✓

TCMX and DCB not reported on this form

Data File: /chem/tracegc84.i/v010928c.b/038vPEM2X.d
Report Date 10/01/2001 10:35

CompuChem Environmental Corporation

Lab Smp Id : PEM2X
Sample Type : PEM
Inj Date : 01-OCT-2001 09:16
Operator : 2485
Method : /chem/tracegc84.i/v010928c.b/2ul0LM04_clpest2v3.m

Client Smp Id : PEM2X
Sublist : PEM
Inst ID : TRACEGC84
Spike Sublist : PEM

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	CALC AMT ON-COLUMN (Ng)	%D	%D LIMIT	FLAGS
2.04			1457							
2.53			1360							
2.78			3186							
3.13			1660							
3.21			1469							
3.62			281							
3.79			170							
3.95 ✓	3.89	3.99	51011	2426300	Tetrachloro-m-xylene	0.020000	0.021024	5.1 ✓	25.0	
4.35			173							
4.47			1589							
4.78			3496							
5.14			809							
5.39	5.34	5.44	43312	4018550	alpha-BHC	0.010000	0.010778	7.8	25.0	
5.92			2677							
6.24	6.19	6.29	38535	3807250	gamma-BHC (Lindane)	0.010000	0.010121	1.2	25.0	
6.51	6.46	6.56	17651	1595750	beta-BHC	0.010000	0.011061	10.6	25.0	
6.68			754							
7.07			278							
7.15			275							
7.44			726							
7.74			1179							
7.98			273							
8.11			400							
8.39			478							
8.59			305							
8.86			913							
9.24			1562							
9.53			556							
9.66			394							
10.06			419							
10.36			1181							
10.67	10.60	10.74	1119	3099800	4,4'-DDE	0.000000	0.000361			JM 2
11.51	11.44	11.58	131558	2237100	Endrin	0.050000	0.058807	17.6	25.0	
12.02	11.92	12.06	1426	2113700	4,4'-DDD	0.000000	0.000675			J
12.35			433							
12.44			410							
12.68	12.61	12.75	226544	2066550	4,4'-DDT	0.100000	0.110592	10.6	25.0	M 2
12.80	12.74	12.88	5856	1785000	Endrin aldehyde	0.000000	0.003281			JM 2
13.25			5195							
13.62			212							
13.81			127							
13.98			618							
14.34	14.27	14.41	206254	856540	Methoxychlor	0.250000	0.240798	-3.7	25.0	

CDB 10-1-01
PM 10-2-01

Data File: /chem/tracegc84.i/v010928c.b/038vPEM2X.d
Report Date 10/01/2001 10:35

CompuChem Environmental Corporation

Lab Smp Id : PEM2X
Sample Type : PEM
Inj Date : 01-OCT-2001 09:16
Operator : 2485
Method : /chem/tracegc84.i/v010928c.b/2ul0LM04_clpest2v3.m

Client Smp Id : PEM2X
Sublist : PEM
Inst ID :
Spike Sublist : PEM

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	CALC AMT ON-COLUMN (Ng)	%D	%D LIMIT	FLAGS
14.56	14.49 14.63	5972	2245700	Endrin ketone	0.000000	0.002659			J
14.69		3205							
15.18		683							
15.48		206							
15.75		410							
15.87		366							
16.03		116							
16.09		181							
16.24		143							
16.30		387							
16.59		215							
16.74		335							
16.91		700							
17.14		586							
17.31		217							
17.49	17.38 17.58	53984	2745400	Decachlorobiphenyl	0.020000	0.019663	-1.7	25.0	
17.74		125							
17.96		240							
18.26		388							
18.82		236							
18.92		154							
19.29		197							

7E

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GC Column: CLPEST ID: 0.53 (mm) Init. Calib. Date(s): 09/24/01 09/25/01

EPA Sample No.(PIBLK##): PIBLKYX Date Analyzed : 09/25/01

Lab Sample ID (PIBLK) : PIBLKYX Time Analyzed : 2334

EPA Sample No.(PEM##) : PEMYX Date Analyzed : 09/25/01

Lab Sample ID (PEM) : PEMYX ✓ Time Analyzed : 2355 ✓

PEM COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
alpha-BHC +/- 0.05	4.10	4.07	4.17	✓ 0.0093	0.010	-7.0
beta-BHC	4.99	4.96	5.06	0.0092	0.010	-8.0
gamma-BHC (Lindane)	4.75	4.72	4.82	0.0088	0.010	-12.0
Endrin	9.59	9.54	9.68	0.055	0.050	10.0
4,4'-DDT	10.61	10.56	10.70	0.091	0.10	-9.0
Methoxychlor	11.85	11.80	11.94	0.227	0.25	-9.2

4,4'-DDT % Breakdown (1): 0.29 ✓ Endrin % Breakdown (1): 6.45 ✓

Combined % Breakdown (1): 6.73 ✓

TCMX and DCB not reported on this form

CompuChem Environmental Corporation

Lab Smp Id : PEM2X
Sample Type : PEM
Inj Date : 01-OCT-2001 09:16
Operator : 2485
Method : /chem/tracegc85.i/v010928c.b/2ulOLM04_clpestv3.m

Client Smp Id : PEM2X
Sublist : PEM
Inst ID : TRACEGC85
Spike Sublist : PEM

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	CALC AMT ON-COLUMN (Ng)	%D	%D LIMIT	FLAGS
0.14			1104							
0.78			629330							
3.04	2.99	3.09	14522	712150	Tetrachloro-m-xylene	0.020000	0.020392	2.0	25.0	
4.10	4.05	4.15	10070	1000750	alpha-BHC	0.010000	0.010061	0.6	25.0	
4.76	4.71	4.81	9290	955600	gamma-BHC (Lindane)	0.010000	0.009721	-2.8	25.0	
5.00	4.95	5.05	4238	438500	beta-BHC	0.010000	0.009665	-3.4	25.0	
8.69	8.62	8.76	295	781575	4,4'-DDE	0.000000	0.000376			JM 2
9.12			117							
9.60	9.52	9.66	35637	659600	Endrin	0.050000	0.054028	8.1	25.0	
10.02	9.94	10.08	198	554875	4,4'-DDD	0.000000	0.000355			JM 2
10.22			112							
10.62	10.54	10.68	59314	626725	4,4'-DDT	0.100000	0.094641	-5.4	25.0	
10.74			2972							
11.07	10.98	11.12	1766	508900	Endrin aldehyde	0.000000	0.003468			J
11.28			676							
11.86	11.78	11.92	66419	295310	Methoxychlor	0.250000	0.224913	-10.0	25.0	M 2
12.10			2232							
12.56	12.48	12.62	859	690275	Endrin ketone	0.000000	0.001244			J
15.02	14.91	15.11	15196	767500	Decachlorobiphenyl	0.020000	0.019799	-1.0	25.0	

CJB 10-1-01
tcm 10-2-01

7E

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GC Column: CLPEST2 ID: 0.53 (mm) Init. Calib. Date(s): 09/24/01 09/25/01

EPA Sample No.(PIBLK##): PIBLKZC Date Analyzed : 09/26/01

Lab Sample ID (PIBLK) : PIBLKZC Time Analyzed : 1038

EPA Sample No.(PEM##) : PEMZD Date Analyzed : 09/26/01

Lab Sample ID (PEM) : PEMZD ✓ Time Analyzed : 1101 ✓

PEM COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
alpha-BHC '1-0.05	5.39	5.36	5.46	✓ 0.0096	0.010	-4.0
beta-BHC	6.50	6.47	6.57	0.011	0.010	10.0
gamma-BHC (Lindane)	6.24	6.21	6.31	0.0100	0.010	0.0
Endrin	11.50	11.45	11.59	0.059	0.050	18.0
4,4'-DDT	12.67	12.62	12.76	0.112	0.10	12.0
Methoxychlor	14.34	14.29	14.43	0.255	0.25	2.0

4,4'-DDT % Breakdown (1): 3.05 ✓ Endrin % Breakdown (1): 16.09 ✓

Combined % Breakdown (1): 19.15 ✓

Tcmx and Dcb not reported on this form

CompuChem Environmental Corporation

Lab Smp Id : PEM3L
Sample Type : PEM
Inj Date : 02-OCT-2001 01:51
Operator : 2401
Method : /chem/tracegc84.i/v010928e.b/2ul0LM04_clpest2v3.m

Client Smp Id : PEM3L
Sublist : PEM
Inst ID : TRACEGC84
Spike Sublist : PEM

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	CALC AMT ON-COLUMN (Ng)	%D	%D LIMIT	FLAGS
2.04			1235							
2.25			201							
2.46			1000							
2.73			400							
2.87			784							
3.17			2227							
3.39			268							
3.64			284							
3.83			293							
3.95 ✓	3.89	3.99	48351	2426300	Tetrachloro-m-xylene	0.020000	0.019928	-0.4 ✓	25.0	
4.66			1182							
4.79			3707							
5.06			1433							
5.12			2938							
5.28			1504							
5.40	5.34	5.44	40373	4018550	alpha-BHC	0.010000	0.010047	0.5	25.0	
5.62			518							
5.72			1854							
5.92			5363							
6.12			2008							
6.25	6.19	6.29	33610	3807250	gamma-BHC (Lindane)	0.010000	0.008828	-11.7	25.0	
6.51	6.46	6.56	16712	1595750	beta-BHC	0.010000	0.010473	4.7	25.0	
6.87			1428							
7.09			394							
7.25			582							
7.42			1117							
7.65			482							
7.99			978							
8.09			632							
8.22			945							
8.39			591							
8.78			360							
8.87			599							
9.05			109							
9.21			1227							
9.59			833							
9.91			289							
10.15			326							
10.34			802							
10.56			263							
10.68	10.60	10.74	2406	3099800	4,4'-DDE	0.000000	0.000776			J
11.00			417							
11.12			475							

CDB 10-2-01

CompuChem Environmental Corporation

Lab Smp Id : PEM3L
Sample Type : PEM
Inj Date : 02-OCT-2001 01:51
Operator : 2401
Method : /chem/tracegc84.i/v010928e.b/2ulOLM04_clpest2v3.m

Client Smp Id : PEM3L
Sublist : PEM
Inst ID :
Spike Sublist : PEM

RT	RT WINDOW	AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	CALC AMT ON-COLUMN (Ng)	%D	%D LIMIT	FLAGS
11.25		376							
11.51	11.44 11.58	123147	2237100	Endrin	0.050000	0.055048	10.1	25.0	
11.93		405							
12.02	11.92 12.06	4018	2113700	4,4'-DDD	0.000000	0.001901			J
12.34		575							
12.68	12.61 12.75	208722	2066550	4,4'-DDT	0.100000	0.101000	1.0	25.0	M 2
12.81	12.74 12.88	6142	1785000	Endrin aldehyde	0.000000	0.003441			JM 2
12.96		2717							
13.25		5560							
13.65		491							
13.93		411							
14.13		367							
14.34	14.27 14.41	195134	856540	Methoxychlor	0.250000	0.227816	-8.9	25.0	M 2
14.56	14.49 14.63	6879	2245700	Endrin ketone	0.000000	0.003063			JM 2
14.69		3352							
15.23		117							
15.55		704							
15.80		230							
16.06		174							
16.24		183							
16.32		136							
[illegible].61		175							
[illegible].76		327							
[illegible].93		952							
17.16		492							
17.27		615							
17.49	17.38 17.58	54801	2745400	Decachlorobiphenyl	0.020000	0.019961	-0.2	25.0	
17.89		854							
17.99		578							
18.16		318							
18.31		436							
18.46		380							
18.68		331							
19.01		575							
19.21		290							
19.43		260							
19.61		132							

CDB 10-2-01
tem 10-2-01

7E

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GC Column: CLPEST ID: 0.53 (mm) Init. Calib. Date(s): 09/24/01 09/25/01

EPA Sample No.(PIBLK##): PIBLKZD Date Analyzed : 09/26/01

Lab Sample ID (PIBLK) : PIBLKZD Time Analyzed : 1038

EPA Sample No.(PEM##) : PEMZD Date Analyzed : 09/26/01

Lab Sample ID (PEM) : PEMZD ✓ Time Analyzed : 1101 ✓

PEM COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
alpha-BHC +/- 0.05	4.09	4.07	4.17 ✓	0.0094	0.010	-6.0
beta-BHC	4.99	4.96	5.06	0.0098	0.010	-2.0
gamma-BHC (Lindane)	4.75	4.72	4.82	0.0092	0.010	-8.0
Endrin	9.59	9.54	9.68	0.056	0.050	12.0
4,4'-DDT	10.61	10.56	10.70	0.094	0.10	-6.0
Methoxychlor	11.85	11.80	11.94	0.237	0.25	-5.2

4,4'-DDT % Breakdown (1): 1.29 ✓ Endrin % Breakdown (1): 9.57 ✓

Combined % Breakdown (1): 10.86 ✓

TCMX and DCB not reported on this form

CompuChem Environmental Corporation

Lab Smp Id : PEM3L
Sample Type : PEM
Inj Date : 02-OCT-2001 01:51
Operator : 2401
Method : /chem/tracegc85.i/v010928e.b/2ulOLM04_clpestv3.m

Client Smp Id : PEM3L
Sublist : PEM
Inst ID : TRACEGC85
Spike Sublist : PEM

RT	RT WINDOW		AREA	QUANT RF	COMPOUND	STD AMT ON-COLUMN (Ng)	CALC AMT ON-COLUMN (Ng)	%D	%D LIMIT	FLAGS
0.78			631513							
3.04 ✓	2.99	3.09	14314	712150	Tetrachloro-m-xylene	0.020000	0.020100	0.5 ✓	25.0	
4.10	4.05	4.15	9787	1000750	alpha-BHC	0.010000	0.009780	-2.2	25.0	
4.76	4.71	4.81	9107	955600	gamma-BHC (Lindane)	0.010000	0.009531	-4.7	25.0	
5.00	4.95	5.05	4004	438500	beta-BHC	0.010000	0.009130	-8.7	25.0	
8.70	8.62	8.76	271	781575	4,4'-DDE	0.000000	0.000347			JM 2
9.60	9.52	9.66	35148	659600	Endrin	0.050000	0.053287	6.6	25.0	
10.62	10.54	10.68	58661	626725	4,4'-DDT	0.100000	0.093599	-6.4	25.0	
10.73			3005							
11.07	10.98	11.12	1134	508900	Endrin aldehyde	0.000000	0.002228			J
11.86	11.78	11.92	65670	295310	Methoxychlor	0.250000	0.222378	-11.0	25.0	
12.56	12.48	12.62	1024	690275	Endrin ketone	0.000000	0.001483			J
15.02 ✓	14.91	15.11	15618	767500	Decachlorobiphenyl	0.020000	0.020349	1.7 ✓	25.0	

CPB 10-2-01
KM 10-2-01

7F

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GC Column: CLPEST2 ID: 0.53 (mm) Init. Calib. Date(s): 09/28/01 09/29/01

EPA Sample No.(PIBLK##): PIBLK2Y Date Analyzed : 10/01/01

Lab Sample ID (PIBLK) : PIBLK2Y Time Analyzed : 1611

EPA Sample No.(INDAM##) : INDAM2Z Date Analyzed : 10/01/01

Lab Sample ID (INDA) : INDAM2Z ✓ Time Analyzed : 1634 ✓

INDIVIDUAL MIX A COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
alpha-BHC	5.40 ✓	5.34	5.44	0.020	0.020	0.0 ✓
gamma-BHC (Lindane)	6.25	6.19	6.29	0.020	0.020	0.0
Heptachlor	7.25	7.19	7.29	0.020	0.020	0.0
Endosulfan I	10.22	10.14	10.28	0.021	0.020	5.0
Dieldrin	10.85 ✓	10.77	10.91	0.042	0.040	5.0 ✓
Endrin	11.52	11.44	11.58	0.043	0.040	7.5
4,4'-DDD	12.00	11.92	12.06	0.042	0.040	5.0
4,4'-DDT	12.69	12.61	12.75	0.042	0.040	5.0
Methoxychlor	14.35	14.27	14.41	0.203	0.20	1.5
Tetrachloro-m-xylene	3.95	3.89	3.99	0.020	0.020	0.0
Decachlorobiphenyl	17.49	17.38	17.58	0.042	0.040	5.0

EPA Sample No.(INDBM##) : INDBM2Z Date Analyzed : 10/01/01

Lab Sample ID (INDB) : INDBM2Z Time Analyzed : 1656

INDIVIDUAL MIX B COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
beta-BHC	6.52	6.46	6.56	0.020	0.020	0.0
delta-BHC	7.20	7.13	7.23	0.019	0.020	-5.0
Aldrin	7.97	7.91	8.01	0.020	0.020	0.0
Heptachlor epoxide	9.36	9.28	9.42	0.020	0.020	0.0
4,4'-DDE	10.68	10.60	10.74	0.040	0.040	0.0
Endosulfan II	12.02	11.95	12.09	0.041	0.040	2.5
Endosulfan sulfate	13.44	13.36	13.50	0.042	0.040	5.0
Endrin ketone	14.57	14.49	14.63	0.041	0.040	2.5
Endrin aldehyde	12.82	12.74	12.88	0.041	0.040	2.5
alpha-Chlordane	10.14	10.06	10.20	0.020	0.020	0.0
gamma-Chlordane	9.80	9.72	9.86	0.020	0.020	0.0
Tetrachloro-m-xylene	3.95	3.89	3.99	0.020	0.020	0.0
Decachlorobiphenyl	17.50	17.38	17.58	0.039	0.040	-2.5

7F

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GC Column: CLPEST ID: 0.53 (mm) Init. Calib. Date(s): 09/28/01 09/29/01

EPA Sample No.(PIBLK##): PIBLK2Z Date Analyzed : 10/01/01

Lab Sample ID (PIBLK) : PIBLK2Z Time Analyzed : 1611

EPA Sample No.(INDAM##) : INDAM2Z Date Analyzed : 10/01/01

Lab Sample ID (INDA) : INDAM2Z ✓ Time Analyzed : 1634 ✓

INDIVIDUAL MIX A COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D	
alpha-BHC	4.11 ✓	4.05	4.15	0.020	0.020	0.0	✓
gamma-BHC (Lindane)	4.76	4.71	4.81	0.020	0.020	0.0	
Heptachlor	5.76	5.70	5.80	0.020	0.020	0.0	
Endosulfan I	8.59	8.51	8.65	0.021	0.020	5.0	
Dieldrin	9.13 ✓	9.05	9.19	0.040	0.040	0.0	✓
Endrin	9.60	9.52	9.66	0.041	0.040	2.5	
4,4'-DDD	10.02	9.94	10.08	0.039	0.040	-2.5	
4,4'-DDT	10.62	10.54	10.68	0.040	0.040	0.0	
Methoxychlor	11.86	11.78	11.92	0.202	0.20	1.0	
Tetrachloro-m-xylene	3.04	2.99	3.09	0.020	0.020	0.0	
Decachlorobiphenyl	15.03	14.91	15.11	0.040	0.040	0.0	

EPA Sample No.(INDBM##) : INDBM2Z Date Analyzed : 10/01/01

Lab Sample ID (INDB) : INDBM2Z Time Analyzed : 1656

INDIVIDUAL MIX B COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
beta-BHC	5.01	4.95	5.05	0.020	0.020	0.0
delta-BHC	5.36	5.29	5.39	0.019	0.020	-5.0
Aldrin	6.38	6.32	6.42	0.020	0.020	0.0
Heptachlor epoxide	7.76	7.68	7.82	0.020	0.020	0.0
4,4'-DDE	8.70	8.62	8.76	0.040	0.040	0.0
Endosulfan II	10.11	10.03	10.17	0.040	0.040	0.0
Endosulfan sulfate	12.02	11.94	12.08	0.040	0.040	0.0
Endrin ketone	12.56	12.48	12.62	0.040	0.040	0.0
Endrin aldehyde	11.07	10.98	11.12	0.040	0.040	0.0
alpha-Chlordane	8.34	8.26	8.40	0.020	0.020	0.0
gamma-Chlordane	8.04	7.96	8.10	0.020	0.020	0.0
Tetrachloro-m-xylene	3.04	2.99	3.09	0.020	0.020	0.0
Decachlorobiphenyl	15.03	14.91	15.11	0.037	0.040	-7.5

7F

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GC Column: CLPEST2 ID: 0.53 (mm) Init. Calib. Date(s): 09/24/01 09/25/01

EPA Sample No.(PIBLK##): PIBLKZA Date Analyzed : 09/26/01

Lab Sample ID (PIBLK) : PIBLKZA Time Analyzed : 0707

EPA Sample No.(INDAM##) : INDAMZB Date Analyzed : 09/26/01

Lab Sample ID (INDA) : INDAMZB ✓ Time Analyzed : 0730 ✓

INDIVIDUAL MIX A COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
alpha-BHC	5.39 ✓	5.36	5.46	0.020	0.020	0.0 ✓
gamma-BHC (Lindane)	6.24	6.21	6.31	0.021	0.020	5.0
Heptachlor	7.24	7.21	7.31	0.021	0.020	5.0
Endosulfan I	10.21	10.15	10.29	0.022	0.020	10.0
Dieldrin	10.84 ✓	10.79	10.93	0.042	0.040	5.0 ✓
Endrin	11.51	11.45	11.59	0.044	0.040	10.0
4,4'-DDD	11.99	11.94	12.08	0.044	0.040	10.0
4,4'-DDT	12.68	12.62	12.76	0.044	0.040	10.0
Methoxychlor	14.34	14.29	14.43	0.222	0.20	11.0
Tetrachloro-m-xylene	3.94	3.91	4.01	0.022	0.020	10.0
Decachlorobiphenyl	17.48	17.40	17.60	0.042	0.040	5.0

EPA Sample No.(INDBM##) : INDBMZB Date Analyzed : 09/26/01

Lab Sample ID (INDB) : INDBMZB Time Analyzed : 0752

INDIVIDUAL MIX B COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
beta-BHC	6.51	6.47	6.57	0.022	0.020	10.0
delta-BHC	7.18	7.15	7.25	0.020	0.020	0.0
Aldrin	7.96	7.93	8.03	0.021	0.020	5.0
Heptachlor epoxide	9.35	9.30	9.44	0.021	0.020	5.0
4,4'-DDE	10.68	10.62	10.76	0.043	0.040	7.5
Endosulfan II	12.02	11.96	12.10	0.043	0.040	7.5
Endosulfan sulfate	13.44	13.38	13.52	0.042	0.040	5.0
Endrin ketone	14.56	14.50	14.64	0.044	0.040	10.0
Endrin aldehyde	12.81	12.75	12.89	0.043	0.040	7.5
alpha-Chlordane	10.14	10.08	10.22	0.022	0.020	10.0
gamma-Chlordane	9.79	9.73	9.87	0.021	0.020	5.0
Tetrachloro-m-xylene	3.94	3.91	4.01	0.022	0.020	10.0
Decachlorobiphenyl	17.48	17.40	17.60	0.040	0.040	0.0

7F

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GC Column: CLPEST ID: 0.53 (mm) Init. Calib. Date(s): 09/24/01 09/25/01

EPA Sample No.(PIBLK##): PIBLKZB Date Analyzed : 09/26/01

Lab Sample ID (PIBLK) : PIBLKZB Time Analyzed : 0707

EPA Sample No.(INDAM##) : INDAMZB Date Analyzed : 09/26/01

Lab Sample ID (INDA) : INDAMZB Time Analyzed : 0730

INDIVIDUAL MIX A COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
alpha-BHC	4.10	4.07	4.17	0.019	0.020	-5.0
gamma-BHC (Lindane)	4.76	4.72	4.82	0.019	0.020	-5.0
Heptachlor	5.75	5.72	5.82	0.020	0.020	0.0
Endosulfan I	8.58	8.53	8.67	0.020	0.020	0.0
Dieldrin	9.12	9.07	9.21	0.040	0.040	0.0
Endrin	9.59	9.54	9.68	0.042	0.040	5.0
4,4'-DDD	10.01	9.95	10.09	0.040	0.040	0.0
4,4'-DDT	10.61	10.56	10.70	0.039	0.040	-2.5
Methoxychlor	11.85	11.80	11.94	0.205	0.20	2.5
Tetrachloro-m-xylene	3.03	2.99	3.09	0.019	0.020	-5.0
Decachlorobiphenyl	15.01	14.93	15.13	0.039	0.040	-2.5

EPA Sample No.(INDBM##) : INDBMZB Date Analyzed : 09/26/01

Lab Sample ID (INDB) : INDBMZB Time Analyzed : 0752

INDIVIDUAL MIX B COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
beta-BHC	5.00	4.96	5.06	0.019	0.020	-5.0
delta-BHC	5.34	5.31	5.41	0.018	0.020	-10.0
Aldrin	6.37	6.34	6.44	0.020	0.020	0.0
Heptachlor epoxide	7.75	7.70	7.84	0.020	0.020	0.0
4,4'-DDE	8.69	8.63	8.77	0.041	0.040	2.5
Endosulfan II	10.10	10.05	10.19	0.041	0.040	2.5
Endosulfan sulfate	12.01	11.95	12.09	0.040	0.040	0.0
Endrin ketone	12.55	12.50	12.64	0.041	0.040	2.5
Endrin aldehyde	11.05	11.00	11.14	0.041	0.040	2.5
alpha-Chlordane	8.33	8.28	8.42	0.020	0.020	0.0
gamma-Chlordane	8.03	7.98	8.12	0.020	0.020	0.0
Tetrachloro-m-xylene	3.03	2.99	3.09	0.019	0.020	-5.0
Decachlorobiphenyl	15.02	14.93	15.13	0.037	0.040	-7.5

8D
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GC Column: CLPEST2 ID: 0.53 (mm) Init. Calib. Date(s): 09/24/01 09/25/01

Instrument ID: TRACEGC84

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 3.96 DCB: 17.50

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	RESC14 ✓	RESC14	09/24/01	2111	3.96	17.50
02	PEM14 ✓	PEM14	09/24/01	2134	3.96	17.50
03	AR166014	AR166014	09/24/01	2157	3.96	17.50
04	AR122114	AR122114	09/24/01	2219	3.96	17.50
05	AR123214	AR123214	09/24/01	2242	3.96	17.50
06	AR124214	AR124214	09/24/01	2305	3.96	17.50
07	AR124814	AR124814	09/24/01	2327	3.96	17.50
08	AR125414	AR125414	09/24/01	2350	3.96	17.50
09	TOXAPH14	TOXAPH14	09/25/01	0013	3.96	17.50
10	INDAL14	INDAL14	09/25/01	0035	3.96	17.50
11	INDBL14	INDBL14	09/25/01	0058	3.96	17.50
12	INDAM14 ✓	INDAM14	09/25/01	0121	3.96	17.50
13	INDBM14	INDBM14	09/25/01	0143	3.96	17.50
14	INDAH14	INDAH14	09/25/01	0206	3.96	17.50
15	INDBH14	INDBH14	09/25/01	0228	3.96	17.50
16	PIBLK14 ✓	PIBLK14	09/25/01	0251	3.96	17.50
17	PEM15 ✓	PEM15	09/25/01	0314	3.96	17.50
18	PIBLKYW ✓	PIBLKYW	09/25/01	2334	3.94	17.50
19	PEMYX ✓	PEMYX	09/25/01	2355	3.94	17.49
20	PIBLKZA ✓	PIBLKZA	09/26/01	0707	3.94	17.48
21	INDAMZB ✓	INDAMZB	09/26/01	0730	3.94	17.48
22	INDBMZB	INDBMZB	09/26/01	0752	3.94	17.48
23	PBLKPI ✓	WG13070-1	09/26/01	0822	3.94	17.50
24	PE3SPMS ✓	WG13070-2	09/26/01	0845	3.94	17.48
25	PE3SPMSD ✓	WG13070-3	09/26/01	0908	3.94	17.48
26	PE1SP ✓	Q2298-1	09/26/01	0931	3.94	17.48
27	PE2SP ✓	Q2298-2	09/26/01	0953	3.94	17.48
28	PE3SP ✓	Q2298-3	09/26/01	1016	3.94	17.48
29	PIBLKZC ✓	PIBLKZC	09/26/01	1038	3.94	17.48
30	PEMZD ✓	PEMZD	09/26/01	1101	3.94	17.48
31						
32						

QC LIMITS
TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

8D
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GC Column: CLPEST ID: 0.53 (mm) Init. Calib. Date(s): 09/24/01 09/25/01

Instrument ID: TRACEGC85

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 3.04 DCB: 15.03

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	RESC14 ✓	RESC14	09/24/01	2111	3.05	15.03
02	PEM14 ✓	PEM14	09/24/01	2134	3.05	15.03
03	AR166014	AR166014	09/24/01	2157	3.05	15.03
04	AR122114	AR122114	09/24/01	2219	3.05	15.03
05	AR123214	AR123214	09/24/01	2242	3.05	15.03
06	AR124214	AR124214	09/24/01	2305	3.04	15.03
07	AR124814	AR124814	09/24/01	2327	3.05	15.04
08	AR125414	AR125414	09/24/01	2350	3.05	15.03
09	TOXAPH14	TOXAPH14	09/25/01	0013	3.05	15.03
10	INDAL14	INDAL14	09/25/01	0035	3.04	15.03
11	INDBL14	INDBL14	09/25/01	0058	3.05	15.03
12	INDAM14 ✓	INDAM14	09/25/01	0121	3.04	15.03
13	INDBM14	INDBM14	09/25/01	0143	3.05	15.03
14	INDAH14	INDAH14	09/25/01	0206	3.05	15.03
15	INDBH14	INDBH14	09/25/01	0228	3.05	15.03
16	PIBLK15 ✓	PIBLK15	09/25/01	0251	3.04	15.04
17	PEM15 ✓	PEM15	09/25/01	0314	3.04	15.03
18	PIBLKYX ✓	PIBLKYX	09/25/01	2334	3.02	15.03
19	PEMYX ✓	PEMYX	09/25/01	2355	3.03	15.02
20	PIBLKZB ✓	PIBLKZB	09/26/01	0707	3.03	15.01
21	INDAMZB ✓	INDAMZB	09/26/01	0730	3.03	15.01
22	INDBMZB	INDBMZB	09/26/01	0752	3.03	15.02
23	PBLKPI ✓	WG13070-1	09/26/01	0822	3.03	15.02
24	PE3SPMS ✓	WG13070-2	09/26/01	0845	3.03	15.01
25	PE3SPMSD ✓	WG13070-3	09/26/01	0908	3.04	15.01
26	PE1SP ✓	Q2298-1	09/26/01	0931	3.03	15.01
27	PE2SP ✓	Q2298-2	09/26/01	0953	3.04	15.01
28	PE3SP ✓	Q2298-3	09/26/01	1016	3.03	15.01
29	PIBLKZD ✓	PIBLKZD	09/26/01	1038	3.03	15.01
30	PEMZD ✓	PEMZD	09/26/01	1101	3.03	15.01
31						
32						

QC LIMITS
TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

8D
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GC Column: CLPEST2 ID: 0.53 (mm) Init. Calib. Date(s): 09/28/01 09/29/01

Instrument ID: TRACEGC84

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 3.94 DCB: 17.48

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	RESC20 ✓	RESC20	09/28/01	2306	3.95	17.48
02	PEM20 ✓	PEM20	09/28/01	2328	3.94	17.48
03	AR166020	AR166020	09/28/01	2351	3.94	17.48
04	AR122120	AR122120	09/29/01	0014	3.94	17.48
05	AR123220	AR123220	09/29/01	0036	3.95	17.49
06	AR124220	AR124220	09/29/01	0059	3.94	17.48
07	AR124820	AR124820	09/29/01	0122	3.94	17.48
08	AR125420	AR125420	09/29/01	0144	3.95	17.49
09	TOXAPH20	TOXAPH20	09/29/01	0207	3.94	17.48
10	INDAL20	INDAL20	09/29/01	0229	3.94	17.49
11	INDBL20	INDBL20	09/29/01	0252	3.94	17.48
12	INDAM20 ✓	INDAM20	09/29/01	0315	3.94	17.48
13	INDBM20	INDBM20	09/29/01	0337	3.94	17.48
14	INDAH20	INDAH20	09/29/01	0400	3.94	17.48
15	INDBH20	INDBH20	09/29/01	0423	3.94	17.49
16	PIBLK20 ✓	PIBLK20	09/29/01	0445	3.94	17.48
17	PEM21 ✓	PEM21	09/29/01	0508	3.95	17.49
18	PIBLK2W ✓	PIBLK2W	10/01/01	0855	3.94	17.50
19	PEM2X ✓	PEM2X	10/01/01	0916	3.95	17.49
20	PIBLK2Y ✓	PIBLK2Y	10/01/01	1611	3.96	17.49
21	INDAM2Z ✓	INDAM2Z	10/01/01	1634	3.95	17.49
22	INDBM2Z	INDBM2Z	10/01/01	1656	3.95	17.50
23	PBLKQA ✓	WG13123-1	10/01/01	2012	3.94	17.50
24	PE5-S-PDL ✓	Q2298-5	10/01/01	2034	3.95	17.50
25	PE4-S-P ✓	Q2298-4	10/01/01	2057	3.96	17.49
26	PE5-S-P ✓	Q2298-5	10/01/01	2120	3.96	17.55
27	PE6-S-P ✓	Q2298-6	10/01/01	2142	3.95	17.55
28	PE7-S-B ✓	Q2298-7	10/01/01	2205	3.95	17.49
29	PE8-S-B ✓	Q2298-8	10/01/01	2228	3.95	17.49
30	PE9-S-B ✓	Q2298-9	10/01/01	2250	3.95	17.49
31	PE10-S-B ✓	Q2298-10	10/01/01	2313	3.95	17.49
32	PE11-S-B ✓	Q2298-11	10/01/01	2335	3.95	17.48

QC LIMITS
TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

8D
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GC Column: CLPEST2 ID: 0.53 (mm) Init. Calib. Date(s): 09/28/01 09/29/01

Instrument ID: TRACEGC84

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 3.94 DCB: 17.48

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	PE12-S-B ✓	Q2298-12	10/01/01	2358	3.95	17.49
02	PE13-S-B ✓	Q2298-13	10/02/01	0021	3.95	17.49
03	ZZZZZ	ZZZZZ	10/02/01	0043	3.99	17.50
04	ZZZZZ	ZZZZZ	10/02/01	0106	3.96	
05	PIBLK3K ✓	PIBLK3K	10/02/01	0128	3.95	17.49
06	PEM3L ✓	PEM3L	10/02/01	0151	3.95	17.49
07						
08						
09						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						

QC LIMITS
TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

8D
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GC Column: CLPEST ID: 0.53 (mm) Init. Calib. Date(s): 09/28/01 09/29/01

Instrument ID: TRACEGC85

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 3.04 DCB: 15.01

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	RESC20 ✓	RESC20	09/28/01	2306	3.04	15.02
02	PEM20 ✓	PEM20	09/28/01	2328	3.04	15.02
03	AR166020	AR166020	09/28/01	2351	3.03	15.02
04	AR122120	AR122120	09/29/01	0014	3.04	15.02
05	AR123220	AR123220	09/29/01	0036	3.04	15.02
06	AR124220	AR124220	09/29/01	0059	3.03	15.01
07	AR124820	AR124820	09/29/01	0122	3.03	15.02
08	AR125420	AR125420	09/29/01	0144	3.04	15.02
09	TOXAPH20	TOXAPH20	09/29/01	0207	3.04	15.02
10	INDAL20	INDAL20	09/29/01	0229	3.04	15.02
11	INDBL20	INDBL20	09/29/01	0252	3.03	15.02
12	INDAM20 ✓	INDAM20	09/29/01	0315	3.03	15.01
13	INDBM20	INDBM20	09/29/01	0337	3.03	15.01
14	INDAH20	INDAH20	09/29/01	0400	3.04	15.01
15	INDBH20	INDBH20	09/29/01	0423	3.03	15.02
16	PIBLK21 ✓	PIBLK21	09/29/01	0445	3.03	15.02
17	PEM21 ✓	PEM21	09/29/01	0508	3.04	15.02
18	PIBLK2X ✓	PIBLK2X	10/01/01	0855	3.03	15.03
19	PEM2X ✓	PEM2X	10/01/01	0916	3.04	15.02
20	PIBLK2Z ✓	PIBLK2Z	10/01/01	1611	3.04	15.03
21	INDAM2Z ✓	INDAM2Z	10/01/01	1634	3.04	15.03
22	INDBM2Z	INDBM2Z	10/01/01	1656	3.04	15.03
23	PBLKQA ✓	WG13123-1	10/01/01	2012	3.04	15.03
24	PE5-S-PDL ✓	Q2298-5	10/01/01	2034	3.04	15.01
25	PE4-S-P ✓	Q2298-4	10/01/01	2057	3.04	15.02
26	PE5-S-P ✓	Q2298-5	10/01/01	2120	3.04	15.00
27	PE6-S-P ✓	Q2298-6	10/01/01	2142	3.04	15.00
28	PE7-S-B ✓	Q2298-7	10/01/01	2205	3.04	15.02
29	PE8-S-B ✓	Q2298-8	10/01/01	2228	3.04	15.02
30	PE9-S-B ✓	Q2298-9	10/01/01	2250	3.04	15.02
31	PE10-S-B ✓	Q2298-10	10/01/01	2313	3.04	15.02
32	PE11-S-B ✓	Q2298-11	10/01/01	2335	3.04	15.02

QC LIMITS
TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

8D
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GC Column: CLPEST ID: 0.53 (mm) Init. Calib. Date(s): 09/28/01 09/29/01

Instrument ID: TRACEGC85

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 3.04 DCB: 15.01

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	PE12-S-B ✓	Q2298-12	10/01/01	2358	3.04	15.02
02	PE13-S-B ✓	Q2298-13	10/02/01	0021	3.04	15.02
03	ZZZZZ	ZZZZZ	10/02/01	0043		
04	ZZZZZ	ZZZZZ	10/02/01	0106		
05	PIBLK3L ✓	PIBLK3L	10/02/01	0128	3.04	15.02
06	PEM3L ✓	PEM3L	10/02/01	0151	3.04	15.02
07						
08						
09						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						

QC LIMITS
TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

9A
PESTICIDE FLORISIL CARTRIDGE CHECK

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

Florisil Cartridge Lot Number: W9260L1 Date of Analysis: 05/26/01 per lot or 6 months OK.

GC Column(1): CLPEST2 ID: 0.53 (mm) GC Column(2): CLPEST ID: 0.53 (mm)

COMPOUND	SPIKE ADDED (ng)	SPIKE RECOVERED (ng)	% REC #	QC LIMITS
alpha-BHC	10	9.1	91 ✓	80-120
gamma-BHC (Lindane)	10	9.1	91	80-120
Heptachlor	10	9.7	97	80-120
Endosulfan I	10	10	100	80-120
Dieldrin	20	19	95 ✓	80-120
Endrin	20	21	105	80-120
4,4'-DDD	20	19	95	80-120
4,4'-DDT	20	20	100	80-120
Methoxychlor	100	110	110	80-120
2,4,5-Trichorophenol	500	12	2.4 ✓	0- 5
Tetrachloro-m-xylene	10	9.2	92	80-120
Decachlorobiphenyl	20	20	100	80-120

Column to be used to flag recovery with an asterisk.
* Values outside of QC limits.

THIS CARTRIDGE LOT APPLIES TO THE FOLLOWING SAMPLES, BLANKS, MS, AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	PBLKPI	WG13070-1	09/26/01	09/26/01
02	PE3SPMS	WG13070-2	09/26/01	09/26/01
03	PE3SPMSD	WG13070-3	09/26/01	09/26/01
04	PE1SP	Q2298-1	09/26/01	09/26/01
05	PE2SP	Q2298-2	09/26/01	09/26/01
06	PE3SP	Q2298-3	09/26/01	09/26/01
07	PBLKQA	WG13123-1	10/01/01	10/01/01
08	PE5-S-PDL	Q2298-5	10/01/01	10/01/01
09	PE4-S-P	Q2298-4	10/01/01	10/01/01
10	PE5-S-P	Q2298-5	10/01/01	10/01/01
11	PE6-S-P	Q2298-6	10/01/01	10/01/01
12	PE7-S-B	Q2298-7	10/01/01	10/01/01
13	PE8-S-B	Q2298-8	10/01/01	10/01/01
14	PE9-S-B	Q2298-9	10/01/01	10/01/01
15	PE10-S-B	Q2298-10	10/01/01	10/01/01
16	PE11-S-B	Q2298-11	10/01/01	10/01/01
17	PE12-S-B	Q2298-12	10/01/01	10/01/01
18	PE13-S-B	Q2298-13	10/02/01	10/02/01
19				
20				
21				
22				

Data File: /chem/tracegc81.i/r010515nfl.b/208rW9260L1-10.d Page 1
Report Date: 06-Jun-2001 13:39

CompuChem

RECOVERY REPORT

Client Name:
Sample Matrix: LIQUID
Lab Smp Id: W9260L1-10
Level: LOW
Data Type: GC MULTI COMP
SpikeList File: FLORISIL.spk
Sublist File: florisil.sub
Method File: /chem/tracegc81.i/r010515nfl.b/2ul0LM04_clpest2v3.m
Misc Info: None

Client SDG: r010515nfl
Fraction: PEST
Client Smp ID: FLOW9260L1-10
Operator: 2418
SampleType: FLORISIL
Quant Type: ESTD

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
1 alpha-BHC	10	9.1 ✓	91.00	80-120
4 gamma-BHC (Lindane	10	9.1	91.00	80-120
5 Heptachlor	10	9.7	97.00	80-120
8 Endosulfan I	10	10	100.00	80-120
9 Dieldrin	20	19 ✓	95.00	80-120
11 Endrin	20	21	105.00	80-120
13 4,4'-DDD	20	19	95.00	80-120
15 4,4'-DDT	20	20	100.00	80-120
16 Methoxychlor	100	110	110.00	80-120
$ 29 Tetrachloro-m-xyle	10	9.2	92.00	80-120
$ 30 Decachlorobiphenyl	20	20	100.00	80-120
33 2,4,5-Trichorophen	500	12 ✓	2.40	0-5

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$ 29 Tetrachloro-m-xyle	0.20	9.2	92.00	30-150
$ 30 Decachlorobiphenyl	0.20	20	100.00	30-150

9B
PESTICIDE GPC CALIBRATION VERIFICATION

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GPC Column: GPCABC1 Calibration Verification Date: 09/25/01

GC Column(1): CLPEST2 ID: 0.53 (mm) GC Column(2): CLPEST ID: 0.53 (mm)

COMPOUND	SPIKE ADDED (ng)	SPIKE RECOVERED (ng)	% REC #	QC. LIMITS REC.
gamma-BHC (Lindane)	500	480	96	80-110
Heptachlor	500	440	88	80-110
Aldrin	500	460	92	80-110
Dieldrin	1000	930	93 ✓	80-110
Endrin	1000	910	91	80-110
4,4'-DDT	1000	920	92	80-110

Column to be used to flag recovery with an asterisk.
* Values outside of QC limits.

THIS GPC CALIBRATION VERIFICATION APPLIES TO THE FOLLOWING SAMPLES, BLANKS, MS, AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	PBLKQA	WG13123-1	10/01/01	10/01/01
02	PE5-S-PDL	Q2298-5	10/01/01	10/01/01
03	PE4-S-P	Q2298-4	10/01/01	10/01/01
04	PE5-S-P	Q2298-5	10/01/01	10/01/01
05	PE6-S-P	Q2298-6	10/01/01	10/01/01
06	PE7-S-B	Q2298-7	10/01/01	10/01/01
07	PE8-S-B	Q2298-8	10/01/01	10/01/01
08	PE9-S-B	Q2298-9	10/01/01	10/01/01
09	PE10-S-B	Q2298-10	10/01/01	10/01/01
10	PE11-S-B	Q2298-11	10/01/01	10/01/01
11	PE12-S-B	Q2298-12	10/01/01	10/01/01
12	PE13-S-B	Q2298-13	10/02/01	10/02/01
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				

9B
PESTICIDE GPC CALIBRATION VERIFICATION

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

GPC Column: GPCABC4 Calibration Verification Date: 09/20/01

GC Column(1): CLPEST2 ID: 0.53 (mm) GC Column(2): CLPEST ID: 0.53 (mm)

COMPOUND	SPIKE ADDED (ng)	SPIKE RECOVERED (ng)	% REC #	QC. LIMITS REC.
gamma-BHC (Lindane)	500	500	100	80-110
Heptachlor	500	470	94	80-110
Aldrin	500	480	96	80-110
Dieldrin	1000	990	99 ✓	80-110
Endrin	1000	870	87	80-110
4,4'-DDT	1000	1000	100	80-110

Column to be used to flag recovery with an asterisk.
* Values outside of QC limits.

THIS GPC CALIBRATION VERIFICATION APPLIES TO THE FOLLOWING SAMPLES, BLANKS, MS, AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	PBLKPI	WG13070-1	09/26/01	09/26/01
02	PE3SPMS	WG13070-2	09/26/01	09/26/01
03	PE3SPMSD	WG13070-3	09/26/01	09/26/01
04	PE1SP	Q2298-1	09/26/01	09/26/01
05	PE2SP	Q2298-2	09/26/01	09/26/01
06	PE3SP	Q2298-3	09/26/01	09/26/01
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				

10A
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

EPA SAMPLE NO.

PE3SPMS ✓

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

Lab Sample ID: WG13070-2 Date(s) Analyzed: 09/26/01 09/26/01

Instrument ID (1): TRACEGC84 Instrument ID (2): TRACEGC85

GC Column(1): CLPEST2 ID: 0.53(mm) GC Column(2): CLPEST ID: 0.53(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Dieldrin	1	10.83 ✓	10.79	10.93	29 ✓	
	2	9.12 ✓	9.07	9.21	36 ✓	24.1 ✓
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

page 1 of 1

FORM X PEST-1 OLM04.2

10A
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

EPA SAMPLE NO.

PE3SPMSD ✓

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

Lab Sample ID: WG13070-3 Date(s) Analyzed: 09/26/01 09/26/01

Instrument ID (1): TRACEGC84 Instrument ID (2): TRACEGC85

GC Column(1): CLPEST2 ID: 0.53(mm) GC Column(2): CLPEST ID: 0.53(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Dieldrin	1	10.84 ✓	10.79	10.93	33 ✓	
	2	9.12 ✓	9.07	9.21	30 ✓	10.0 ✓
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

page 1 of 1

FORM X PEST-1 OLM04.2

1E

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLKPI ✓

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

Matrix: (soil/water) SOIL Lab Sample ID: WG13070-1

Sample wt/vol: 30.0(g/mL) G Lab File ID: _____

% Moisture: 0 Decanted: (Y/N) N Date Received: _____

Extraction: (Type) SONC Date Extracted: 09/24/01

Concentrated Extract Volume: 5000(uL) Date Analyzed: 09/26/01 ✓

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
319-84-6	alpha-BHC	1.7	U	✓
60-57-1	Dieldrin	3.3	U	✓
11097-69-1	Aroclor-1254	33	U	✓

1E

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLKQA ✓

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

Matrix: (soil/water) SOIL Lab Sample ID: WG13123-1

Sample wt/vol: 30.0(g/mL) G Lab File ID: _____

% Moisture: 0 Decanted: (Y/N) N Date Received: _____

Extraction: (Type) SONC Date Extracted: 09/27/01

Concentrated Extract Volume: 5000(uL) Date Analyzed: 10/01/01 ✓

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
319-84-6	alpha-BHC	1.7	U	✓
60-57-1	Dieldrin	3.3	U	✓
11097-69-1	Aroclor-1254	33	U	✓

1E

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PIBLK14 ✓

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

Matrix: (soil/water) WATER Lab Sample ID: PIBLK14

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) _____ Date Received: _____

Extraction: (Type) ____ Date Extracted: _____

Concentrated Extract Volume: 10000(uL) Date Analyzed: 09/25/01 ✓

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U ✓
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U ✓
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U ✓
11096-82-5	Aroclor-1260	1.0	U

Not reported on Form 8
Pesticide analytical Sequence Form.

1E
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PIBLK15 ✓

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

Matrix: (soil/water) WATER Lab Sample ID: PIBLK15

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) _____ Date Received: _____

Extraction: (Type) ____ Date Extracted: _____

Concentrated Extract Volume: 10000(uL) Date Analyzed: 09/25/01 ✓

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U ✓
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U ✓
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U ✓
11096-82-5	Aroclor-1260	1.0	U

1E

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PIBLK20 ✓

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

Matrix: (soil/water) WATER Lab Sample ID: PIBLK20

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) _____ Date Received: _____

Extraction: (Type) ____ Date Extracted: _____

Concentrated Extract Volume: 10000(uL) Date Analyzed: 09/29/01 ✓

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U ✓
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U ✓
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U ✓
11096-82-5	Aroclor-1260	1.0	U

Not reported on Form 8
Pesticide Analytical Sequence form. -

1E

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PIBLK21 ✓

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

Matrix: (soil/water) WATER Lab Sample ID: PIBLK21

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) _____ Date Received: _____

Extraction: (Type) ____ Date Extracted: _____

Concentrated Extract Volume: 10000(uL) Date Analyzed: 09/29/01 ✓

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
319-84-6	alpha-BHC	0.050	U	✓
319-85-7	beta-BHC	0.050	U	
319-86-8	delta-BHC	0.050	U	
58-89-9	gamma-BHC (Lindane)	0.050	U	
76-44-8	Heptachlor	0.050	U	
309-00-2	Aldrin	0.050	U	
1024-57-3	Heptachlor epoxide	0.050	U	
959-98-8	Endosulfan I	0.050	U	
60-57-1	Dieldrin	0.10	U	✓
72-55-9	4,4'-DDE	0.10	U	
72-20-8	Endrin	0.10	U	
33213-65-9	Endosulfan II	0.10	U	
72-54-8	4,4'-DDD	0.10	U	
1031-07-8	Endosulfan sulfate	0.10	U	
50-29-3	4,4'-DDT	0.10	U	
72-43-5	Methoxychlor	0.50	U	
53494-70-5	Endrin ketone	0.10	U	
7421-93-4	Endrin aldehyde	0.10	U	
5103-71-9	alpha-Chlordane	0.050	U	
5103-74-2	gamma-Chlordane	0.050	U	
8001-35-2	Toxaphene	5.0	U	
12674-11-2	Aroclor-1016	1.0	U	
11104-28-2	Aroclor-1221	2.0	U	
11141-16-5	Aroclor-1232	1.0	U	
53469-21-9	Aroclor-1242	1.0	U	
12672-29-6	Aroclor-1248	1.0	U	
11097-69-1	Aroclor-1254	1.0	U	✓
11096-82-5	Aroclor-1260	1.0	U	

1E

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PIBLKYW ✓

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

Matrix: (soil/water) WATER Lab Sample ID: PIBLKYW

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) _____ Date Received: _____

Extraction: (Type) ____ Date Extracted: _____

Concentrated Extract Volume: 10000(uL) Date Analyzed: 09/25/01 ✓

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
319-84-6	alpha-BHC	0.050	U	✓
319-85-7	beta-BHC	0.050	U	
319-86-8	delta-BHC	0.050	U	
58-89-9	gamma-BHC (Lindane)	0.050	U	
76-44-8	Heptachlor	0.050	U	
309-00-2	Aldrin	0.050	U	
1024-57-3	Heptachlor epoxide	0.013	J	
959-98-8	Endosulfan I	0.050	U	
60-57-1	Dieldrin	0.10	U	✓
72-55-9	4,4'-DDE	0.10	U	
72-20-8	Endrin	0.10	U	
33213-65-9	Endosulfan II	0.10	U	
72-54-8	4,4'-DDD	0.10	U	
1031-07-8	Endosulfan sulfate	0.10	U	
50-29-3	4,4'-DDT	0.10	U	
72-43-5	Methoxychlor	0.50	U	
53494-70-5	Endrin ketone	0.10	U	
7421-93-4	Endrin aldehyde	0.10	U	
5103-71-9	alpha-Chlordane	0.050	U	
5103-74-2	gamma-Chlordane	0.050	U	
8001-35-2	Toxaphene	5.0	U	
12674-11-2	Aroclor-1016	1.0	U	
11104-28-2	Aroclor-1221	2.0	U	
11141-16-5	Aroclor-1232	1.0	U	
53469-21-9	Aroclor-1242	1.0	U	
12672-29-6	Aroclor-1248	1.0	U	
11097-69-1	Aroclor-1254	1.0	U	✓
11096-82-5	Aroclor-1260	1.0	U	

Not reported on Form 8
Pesticide Analytical Sequence

1E

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PIBLKYX

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

Matrix: (soil/water) WATER Lab Sample ID: PIBLKYX

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) _____ Date Received: _____

Extraction: (Type) ____ Date Extracted: _____

Concentrated Extract Volume: 10000(uL) Date Analyzed: 09/25/01

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
319-84-6	alpha-BHC	0.050	U	✓
319-85-7	beta-BHC	0.050	U	
319-86-8	delta-BHC	0.050	U	
58-89-9	gamma-BHC (Lindane)	0.050	U	
76-44-8	Heptachlor	0.050	U	
309-00-2	Aldrin	0.050	U	
1024-57-3	Heptachlor epoxide	0.050	U	
959-98-8	Endosulfan I	0.050	U	
60-57-1	Dieldrin	0.10	U	✓
72-55-9	4,4'-DDE	0.10	U	
72-20-8	Endrin	0.10	U	
33213-65-9	Endosulfan II	0.10	U	
72-54-8	4,4'-DDD	0.10	U	
1031-07-8	Endosulfan sulfate	0.10	U	
50-29-3	4,4'-DDT	0.10	U	
72-43-5	Methoxychlor	0.50	U	
53494-70-5	Endrin ketone	0.10	U	
7421-93-4	Endrin aldehyde	0.10	U	
5103-71-9	alpha-Chlordane	0.050	U	
5103-74-2	gamma-Chlordane	0.050	U	
8001-35-2	Toxaphene	5.0	U	
12674-11-2	Aroclor-1016	1.0	U	
11104-28-2	Aroclor-1221	2.0	U	
11141-16-5	Aroclor-1232	1.0	U	
53469-21-9	Aroclor-1242	1.0	U	
12672-29-6	Aroclor-1248	1.0	U	
11097-69-1	Aroclor-1254	1.0	U	✓
11096-82-5	Aroclor-1260	1.0	U	

1E

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PIBLKZA ✓

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

Matrix: (soil/water) WATER Lab Sample ID: PIBLKZA

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) _____ Date Received: _____

Extraction: (Type) ____ Date Extracted: _____

Concentrated Extract Volume: 10000(uL) Date Analyzed: 09/26/01 ✓

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
319-84-6	alpha-BHC	0.050	U	✓
319-85-7	beta-BHC	0.050	U	
319-86-8	delta-BHC	0.050	U	
58-89-9	gamma-BHC (Lindane)	0.050	U	
76-44-8	Heptachlor	0.050	U	
309-00-2	Aldrin	0.050	U	
1024-57-3	Heptachlor epoxide	0.050	U	
959-98-8	Endosulfan I	0.050	U	
60-57-1	Dieldrin	0.10	U	✓
72-55-9	4,4'-DDE	0.10	U	
72-20-8	Endrin	0.10	U	
33213-65-9	Endosulfan II	0.10	U	
72-54-8	4,4'-DDD	0.10	U	
1031-07-8	Endosulfan sulfate	0.10	U	
50-29-3	4,4'-DDT	0.10	U	
72-43-5	Methoxychlor	0.50	U	
53494-70-5	Endrin ketone	0.10	U	
7421-93-4	Endrin aldehyde	0.10	U	
5103-71-9	alpha-Chlordane	0.050	U	
5103-74-2	gamma-Chlordane	0.050	U	
8001-35-2	Toxaphene	5.0	U	
12674-11-2	Aroclor-1016	1.0	U	
11104-28-2	Aroclor-1221	2.0	U	
11141-16-5	Aroclor-1232	1.0	U	
53469-21-9	Aroclor-1242	1.0	U	
12672-29-6	Aroclor-1248	1.0	U	
11097-69-1	Aroclor-1254	1.0	U	✓
11096-82-5	Aroclor-1260	1.0	U	

not reported on form 8
Pesticide Analytical Sequence.

1E
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PIBLKZB

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

Matrix: (soil/water) WATER Lab Sample ID: PIBLKZB

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) _____ Date Received: _____

Extraction: (Type) _____ Date Extracted: _____

Concentrated Extract Volume: 10000(uL) Date Analyzed: 09/26/01

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: _____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
319-84-6	alpha-BHC	0.050	U	✓
319-85-7	beta-BHC	0.050	U	
319-86-8	delta-BHC	0.050	U	
58-89-9	gamma-BHC (Lindane)	0.050	U	
76-44-8	Heptachlor	0.050	U	
309-00-2	Aldrin	0.050	U	
1024-57-3	Heptachlor epoxide	0.050	U	
959-98-8	Endosulfan I	0.050	U	
60-57-1	Dieldrin	0.10	U	✓
72-55-9	4,4'-DDE	0.10	U	
72-20-8	Endrin	0.10	U	
33213-65-9	Endosulfan II	0.10	U	
72-54-8	4,4'-DDD	0.10	U	
1031-07-8	Endosulfan sulfate	0.10	U	
50-29-3	4,4'-DDT	0.10	U	
72-43-5	Methoxychlor	0.50	U	
53494-70-5	Endrin ketone	0.10	U	
7421-93-4	Endrin aldehyde	0.10	U	
5103-71-9	alpha-Chlordane	0.050	U	
5103-74-2	gamma-Chlordane	0.050	U	
8001-35-2	Toxaphene	5.0	U	
12674-11-2	Aroclor-1016	1.0	U	
11104-28-2	Aroclor-1221	2.0	U	
11141-16-5	Aroclor-1232	1.0	U	
53469-21-9	Aroclor-1242	1.0	U	
12672-29-6	Aroclor-1248	1.0	U	
11097-69-1	Aroclor-1254	1.0	U	✓
11096-82-5	Aroclor-1260	1.0	U	

1E

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PIBLKZC ✓

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

Matrix: (soil/water) WATER Lab Sample ID: PIBLKZC

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) _____ Date Received: _____

Extraction: (Type) ____ Date Extracted: _____

Concentrated Extract Volume: 10000(uL) Date Analyzed: 09/26/01 ✓

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U ✓
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U ✓
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U ✓
11096-82-5	Aroclor-1260	1.0	U

Not reported on form 8
Pesticide Analytical Sequence

1E
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PIBLKZD

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

Matrix: (soil/water) WATER Lab Sample ID: PIBLKZD

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) _____ Date Received: _____

Extraction: (Type) _____ Date Extracted: _____

Concentrated Extract Volume: 10000(uL) Date Analyzed: 09/26/01

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: _____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
319-84-6	alpha-BHC	0.050	U	✓
319-85-7	beta-BHC	0.050	U	
319-86-8	delta-BHC	0.050	U	
58-89-9	gamma-BHC (Lindane)	0.050	U	
76-44-8	Heptachlor	0.050	U	
309-00-2	Aldrin	0.050	U	
1024-57-3	Heptachlor epoxide	0.050	U	
959-98-8	Endosulfan I	0.050	U	
60-57-1	Dieldrin	0.10	U	
72-55-9	4,4'-DDE	0.10	U	✓
72-20-8	Endrin	0.10	U	
33213-65-9	Endosulfan II	0.10	U	
72-54-8	4,4'-DDD	0.10	U	
1031-07-8	Endosulfan sulfate	0.10	U	
50-29-3	4,4'-DDT	0.10	U	
72-43-5	Methoxychlor	0.50	U	
53494-70-5	Endrin ketone	0.10	U	
7421-93-4	Endrin aldehyde	0.10	U	
5103-71-9	alpha-Chlordane	0.050	U	
5103-74-2	gamma-Chlordane	0.050	U	
8001-35-2	Toxaphene	5.0	U	
12674-11-2	Aroclor-1016	1.0	U	
11104-28-2	Aroclor-1221	2.0	U	
11141-16-5	Aroclor-1232	1.0	U	
53469-21-9	Aroclor-1242	1.0	U	
12672-29-6	Aroclor-1248	1.0	U	
11097-69-1	Aroclor-1254	1.0	U	✓
11096-82-5	Aroclor-1260	1.0	U	

1E

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PIBLK2W ✓

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

Matrix: (soil/water) WATER Lab Sample ID: PIBLK2W

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) _____ Date Received: _____

Extraction: (Type) ____ Date Extracted: _____

Concentrated Extract Volume: 10000(uL) Date Analyzed: 10/01/01 ✓

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
319-84-6	alpha-BHC	0.050	U	✓
319-85-7	beta-BHC	0.050	U	
319-86-8	delta-BHC	0.050	U	
58-89-9	gamma-BHC (Lindane)	0.050	U	
76-44-8	Heptachlor	0.050	U	
309-00-2	Aldrin	0.050	U	
1024-57-3	Heptachlor epoxide	0.050	U	
959-98-8	Endosulfan I	0.050	U	
60-57-1	Dieldrin	0.10	U	✓
72-55-9	4,4'-DDE	0.10	U	
72-20-8	Endrin	0.10	U	
33213-65-9	Endosulfan II	0.10	U	
72-54-8	4,4'-DDD	0.10	U	
1031-07-8	Endosulfan sulfate	0.10	U	
50-29-3	4,4'-DDT	0.10	U	
72-43-5	Methoxychlor	0.50	U	
53494-70-5	Endrin ketone	0.10	U	
7421-93-4	Endrin aldehyde	0.10	U	
5103-71-9	alpha-Chlordane	0.050	U	
5103-74-2	gamma-Chlordane	0.050	U	
8001-35-2	Toxaphene	5.0	U	
12674-11-2	Aroclor-1016	1.0	U	
11104-28-2	Aroclor-1221	2.0	U	
11141-16-5	Aroclor-1232	1.0	U	
53469-21-9	Aroclor-1242	1.0	U	
12672-29-6	Aroclor-1248	1.0	U	
11097-69-1	Aroclor-1254	1.0	U	✓
11096-82-5	Aroclor-1260	1.0	U	

Not reported on Form 8
Pesticide Analytical Sequence.

1E
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PIBLK2X

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

Matrix: (soil/water) WATER Lab Sample ID: PIBLK2X

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) _____ Date Received: _____

Extraction: (Type) ____ Date Extracted: _____

Concentrated Extract Volume: 10000(uL) Date Analyzed: 10/01/01

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
319-84-6	alpha-BHC	0.050	U	✓
319-85-7	beta-BHC	0.050	U	
319-86-8	delta-BHC	0.050	U	
58-89-9	gamma-BHC (Lindane)	0.050	U	
76-44-8	Heptachlor	0.050	U	
309-00-2	Aldrin	0.050	U	
1024-57-3	Heptachlor epoxide	0.050	U	
959-98-8	Endosulfan I	0.050	U	
60-57-1	Dieldrin	0.10	U	✓
72-55-9	4,4'-DDE	0.10	U	
72-20-8	Endrin	0.10	U	
33213-65-9	Endosulfan II	0.10	U	
72-54-8	4,4'-DDD	0.10	U	
1031-07-8	Endosulfan sulfate	0.10	U	
50-29-3	4,4'-DDT	0.10	U	
72-43-5	Methoxychlor	0.50	U	
53494-70-5	Endrin ketone	0.10	U	
7421-93-4	Endrin aldehyde	0.10	U	
5103-71-9	alpha-Chlordane	0.050	U	
5103-74-2	gamma-Chlordane	0.050	U	
8001-35-2	Toxaphene	5.0	U	
12674-11-2	Aroclor-1016	1.0	U	
11104-28-2	Aroclor-1221	2.0	U	
11141-16-5	Aroclor-1232	1.0	U	
53469-21-9	Aroclor-1242	1.0	U	
12672-29-6	Aroclor-1248	1.0	U	
11097-69-1	Aroclor-1254	1.0	U	✓
11096-82-5	Aroclor-1260	1.0	U	

1E

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PIBLK2Y ✓

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

Matrix: (soil/water) WATER Lab Sample ID: PIBLK2Y

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) _____ Date Received: _____

Extraction: (Type) ____ Date Extracted: _____

Concentrated Extract Volume: 10000(uL) Date Analyzed: 10/01/01 ✓

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
319-84-6	alpha-BHC	0.050	U	✓
319-85-7	beta-BHC	0.050	U	
319-86-8	delta-BHC	0.050	U	
58-89-9	gamma-BHC (Lindane)	0.050	U	
76-44-8	Heptachlor	0.050	U	
309-00-2	Aldrin	0.050	U	
1024-57-3	Heptachlor epoxide	0.050	U	
959-98-8	Endosulfan I	0.050	U	
60-57-1	Dieldrin	0.10	U	✓
72-55-9	4,4'-DDE	0.10	U	
72-20-8	Endrin	0.10	U	
33213-65-9	Endosulfan II	0.10	U	
72-54-8	4,4'-DDD	0.10	U	
1031-07-8	Endosulfan sulfate	0.10	U	
50-29-3	4,4'-DDT	0.10	U	
72-43-5	Methoxychlor	0.50	U	
53494-70-5	Endrin ketone	0.10	U	
7421-93-4	Endrin aldehyde	0.10	U	
5103-71-9	alpha-Chlordane	0.050	U	
5103-74-2	gamma-Chlordane	0.050	U	
8001-35-2	Toxaphene	5.0	U	
12674-11-2	Aroclor-1016	1.0	U	
11104-28-2	Aroclor-1221	2.0	U	
11141-16-5	Aroclor-1232	1.0	U	
53469-21-9	Aroclor-1242	1.0	U	
12672-29-6	Aroclor-1248	1.0	U	
11097-69-1	Aroclor-1254	1.0	U	✓
11096-82-5	Aroclor-1260	1.0	U	

Not reported on form 8
Pesticide Analytical Sequence

1E
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PIBLK2Z

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

Matrix: (soil/water) WATER Lab Sample ID: PIBLK2Z

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) _____ Date Received: _____

Extraction: (Type) _____ Date Extracted: _____

Concentrated Extract Volume: 10000(uL) Date Analyzed: 10/01/01

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: _____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
319-84-6	alpha-BHC	0.050	U	✓
319-85-7	beta-BHC	0.050	U	
319-86-8	delta-BHC	0.050	U	
58-89-9	gamma-BHC (Lindane)	0.050	U	
76-44-8	Heptachlor	0.050	U	
309-00-2	Aldrin	0.050	U	
1024-57-3	Heptachlor epoxide	0.050	U	
959-98-8	Endosulfan I	0.050	U	
60-57-1	Dieldrin	0.10	U	✓
72-55-9	4,4'-DDE	0.10	U	
72-20-8	Endrin	0.10	U	
33213-65-9	Endosulfan II	0.10	U	
72-54-8	4,4'-DDD	0.10	U	
1031-07-8	Endosulfan sulfate	0.10	U	
50-29-3	4,4'-DDT	0.10	U	
72-43-5	Methoxychlor	0.50	U	
53494-70-5	Endrin ketone	0.10	U	
7421-93-4	Endrin aldehyde	0.10	U	
5103-71-9	alpha-Chlordane	0.050	U	
5103-74-2	gamma-Chlordane	0.050	U	
8001-35-2	Toxaphene	5.0	U	
12674-11-2	Aroclor-1016	1.0	U	
11104-28-2	Aroclor-1221	2.0	U	
11141-16-5	Aroclor-1232	1.0	U	
53469-21-9	Aroclor-1242	1.0	U	
12672-29-6	Aroclor-1248	1.0	U	
11097-69-1	Aroclor-1254	1.0	U	✓
11096-82-5	Aroclor-1260	1.0	U	

1E

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PIBLK3K ✓

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

Matrix: (soil/water) WATER Lab Sample ID: PIBLK3K

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) _____ Date Received: _____

Extraction: (Type) ____ Date Extracted: _____

Concentrated Extract Volume: 10000(uL) Date Analyzed: 10/02/01 ✓

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
319-84-6	alpha-BHC	0.050	U	✓
319-85-7	beta-BHC	0.050	U	
319-86-8	delta-BHC	0.050	U	
58-89-9	gamma-BHC (Lindane)	0.050	U	
76-44-8	Heptachlor	0.050	U	
309-00-2	Aldrin	0.050	U	
1024-57-3	Heptachlor epoxide	0.050	U	
959-98-8	Endosulfan I	0.050	U	
60-57-1	Dieldrin	0.10	U	✓
72-55-9	4,4'-DDE	0.10	U	
72-20-8	Endrin	0.10	U	
33213-65-9	Endosulfan II	0.10	U	
72-54-8	4,4'-DDD	0.10	U	
1031-07-8	Endosulfan sulfate	0.10	U	
50-29-3	4,4'-DDT	0.10	U	
72-43-5	Methoxychlor	0.50	U	
53494-70-5	Endrin ketone	0.10	U	
7421-93-4	Endrin aldehyde	0.10	U	
5103-71-9	alpha-Chlordane	0.050	U	
5103-74-2	gamma-Chlordane	0.050	U	
8001-35-2	Toxaphene	5.0	U	
12674-11-2	Aroclor-1016	1.0	U	
11104-28-2	Aroclor-1221	2.0	U	
11141-16-5	Aroclor-1232	1.0	U	
53469-21-9	Aroclor-1242	1.0	U	
12672-29-6	Aroclor-1248	1.0	U	
11097-69-1	Aroclor-1254	1.0	U	✓
11096-82-5	Aroclor-1260	1.0	U	

Not reported on Form 8
Pesticide Analytical Sequence

1E
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PIBLK3L

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

Matrix: (soil/water) WATER Lab Sample ID: PIBLK3L

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) _____ Date Received: _____

Extraction: (Type) ____ Date Extracted: _____

Concentrated Extract Volume: 10000(uL) Date Analyzed: 10/02/01

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: ____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
319-84-6	alpha-BHC	0.050	U	✓
319-85-7	beta-BHC	0.050	U	
319-86-8	delta-BHC	0.050	U	
58-89-9	gamma-BHC (Lindane)	0.050	U	
76-44-8	Heptachlor	0.050	U	
309-00-2	Aldrin	0.050	U	
1024-57-3	Heptachlor epoxide	0.050	U	
959-98-8	Endosulfan I	0.050	U	
60-57-1	Dieldrin	0.10	U	✓
72-55-9	4,4'-DDE	0.10	U	
72-20-8	Endrin	0.10	U	
33213-65-9	Endosulfan II	0.10	U	
72-54-8	4,4'-DDD	0.10	U	
1031-07-8	Endosulfan sulfate	0.10	U	
50-29-3	4,4'-DDT	0.10	U	
72-43-5	Methoxychlor	0.50	U	
53494-70-5	Endrin ketone	0.10	U	
7421-93-4	Endrin aldehyde	0.10	U	
5103-71-9	alpha-Chlordane	0.050	U	
5103-74-2	gamma-Chlordane	0.050	U	
8001-35-2	Toxaphene	5.0	U	
12674-11-2	Aroclor-1016	1.0	U	
11104-28-2	Aroclor-1221	2.0	U	
11141-16-5	Aroclor-1232	1.0	U	
53469-21-9	Aroclor-1242	1.0	U	
12672-29-6	Aroclor-1248	1.0	U	
11097-69-1	Aroclor-1254	1.0	U	✓
11096-82-5	Aroclor-1260	1.0	U	

1E

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PE3SPMS1 ✓

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

Matrix: (soil/water) SOIL Lab Sample ID: WG13070-2

Sample wt/vol: 30.0(g/mL) G Lab File ID:

% Moisture: 15 ✓ Decanted: (Y/N) N Date Received: 09/22/01 ✓

Extraction: (Type) SONC Date Extracted: 09/24/01 ✓

Concentrated Extract Volume: 5000(uL) Date Analyzed: 09/26/01 ✓

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.1 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.0	U
60-57-1	Dieldrin	29 ✓	
11097-69-1	Aroclor-1254	39	U

1E

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PE3SPMSD ✓

Lab Name: COMPUCHEM Contract: OLM04REVS

Lab Code: LIBRTY Case No.: Q2298 SAS No.: SDG No.: Q2298

Matrix: (soil/water) SOIL Lab Sample ID: WG13070-3

Sample wt/vol: 30.0(g/mL) G Lab File ID:

% Moisture: 15 ✓ Decanted: (Y/N) N Date Received: 09/22/01 ✓

Extraction: (Type) SONC Date Extracted: 09/24/01 ✓

Concentrated Extract Volume: 5000(uL) Date Analyzed: 09/26/01 ✓

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.1 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.0	U
60-57-1	Dieldrin	30 ✓	
11097-69-1	Aroclor-1254	39	U

9.251

703

COMPUCHEM

PEST/PCB WEEKLY GPC CALIBRATION CHECK

USEPA CLP SOW

DATE RAN: 9/24/01

TECHNICIAN NAME: Carl Hooley

EMPLOYEE ID: 1787 GPC INSTRUMENT # ABC GPC # 1

SAMPLE ID NUMBER	GPC INJ VOLUME	FINAL VOLUME	COMMENTS
A10924 1	2.0 ml	10.0 ml	#4033 PESTICIDE SPIKE SOLUTION LOT # 52010
A10924 1R			
A10924 2	2 ml	10.0 ml	1016/1260 PCB MIXTURE LOT # 52013
A10924 3	2 ml	5 ml	METHYLENE CHLORIDE BLANK MANUFACTURER & LOT # J.T.Baker V31E13

COMPLETE SAMPLE ID NUMBER USING GPC COLUMN NUMBER ALONG WITH MONTH AND DATE. (i.e. A402022, A402022, & A402022P)

RUN WEEKLY GPC CALIBRATION THROUGH GPC CLEANUP EVERY SEVEN CALENDAR DAYS AND SUBMIT TO QC LAB FOR ANALYSIS

A 10924 1 = 2.0 mL OF SPIKING SOLUTION DILUTED TO 10.0 mL MeCl2

A 10924 2 = A MIXTURE OF 2 µg OF AROCLOR 1016 AND 2.00 OF AROCLOR 1260 IN A FINAL VOLUME OF 10.0 mL WITH METHYLENE CHLORIDE

A 10924 B = METHYLENE CHLORIDE ONLY

SUPERVISOR REVIEW: Carl A Hooley

FINAL VOLUME VERIFIED:

EXTRACTS RECEIVED BY: Temp storage

GPC Weekly Calibration Log: ABC #2

Tape a copy of the U/V trace in the space below. Make copies of this page and attach them to the associated extraction sheets. Label each peak on the U/V trace with the compound name. Show resolution calculations.

Date/Time: 9/28/01 10:30AM Room Temp: 21.0 Technician Name/ID: C. Hutchen / 1787

GPC calibration standards (listed in order of elution)	Time (min) Or (CM)	RSD (%)
Corn oil		
Bis(2-ethylhexyl)phthalate	5.55	1.81
Methoxychlor		
Perylene	9.3	0.5
Sulfur		

Lot No. of GPC Calibration Standard Used 51838

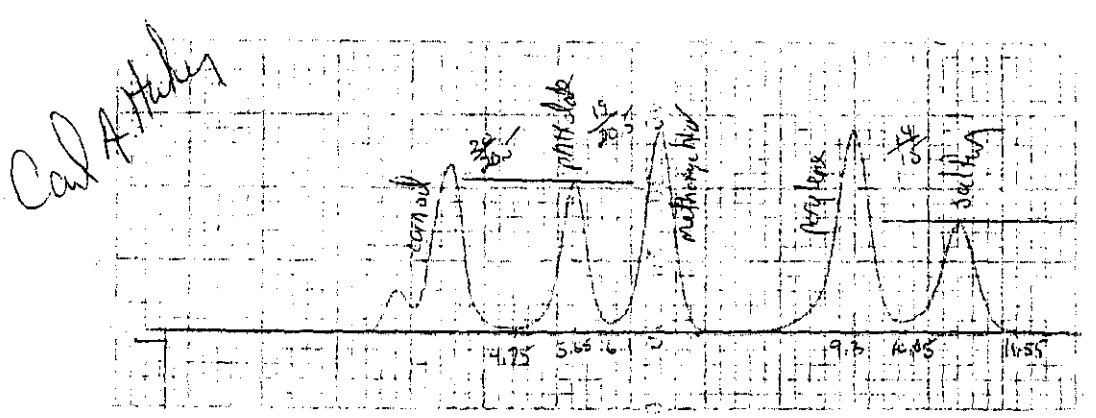
Acceptance criteria: ± 5.0% change from previous calibration (Do not round.)
Retention time criteria met. (Y) N

Calculate and record retention time shift from the previous calibration/UV trace.

Flow Rate: 5.0 ml/min Column: Bio-Beads Chart Speed: 15 cm/hr

Column Pressure: 20 psi

Pest/PCB		Semivolatiles
Dump Time: 24:24 min	> 85% resolution between corn oil and phthalate (Y) N	Dump Time: 19:00 min
Collect Time: 15:48 min	> 85% resolution between phthalate and methoxychlor (Y) N	Collect Time: 21:12 min
Collect Volume: 29 ml	> 90% resolution between perylene and sulfur (Y) N	Collect Volume: 106 ml
Wash Time: 10:00 min		Wash Time: 16:00 min



Reviewed By: _____ Date: 9/28/01

GPC Weekly Calibration Log: ABC #2

Tape a copy of the U/V trace in the space below. Make copies of this page and attach them to the associated extraction sheets. Label each peak on the U/V trace with the compound name. Show resolution calculations.

Date/Time: 9/21/01 8:00am Room Temp: 21.9 Technician Name/ID: C. Hulm 11787

GPC calibration standards (listed in order of elution)	Time (min) Or (CM)	RSD (%)
Corn oil		
Bis(2-ethylhexyl)phthalate	5.45	0
Methoxychlor		
Perylene	9.25	0
Sulfur		

Lot No. of GPC Calibration Standard Used 51838

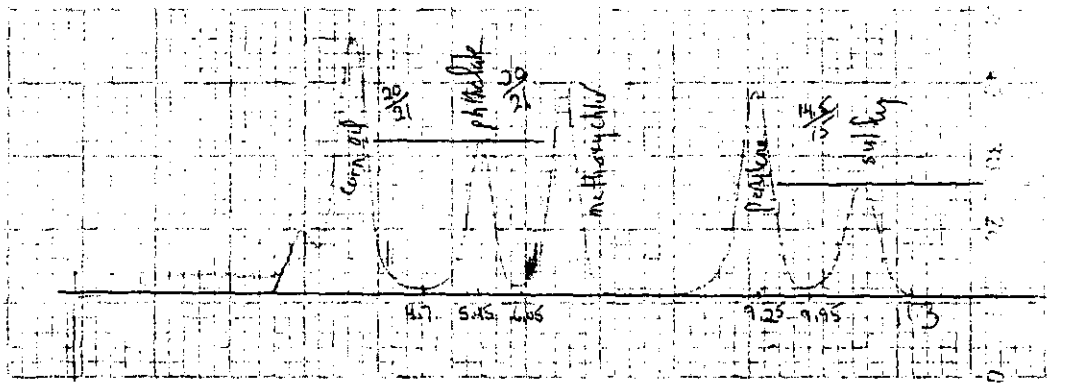
Acceptance criteria: ± 5.0% change from previous calibration (Do not round.)
Retention time criteria met. (Y) N

Calculate and record retention time shift from the previous calibration/UV trace.

Flow Rate: 5.0 ml/min Column: Bio-Beads Chart Speed: 15 cm/hr

Column Pressure: 21 psi

Pest/PCB		Semivolatiles
Dump Time: 24.12 min	> 85% resolution between corn oil and phthalate (Y) N	Dump Time: 18.48 min
Collect Time: 15:36 min	> 85% resolution between phthalate and methoxychlor (Y) N	Collect Time: 21:00 min
Collect Volume: 78 ml	> 90% resolution between perylene and sulfur (Y) N	Collect Volume: 105 ml
Wash Time: 10:00 min		Wash Time: 15:00 min



Reviewed By: M. Brown Date: 9/21/01

1717

6/26/00:mlj

705