

03.04-10/02/92-01509

**DATA VALIDATION REPORTS  
FOR SITE INSPECTIONS CONDUCTED AT:**

**SITE 43 - AGAN STREET  
SITE 44 - JONES STREET  
SITE 63 - VERONA LOOP  
SITE 65 - ENGINEER AREA**

**CONTRACT TASK ORDER 0003**

*Prepared For:*

**DEPARTMENT OF THE NAVY  
ATLANTIC DIVISION  
NAVAL FACILITIES  
ENGINEERING COMMAND  
*Norfolk, Virginia***

*Under:*

**LANTDIV CLEAN Program  
Contract N62470-89-D-4814**

*Prepared By:*

**BAKER ENVIRONMENTAL, INC.  
*Coraopolis, Pennsylvania***

**OCTOBER 2, 1992**

## PREFACE

This document incorporates the data validation reports for soil, groundwater, surface water, and sediment samples collected during Site Inspections (SI) at Sites 43, 44, 63, and 65, MCB Camp Lejeune, North Carolina. This document is a supplemental document to the SI Reports for the above mentioned sites.

The SIs were conducted by Baker Environmental, Inc. (Baker) in July and August 1991. All analytical work was performed by CompuChem Laboratories, Inc. The analytical data was validated in accordance with EPA guidelines by Roy F. Weston, Inc.

Because the field sampling investigations were conducted concurrently at the four SI sites, many of the validation reports contain data from more than one site (e.g., a validation report may contain soil results for both Sites 43 and 44).



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**ORGANIC QUALITY ASSURANCE REVIEW**  
**SITE: BAKER (CLEAN)**  
**CASE: 23664**  
**SDG: 81**

**REVIEW PERFORMED BY**  
**THE ANALYTICS DIVISION**  
**OF**  
**ROY F. WESTON, INC.**

CC: ~~WDT/Smith/SW/Kentz~~; E Mac Donald;  
RP Wattvas/PF; PROG F  
S.O. # 19003-SRN  
Subfile # 10

PREPARED BY: \_\_\_\_\_

Zohreh Hamid, Ph.D.  
Section Manager - Data Validation

10-21-91  
Date

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SITE: BAKER (CLEAN)  
CASE: 23664  
SDG: #267

INTRODUCTION

This quality assurance review is based upon a review of all data generated from twenty (20) water samples for volatile and ten (10) water samples for semivolatile and pesticide/PCB analysis collected on 8 - 7,8,9,20,21,22 - 1991. The samples were analyzed according to criteria set forth in the Contract Laboratory Program (CLP) for TCL target compounds.

This review has been performed in accordance with the confirmation method. The reported analytical results are presented as a summary of the data in Attachment II. All of the analytical data were examined to determine the usability of the analytical results and also to determine contractual compliance relative to the analytical requirements and deliverables specified for CLP method. The applicable qualifier codes have been placed next to the results in the data summary to indicate the qualitative and/or quantitative reliability. The details for this evaluation review are presented in the memo section of this report.

All data have been validated with regard to usability according to the quality assurance set forth in the Functional Guidelines for evaluation of organic analysis for completion of the Data Validation Report Forms and preparation of the final data validation report. If you have any questions or comments on this data review, please call Zoreh Hamid at (215) 344-3745.

QUALITY ASSURANCE REVIEW

The analyses of the samples were performed by CompuChem Laboratories, Inc.

The findings offered in this report are based upon a rigorous review of the following criteria:

- . Data completeness
- . Holding times
- \* . GC/MS tuning
- . Calibration
- . Surrogate recoveries
- . Matrix spike/spike duplicate
- \* . Internal standard
- \* . Instrument performance
- \* . Compound identification
- \* . Compound quantitations
  
- \* Criteria are met for the parameters.



**EVALUATION BY FRACTION**

**I. Volatiles**

- Holding Time
- Surrogate Recovery
- MS/MSD
- Blank
- GC/MS Tuning
- Initial Calibration
- Continuing Calibration
- Compound ID (HSL, TIC)
- Standards
- Spectra Quality
- Chromatography
- Data Completeness

Ten (10) water samples and ten trip blanks/lab pure samples were analyzed within the holding time for volatile target compounds with the exception of sample 63SW01D.

All surrogate and internal standard recoveries were within the CLP contract requirement control limits. Overall, the data are fair. The minor issues are listed in the following section.

The analysis holding time exceeded the "10-day" requirement by three days. The reported sample results and the quantitation limits are qualified estimated.

The RRF for 2-butanone was less than 0.05 in continuing calibration analyzed on 8-22-91. The reported detection limit for the affected sample (63SW01D) is rejected.

The %RSDs were within the 30% QC limit in all initial calibrations with the exception of 2-hexanone (31%) and chloromethane (34%) in calibrations analyzed on 8-17-91. These compounds were not detected in the samples; therefore, the data are not impacted.

A few compounds had %D above 25% in continuing calibrations. The % difference were less than 50% and, these compounds were not detected in the samples, therefore, the data are not impacted.

The chain-of-custodies for lab pure and trip blanks were not included in the data package. These documents should be submitted by the respective laboratory.



Acetone and methylene chloride were detected in the samples and trip blanks, as well as the laboratory blanks. The reported sample results are qualified "U" and should be considered as the sample detection limit.

Aliphatic hydrocarbons were detected as Tentatively Identified Compounds (TIC's). Also Siloxane was reported as TIC. This compounds is considered as a laboratory artifact and the reported results as TIC's should be disregarded.

The sample ID in the chain-of-custody did not coincide the sample ID in the data package for sample 43GW031. The case narrative stated that there was a discrepancy between the identifier on chain-of-custody and identifier on the bottle.

The matrix spike recovery for toluene (126%) was above the upper QC limit in matrix spike samples. However, the spike recoveries for all compounds met the control limits in the spike duplicate sample, therefore, the data are not impacted.



## EVALUATION BY FRACTION

### II. Base/Neutral/Acids

_____	Holding Time
_____	Extraction Time
<u>  X  </u>	Surrogate Recovery
_____	Blank
_____	MS/MSD
_____	GC/MS Tuning
_____	Initial Calibration
<u>  X  </u>	Continuing Calibration
<u>  X  </u>	Compound ID (HSL, TIC)
_____	Standards
_____	Spectra Quality
_____	Chromatography
<u>  X  </u>	Data Completeness

Ten water samples were extracted and analyzed within the holding time for semivolatile target compounds.

The surrogate recovery of (0%) was obtained for phenol-d5 in sample 01R080 also the recovery of 2-fluorophenol (12%) was less than the lower QC limit of 21%. The reported quantitation limits for acid compounds are considered as false negatives. This sample was reextracted outside the holding time. The phenol-d5 recovery was 12% in the reanalysis sample. The comparisons of the original sample results and the reanalysis data gave an acceptable reproducibility. Since the extraction holding time exceeded for the reanalysis samples, the original sample data are reported on the data summary and the reported quantitation limits for the acid compounds are qualified estimated.

Target compounds were not detected in the samples at levels above the CRQL. The non-target compounds were reported in the samples. These compounds are tabulated and included in this data review for further investigation. The unknowns identified as solvent contaminations are not tabulated as TICs, since these compounds are considered as laboratory artifacts.

The laboratory blanks were free of target compound contamination. Non-target compounds were not detected in the blanks with the exception of unknown ester hexanedioic acid in blank SBLK30. The sample data are not impacted, since this compound was not reported as TIC in the samples.



All %RSDs and RRFs were within the control limits. The %D for three compounds exceeded 25% QC limit on calibration standard analyzed on 8-25-91. These compounds were not detected in the associated sample (01R0820). The reported quantitation limit for 2,4 -dinitrophenol which has %D above 50% is qualified estimated in the aforementioned sample.

The extraction date on Form IV (8-28-91) does not coincide the extraction date of Form 1 for sample "01R0820 Re". The review of Form 1 for the associated blank (SBLK00) confirmed the extraction was performed on 8-28-91. Therefore, the sample was re-extracted outside the holding time. This discrepancy should be clarified by the laboratory.

The surrogate recovery for 2 - fluorophenol (110%) exceeded the 100% QC limit in sample 63R02MSD. However, the surrogate recovery criteria (i.e.: no more than one (1) outlier in each fraction and not less than 10%) are met.

**TENTATIVELY IDENTIFIED COMPOUNDS**  
**BNA**

Compound Name	01R0820	43GW011	43GW031	44SW02
unknown RT = 7 - 10	X			
Benzamide derivatives		X		
unknown RT = 20			X	X





**EVALUATION BY FRACTION**

**III. Pesticides/PCB**

- Holding Time
- Extraction Time
- Surrogate Recovery
- MS/MSD
- Blank
- Linearity Calibration
- DDT/Endrin Degradation
- Analytical Sequence
- DBC Retention Time
- Continuing Calibration
- Retention Time Window
- Standards
- Chromatography
- HSL Compounds
- Data Completeness

This portion of the case consisted of ten water samples analyzed for pesticide/PCB target compounds according to the criteria set forth in the Contract Laboratory Protocol (CLP).

The extraction holding time is exceeded by four (4) days for samples 634SW01MS/MSD. The reported sample data are considered estimated.

The following spike recoveries were outside the QC limits:

<u>Compound Name</u>	<u>% Recovery MS/MSP</u>	<u>QC Limit</u>
Aldrine	-/124	40 - 120
Endrine	-/145	56 - 121
4,4 - DDT	248/306	38 - 127

Also the RPD for gamma-PHC, dieldrin and endrin exceeded the QC limits. Since the target compounds were not detected in the samples, the data are accepted without the qualifier codes.

**ATTACHMENT I**  
**GLOSSARY OF DATA QUALIFIER CODES**



## GLOSSARY OF DATA QUALIFIERS

### CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds):

- U = NOT DETECTED, SUBSTANTIALLY ABOVE THE LEVEL REPORTED IN LABORATORY OR FIELD BLANKS.
- R = UNRELIABLE RESULT. ANALYTE MAY OR MAY NOT BE PRESENT IN THE SAMPLE. SUPPORTING DATA NECESSARY TO CONFIRM RESULT.
- N = NEGATED COMPOUND WAS CONSIDERED AS NOT PRESENT IN THE SAMPLE.

(NO CODE) = CONFIRMED IDENTIFICATION

### CODES RELATING TO QUANTITATION

(can be used for both positive results and sample quantitation limits):

- J = ANALYTE PRESENT. REPORTED VALUE MAY NOT BE ACCURATE OR PRECISE.
- L = ANALYTE PRESENT. REPORTED VALUE MAY BE BIASED LOW. ACTUAL VALUE IS EXPECTED TO BE HIGHER.
- UJ = THE REPORTED QUANTITATION LIMITS ARE QUALIFIED ESTIMATED.
- UL = NOT DETECTED. QUANTITATION LIMIT MAY BE HIGHER.

### OTHER CODES

- Q = NO ANALYTICAL RESULT.

**ATTACHMENT II  
DATA SUMMARIES**

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664      SDG:#267      Client: BAKER      Page: 1

	Cust ID:	01R0820	43GW011	43GW021	43GW031	43SW03	44SW02
Sample Information	Matrix:	Water	Water	Water	Water	Water	Water
	D.F.:	1	1	1	1	1	1
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L

Chloromethane.....							
Bromomethane.....							
Vinyl Chloride.....							
Chloroethane.....							
Methylene Chloride.....	6 U			8 U	5 U		16 U
Acetone.....				10 U		45 U	
Carbon Disulfide.....		7					
1,1-Dichloroethene.....							
1,1-Dichloroethane.....							
Trans-1,2-Dichloroethene.....							
Chloroform.....	24						
1,2-Dichloroethane.....							
2-Butanone.....							
1,1,1-Trichloroethane.....							
Carbon Tetrachloride.....							
Vinyl Acetate.....							
Bromodichloromethane.....	9						
1,2-Dichloropropane.....							
Trans-1,3-Dichloropropene.....							
Trichloroethene.....							
Dibromochloromethane.....	3 J						
1,1,2-Trichloroethane.....							
Benzene.....							
cis-1,3-Dichloropropene.....							
2-Chloroethylvinylether.....							
Bromoform.....							
4-Methyl-2-pentanone.....							
2-Hexanone.....							

Case Number: 23664

SDG:#267

Client: BAKER

Page: 1

Cust ID: 01R0820

43GW011

43GW021

43GW031

43SW03

44SW02

=====  
 =====fl=====fl=====fl=====fl=====fl=====fl=====fl  
 Tetrachloroethene.....  
 1,1,2,2-Tetrachloroethane..... 3 J  
 Toluene.....  
 Chlorobenzene.....  
 Ethylbenzene.....  
 Styrene.....  
 Total Xylenes.....

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664

SDG: #267

Client: BAKER

Page: 2

Sample Information	Cust ID:	63R02	63SW01	63SW01D	63SW02	LAB PURE	LAB PURE II
	Matrix:	Water	Water	Water	Water	Water	Water
	D.F.:	1	1	1	1	1	1
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Chloromethane.....							
Bromomethane.....							
Vinyl Chloride.....							
Chloroethane.....							
Methylene Chloride.....	5 U			88 U		5 U	15 U
Acetone.....				54 U			
Carbon Disulfide.....							
1,1-Dichloroethene.....							
1,1-Dichloroethane.....							
Trans-1,2-Dichloroethene.....							
Chloroform.....	2 J						
1,2-Dichloroethane.....							
2-Butanone.....							
1,1,1-Trichloroethane.....							
Carbon Tetrachloride.....							
Vinyl Acetate.....							
Bromodichloromethane.....							
1,2-Dichloropropane.....							
Trans-1,3-Dichloropropene.....							
Trichloroethene.....							
Dibromochloromethane.....							
1,1,2-Trichloroethane.....							
Benzene.....							
cis-1,3-Dichloropropene.....							
2-Chloroethylvinylether.....							
Bromoform.....							
4-Methyl-2-pentanone.....							
2-Hexanone.....							

Case Number: 23664

SDG:#267

Client: BAKER

Page: 2

Cust ID:

63R02

63SW01

63SW01D

63SW02

LAB PURE

LAB PURE II

```
=====fl=====fl=====fl=====fl=====fl=====fl=====fl
Tetrachloroethene.....UJ
1,1,2,2-Tetrachloroethane.....UJ
Toluene.....UJ
Chlorobenzene.....UJ
Ethylbenzene.....UJ
Styrene.....UJ
Total Xylenes.....UJ
```



WESTON ANALYTICAL  
GC/MS DATA SUMMARY  
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664

SDG:#267

Client: BAKER

Page: 3

Sample Information	Cust ID: LAB PURE	LAB PURE	TB4303	TB6301	TB6301D	TB6302
	21	31				
	Matrix: Water	Water	Water	Water	Water	Water
	D.F.: 1	1	1	1	1	1
	Units: ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	=====fl=====		=====fl=====		=====fl=====	

Chloromethane.....						
Bromomethane.....						
Vinyl Chloride.....						
Chloroethane.....						
Methylene Chloride.....	9 U	12 U	6 U	8 U	5 U	5 U
Acetone.....						
Carbon Disulfide.....						
1,1-Dichloroethene.....						
1,1-Dichloroethane.....						
Trans-1,2-Dichloroethene.....						
Chloroform.....						
1,2-Dichloroethane.....						
2-Butanone.....						
1,1,1-Trichloroethane.....						
Carbon Tetrachloride.....						
Vinyl Acetate.....						
Bromodichloromethane.....						
1,2-Dichloropropane.....						
Trans-1,3-Dichloropropene.....						
Trichloroethene.....						
Dibromochloromethane.....						
1,1,2-Trichloroethane.....						
Benzene.....						
cis-1,3-Dichloropropene.....						
2-Chloroethylvinylether.....						
Bromoform.....						
4-Methyl-2-pentanone.....						
2-Hexanone.....						

Case Number: 23664

SDG:#267

Client: BAKER

Page: 3

Cust ID: LAB PURE  
21

LAB PURE  
31

TB4303

TB6301

TB6301D

TB6302

====fl=====fl=====fl=====fl=====fl=====fl=====fl=====

Tetrachloroethene.....  
1,1,2,2-Tetrachloroethane.....  
Toluene.....  
Chlorobenzene.....  
Ethylbenzene.....  
Styrene.....  
Total Xylenes.....

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

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Case Number: 23664

SDG:#267

Client: BAKER

Page: 4

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Cust ID: TB63R02 TRIP BLK

Sample  
Information

Matrix:	Water	Water
D.F.:	1	1
Units:	ug/L	ug/L

---

Chloromethane.....		
Bromomethane.....		
Vinyl Chloride.....		
Chloroethane.....		
Methylene Chloride.....	10 U	13 U
Acetone.....		
Carbon Disulfide.....		
1,1-Dichloroethene.....		
1,1-Dichloroethane.....		
Trans-1,2-Dichloroethene.....		
Chloroform.....		
1,2-Dichloroethane.....		
2-Butanone.....		
1,1,1-Trichloroethane.....		
Carbon Tetrachloride.....		
Vinyl Acetate.....		
Bromodichloromethane.....		
1,2-Dichloropropane.....		
Trans-1,3-Dichloropropene.....		
Trichloroethene.....		
Dibromochloromethane.....		
1,1,2-Trichloroethane.....		
Benzene.....		
cis-1,3-Dichloropropene.....		
2-Chloroethylvinylether.....		
Bromoform.....		
4-Methyl-2-pentanone.....		
2-Hexanone.....		

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Case Number: 23664

SDG:#267

Client: BAKER

Page: 4

Cust ID: TB63R02 TRIP BLK

=====  
=====fl=====fl=====fl=====fl=====fl=====fl  
Tetrachloroethene.....  
1,1,2,2-Tetrachloroethane.....  
Toluene.....  
Chlorobenzene.....  
Ethylbenzene.....  
Styrene.....  
Total Xylenes.....

WESTON ANALYTICS  
GC/MS DATA SUMMARY

SEMI-VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664 SDG: #267 Client: BAKER Page: 1

Sample Information	Cust ID: 01R0820 43GW011 43GW021 43GW031 43SW03 44SW02						
	Matrix:	Water	Water	Water	Water	Water	Water
	D.F.:	1	1	1	1	1	1
Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	fl	fl	fl	fl	fl	fl	fl
Phenol.....	UJ						
bis(2-Chloroethyl) Ether.....							
2-Chlorophenol.....	UJ						
1,3-Dichlorobenzene.....							
1,4-Dichlorobenzene.....							
Benzyl Alcohol.....							
1,2-Dichlorobenzene.....							
2-Methylphenol.....	UJ						
bis(2-Chloroisopropyl) Ether.....							
4-Methylphenol.....	UJ						
N-Nitroso-di-n-propylamine.....							
Hexachloroethane.....							
Nitrobenzene.....							
Isophorone.....							
2-Nitrophenol.....	UJ						
2,4-Dimethylphenol.....	UJ						
Benzoic Acid(2).....	UJ						
bis(2-Chloroethoxy)Methane.....							
2,4-Dichlorophenol.....	UJ						
1,2,4-Trichlorobenzene.....							
Naphthalene.....							
4-Chloroaniline.....							
Hexachlororbutadiene.....							
4-Chloro-3-methylphenol.....	UJ						
2-Methylnaphthalene.....							
Hexachlorocyclopentadiene.....							

Cust ID: 01R0820RE    43GW011    43GW021    43GW031    43SW03    44SW02

=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====	
2,4,6-Trichlorophenol.....	UJ
2,4,5-Trichlorophenol(2).....	UJ
2-Chloronaphthalene.....	
2-Nitroaniline(2).....	
Dimethyl Phthalate.....	
Acenaphthylene.....	
3-Nitroaniline(2).....	
Acenaphthene.....	
2,4-Dinitrophenol(2).....	UJ
4-Nitrophenol(2).....	UJ
Dibenzofuran.....	
2,4-Dinitrotoluene.....	
2,6-Dinitrotoluene.....	
Diethyl Phthalate.....	
4-Chlorophenyl-phenylether.....	
Fluorene.....	
4-Nitroaniline(2).....	
4,6-Dinitro-2-methylphenol(2).....	UJ
N-Nitrosodiphenylamine(1).....	
4-Bromophenyl-phenylether.....	
Hexachlorobenzene.....	
Pentachlorophenol(2).....	UJ
Phenanthrene.....	
Anthracene.....	
di-n-Butyl Phthalate.....	
Fluoranthene.....	
Pyrene.....	
Butyl Benzyl Phthalate.....	
3,3'-Dichlorobenzidine(3).....	
Benzo(a)Anthracene.....	
bis(2-Ethylhexyl) Phthalate.....	
Chrysene.....	
di-n-Octyl Phthalate.....	
Benzo(b)Fluoranthene.....	
Benzo(k)Fluoranthene.....	
Benzo(a)Pyrene.....	
Indeno(1,2,3-cd)Pyrene.....	
Dibenz(a,h)Anthracene.....	
Benzo(g,h,i)Perylene.....	

WESTON ANALYTICAL  
GC/MS DATA SUMMARY  
SEMI-VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664    SDG: #267    Client: BAKER

Page: 2

Sample Information	Cust ID:	63R02	63SW01	63SW01D	63SW02
Matrix:	Water	Water	Water	Water	
D.F.:	1	1	1	1	
Units:	ug/L	ug/L	ug/L	ug/L	

- Phenol.....
- bis(2-Chloroethyl) Ether.....
- 2-Chlorophenol.....
- 1,3-Dichlorobenzene.....
- 1,4-Dichlorobenzene.....
- Benzyl Alcohol.....
- 1,2-Dichlorobenzene.....
- 2-Methylphenol.....
- bis(2-Chloroisopropyl) Ether.....
- 4-Methylphenol.....
- N-Nitroso-di-n-propylamine.....
- Hexachloroethane.....
- Nitrobenzene.....
- Isophorone.....
- 2-Nitrophenol.....
- 2,4-Dimethylphenol.....
- Benzoic Acid(2).....
- bis(2-Chloroethoxy)Methane.....
- 2,4-Dichlorophenol.....
- 1,2,4-Trichlorobenzene.....
- Naphthalene.....
- 4-Chloroaniline.....
- Hexachlororbutadiene.....
- 4-Chloro-3-methylphenol.....
- 2-Methylnaphthalene.....
- Hexachlorocyclopentadiene.....

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Cust ID:            63R02            63SW01            63SW01D            63SW02

=====  
=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====

- 2,4,6-Trichlorophenol.....
- 2,4,5-Trichlorophenol(2).....
- 2-Chloronaphthalene.....
- 2-Nitroaniline(2).....
- Dimethyl Phthalate.....
- Acenaphthylene.....
- 3-Nitroaniline(2).....
- Acenaphthene.....
- 2,4-Dinitrophenol(2).....
- 4-Nitrophenol(2).....
- Dibenzofuran.....
- 2,4-Dinitrotoluene.....
- 2,6-Dinitrotoluene.....
- Diethyl Phthalate.....
- 4-Chlorophenyl-phenylether.....
- Fluorene.....
- 4-Nitroaniline(2).....
- 4,6-Dinitro-2-methylphenol(2).....
- N-Nitrosodiphenylamine(1).....
- 4-Bromophenyl-phenylether.....
- Hexachlorobenzene.....
- Pentachlorophenol(2).....
- Phenanthrene.....
- Anthracene.....
- di-n-Butyl Phthalate.....
- Fluoranthene.....
- Pyrene.....
- Butyl Benzyl Phthalate.....
- 3,3'-Dichlorobenzidine(3).....
- Benzo(a)Anthracene.....
- bis(2-Ethylhexyl) Phthalate.....
- Chrysene.....
- di-n-Octyl Phthalate.....
- Benzo(b) Fluoranthene.....
- Benzo(k) Fluoranthene.....
- Benzo(a) Pyrene.....
- Indeno(1,2,3-cd) Pyrene.....
- Dibenz(a,h)Anthracene.....
- Benzo(g,h,i) Perylene.....



WESTON ANALYTICALS  
 PESTICIDE/PCB's  
 CLP LIST

=====  
 Case Number: 23664     SDG: #267     Client: BAKER     Page: 1  
 =====

Sample Information	Cust ID:	01R0820	43GW011	43GW021	43GW031	43SW03	44SW02
Matrix:	Water	Water	Water	Water	Water	Water	Water
D.F.:	1	1	1	1	1	1	1
Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	fl	fl	fl	fl	fl	fl	fl

Alpha-BHC.....  
 Beta-BHC.....  
 Delta-BHC.....  
 Gamma-BHC (Lindane).....  
 Heptachlor.....  
 Aldrin.....  
 Heptachlor Epoxide.....  
 Endosulfan I.....  
 Dieldrin.....  
 4,4'-DDE.....  
 Endrin.....  
 Endosulfan II.....  
 4,4'-DDD.....  
 Endosulfan Sulfate.....  
 4,4'-DDT.....  
 Methoxychlor.....  
 Endrin Ketone.....  
 Alpha Chlordane.....  
 Gamma Chlordane.....  
 Toxaphene.....  
 Aroclor-1016.....  
 Aroclor-1221.....  
 Aroclor-1232.....  
 Aroclor-1242.....  
 Aroclor-1248.....  
 Aroclor-1254.....  
 Aroclor-1260.....

WESTON ANALYTICAL  
 PESTICIDE/PCB'S  
 CLP LIST

=====  
 Case Number: 23664      SDG: #267      Client: BAKER      Page: 2  
 =====

Sample Information	Cust ID:	63R02	63SW01	63SW01D	63SW02
	Matrix:	Water	Water	Water	Water
	D.F.:	1	1	1	1
	Units:	ug/L	ug/L	ug/L	ug/L

=====  
 =====fl=====fl=====fl=====fl=====fl=====fl=====fl=====

- Alpha-BHC.....
- Beta-BHC.....
- Delta-BHC.....
- Gamma-BHC (Lindane).....
- Heptachlor.....
- Aldrin.....
- Heptachlor Epoxide.....
- Endosulfan I.....
- Dieldrin.....
- 4,4'-DDE.....
- Endrin.....
- Endosulfan II.....
- 4,4'-DDD.....
- Endosulfan Sulfate.....
- 4,4'-DDT.....
- Methoxychlor.....
- Endrin Ketone.....
- Alpha Chlordane.....
- Gamma Chlordane.....
- Toxaphene.....
- Aroclor-1016.....
- Aroclor-1221.....
- Aroclor-1232.....
- Aroclor-1242.....
- Aroclor-1248.....
- Aroclor-1254.....
- Aroclor-1260.....

ATTACHMENT III

**VOLATILE CALIBRATION  
SUMMARY OF CRITERIA OUTLIERS**

CASE: 23664 SP6 # 267  
CLIENT: Baker

I.C    I.C    I.C    C.C    C.C    C.C    C.C

DATE/TIME OF CALIBRATION	7-17-91	7-25-91	8-17-91	8-22-91	8-17-91	8-18-91	8-28-91
INSTRUMENT ID	OWA03	F50051	F-50053	OWA03	F50051	F50051	F50053
Chloromethane			%RSD=74				
Bromomethane				%D=31.4			
Vinyl Chloride							
Chloroethane							
Methylene Chloride							
Acetone							
Carbon Disulfide							
1,1-Dichloroethene							
1,1-Dichloroethane							
1,2-Dichloroethene (total)							
Chloroform							
1,2-Dichloroethane				%D=32			
2-Butanone				%RF=0.02	%D=21.7		
1,1,1-Trichloroethane							
Carbon Tetrachloride				%D=35			
Vinyl Acetate					%D=31	%D=30	
Bromodichloromethane							
1,2-Dichloropropane							
Cis-1,3-dichloropropene				%D=38			
Trichloroethene							
Dibromochloromethane							
1,1,2-Trichloroethane							
Benzene							
Trans-1,3-dichloropropene				%D=49			%D=26
Bromoform							
4-Methyl-2-pentanone					%D=32	%D=26	
2-Hexanone	%RSD=31.2				%D=32		
Tetrachloroethene							
1,1,2,2-Tetrachloroethane					%D=38	%D=30.4	
Toluene							
Chlorobenzene							
Ethylbenzene							
Styrene							
Xylene (total)							
ASSOCIATED SAMPLES				635601D	435603	TB63A02	01A020
					445402	MS	43C0011
					63R02	MSD	43C0024
					635601		43C0031
					635602		Lab Pur
					TB4303		11
					TB6301		21
					TB6301D		31
					TB6302		
					TV-PB1K		-

CASE:

LAB:

ECC #	EXCEPTION CRITERIA:	I-C	E-C	C-C	C-C	C-C	C-C
		8-4-91	8-29	8-13	8-14	8-25	8-30
Initial Calib. >30% RSD	Containing >25% RPD	F 50052	F 50052	F 50052	F 50052	F 50052	F 50052
Minimum RF	0.05						
8-2 *	Phenol						
111-44-4	bis(2-Chloroethyl)Ether						
95-87-8	2-Chlorophenol						
541-73-1	1, 3-Dichlorobenzene						
106-46-7 *	1, 4-Dichlorobenzene						
100-51-6	Benzyl Alcohol						
95-50-1	1, 2-Dichlorobenzene						
95-48-7	2-Methylphenol						
39638-32-9	bis(2-chloroisopropyl)Ether						
106-44-5	4-Methylphenol						
821-64-7	N-Nitroso-Di-n-Propylamine						
87-72-1	Hexachloroethane						
98-95-3	Nitrobenzene						
78-59-1	Isophorone						
88-75-5 *	2-Nitrophenol						
106-67-9	2, 4-Dimethylphenol						
85-85-0	Benzoic Acid (2)						
111-91-1	bis(2-Chloroethoxy)Methane						
120-83-2 *	2, 4-Dichlorophenol						
120-82-1	1, 2, 4-Trichlorobenzene						
91-20-3	Naphthalene						
106-47-8	4-Chloroaniline						
87-68-3 *	Hexachlorobutadiene						
59-50-7 *	4-Chloro-3-Methylphenol						
91-57-6	2-Methylnaphthalene						
77-47-4 *	Hexachlorocyclopentadiene						
98-06-2 *	2, 4, 6-Trichlorophenol						
95-95-4	2, 4, 5-Trichlorophenol (2)						
91-58-7	2-Chloronaphthalene						
88-74-4	2-Nitroaniline (2)						
131-11-3	Dimethyl Phthalate						
8-8	Acenaphthylene						
2	3-Nitroaniline (2)						
2-9 *	Acenaphthene						
81-28-6 **	2, 4-Dinitrophenol (2)					7.0-55	
100-02-7 *	4-Nitrophenol (2)						
132-64-9	Obenzofuran						
121-14-2	2, 4-Dinitrotoluene						
606-20-2	2, 6-Dinitrotoluene						
84-66-2	Diethylphthalate						
7005-72-3	4-Chlorophenyl-phenylether						
86-73-7	Fluorene						
100-01-8	4-Nitroaniline (2)						
834-52-1	4, 6-Dinitro-2-Methylphenol (2)					7.0-47	
86-30-6 *	N-Nitrosodiphenylamine (1)						
101-55-3	4-Bromophenyl-phenylether						
118-74-1	Hexachlorobenzene						
87-86-5 *	Pentachlorophenol (2)						
85-01-8	Phenanthrene						
120-12-7	Anthracene						
84-74-2	Di-n-Butylphthalate					7.0-62.5	
206-44-0 *	Fluoranthene						
129-00-0	Pyrene						
85-68-7	Butylbenzylphthalate						
81-94-1	3, 3'-Dichlorobenzidine (3)						
86-55-3	Benzofluoranthene						
117-81-7	bis(2-Ethylhexyl)Phthalate						
218-01-8	Chrysene						
117-84-0 *	Di-n-Octyl Phthalate						
205-99-2	Benzofluoranthene						
207-08-9	Benzofluoranthene						
80-32-8 *	Benzofluoranthene						
193-39-5	Indenol(1, 2, 3-cd)Pyrene						
83-70-3	Obenzo, h)Anthracene						
4-2	Benzofluoranthene						

Cannot be separated from diphenylamine

435403 449602 0110820 0110820K  
 63R02 MS 436011  
 63501 MS0 436021  
 63501D 436031  
 63502



1 WESTON WAY  
WEST CHESTER, PA 19380-1449  
PHONE: 215-692-3030  
FAX: 215-430-3124

entered ✓

"u" values

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ORGANIC QUALITY ASSURANCE REVIEW  
SITE: BAKER (CLEAN)  
CASE: 23664  
SDG: 81

REVIEW PERFORMED BY  
THE ANALYTICS DIVISION  
OF  
ROY F. WESTON, INC.

PREPARED BY:

Zohreh Hamid, Ph.D.

Section Manager - Data Validation

10-8-91

Date

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bcc: WDTribbath/JWmentz/PROG F;  
DPBlack/RPWattras | PF; EMacDonald

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SITE: BAKER (CLEAN)  
CASE: 23664  
SDG: 81

INTRODUCTION

This quality assurance review is based upon a review of all data generated from twenty (20) soil samples collected on 8/5-8/91. The samples were analyzed according to criteria set forth in the Contract Laboratory Program (CLP) for TCL target compounds.

This review has been performed in accordance with the confirmation method. The reported analytical results are presented as a summary of the data in Attachment II. All of the analytical data were examined to determine the usability of the analytical results and also to determine contractual compliance relative to the analytical requirements and deliverables specified for CLP method. The applicable qualifier codes have been placed next to the results in the data summary to indicate the qualitative and/or quantitative reliability. The details of this evaluation review are presented in the memo section of this report.

All data have been validated with regard to usability according to the quality assurance guidelines set forth in the USEPA Functional Guidelines for evaluation of organic analysis for completion of the Data Validation Report Forms and preparation of the final data validation report. If you have any questions or comments on this data review, please call Zohreh Hamid at (215) 344-3745.

QUALITY ASSURANCE REVIEW

The analyses of the samples were performed by CompuChem Laboratories, Inc.

The findings offered in this report are based upon a rigorous review of the following criteria:

- Holding times
- \*•GC/MS tuning
- Calibration
- Blanks
- \*•Surrogate recoveries
- Matrix spike/spike duplicate
- \*•Internal standard
- \*•Instrument performance
- \*•Compound identification
- \*•Compound quantitations
- Data completeness

\* = All criteria were met for this classification.

## EVALUATION BY FRACTION

I. Volatiles

\_\_\_\_ Holding Time  
\_\_\_\_ Surrogate Recovery  
X MS/MSD  
\_\_\_\_ Blank  
\_\_\_\_ GC/MS Tuning  
X Initial Calibration  
X Continuing Calibration  
X Compound ID (HSL, TIC)  
\_\_\_\_ Standards  
\_\_\_\_ Spectra Quality  
\_\_\_\_ Chromatography  
\_\_\_\_ Data Completeness

OVERVIEW

Twenty (20) soil samples were analyzed within the holding time requirements (10 days from VTSR).

The surrogate, internal standard and matrix spike recoveries were within the QC limits. Problems associated with this sample analyses are listed in the following section.

ISSUES

The relative response factor (RRF) for 2-butanone in initial calibration analyzed on 8-15-91 (instrument ID = 18) and the corresponding continuing calibration were less than 0.05. Therefore, the reported quantitation limits are rejected and are qualified "R" in the data summary.

A few compounds had %RSD and/or %D above 30% and 25% in initial and continuing calibrations. These compounds with the exception of acetone and methylene chloride (common laboratory contaminants) were not detected in the samples. Therefore, no qualifier codes have been applied to the data.

Carbon disulfide was detected in Sample 65SD03. This compound was not detected in the corresponding QC Samples, (65SD03 MS/MSD), therefore, the reported result for this compound in the original unspiked sample is qualified estimated.

The relative percent difference (RPD) for 1,1-dichloromethane (25%) exceeded the 22% requirement limit. The matrix spike recoveries met the criteria in both matrix spikes and matrix spike duplicate samples, therefore, no qualifier codes have been applied due to the RPD outlier.





QA ORGANIC DATA REVIEW  
BAKER (CLEAN)  
CASE: 23664  
SDG: 81  
Page 4 of 7

The % moisture in Samples (43SD01, 43SD02, 43SD05, 44SD02, 65SD01, 65SD02 and 65SD03) exceeded 30%. Consequently, the quantitation limits and the results are elevated. The results in these sediment samples should be reported in wet bases. The target compounds with the exception of methylene chloride and acetone (common laboratory contaminants) were not reported at levels above the corresponding sample CRQLs, therefore, the reported data is considered as representative.

The laboratory artifact reported as TIC in the samples and the corresponding laboratory method blanks should be disregarded. There are unknown compounds were detected in Sample 43SD01 as TICs. These unknowns could be grouped as aliphatic and aromatic hydrocarbons.

## EVALUATION BY FRACTION

II. Base/Neutral/Acids

Holding Time  
 Extraction Time  
 Surrogate Recovery  
 Blank  
 MS/MSD  
 GC/MS Tuning  
 Initial Calibration  
 Continuing Calibration  
 Compound ID (HSL, TIC)  
 Standards  
 Spectra Quality  
 Chromatography  
 Data Completeness

OVERVIEW

This portion of the case consisted of twenty (20) soil samples analyzed within the holding time for Semivolatile target compounds.

All surrogate, internal standard and spike recoveries were within the quality control limits. The minor problems associated with this batch of sample analyses are listed in the following section.

ISSUES

The %D for benzoic acid was 50% in calibration standard analyzed on 8-23-91. The corresponding sample detection limits and the results are qualified estimated. Affected Samples (44SD02, 65SD01, 65SD02, 65SD03). Also the %D for this compound was 27% on calibration standard analyzed on 8-14-91. The reported results for Samples 43SD01, 43SD02, 63MW0200, and 63MW0300 are considered estimated.

The %RSD for benzo(b)fluoranthene and benzo(k)fluoranthene was 37% in initial calibration analyzed on 7-31-91. These compounds were coeluted and the reported results are qualified estimated due to the %RSD outlier and coelution problem.

Sample 43SD04 was analyzed at 2-fold dilution. The corresponding QC Samples (43SD04 MS and 43SD04 MSD) were analyzed at one-fold dilution. The phenanthrene, fluoranthene, butylbenzylphthalate, chrysene, benzo(b)fluoranthene, and benzo(k)fluoranthene were reported in the QC samples. However, these compounds were not detected in the unspiked sample. Also, the results for Bis(2-ethylhexyl)phthalate was 1600, 210, and 240 ug/kg in the original, matrix spike and spike duplicate samples respectively. The case narrative stated that comparison of the Reconstructed Ion

Chromatograph (RICs) of the matrix spike/matrix spike duplicate with the unspiked original sample confirm that the samples were extracted from the same run sample, however, the large TIC peak (tentatively identified as sulfur) and lower viscosity of the spike samples have been attributed to the inhomogeneity of the sample soil matrix. This is the reviewer's opinion that the reported results and the detection limits for the aforementioned compounds should be qualified estimated due to the poor reproducibility.

The high level of unknown PNA compounds (TIC) in Sample 63MW0206 suppress the standard and surrogate compound peaks in the sample chromatograph, however, the quantitation of the data are not impacted.

Tribromophenol and fluorophenol were reported as Tentative Identified Compounds in SBLK41. These are surrogate compounds and the reported results as TICs should be disregarded.

Up to 24 non-target compounds (grouped as unknown PNA, hydrocarbons, solvent contaminate, sulfur, and Aldol condensation products) were reported in the samples.

All blanks were free of target compound contaminations with the exception of SBLK34. 2,4-dinitrotoluene was detected in this blank. Since this compound was not detected in any samples, the data are not impacted.

The benzoic acid in Samples 43SD01 and 43SD02 and 4-Methylphenol in Sample 44SD02 were detected at levels above the sample CRQLs. The high concentrations could be attributed to the high levels of moisture in the samples. The reported results in the wet base are approximately one-fourth (1/4) of the reported values.

A few PNA compounds were detected in the samples at levels less than CRQL. Although the common phthalates such as di-n-butylphthalate, butylbenzylphthalate and bis(2-ethylhexyl)phthalate are not reported in the laboratory blanks, the reported results in the samples could be considered as laboratory artifact and should be disregarded.

The chromatograph for Sample 43SD04 was missing from the data package. The respective laboratory has been contacted.

## EVALUATION BY FRACTION

III. Pesticides/PCB

Holding Time  
 Extraction Time  
 Surrogate Recovery  
 MS/MSD  
 Blank  
 Linearity Calibration  
 DDT/Endrin Degradation  
 Analytical Sequence  
 DBC Retention Time  
 Continuing Calibration  
 Retention Time Window  
 Standards  
 Chromatography  
 HSL Compounds  
 Data Completeness

OVERVIEW

This portion of the case consisted of twenty (20) soil samples.

The samples were extracted/analyzed within the holding time specified in the Contract Laboratory Program (CLP).

ISSUES

DDE, DDD and DDT were reported in some samples at levels above the CRQL. The high levels of these compounds in Samples 43SD01 and 43SD02 could be attributed to the high levels of % moisture. The concentration of these compounds in the sediment samples (wet base) are approximately one-fourth (1/4) of the reported concentrations.

The matrix spike recovery for aldrin (32%) was less than the control limit of 34%. The recovery of this compound was within the QC limit in the matrix spike duplicate, and since the RPD was within the requirement limit, no qualifier codes have been applied.

Sample 43SD05 was analyzed at five-fold dilution due to the high level of non-target compound in this sample. The result is also elevated due to the high level of moisture in the sample.

Many compounds had %D above 15% and 20% in the initial and confirmation analysis. However, these standards were analyzed at the end of the sample analysis, therefore, no qualifier codes have been applied.

**ATTACHMENT I**  
**GLOSSARY OF DATA QUALIFIER CODES**



## GLOSSARY OF DATA QUALIFIERS

### CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds):

- U = NOT DETECTED, SUBSTANTIALLY ABOVE THE LEVEL REPORTED IN LABORATORY OR FIELD BLANKS.
- R = UNRELIABLE RESULT. ANALYTE MAY OR MAY NOT BE PRESENT IN THE SAMPLE. SUPPORTING DATA NECESSARY TO CONFIRM RESULT.
- N = NEGATED COMPOUND WAS CONSIDERED AS NOT PRESENT IN THE SAMPLE.

(NO CODE) = CONFIRMED IDENTIFICATION

### CODES RELATING TO QUANTITATION

(can be used for both positive results and sample quantitation limits):

- J = ANALYTE PRESENT. REPORTED VALUE MAY NOT BE ACCURATE OR PRECISE.
- L = ANALYTE PRESENT. REPORTED VALUE MAY BE BIASED LOW. ACTUAL VALUE IS EXPECTED TO BE HIGHER.
- UJ = THE REPORTED QUANTITATION LIMITS ARE QUALIFIED ESTIMATED.
- UL = NOT DETECTED. QUANTITATION LIMIT MAY BE HIGHER.

### OTHER CODES

- Q = NO ANALYTICAL RESULT.

**ATTACHMENT II  
DATA SUMMARIES**

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664    SDG#: 81    Client: BAKER Page: 1

	Cust ID: 43MW0100	43MW0100D	43MW0200	43MW0202	43MW0300	43SD01
Sample Information	Matrix: Soil	Soil	Soil	Soil	Soil	Soil
	D.F.: 1	1	1	1	1	1
	Units: ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg

	f1	f1	f1	f1	f1	f1
Chloromethane.....						
Bromomethane.....						
Vinyl Chloride.....						
Chloroethane.....						
Methylene Chloride.....	22 U	33 U	22 U	22 U	62 U	65 U
Acetone.....	31 U	67 U	37 U	22 U	20 U	
Carbon Disulfide.....						
1,1-Dichloroethene.....						
1,1-Dichloroethane.....						
Trans-1,2-Dichloroethene.....						
Chloroform.....						
1,2-Dichloroethane.....						
2-Butanone.....	R	R	R	R	R	R
1,1,1-Trichloroethane.....						
Carbon Tetrachloride.....						
Vinyl Acetate.....						
Bromodichloromethane.....						
1,2-Dichloropropane.....						
Trans-1,3-Dichloropropene.....						
Trichloroethene.....						
Dibromochloromethane.....						
1,1,2-Trichloroethane.....						
Benzene.....						
cis-1,3-Dichloropropene.....						
2-Chloroethylvinylether.....						
Bromoform.....						
4-Methyl-2-pentanone.....						
2-Hexanone.....						



WESTON ANALYTICS  
GC/MS DATA SUMMARY  
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664    SDG#: 81    Client: BAKER Page: 2

	Cust ID:	43SD02	43SD03	43SD04	43SD05	44SD02	63MW0105
Sample Information	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	1	1	1
	Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg

Chloromethane.....							
Bromomethane.....							
Vinyl Chloride.....							
Chloroethane.....							
Methylene Chloride.....	68 U	25 U	19 U	28 U	90 U	30 U	
Acetone.....		21 U			440 U	12 U	
Carbon Disulfide.....							
1,1-Dichloroethene.....							
1,1-Dichloroethane.....							
Trans-1,2-Dichloroethene.....							
Chloroform.....							
1,2-Dichloroethane.....	R	R	R	R			R
2-Butanone.....							
1,1,1-Trichloroethane.....							
Carbon Tetrachloride.....							
Vinyl Acetate.....							
Bromodichloromethane.....							
1,2-Dichloropropane.....							
Trans-1,3-Dichloropropene.....							
Trichloroethene.....							
Dibromochloromethane.....							
1,1,2-Trichloroethane.....							
Benzene.....							
cis-1,3-Dichloropropene.....							
2-Chloroethylvinylether.....							
Bromoform.....							
4-Methyl-2-pentanone.....							
2-Hexanone.....							

=====  
Case Number: 23664    SDG#: 81    Client: BAKER

Page: 1

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Cust ID: 43MW0100    43MW0100D    43MW0200    43MW0202    43MW0300    43SD01

=====  
=====fl=====fl=====fl=====fl=====fl=====fl

Tetrachloroethene.....  
1,1,2,2-Tetrachloroethane.....  
Toluene.....  
Chlorobenzene.....  
Ethylbenzene.....  
Styrene.....  
Total Xylenes.....

Case Number: 23664    SDG#: 81    Client: BAKER

Page: 2

Cust ID:    43SD02    43SD03    43SD04    43SD05    44SD02    63MW01

=====  
=====fl=====fl=====fl=====fl=====fl=====fl=====fl  
Tetrachloroethene.....  
1,1,2,2-Tetrachloroethane.....  
Toluene.....  
Chlorobenzene.....  
Ethylbenzene.....  
Styrene.....  
Total Xylenes.....

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664    SDG#: 81    Client: BAKER Page: 3

	Cust ID: 63MW0100	63MW0200	63MW0206	63MW0300	63MW0304	65SD01
Sample Information	Matrix: Soil	Soil	Soil	Soil	Soil	Soil
	D.F.: 1	1	1	1	1	1
	Units: ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg

Chloromethane.....						
Bromomethane.....						
Vinyl Chloride.....						
Chloroethane.....						
Methylene Chloride.....	33 U	19 U	30 U	21 U	29 U	43 U
Acetone.....	42 U		55 U	53 U	23 U	150 U
Carbon Disulfide.....						
1,1-Dichloroethene.....						
1,1-Dichloroethane.....						
Trans-1,2-Dichloroethene.....						
Chloroform.....						
1,2-Dichloroethane.....						
2-Butanone.....	R	R	R	R	R	
1,1,1-Trichloroethane.....						
Carbon Tetrachloride.....						
Vinyl Acetate.....						
Bromodichloromethane.....						
1,2-Dichloropropane.....						
Trans-1,3-Dichloropropene.....						
Trichloroethene.....						
Dibromochloromethane.....						
1,1,2-Trichloroethane.....						
Benzene.....						
cis-1,3-Dichloropropene.....						
2-Chloroethylvinylether.....						
Bromoform.....						
4-Methyl-2-pentanone.....						
2-Hexanone.....						

=====  
Case Number: 23664    SDG#: 81    Client: BAKER  
-----

Page: 3

Cust ID: 63MW0100    63MW0200    63MW0206    63MW0300    63MW0304    65SD01

=====  
=====fl=====fl=====fl=====fl=====fl=====fl=====fl  
Tetrachloroethene.....  
1,1,2,2-Tetrachloroethane.....  
Toluene.....  
Chlorobenzene.....  
Ethylbenzene.....  
Styrene.....  
Total Xylenes.....

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664    SDG#: 81    Client: BAKER

Page: 4

	Cust ID: 65SD02	65SD03	
Sample Information	Matrix: Soil	Soil	
	D.F.: 1	1	
	Units: ug/kg	ug/kg	

	fl	fl	fl	fl	fl	fl
Chloromethane.....						
Bromomethane.....						
Vinyl Chloride.....						
Chloroethane.....						
Methylene Chloride.....	85 U	63 U				
Acetone.....	110 U	29 U				
Carbon Disulfide.....	2 J	10 J				
1,1-Dichloroethene.....						
1,1-Dichloroethane.....						
Trans-1,2-Dichloroethene.....						
Chloroform.....						
1,2-Dichloroethane.....						
2-Butanone.....						
1,1,1-Trichloroethane.....						
Carbon Tetrachloride.....						
Vinyl Acetate.....						
Bromodichloromethane.....						
1,2-Dichloropropane.....						
Trans-1,3-Dichloropropene.....						
Trichloroethene.....						
Dibromochloromethane.....						
1,1,2-Trichloroethane.....						
Benzene.....						
cis-1,3-Dichloropropene.....						
2-Chloroethylvinylether.....						
Bromoform.....						
4-Methyl-2-pentanone.....						
2-Hexanone.....						

=====  
Case Number: 23664    SDG#: 81    Client: BAKER  
-----

Page: 4

Cust ID:    65SD02    65SD03

=====  
=====fl=====fl=====fl=====fl=====fl=====fl=====fl  
Tetrachloroethene.....  
1,1,2,2-Tetrachloroethane.....  
Toluene.....  
Chlorobenzene.....  
Ethylbenzene.....  
Styrene.....  
Total Xylenes.....

WESTON ANALYTICAL  
GC/MS DATA SUMMARY  
SEMI-VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664    SDG#: 81    Client: BAKER Page: 1

Sample Information	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	1	1	1
	Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg

Sample Information	Cust ID: 43MW0100	43MW0100D	433MW0200	43MW0202	43MW0300	43SD01
Phenol.....						
bis(2-Chloroethyl) Ether.....						
2-Chlorophenol.....						
1,3-Dichlorobenzene.....						
1,4-Dichlorobenzene.....						
Benzyl Alcohol.....						
1,2-Dichlorobenzene.....						
2-Methylphenol.....						810 J
bis(2-Chloroisopropyl) Ether.....						
4-Methylphenol.....						
N-Nitroso-di-n-propylamine.....						
Hexachloroethane.....						
Nitrobenzene.....						
Isophorone.....						
2-Nitrophenol.....						
2,4-Dimethylphenol.....						7600 J
Benzoic Acid(2).....						
bis(2-Chloroethoxy) Methane.....						
2,4-Dichlorophenol.....						
1,2,4-Trichlorobenzene.....						
Naphthalene.....						
4-Chloroaniline.....						
Hexachlororbutadiene.....						
4-Chloro-3-methylphenol.....						
2-Methylnaphthalene.....						
Hexachlorocyclopentadiene.....						

\* - COELUTED



Cust ID: 43MW0100 43MW0100D 433MW0200 43MW0202 43MW0300 43SD01

=====fl=====fl=====fl=====fl=====fl=====fl=====fl

2,4,6-Trichlorophenol.....						
2,4,5-Trichlorophenol(2).....						
2-Chloronaphthalene.....						
2-Nitroaniline(2).....						
Dimethyl Phthalate.....						
Acenaphthylene.....						
3-Nitroaniline(2).....						
Acenaphthene.....						
2,4-Dinitrophenol(2).....						
4-Nitrophenol(2).....						
Dibenzofuran.....						
2,4-Dinitrotoluene.....						
2,6-Dinitrotoluene.....						
Diethyl Phthalate.....						
4-Chlorophenyl-phenylether.....						
Fluorene.....						
4-Nitroaniline(2).....						
4,6-Dinitro-2-methylphenol(2).....						
N-Nitrosodiphenylamine(1).....						
4-Bromophenyl-phenylether.....						
Hexachlorobenzene.....						
Pentachlorophenol(2).....						
Phenanthrene.....	57 J		UJ			
Anthracene.....						
di-n-Butyl Phthalate.....	89 J		40 J			210 J
Fluoranthene.....	230 J		110 J			
Pyrene.....	210 J		94 J			150 J
Butyl Benzyl Phthalate.....						
3,3'-Dichlorobenzidine(3).....						
Benzo(a)Anthracene.....	110 J		55 J			
bis(2-Ethylhexyl)Phthalate.....	200 J		100 J	49 J	54 J	72 J
Chrysene.....	160		73 J			
di-n-Octyl Phthalate.....						
Benzo(b)Fluoranthene.....	300 J*		160 J*			290 J*
Benzo(k)Fluoranthene.....	300 J*		160 J*			290 J*
Benzo(a)Pyrene.....	110 J		56 J			
Indeno(1,2,3-cd)Pyrene.....	64 J		UJ			
Dibenz(a,h)Anthracene.....						
Benzo(g,h,i)Perylene.....	80 J		42 J			

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
SEMI-VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664    SDG#: 81    Client: BAKER Page: 2

Sample Information	Cust ID:	434SD02	43SD03	43SD04	43SD05	44SD02	63MW01
Matrix:	Soil	Soil	Soil	Soil	Soil	Soil	Soil
D.F.:	1	1	2	1	1	1	1
Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
	fl	fl	fl	fl	fl	fl	fl

Phenol.....							
bis(2-Chloroethyl) Ether.....							
2-Chlorophenol.....							
1,3-Dichlorobenzene.....							
1,4-Dichlorobenzene.....							
Benzyl Alcohol.....							
1,2-Dichlorobenzene.....							
2-Methylphenol.....							
bis(2-Chloroisopropyl) Ether.....					64 J	2400	
4-Methylphenol.....							
N-Nitroso-di-n-propylamine.....							
Hexachloroethane.....							
Nitrobenzene.....							
Isophorone.....							
2-Nitrophenol.....							
2,4-Dimethylphenol.....							
Benzoic Acid(2).....	3000 J						UJ
bis(2-Chloroethoxy)Methane.....							
2,4-Dichlorophenol.....							
1,2,4-Trichlorobenzene.....							
Naphthalene.....							
4-Chloroaniline.....							
Hexachlororbutadiene.....							
4-Chloro-3-methylphenol.....							
2-Methylnaphthalene.....							
Hexachlorocyclopentadiene.....							

\* - COELUTED

=====  
Case Number: 23664 SDG#: 81 Client: BAKER  
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Page: 2

Cust ID: 434SD02 43SD03 43SD04 43SD05 44SD02 63MW01

=====  
=====fl=====fl=====fl=====fl=====fl=====fl=====fl  
2,4,6-Trichlorophenol.....  
2,4,5-Trichlorophenol(2).....  
2-Chloronaphthalene.....  
2-Nitroaniline(2).....  
Dimethyl Phthalate.....  
Acenaphthylene.....  
3-Nitroaniline(2).....  
Acenaphthene.....  
2,4-Dinitrophenol(2).....  
4-Nitrophenol(2).....  
Dibenzofuran.....  
2,4-Dinitrotoluene.....  
2,6-Dinitrotoluene.....  
Diethyl Phthalate.....  
4-Chlorophenyl-phenylether.....  
Fluorene.....  
4-Nitroaniline(2).....  
4,6-Dinitro-2-methylphenol(2).....  
N-Nitrosodiphenylamine(1).....  
4-Bromophenyl-phenylether.....  
Hexachlorobenzene.....  
Pentachlorophenol(2).....  
Phenanthrene..... UJ  
Anthracene.....  
di-n-Butyl Phthalate..... 170 J 59 J 61 J 170 J  
Fluoranthene..... UJ  
Pyrene.....  
Butyl Benzyl Phthalate..... 55 J UJ  
3,3'-Dichlorobenzidine(3).....  
Benzo(a)Anthracene.....  
bis(2-Ethylhexyl)Phthalate..... 1600 J 150 J 480 J 62 J  
Chrysene..... UJ  
di-n-Octyl Phthalate.....  
Benzo(b)Fluoranthene..... 66 J\* UJ  
Benzo(k)Fluoranthene..... 66 J\* UJ  
Benzo(a)Pyrene.....  
Indeno(1,2,3-cd)Pyrene.....  
Dibenz(a,h)Anthracene.....  
Benzo(g,h,i)Perylene.....

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
SEMI-VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664    SDG#: 81    Client: BAKER Page: 3

	Cust ID: 63MW0100	63MW0200	63MW0206	63MW0300	63MW0304	65SD01
Sample Information	Matrix: Soil	Soil	Soil	Soil	Soil	Soil
	D.F.: 1	1	1	1	1	1
	Units: ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg

	fl	fl	fl	fl	fl	fl
Phenol.....						
bis(2-Chloroethyl) Ether.....						
2-Chlorophenol.....						
1,3-Dichlorobenzene.....						
1,4-Dichlorobenzene.....						
Benzyl Alcohol.....						
1,2-Dichlorobenzene.....						
2-Methylphenol.....						
bis(2-Chloroisopropyl) Ether.....						
4-Methylphenol.....						55 J
N-Nitroso-di-n-propylamine.....						
Hexachloroethane.....						
Nitrobenzene.....						
Isophorone.....						
2-Nitrophenol.....						
2,4-Dimethylphenol.....						
Benzoic Acid(2).....		280 J		45 J		UJ
bis(2-Chloroethoxy)Methane.....						
2,4-Dichlorophenol.....						
1,2,4-Trichlorobenzene.....						
Naphthalene.....						
4-Chloroaniline.....						
Hexachlororbutadiene.....						
4-Chloro-3-methylphenol.....						
2-Methylnaphthalene.....						
Hexachlorocyclopentadiene.....						

\* - COELUTED

Case Number: 23664 SDG#: 81 Client: BAKER

Cust ID: 63MW0100 63MW0200 63MW0206 63MW0300 63MW0304 65SD01

=====fl=====fl=====fl=====fl=====fl=====fl=====fl

2,4,6-Trichlorophenol.....  
2,4,5-Trichlorophenol (2).....  
2-Chloronaphthalene.....  
2-Nitroaniline (2).....  
Dimethyl Phthalate.....  
Acenaphthylene.....  
3-Nitroaniline (2).....  
Acenaphthene.....  
2,4-Dinitrophenol (2).....  
4-Nitrophenol (2).....  
Dibenzofuran.....  
2,4-Dinitrotoluene.....  
2,6-Dinitrotoluene.....  
Diethyl Phthalate.....  
4-Chlorophenyl-phenylether.....  
Fluorene.....  
4-Nitroaniline (2).....  
4,6-Dinitro-2-methylphenol (2).....  
N-Nitrosodiphenylamine (1).....  
4-Bromophenyl-phenylether.....  
Hexachlorobenzene.....  
Pentachlorophenol (2).....  
Phenanthrene.....  
Anthracene.....  
di-n-Butyl Phthalate.....  
Fluoranthene.....  
Pyrene.....  
Butyl Benzyl Phthalate.....  
3,3'-Dichlorobenzidine (3).....  
Benzo (a) Anthracene.....  
bis (2-Ethylhexyl) Phthalate.....  
Chrysene.....  
di-n-Octyl Phthalate.....  
Benzo (b) Fluoranthene.....  
Benzo (k) Fluoranthene.....  
Benzo (a) Pyrene.....  
Indeno (1,2,3-cd) Pyrene.....  
Dibenz (a,h) Anthracene.....  
Benzo (g,h,i) Perylene.....

51 J	50 J	78 J	43 J	43 J
67 J	72 J		44 J	82 J

WESTON ANALYTICAL  
GC/MS DATA SUMMARY  
SEMI-VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664    SDG#: 81    Client: BAKER Page: 4

Sample Information	Cust ID:	65SD02	65SD03
	Matrix:	Soil	Soil
	D.F.:	1	1
	Units:	ug/kg	ug/kg
Phenol.....			76 J
bis(2-Chloroethyl) Ether.....			
2-Chlorophenol.....			
1,3-Dichlorobenzene.....			
1,4-Dichlorobenzene.....			
Benzyl Alcohol.....			
1,2-Dichlorobenzene.....			
2-Methylphenol.....			
bis(2-Chloroisopropyl) Ether.....			
4-Methylphenol.....	930		450 J
N-Nitroso-di-n-propylamine.....			
Hexachloroethane.....			
Nitrobenzene.....			
Isophorone.....			
2-Nitrophenol.....			
2,4-Dimethylphenol.....			
Benzoic Acid(2).....	890 J		1100 J
bis(2-Chloroethoxy) Methane.....			
2,4-Dichlorophenol.....			
1,2,4-Trichlorobenzene.....			
Naphthalene.....			
4-Chloroaniline.....			
Hexachlororbutadiene.....			
4-Chloro-3-methylphenol.....			
2-Methylnaphthalene.....			
Hexachlorocyclopentadiene.....			

Cust ID: 65SD02 65SD03

	fl	fl	fl	fl	fl
2,4,6-Trichlorophenol.....					
2,4,5-Trichlorophenol(2).....					
2-Chloronaphthalene.....					
2-Nitroaniline(2).....					
Dimethyl Phthalate.....					
Acenaphthylene.....					
3-Nitroaniline(2).....					
Acenaphthene.....					
2,4-Dinitrophenol(2).....					
4-Nitrophenol(2).....					
Dibenzofuran.....					
2,4-Dinitrotoluene.....					
2,6-Dinitrotoluene.....					
Diethyl Phthalate.....					
4-Chlorophenyl-phenylether.....					
Fluorene.....					
4-Nitroaniline(2).....					
4,6-Dinitro-2-methylphenol(2).....					
N-Nitrosodiphenylamine(1).....					
4-Bromophenyl-phenylether.....					
Hexachlorobenzene.....					
Pentachlorophenol(2).....					
Phenanthrene.....					
Anthracene.....					
di-n-Butyl Phthalate.....	56 J				
Fluoranthene.....					
Pyrene.....					
Butyl Benzyl Phthalate.....					
3,3'-Dichlorobenzidine(3).....					
Benzo(a)Anthracene.....					
bis(2-Ethylhexyl)Phthalate.....	170 J	190 J			
Chrysene.....					
di-n-Octyl Phthalate.....					
Benzo(b)Fluoranthene.....					
Benzo(k)Fluoranthene.....					
Benzo(a)Pyrene.....					
Indeno(1,2,3-cd)Pyrene.....					
Dibenz(a,h)Anthracene.....					
Benzo(g,h,i)Perylene.....					

WESTON ANALYTICAL  
 PESTICIDES/PCB's  
 CLP LIST

=====  
 Case Number: 23664    SDG#: 81    Client: BAKER    Page: 1  
 =====

Sample Information	Cust ID: 43MW0100	43MW0100D	43MW0200	43MW0202	43MW0300	43SD01
Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
D.F.:	1	1	1	1	1	1
Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
	fl	fl	fl	fl	fl	fl

Alpha-BHC.....	
Beta-BHC.....	
Delta-BHC.....	
Gamma-BHC (Lindane).....	
Heptachlor.....	
Aldrin.....	
Heptachlor Epoxide.....	
Endosulfan I.....	
Dieldrin.....	
4,4'-DDE.....	270
Endrin.....	
Endosulfan II.....	
4,4'-DDD.....	500
Endosulfan Sulfate.....	
4,4'-DDT.....	220
Methoxychlor.....	
Endrin Ketone.....	
Alpha Chlordane.....	
Gamma Chlordane.....	
Toxaphene.....	
Aroclor-1016.....	
Aroclor-1221.....	
Aroclor-1232.....	
Aroclor-1242.....	
Aroclor-1248.....	
Aroclor-1254.....	
Aroclor-1260.....	



WESTON ANALYTICS  
 PESTICIDE/PCB's  
 CLP LIST

=====  
 Case Number: 23664    SDG#: 81    Client: BAKER    Page: 2  
 =====

	Cust ID:	43SD02	43SD03	43SD04	43SD05	44SD02	63MW01
Sample Information	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	5	1	1
	Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
		====fl=====	====fl=====	====fl=====	====fl=====	====fl=====	====fl=====

Alpha-BHC.....							
Beta-BHC.....							
Delta-BHC.....							
Gamma-BHC (Lindane).....							
Heptachlor.....							
Aldrin.....							
Heptachlor Epoxide.....							
Endosulfan I.....							
Dieldrin.....							
4,4'-DDE.....	580					140	
Endrin.....							
Endosulfan II.....							
4,4'-DDD.....	310				180	180	
Endosulfan Sulfate.....							
4,4'-DDT.....							
Methoxychlor.....							
Endrin Ketone.....							
Alpha Chlordane.....							
Gamma Chlordane.....							
Toxaphene.....							
Aroclor-1016.....							
Aroclor-1221.....							
Aroclor-1232.....							
Aroclor-1242.....							
Aroclor-1248.....							
Aroclor-1254.....							
Aroclor-1260.....							

WESTON ANALYTICS  
 PESTICIDE/PCB's  
 CLP LIST

Case Number:	23664	SDG#:	81	Client:	BAKER				Page:	3
Sample Information	Cust ID:	63MW0100	63MW0200	63MW0200 <sup>6</sup>	63MW0300	63MW0304	65SD01			
	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil			
	D.F.:	1	1	1	1	1	1			
	Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg			
		fl	fl	fl	fl	fl	fl			

Alpha-BHC.....	
Beta-BHC.....	
Delta-BHC.....	
Gamma-BHC (Lindane).....	
Heptachlor.....	
Aldrin.....	
Heptachlor Epoxide.....	
Endosulfan I.....	
Dieldrin.....	
4,4'-DDE.....	35
Endrin.....	
Endosulfan II.....	
4,4'-DDD.....	75
Endosulfan Sulfate.....	
4,4'-DDT.....	
Methoxychlor.....	
Endrin Ketone.....	
Alpha Chlordane.....	
Gamma Chlordane.....	
Toxaphene.....	
Aroclor-1016.....	
Aroclor-1221.....	
Aroclor-1232.....	
Aroclor-1242.....	
Aroclor-1248.....	
Aroclor-1254.....	
Aroclor-1260.....	

WESTOX ANALYTICS  
PESTICIDE/PCB'S  
CLP LIST

=====  
Case Number: 23664     SDG#: 81     Client: BAKER

Page: 4

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Cust ID: 65SD02     65SD03  
Sample                     Matrix:     Soil     Soil  
Information                D.F.:       1       1  
                          Units:       ug/kg     ug/kg

=====fl=====fl=====fl=====fl=====fl=====fl=====fl

Alpha-BHC.....  
Beta-BHC.....  
Delta-BHC.....  
Gamma-BHC (Lindane).....  
Heptachlor.....  
Aldrin.....  
Heptachlor Epoxide.....  
Endosulfan I.....  
Dieldrin.....  
4,4'-DDE.....  
Endrin.....  
Endosulfan II.....  
4,4'-DDD.....  
Endosulfan Sulfate.....  
4,4'-DDT.....  
Methoxychlor.....  
Endrin Ketone.....  
Alpha Chlordane.....  
Gamma Chlordane.....  
Toxaphene.....  
Aroclor-1016.....  
Aroclor-1221.....  
Aroclor-1232.....  
Aroclor-1242.....  
Aroclor-1248.....  
Aroclor-1254.....  
Aroclor-1260.....

ATTACHMENT III

**VOLATILE CALIBRATION  
SUMMARY OF CRITERIA OUTLIERS**

Page 1

CASE:  
CLIENT: 23664 SDC 181

	I-C	I-C	C-C	C-C	CC	CC	CC
DATE/TIME OF CALIBRATION	8-15-91	8-15-91	8-15-91	8-15	8-15-91	8-16-91	8-16
INSTRUMENT ID	13	18	13	13	13	13	13
			5:55	21:23	12:01		0-4
Chloromethane				%D=26		%D=33	
Bromomethane							
Vinyl Chloride							
Chloroethane				%D=26			
Methylene Chloride	RSD=47			%D=52	%D=35		
Acetone	RSD=47	%RSD=52		%D=40	%D=28		
Carbon Disulfide							
1,1-Dichloroethene							
1,1-Dichloroethane							
1,2-Dichloroethene(total)							
Chloroform							
1,2-Dichloroethane							
2-Butanone		RRF=0.046			RRF=0.033	RRF=0.022	RRF=0.1
1,1,1-Trichloroethane							
Carbon Tetrachloride							
Vinyl Acetate							
Bromodichloromethane							
1,2-Dichloropropane							
Cis-1,3-dichloropropene							
Trichloroethene							
Dibromochloromethane							
1,1,2-Trichloroethane							
Benzene							
Trans-1,3-dichloropropene							
Bromoform						%D=45	
4-Methyl-2-pentanone		%RSD=49					%D=34
2-Hexanone		%RSD=49					%D=70
Tetrachloroethene							
1,1,2,2-Tetrachloroethane							
Toluene							
Chlorobenzene							
Ethylbenzene							
Styrene							
Xylene(total)							
ASSOCIATED SAMPLES			658003	448002	43 MW010	438005	438002
				658001	100P	658001MS	8003
				658002	200	MSD	8004
					202		63 MW02
					300		700
					63 MW01		704
					63 MW0200		



SEMIVOLATILE CALIBRATION  
SUMMARY OF CRITERIA OUTLIERS

CASE:  
CLIENT:

I-C I-C C-C C-C 3:41

DATE/TIME OF CALIBRATION	7-31-91	8-4	8-13-91	8-14-91	8-15-91	8-23-	8-25-
INSTRUMENT ID	20	52	20	20	20	52	52
Phenol							
Bis(2-chloroethoxy)ether							
2-Chlorophenol							
1,3-Dichlorobenzene							
1,4-Dichlorobenzene							
Benzyl Alcohol							
1,2-Dichlorobenzene							
2-Methylphenol							
Bis(2-chloroisopropyl)ether							
4-Methylphenol							
N-Nitroso-Di-n-propylamine							
Hexachloroethane							
Nitrobenzene							
Isophorone							
2-Nitrophenol							
2,4-Dimethylphenol				%D=27		%D=50	%D=44
Benzoic Acid							
Bis(2-chloroethoxy)methane							
2,4-Dichlorophenol							
1,2,4-Trichlorobenzene							
Naphthalene			%D=34		%D=33		
4-Chloroaniline							
Hexachlorobutadiene							
4-Chloro-3-methylphenol							
2-Methylnaphthalene							
Hexachlorocyclopentadiene							
2,4,6-Trichlorophenol							
2,4,5-Trichlorophenol							
2-Chloronaphthalene					%D=28		
2-Nitroaniline							
Dimethylphthalate							
Acenaphthylene							
2,6-Dinitrotoluene				%D=37	%D=27	%D=27	
3-Nitroaniline						%D=46	%D=55
Acenaphthene						%D=33	
2,4-Dinitrophenol				%D=31			
4-Nitrophenol							
Dibenzofuran							
2,4-Dinitrotoluene							
Diethylphthalate							
4-Chlorophenyl-phenylether							
Fluorene				%D=38		%D=32	%D=32
4-Nitroaniline						%D=31	%D=47
4,6-Dinitro-2-methylphenol							
N-N-trosodiphenylamine							
4-Bromophenyl-phenylether				%D=36			
Hexachlorobenzene							
Pentachlorophenol							
Phenanthrene							
Anthracene							
Di-n-butylphthalate							
Fluoranthene							
Pyrene							
Butylbenzylphthalate				%D=39	%D=42	%D=34	
3,3'-Dichlorobenzidine							
Benzo(a)anthracene							
Chrysene							
Bis(2-ethylhexyl)phthalate							
Di-n-octylphthalate							
Benzo(b)fluoranthene							
Benzo(k)fluoranthene							
Benzo(a)pyrene							
Indeno(1,2,3-cd)pyrene							
Dibenzo(a,h)anthracene							
Benzo(g,h,i)perylene							
ASSOCIATED SAMPLES				43 MW100	43 SD01	43 SD04	44 SD02 MS
				200	202		65 SD01 MS
				200	203		202
				202	63 MW100		203
				300	200		
				433005	206		
					200		



1 WESTON WAY  
WEST CHESTER, PA 19380-1449  
PHONE: 215-692-3030  
FAX: 215-430-3124

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**ORGANIC QUALITY ASSURANCE REVIEW**  
**SITE: BAKER (CLEAN)**  
**CASE: 23664**  
**SDG: 277**

**REVIEW PERFORMED BY**  
**THE ANALYTICS DIVISION**  
**OF**  
**ROY F. WESTON, INC.**

PREPARED BY: \_\_\_\_\_

*Zohreh Hamid*  
**Zohreh Hamid, Ph.D.**  
**Section Manager - Data Validation**

*10-28-91*  
**Date**

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SITE: BAKER (CLEAN)  
CASE: 23664  
SDG: #277

INTRODUCTION

This quality assurance review is based upon a review of all data generated from eighteen (18) water samples for volatile and twelve (12) water samples for semivolatile and pesticide/PCB analysis collected on 8 - 21, 22, 23, 24 - 1991. The samples were analyzed according to criteria set forth in the Contract Laboratory Program (CLP) for TCL target compounds.

This review has been performed in accordance with the confirmation method. The reported analytical results are presented as a summary of the data in Attachment II. All of the analytical data were examined to determine the usability of the analytical results and also to determine contractual compliance relative to the analytical requirements and deliverables specified for CLP method. The applicable qualifier codes have been placed next to the results in the data summary to indicate the qualitative and/or quantitative reliability. The details for this evaluation review are presented in the memo section of this report.

All data have been validated with regard to usability according to the quality assurance set forth in the Functional Guidelines for evaluation of organic analysis for completion of the Data Validation Report Forms and preparation of the final data validation report. If you have any questions or comments on this data review, please call Zohreh Hamid at (215) 344-3745.

QUALITY ASSURANCE REVIEW

The analyses of the samples were performed by CompuChem Laboratories, Inc.

The findings offered in this report are based upon a rigorous review of the following criteria:

- . Data completeness
- . Holding times
- \* . GC/MS tuning
- . Calibration
- . Surrogate recoveries
- . Matrix spike/spike duplicate
- \* . Internal standard
- \* . Instrument performance
- \* . Compound identification
- \* . Compound quantitations
  
- \* Criteria are met for the parameters.

## EVALUATION BY FRACTION

## I. Volatiles

Holding Time  
 Surrogate Recovery  
 MS/MSD  
 Blank  
 GC/MS Tuning  
 Initial Calibration  
 Continuing Calibration  
 Compound ID (HSL, TIC)  
 Standards  
 Spectra Quality  
 Chromatography  
 Data Completeness

Twelve (12) water samples and six (6) lab pure samples were analyzed within the holding time for volatile target compounds.

All surrogate and internal standard recoveries were within the CLP contract requirement control limits. Overall, the data are satisfactory. The minor issues are listed in the following section.

The RRF for 2-butanone was less than 0.05 in continuing calibration analyzed on 9-2,3-91. The reported detection limits for the affected samples (all samples with the exception of sample 43GW031D, Labpure 31D, Labpure 1, and Labpure 2) are rejected.

The %RSDs were within the 30% QC limit in all initial calibrations with the exception of chloromethane (34%) in calibrations analyzed on 8-17-91. This compound was not detected in the samples; therefore, the data are not impacted.

A few compounds had %D above 25% in continuing calibrations. The % difference were less than 50% with the exception of bromomethane (%D = 73%) and carbon tetrachloride (%D = 50%) in continuing calibration analyzed on 9-3-91. These compounds were not detected in the samples, therefore, quantitation limits are qualified estimated for the affected samples.

The chain-of-custodies for lab pure samples were not included in the data package. These documents should be submitted by the respective laboratory.

Acetone and methylene chloride were detected in the samples and Lab pure samples, as well as the laboratory blanks. The reported sample results are qualified "U" and should be considered as the sample detection limit.

The unknown cyclic hydrocarbons were detected as Tentatively Identified Compounds (TIC's) in a few samples.

The sample ID in the Baker memo (Labpure 31) did not coincide the sample ID in the data package (Labpure 13). The reviewer could not verify the sample ID since the chain-of-custody for this sample was not included in the data package.

The matrix spike recoveries for benzene (134) and trichloroethene (122) were above the upper QC limit of 127 and 120 in matrix spike samples. However, the spike recoveries for all compounds met the control limits in the spike duplicate sample, therefore, the data are not impacted.

Carbon disulfide, chloroform, toluene and chlorobenzene were detected at low concentrations in the samples.

## EVALUATION BY FRACTION

II. Base/Neutral/Acids

Holding Time  
 Extraction Time  
 Surrogate Recovery  
 Blank  
 MS/MSD  
 GC/MS Tuning  
 Initial Calibration  
 Continuing Calibration  
 Compound ID (HSL, TIC)  
 Standards  
 Spectra Quality  
 Chromatography  
 Data Completeness

Twelve water samples were extracted and analyzed within the holding time for semivolatiles target compounds.

The 2-fluorophenol surrogate recovery (10%) was less than the lower control limit of 21% in SBLK00. This blank was not reanalyzed. The associated sample data (63GW-021) are qualified estimated.

Target compounds were not detected in the samples at levels above the CRQL with the exception of six compounds in sample 44GW031D. The non-target compounds were reported in the samples. These compounds are tabulated and included in this data review for further investigation. The unknowns identified as solvent contaminations are not tabulated as TICs, since these compounds are considered as laboratory artifacts.

The laboratory blanks were free of target compound contamination. Also, non-target compounds were not detected in the blanks.

All %RSDs and RRFs were within the control limits with the exception of %RSD for 2,4-dinitrophenol in initial calibration analyzed on 9-4-91. Also, the %D for one compound exceeded 25% QC limit on calibration standard analyzed on 9-5-91. These compounds were not detected in the associated samples. Therefore, the data are not impacted.

The surrogate recovery for 2-fluorophenol exceeded the 100% QC limit in sample 63GW-021 (108) and sample 63R-0823 (107). Also, the tribromophenol surrogate recovery (125%) was above the control

limit of 123 in sample 44GW-031. However, the surrogate recovery criteria (i.e.: no more than one (1) outlier in each fraction and not less than 10%) are met.

Benzyl alcohol and benzoic acid were not listed on Form Is in samples 44GW031D, 63GW-021 and 44GW-011. Instead, Carbozol was listed on the Form I. The review of the quantitation reports showed that these compounds were quantified correctly. Therefore the data are not affected. However, the Form I should be corrected and resubmitted.

Benzoic acid was detected in sample 63GW-021 at level (3 ug/L) less than CRQL. This compound was not listed of Form I. The amount for this compound is listed on the data summary.

Bis(2-ethylhexyl)phthalate was detected in sample 44GW-031D at a level less than 1/10 of CRQL. However, chrysene was detected at level "3 ug/L" in this sample. The result of "3 ug/L" was inadvertently listed for bis(2-ethhexyl)phthalate. The reported result for this compound is rejected and the actual result for chrysene was listed in the data summary.

The matrix spike/spike duplicate analysis was not performed on this batch of samples. The case narrative stated that due to the low sample volume, the matrix QC sample analysis was not performed. Instead, one set of blank spike/spike duplicate analysis was accompanying the data. All spike recoveries in the blank spike samples were within the QC limits.

TABLE I

TIC

COMPOUND NAME	44GW-011	44GW-031D	63GW-021	65GW-011
Cyclic Aliphatic	X			
Dimethylantracene	X			
Octahydrophenanthrene derivatives	X	X		
Sulfor mole		X		
Aliphatic hydrocarbons		X		
Methylnaphthalene		X		
Benzamide derivatives		X		X
oxetane derivative			X	

**EVALUATION BY FRACTION**

**III. Pesticides/PCB**

- \_\_\_\_\_ Holding Time
- \_\_\_\_\_ Extraction Time
- X  Surrogate Recovery
- X  MS/MSD
- \_\_\_\_\_ Blank
- \_\_\_\_\_ Linearity Calibration
- \_\_\_\_\_ DDT/Endrin Degradation
- \_\_\_\_\_ Analytical Sequence
- \_\_\_\_\_ DBC Retention Time
- X  Continuing Calibration
- \_\_\_\_\_ Retention Time Window
- \_\_\_\_\_ Standards
- \_\_\_\_\_ Chromatography
- \_\_\_\_\_ HSL Compounds
- \_\_\_\_\_ Data Completeness

This portion of the case consisted of twelve water samples analyzed for pesticide/PCB target compounds according to the criteria set forth in the Contract Laboratory Protocol (CLP).

The following spike recoveries were outside the QC limits:

<u>Compound Name</u>	<u>% Recovery MS/MSP</u>	<u>QC Limit</u>
Heptachlor	-/281	40 - 131
Aldrin	-/152	40 - 120

Also the RPD for these two compounds exceeded the QC limits. Since the target compounds were not detected in the samples, the data are accepted without the qualifier codes

The DBC surrogate recovery (189) was above the upper control limit of 154 in sample 63GW-011. The target compounds were not detected in this sample. therefore, the data are not impacted.

A few compounds had %D above the 15% and 20% requirement limits, but in the primary and confirmation analysis respectively. The data are not impacted, since the samples were analyzed prior to these standards.

DDD was detected in sample 65GW021 at level (0.53 ug/L) above the CRQL. No other target compounds were detected in the samples.



QC ORGANIC DATA REVIEW  
BAKER (CLEAN)  
CASE: 23664  
SDG: 277  
PAGE 8 of 8

The DBC percent differences were outside the 2.0% criteria in IndA and IndB analyzed on 9-5-91 on the packed column (Column ID 2250-2401) The analysis was stopped and the samples were not analyzed under these standards. Therefore, the data are not impacted.

Due to the poor resolution, the peaks for early elevated compounds were not resolved in the chromatograms in samples 44GW-031 and 44GW-031D. The reported quantitation limits for these compounds are qualified estimated.



**ATTACHMENT I**  
**GLOSSARY OF DATA QUALIFIER CODES**



## GLOSSARY OF DATA QUALIFIERS

### CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds):

- U = NOT DETECTED, SUBSTANTIALLY ABOVE THE LEVEL REPORTED IN LABORATORY OR FIELD BLANKS.
- R = UNRELIABLE RESULT. ANALYTE MAY OR MAY NOT BE PRESENT IN THE SAMPLE. SUPPORTING DATA NECESSARY TO CONFIRM RESULT.
- N = NEGATED COMPOUND WAS CONSIDERED AS NOT PRESENT IN THE SAMPLE.

(NO CODE) = CONFIRMED IDENTIFICATION

### CODES RELATING TO QUANTITATION

(can be used for both positive results and sample quantitation limits):

- J = ANALYTE PRESENT. REPORTED VALUE MAY NOT BE ACCURATE OR PRECISE.
- L = ANALYTE PRESENT. REPORTED VALUE MAY BE BIASED LOW. ACTUAL VALUE IS EXPECTED TO BE HIGHER.
- UJ = THE REPORTED QUANTITATION LIMITS ARE QUALIFIED ESTIMATED.
- UL = NOT DETECTED. QUANTITATION LIMIT MAY BE HIGHER.

### OTHER CODES

- Q = NO ANALYTICAL RESULT.

**ATTACHMENT II  
DATA SUMMARIES**

WESTON ANALYTICS  
 PESTICIDE/PCB's  
 CLP LIST

=====  
 Case Number: 23664    SDG: 277    CLIENT: BAKER    Page: 1  
 =====

	Cust ID: 43GW-31D	44GW-011	44GW-021	44GW-031	44GW-031D	63GW-011
Sample Information	Matrix: Water	Water	Water	Water	Water	Water
	D.F.: 1	1	1	1	1	1
	Units: ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	=====fl=====	=====fl=====	=====fl=====	=====fl=====	=====fl=====	=====fl=====

Alpha-BHC.....					UJ	UJ
Beta-BHC.....					UJ	UJ
Delta-BHC.....					UJ	UJ
Gamma-BHC (Lindane).....						
Heptachlor.....						
Aldrin.....						
Heptachlor Epoxide.....						
Endosulfan I.....						
Dieldrin.....						
4,4'-DDE.....						
Endrin.....						
Endosulfan II.....						
4,4'-DDD.....						
Endosulfan Sulfate.....						
4,4'-DDT.....						
Methoxychlor.....						
Endrin Ketone.....						
Alpha Chlordane.....						
Gamma Chlordane.....						
Toxaphene.....						
Aroclor-1016.....					UJ	UJ
Aroclor-1221.....					UJ	UJ
Aroclor-1232.....						
Aroclor-1242.....						
Aroclor-1248.....						
Aroclor-1254.....						
Aroclor-1260.....						

WESTON ANALYTICS  
 PESTICIDE/PCB's  
 CLP LIST

=====  
 Case Number: 23664    SDG: 277    CLIENT: BAKER    Page: 2  
 =====

	Cust ID: 63W-021	63W-031	63R-0823	65GW-011	65GW-021	65GW-031
Sample Information	Matrix: Water	Water	Water	Water	Water	Water
	D.F.: 1	1	1	1	1	1
	Units: ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	=====fl=====	=====fl=====	=====fl=====	=====fl=====	=====fl=====	=====fl=====

Alpha-BHC.....  
 Beta-BHC.....  
 Delta-BHC.....  
 Gamma-BHC (Lindane).....  
 Heptachlor.....  
 Aldrin.....  
 Heptachlor Epoxide.....  
 Endosulfan I.....  
 Dieldrin.....  
 4,4'-DDE.....  
 Endrin.....  
 Endosulfan II.....  
 4,4'-DDD.....  
 Endosulfan Sulfate.....  
 4,4'-DDT.....  
 Methoxychlor.....  
 Endrin Ketone.....  
 Alpha Chlordane.....  
 Gamma Chlordane.....  
 Toxaphene.....  
 Aroclor-1016.....  
 Aroclor-1221.....  
 Aroclor-1232.....  
 Aroclor-1242.....  
 Aroclor-1248.....  
 Aroclor-1254.....  
 Aroclor-1260.....

0.53

WESTON . LYTICS  
GC/MS DATA SUMMARY  
SEMI-VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664    SDG: 277    CLIENT: BAKER Page: 1

	Cust ID: 43GW-031D	44GW-011	44GW-021	44GW-031	44GW-031D	63GW-011
Sample Information	Matrix: Water	Water	Water	Water	Water	Water
	D.F.: 1	1	1	1	1	1
	Units: ug/L	ug/L	ug/L	ug/L	ug/L	ug/L

Phenol.....						
bis(2-Chloroethyl) Ether.....						
2-Chlorophenol.....						
1,3-Dichlorobenzene.....						
1,4-Dichlorobenzene.....						
Benzyl Alcohol.....						
1,2-Dichlorobenzene.....						
2-Methylphenol.....						
bis(2-Chloroisopropyl) Ether.....						
4-Methylphenol.....						
N-Nitroso-di-n-propylamine.....						
Hexachloroethane.....						
Nitrobenzene.....						
Isophorone.....						
2-Nitrophenol.....						
2,4-Dimethylphenol.....						
Benzoic Acid(2).....						
bis(2-Chloroethoxy) Methane.....						
2,4-Dichlorophenol.....						
1,2,4-Trichlorobenzene.....						
Naphthalene.....						62
4-Chloroaniline.....						
Hexachlororbutadiene.....						
4-Chloro-3-methylphenol.....						
2-Methylnaphthalene.....						14
Hexachlorocyclopentadiene.....						

Cust ID: 43GW-031D   44GW-011   44GW-021   44GW-031   44GW-031D   63GW-011

=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====fl

2,4,6-Trichlorophenol.....	
2,4,5-Trichlorophenol(2).....	
2-Chloronaphthalene.....	
2-Nitroaniline(2).....	
Dimethyl Phthalate.....	
Acenaphthylene.....	
3-Nitroaniline(2).....	
Acenaphthene.....	16
2,4-Dinitrophenol(2).....	
4-Nitrophenol(2).....	8 J
Dibenzofuran.....	
2,4-Dinitrotoluene.....	
2,6-Dinitrotoluene.....	
Diethyl Phthalate.....	
4-Chlorophenyl-phenylether.....	
Fluorene.....	10
4-Nitroaniline(2).....	
4,6-Dinitro-2-methylphenol(2).....	
N-Nitrosodiphenylamine(1).....	
4-Bromophenyl-phenylether.....	
Hexachlorobenzene.....	
Pentachlorophenol(2).....	
Phenanthrene.....	24
Anthracene.....	3 J
di-n-Butyl Phthalate.....	
Fluoranthene.....	14
Pyrene.....	9 J
Butyl Benzyl Phthalate.....	
3,3'-Dichlorobenzidine(3).....	
Benzo(a)Anthracene.....	3 J
Chrysene.....	3 J
Bis (2-Ethylhexyl)phthalate.....	3 R
di-n-Octyl Phthalate.....	
Benzo(b) Fluoranthene.....	
Benzo(k) Fluoranthene.....	
Benzo(a) Pyrene.....	
Indeno(1,2,3-cd) Pyrene.....	
Dibenz(a,h)Anthracene.....	
Benzo(g,h,i) Perylene.....	

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
SEMI-VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

=====  
Case Number: 23664      SDG: 277      CLIENT: BAKER      Page: 2  
=====

	Cust ID: 63GW-021	63GW-031	63R-0823	63GW-011	63GW-021	63GW-031
Sample Information	Matrix: Water	Water	Water	Water	Water	Water
	D.F.: 1	1	1	1	1	1
	Units: ug/L	ug/L	ug/L	ug/L	ug/L	ug/L

	fl	fl	fl	fl	fl	fl
Phenol.....	UJ					
bis(2-Chloroethyl) Ether.....	UJ					
2-Chlorophenol.....	UJ					
1,3-Dichlorobenzene.....	UJ					
1,4-Dichlorobenzene.....	UJ					
Benzyl Alcohol.....	UJ					
1,2-Dichlorobenzene.....	UJ					
2-Methylphenol.....	UJ					
bis(2-Chloroisopropyl) Ether.....	UJ					
4-Methylphenol.....	UJ					
N-Nitroso-di-n-propylamine.....	UJ					
Hexachloroethane.....	UJ					
Nitrobenzene.....	UJ					
Isophorone.....	UJ					
2-Nitrophenol.....	UJ					
2,4-Dimethylphenol.....	UJ					
Benzoic Acid(2).....	3 J					
bis(2-Chloroethoxy) Methane.....	UJ					
2,4-Dichlorophenol.....	UJ					
1,2,4-Trichlorobenzene.....	UJ					
Naphthalene.....	UJ					
4-Chloroaniline.....	UJ					
Hexachlororbutadiene.....	UJ					
4-Chloro-3-methylphenol.....	UJ					
2-Methylnaphthalene.....	UJ					
Hexachlorocyclopentadiene.....	UJ					



Cust ID: 63GW-021    63GW-031    63R-0823    63GW-011    63GW-021    63GW-031

=====  
=====fl=====fl=====fl=====fl=====fl=====fl=====fl

2,4,6-Trichlorophenol.....	UJ
2,4,5-Trichlorophenol(2).....	UJ
2-Chloronaphthalene.....	UJ
2-Nitroaniline(2).....	UJ
Dimethyl Phthalate.....	UJ
Acenaphthylene.....	UJ
3-Nitroaniline(2).....	UJ
Acenaphthene.....	UJ
2,4-Dinitrophenol(2).....	UJ
4-Nitrophenol(2).....	UJ
Dibenzofuran.....	UJ
2,4-Dinitrotoluene.....	UJ
2,6-Dinitrotoluene.....	UJ
Diethyl Phthalate.....	UJ
4-Chlorophenyl-phenylether.....	UJ
Fluorene.....	UJ
4-Nitroaniline(2).....	UJ
4,6-Dinitro-2-methylphenol(2).....	UJ
N-Nitrosodiphenylamine(1).....	UJ
4-Bromophenyl-phenylether.....	UJ
Hexachlorobenzene.....	UJ
Pentachlorophenol(2).....	UJ
Phenanthrene.....	UJ
Anthracene.....	UJ
di-n-Butyl Phthalate.....	UJ
Fluoranthene.....	UJ
Pyrene.....	UJ
Butyl Benzyl Phthalate.....	UJ
3,3'-Dichlorobenzidine(3).....	UJ
Benzo(a)Anthracene.....	UJ
Chrysene.....	UJ
Bis (2-Ethylhexyl)phthalate.....	9 J
di-n-Octyl Phthalate.....	UJ
Benzo(b)Fluoranthene.....	UJ
Benzo(k)Fluoranthene.....	UJ
Benzo(a)Pyrene.....	UJ
Indeno(1,2,3-cd)Pyrene.....	UJ
Dibenz(a,h)Anthracene.....	UJ
Benzo(g,h,i)Perylene.....	UJ

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

=====  
Case Number: 23664    SDG: 277    CLIENT: BAKER Page: 1  
=====

	Cust ID: 43GW031D	44GW-011	44GW-021	44GW-031	44GW031D	63GW-011
Sample Information	Matrix: Water	Water	Water	Water	Water	Water
	D.F.: 1	1	1	1	1	1
	Units: ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	fl	fl	fl	fl	fl	fl
Chloromethane.....						
Bromomethane.....	UL	UJ	UJ	UJ		UJ
Vinyl Chloride.....						
Chloroethane.....						
Methylene Chloride.....	8 U				5 U	5 U
Acetone.....						
Carbon Disulfide.....		6			2 J	
1,1-Dichloroethene.....						
1,1-Dichloroethane.....						
Trans-1,2-Dichloroethene.....						
Chloroform.....						
1,2-Dichloroethane.....						
2-Butanone.....	R	R	R	R		R
1,1,1-Trichloroethane.....						
Carbon Tetrachloride.....	UJ	UJ	UJ	UJ		
Vinyl Acetate.....						
Bromodichloromethane.....						
1,2-Dichloropropane.....						
Trans-1,3-Dichloropropene.....						
Trichloroethene.....						
Dibromochloromethane.....						
1,1,2-Trichloroethane.....						
Benzene.....						
cis-1,3-Dichloropropene.....						
2-Chloroethylvinylether.....						
Bromoform.....						
4-Methyl-2-pentanone.....						
2-Hexanone.....						

=====  
Case Number: 23664    SDG: 277    CLIENT: BAKER  
-----

Page: 1

-----  
Cust ID: 43GW031D    44GW-011    44GW-021    44GW-031    44GW031D    63GW-011  
-----

=====  
=====fl=====fl=====fl=====fl=====fl=====fl=====fl  
Tetrachloroethene.....  
1,1,2,2-Tetrachloroethane.....  
Toluene.....                    3 J  
Chlorobenzene.....  
Ethylbenzene.....                2 J  
Styrene.....  
Total Xylenes.....

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664    SDG: 277    CLIENT: BAKER    Page: 2

Sample Information	Cust ID: 63GW-021	63GW-031	63R-0823	65GW-011	65GW-021	65GW-031
Matrix:	Water	Water	Water	Water	Water	Water
D.F.:	1	1	1	1	1	1
Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	fl	fl	fl	fl	fl	fl
Chloromethane.....						
Bromomethane.....	UJ	UJ	UJ	UJ	UJ	UJ
Vinyl Chloride.....						
Chloroethane.....						
Methylene Chloride.....				5 U		5 U
Acetone.....				10 U		
Carbon Disulfide.....	1 J	1 J				
1,1-Dichloroethene.....						
1,1-Dichloroethane.....						
Trans-1,2-Dichloroethene.....						
Chloroform.....			2 J			
1,2-Dichloroethane.....						
2-Butanone.....	R	R	R	R	R	R
1,1,1-Trichloroethane.....						
Carbon Tetrachloride.....	UJ	UJ	UJ	UJ	UJ	UJ
Vinyl Acetate.....						
Bromodichloromethane.....						
1,2-Dichloropropane.....						
Trans-1,3-Dichloropropene.....						
Trichloroethene.....						
Dibromochloromethane.....						
1,1,2-Trichloroethane.....						
Benzene.....						
cis-1,3-Dichloropropene.....						
2-Chloroethylvinylether.....						
Bromoform.....						
4-Methyl-2-pentanone.....						
2-Hexanone.....						

=====  
Case Number: 23664    SDG: 277    CLIENT: BAKER  
-----

Page: 2

-----  
Cust ID: 63GW-021    63GW-031    63R-0823    65GW-011    65GW-021    65GW-031  
-----

=====  
=====fl=====fl=====fl=====fl=====fl=====fl=====fl  
Tetrachloroethene.....  
1,1,2,2-Tetrachloroethane.....  
Toluene.....  
Chlorobenzene.....  
Ethylbenzene.....  
Styrene.....  
Total Xylenes.....  
=====

WESTON LYTICS  
GC/MS DATA SUMMARY  
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664    SDG: 277    CLIENT: BAKER Page: 3

Sample Information	Matrix:	Water	Water	Water	Water	Water	Water
	D.F.:	1	1	1	1	1	1
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L

	LABPURE 11	LABPURE13	LABPURE 21	LABPURE 310	LABPURE 1	LABPURE 2
Chloromethane.....						
Bromomethane.....	UJ	UJ	UJ			
Vinyl Chloride.....						
Chloroethane.....						
Methylene Chloride.....	5 U	5 U	5 U	5 U	5 U	13 U
Acetone.....						
Carbon Disulfide.....						
1,1-Dichloroethene.....						
1,1-Dichloroethane.....						
Trans-1,2-Dichloroethene.....						
Chloroform.....						
1,2-Dichloroethane.....						
2-Butanone.....	R	R	R			
1,1,1-Trichloroethane.....						
Carbon Tetrachloride.....	UJ	UJ	UJ			
Vinyl Acetate.....						
Bromodichloromethane.....						
1,2-Dichloropropane.....						
Trans-1,3-Dichloropropene.....						
Trichloroethene.....						
Dibromochloromethane.....						
1,1,2-Trichloroethane.....						
Benzene.....						
cis-1,3-Dichloropropene.....						
2-Chloroethylvinylether.....						
Bromoform.....						
4-Methyl-2-pentanone.....						
2-Hexanone.....						

Case Number: 23664 SDG: 277 CLIENT: BAKER

Page: 3

Cust ID: LABPURE 11 LABPURE13 LABPURE 21 LABPURE LABPURE 1 LABPURE 2  
310

=====  
=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====  
Tetrachloroethene.....  
1,1,2,2-Tetrachloroethane.....  
Toluene.....  
Chlorobenzene.....  
Ethylbenzene.....  
Styrene.....  
Total Xylenes.....

ATTACHMENT III



**VOLATILE CALIBRATION  
SUMMARY OF CRITERIA OUTLIERS**

CASE: 23664 SDC-# 277  
CLIENT: Baker

DATE/TIME OF CALIBRATION	7-17-91	8-17-91	9-2-91	9-3-91	8-29-91		
INSTRUMENT ID	0WA03	F 50053	0WA03	0WA03	F 50053		
Chloromethane		34.2	36	33.5			
Bromomethane			39	73			
Vinyl Chloride							
Chloroethane				26			
Methylene Chloride							
Acetone				28			
Carbon Disulfide				34			
1,1-Dichloroethene							
1,1-Dichloroethane							
1,2-Dichloroethene (total)							
Chloroform							
1,2-Dichloroethane							
2-Butanone			0-038	0-024			
1,1,1-Trichloroethane				40			
Carbon Tetrachloride				50			
Vinyl Acetate							
Bromodichloromethane							
1,2-Dichloropropane							
Cis-1,3-dichloropropene				28			
Trichloroethene							
Dibromochloromethane							
1,1,2-Trichloroethane							
Benzene							
Trans-1,3-dichloropropene				39			
Bromoform							
4-Methyl-2-pentanone			30	33			
2-Hexanone							
Tetrachloroethene			30				
1,1,2,2-Tetrachloroethane							
Toluene							
Chlorobenzene							
Ethylbenzene							
Styrene							
Xylene (total)							
ASSOCIATED SAMPLES			Lab Pure 11	TK- rest 4th S-1/2	4362031D Lab Pure 31D Lab Pure 1 2		

CASE:  
LAB:

✓  
I.C. ✓  
I.C. ✓  
I.C. ✓  
C.C. ✓  
C.C. ✓  
C.C. ✓  
C.C. ✓

EXCEPTION CRITERIA:	8-29	9-4	9-9	8-30	8-31	9-5	9-10	9-11
Initial Calib. >30% RSD	8.29	9.4	9.9	8-30	8-31	9-5	9-10	9-11
Containing Minimum RF >25% RPD	F 50057	F 50057	F 50057	11:18	13:25	18:07	19:10	12:13
0.05								
1-2 * Phenol								
111-44-4 bis(2-Chloroethyl)Ether								
95-67-6 2-Chlorophenol								
541-73-1 1,3-Dichlorobenzene								
106-46-7 * 1,4-Dichlorobenzene								
100-51-6 Benzyl Alcohol								
95-50-1 1,2-Dichlorobenzene								
95-48-7 2-Methylphenol								
39638-32-9 bis(2-chloroisopropyl)Ether								
106-44-5 4-Methylphenol								
621-64-7 * N-Nitroso-Di-n-Propylamine								
67-72-1 Hexachloroethane								
98-95-3 Nitrobenzene								
78-59-1 Isophorone								
88-75-5 * 2-Nitrophenol								
105-67-9 2,4-Dimethylphenol								
65-85-0 Benzoic Acid (2)								
111-91-1 bis(2-Chloroethoxy)Methane								
120-83-2 * 2,4-Dichlorophenol								
120-82-1 1,2,4-Trichlorobenzene								
91-20-3 Naphthalene								
106-47-8 4-Chloroaniline								
87-68-3 * Hexachlorobutadiene								
59-50-7 * 4-Chloro-3-Methylphenol								
91-57-6 2-Methylnaphthalene								
77-47-4 * Hexachlorocyclopentadiene								
88-06-2 * 2,4,6-Trichlorophenol								
95-95-4 2,4,5-Trichlorophenol (2)								
91-58-7 2-Chloronaphthalene								
88-74-4 2-Nitroaniline (2)								
131-11-3 Dimethyl Phthalate								
1-8 Acenaphthylene								
2 3-Nitroaniline (2)								
1-9 * Acenaphthene								
61-28-6 * 2,4-Dinitrophenol (2)		37						
100-02-7 * 4-Nitrophenol (2)								
132-84-9 Dibenzofuran								
121-14-2 2,4-Dinitrotoluene								
606-20-2 2,6-Dinitrotoluene								
84-66-2 Diethylphthalate								
7005-72-3 4-Chlorophenyl-phenylether								
86-73-7 Fluorene								
100-01-6 4-Nitroaniline (2)								
534-52-1 4,6-Dinitro-2-Methylphenol (2)								
86-30-6 * N-Nitrosodiphenylamine (1)								
101-55-3 4-Bromophenyl-phenylether								
118-74-1 Hexachlorobenzene								
87-86-5 * Pentachlorophenol (2)								
85-01-8 Phenanthrene								
120-12-7 Anthracene								
84-74-2 Di-n-Butylphthalate								
206-44-0 * Fluoranthene								
129-00-0 Pyrene								
85-68-7 Butylbenzylphthalate								
91-94-1 3,3'-Dichlorobenzidine (1)								
56-55-3 Benzofluoranthene								
117-81-7 bis(2-Ethylhexyl)Phthalate								
218-01-9 Chrysene								
117-84-0 * Di-n-Octyl Phthalate								
205-99-3 Benzofluoranthene								
207-08-9 Benzofluoranthene								
50-32-8 * Benzofluorene								
193-39-5 Indenol, 2,3-cdPyrene								
53-70-3 Oxbenz[a,h]Anthracene								
4-2 Benzofluorene								

Cannot be separated from diphenylamine

436w0340 BS-2 446w021 44-011 63-011  
 656w021 44-0310 44-021 BK  
 656w021 636w02 11c  
 65-031 636w011 014  
 BS-1 636-0323



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**ORGANIC QUALITY ASSURANCE REVIEW**

**SITE: BAKER (CLEAN)**

**CASE: 23664**

**SDG: 81 267**

**REVIEW PERFORMED BY  
THE ANALYTICS DIVISION  
OF  
ROY F. WESTON, INC.**

CC: WDTribbath/JWMentz ; ELMacDonald ;  
RPLWattvas/PF ; PROG F

S.O. # 19003-SRN

Subfile # 10

PREPARED BY: \_\_\_\_\_

Zohreh Hamid, Ph.D.  
Section Manager - Data Validation

10-21-91  
Date

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SITE: BAKER (CLEAN)

CASE: 23664

SDG: #267

### INTRODUCTION

This quality assurance review is based upon a review of all data generated from twenty (20) water samples for volatile and ten (10) water samples for semivolatile and pesticide/PCB analysis collected on 8 - 7,8,9,20,21,22 - 1991. The samples were analyzed according to criteria set forth in the Contract Laboratory Program (CLP) for TCL target compounds.

This review has been performed in accordance with the confirmation method. The reported analytical results are presented as a summary of the data in Attachment II. All of the analytical data were examined to determine the usability of the analytical results and also to determine contractual compliance relative to the analytical requirements and deliverables specified for CLP method. The applicable qualifier codes have been placed next to the results in the data summary to indicate the qualitative and/or quantitative reliability. The details for this evaluation review are presented in the memo section of this report.

All data have been validated with regard to usability according to the quality assurance set forth in the Functional Guidelines for evaluation of organic analysis for completion of the Data Validation Report Forms and preparation of the final data validation report. If you have any questions or comments on this data review, please call Zoreh Hamid at (215) 344-3745.

### QUALITY ASSURANCE REVIEW

The analyses of the samples were performed by CompuChem Laboratories, Inc.

The findings offered in this report are based upon a rigorous review of the following criteria:

- Data completeness
- Holding times
- \* • GC/MS tuning
- Calibration
- Surrogate recoveries
- Matrix spike/spike duplicate
- \* • Internal standard
- \* • Instrument performance
- \* • Compound identification
- \* • Compound quantitations
  
- \* Criteria are met for the parameters.



## EVALUATION BY FRACTION

### I. Volatiles

- Holding Time
- Surrogate Recovery
- MS/MSD
- Blank
- GC/MS Tuning
- Initial Calibration
- Continuing Calibration
- Compound ID (HSL, TIC)
- Standards
- Spectra Quality
- Chromatography
- Data Completeness

Ten (10) water samples and ten trip blanks/lab pure samples were analyzed within the holding time for volatile target compounds with the exception of sample 63SW01D.

All surrogate and internal standard recoveries were within the CLP contract requirement control limits. Overall, the data are fair. The minor issues are listed in the following section.

The analysis holding time exceeded the "10-day" requirement by three days. The reported sample results and the quantitation limits are qualified estimated.

The RRF for 2-butanone was less than 0.05 in continuing calibration analyzed on 8-22-91. The reported detection limit for the affected sample (63SW01D) is rejected.

The %RSDs were within the 30% QC limit in all initial calibrations with the exception of 2-hexanone (31%) and chloromethane (34%) in calibrations analyzed on 8-17-91. These compounds were not detected in the samples; therefore, the data are not impacted.

A few compounds had %D above 25% in continuing calibrations. The % difference were less than 50% and, these compounds were not detected in the samples, therefore, the data are not impacted.

The chain-of-custodies for lab pure and trip blanks were not included in the data package. These documents should be submitted by the respective laboratory.



Acetone and methylene chloride were detected in the samples and trip blanks, as well as the laboratory blanks. The reported sample results are qualified "U" and should be considered as the sample detection limit.

Aliphatic hydrocarbons were detected as Tentatively Identified Compounds (TIC's). Also Siloxane was reported as TIC. This compounds is considered as a laboratory artifact and the reported results as TIC's should be disregarded.

The sample ID in the chain-of-custody did not coincide the sample ID in the data package for sample 43GW031. The case narrative stated that there was a discrepancy between the identifier on chain-of-custody and identifier on the bottle.

The matrix spike recovery for toluene (126%) was above the upper QC limit in matrix spike samples. However, the spike recoveries for all compounds met the control limits in the spike duplicate sample, therefore, the data are not impacted.



## EVALUATION BY FRACTION

### II. Base/Neutral/Acids

Holding Time  
 Extraction Time  
 Surrogate Recovery  
 Blank  
 MS/MSD  
 GC/MS Tuning  
 Initial Calibration  
 Continuing Calibration  
 Compound ID (HSL, TIC)  
 Standards  
 Spectra Quality  
 Chromatography  
 Data Completeness

Ten water samples were extracted and analyzed within the holding time for semivolatile target compounds.

The surrogate recovery of (0%) was obtained for phenol-d5 in sample 01R080 also the recovery of 2-fluorophenol (12%) was less than the lower QC limit of 21%. The reported quantitation limits for acid compounds are considered as false negatives. This sample was reextracted outside the holding time. The phenol-d5 recovery was 12% in the reanalysis sample. The comparisons of the original sample results and the reanalysis data gave an acceptable reproducibility. Since the extraction holding time exceeded for the reanalysis samples, the original sample data are reported on the data summary and the reported quantitation limits for the acid compounds are qualified estimated.

Target compounds were not detected in the samples at levels above the CRQL. The non-target compounds were reported in the samples. These compounds are tabulated and included in this data review for further investigation. The unknowns identified as solvent contaminations are not tabulated as TICs, since these compounds are considered as laboratory artifacts.

The laboratory blanks were free of target compound contamination. Non-target compounds were not detected in the blanks with the exception of unknown ester hexanedioic acid in blank SBLK30. The sample data are not impacted, since this compound was not reported as TIC in the samples.



All %RSDs and RRFs were within the control limits. The %D for three compounds exceeded 25% QC limit on calibration standard analyzed on 8-25-91. These compounds were not detected in the associated sample (01R0820). The reported quantitation limit for 2,4 -dinitrophenol which has %D above 50% is qualified estimated in the aforementioned sample.

The extraction date on Form IV (8-28-91) does not coincide the extraction date of Form 1 for sample "01R0820 Re". The review of Form 1 for the associated blank (SBLK00) confirmed the extraction was performed on 8-28-91. Therefore, the sample was re-extracted outside the holding time. This discrepancy should be clarified by the laboratory.

The surrogate recovery for 2 - fluorophenol (110%) exceeded the 100% QC limit in sample 63R02MSD. However, the surrogate recovery criteria (i.e.: no more than one (1) outlier in each fraction and not less than 10%) are met.

**TENTATIVELY IDENTIFIED COMPOUNDS**  
**BNA**

Compound Name	01R0820	43GW011	43GW031	44SW02
unknown RT = 7 - 10	X			
Benzamide derivatives		X		
unknown RT = 20			X	X





**EVALUATION BY FRACTION**

**III. Pesticides/PCB**

- Holding Time
- Extraction Time
- Surrogate Recovery
- MS/MSD
- Blank
- Linearity Calibration
- DDT/Endrin Degradation
- Analytical Sequence
- DBC Retention Time
- Continuing Calibration
- Retention Time Window
- Standards
- Chromatography
- HSL Compounds
- Data Completeness

This portion of the case consisted of ten water samples analyzed for pesticide/PCB target compounds according to the criteria set forth in the Contract Laboratory Protocol (CLP).

The extraction holding time is exceeded by four (4) days for samples 634SW01MS/MSD. The reported sample data are considered estimated.

The following spike recoveries were outside the QC limits:

<u>Compound Name</u>	<u>% Recovery MS/MSP</u>	<u>QC Limit</u>
Aldrine	-/124	40 - 120
Endrine	-/145	56 - 121
4,4 - DDT	248/306	38 - 127

Also the RPD for gamma-PHC, dieldrin and endrin exceeded the QC limits. Since the target compounds were not detected in the samples, the data are accepted without the qualifier codes.

**ATTACHMENT I**  
**GLOSSARY OF DATA QUALIFIER CODES**



## GLOSSARY OF DATA QUALIFIERS

### CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds):

- U = NOT DETECTED, SUBSTANTIALLY ABOVE THE LEVEL REPORTED IN LABORATORY OR FIELD BLANKS.
- R = UNRELIABLE RESULT. ANALYTE MAY OR MAY NOT BE PRESENT IN THE SAMPLE. SUPPORTING DATA NECESSARY TO CONFIRM RESULT.
- N = NEGATED COMPOUND WAS CONSIDERED AS NOT PRESENT IN THE SAMPLE.

(NO CODE) = CONFIRMED IDENTIFICATION

### CODES RELATING TO QUANTITATION

(can be used for both positive results and sample quantitation limits):

- J = ANALYTE PRESENT. REPORTED VALUE MAY NOT BE ACCURATE OR PRECISE.
- L = ANALYTE PRESENT. REPORTED VALUE MAY BE BIASED LOW. ACTUAL VALUE IS EXPECTED TO BE HIGHER.
- UJ = THE REPORTED QUANTITATION LIMITS ARE QUALIFIED ESTIMATED.
- UL = NOT DETECTED. QUANTITATION LIMIT MAY BE HIGHER.

### OTHER CODES

- Q = NO ANALYTICAL RESULT.

**ATTACHMENT II  
DATA SUMMARIES**

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

=====  
Case Number: 23664      SDG:#267      Client: BAKER      Page: 1  
=====

	Cust ID:	01R0820	43GW011	43GW021	43GW031	43SW03	44SW02
Sample Information	Matrix:	Water	Water	Water	Water	Water	Water
	D.F.:	1	1	1	1	1	1
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
		=====fl	=====fl	=====fl	=====fl	=====fl	=====fl

Chloromethane.....							
Bromomethane.....							
Vinyl Chloride.....							
Chloroethane.....							
Methylene Chloride.....	6 U			8 U	5 U		16 U
Acetone.....				10 U		45 U	
Carbon Disulfide.....		7					
1,1-Dichloroethene.....							
1,1-Dichloroethane.....							
Trans-1,2-Dichloroethene.....							
Chloroform.....	24						
1,2-Dichloroethane.....							
2-Butanone.....							
1,1,1-Trichloroethane.....							
Carbon Tetrachloride.....							
Vinyl Acetate.....							
Bromodichloromethane.....	9						
1,2-Dichloropropane.....							
Trans-1,3-Dichloropropene.....							
Trichloroethene.....							
Dibromochloromethane.....	3 J						
1,1,2-Trichloroethane.....							
Benzene.....							
cis-1,3-Dichloropropene.....							
2-Chloroethylvinylether.....							
Bromoform.....							
4-Methyl-2-pentanone.....							
2-Hexanone.....							

=====  
Case Number: 23664

SDG:#267

Client: BAKER

Page: 1  
-----

Cust ID: 01R0820

43GW011

43GW021

43GW031

43SW03

44SW02

=====  
=====fl=====fl=====fl=====fl=====fl=====fl  
Tetrachloroethene.....  
1,1,2,2-Tetrachloroethane.....  
Toluene.....  
Chlorobenzene.....  
Ethylbenzene.....  
Styrene.....  
Total Xylenes.....

3 J

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664      SDG:#267      Client: BAKER Page: 2

Sample Information	Cust ID:	63R02	63SW01	63SW01D	63SW02	LAB PURE	LAB PURE II
	Matrix:	Water	Water	Water	Water	Water	Water
	D.F.:	1	1	1	1	1	1
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
		fl		fl		fl	
Chloromethane.....							
Bromomethane.....							
Vinyl Chloride.....							
Chloroethane.....							
Methylene Chloride.....		5 U		88 U		5 U	15 U
Acetone.....				54 U			
Carbon Disulfide.....							
1,1-Dichloroethene.....							
1,1-Dichloroethane.....							
Trans-1,2-Dichloroethene.....							
Chloroform.....		2 J					
1,2-Dichloroethane.....							
2-Butanone.....							
1,1,1-Trichloroethane.....							
Carbon Tetrachloride.....							
Vinyl Acetate.....							
Bromodichloromethane.....							
1,2-Dichloropropane.....							
Trans-1,3-Dichloropropene.....							
Trichloroethene.....							
Dibromochloromethane.....							
1,1,2-Trichloroethane.....							
Benzene.....							
cis-1,3-Dichloropropene.....							
2-Chloroethylvinylether.....							
Bromoform.....							
4-Methyl-2-pentanone.....							
2-Hexanone.....							

=====  
Case Number: 23664     SDG:#267     Client: BAKER     Page: 2  
-----

Cust ID:     63R02     63SW01     63SW01D     63SW02     LAB PURE     LAB PURE II

=====  
=====fl=====fl=====fl=====fl=====fl=====fl=====fl  
Tetrachloroethene..... UJ  
1,1,2,2-Tetrachloroethane..... UJ  
Toluene..... UJ  
Chlorobenzene..... UJ  
Ethylbenzene..... UJ  
Styrene..... UJ  
Total Xylenes..... UJ



WESTON LYTICS  
GC/MS DATA SUMMARY  
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664

SDG: #267

Client: BAKER

Page: 3

Sample Information	Cust ID:	LAB PURE	LAB PURE	TB4303	TB6301	TB6301D	TB6302
		21	31				
Matrix:		Water	Water	Water	Water	Water	Water
D.F.:		1	1	1	1	1	1
Units:		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L

=====  
Chloromethane.....  
Bromomethane.....  
Vinyl Chloride.....  
Chloroethane.....  
Methylene Chloride..... 9 U 12 U 6 U 8 U 5 U 5 U  
Acetone.....  
Carbon Disulfide.....  
1,1-Dichloroethene.....  
1,1-Dichloroethane.....  
Trans-1,2-Dichloroethene.....  
Chloroform.....  
1,2-Dichloroethane.....  
2-Butanone.....  
1,1,1-Trichloroethane.....  
Carbon Tetrachloride.....  
Vinyl Acetate.....  
Bromodichloromethane.....  
1,2-Dichloropropane.....  
Trans-1,3-Dichloropropene.....  
Trichloroethene.....  
Dibromochloromethane.....  
1,1,2-Trichloroethane.....  
Benzene.....  
cis-1,3-Dichloropropene.....  
2-Chloroethylvinylether.....  
Bromoform.....  
4-Methyl-2-pentanone.....  
2-Hexanone.....

=====  
Case Number: 23664

SDG:#267

Client: BAKER

Page: 3

-----  
Cust ID: LAB PURE

LAB PURE

TB4303

TB6301

TB6301D

TB6302

21

31

=====  
=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====

Tetrachloroethene.....

1,1,2,2-Tetrachloroethane.....

Toluene.....

Chlorobenzene.....

Ethylbenzene.....

Styrene.....

Total Xylenes.....

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664

SDG: #267

Client: BAKER

Page: 4

Cust ID: TB63R02 TRIP BLK (SITE 44)

Sample Information

Matrix:	Water	Water
D.F.:	1	1
Units:	ug/L	ug/L

Chloromethane.....  
 Bromomethane.....  
 Vinyl Chloride.....  
 Chloroethane.....  
 Methylene Chloride.....  
 Acetone.....  
 Carbon Disulfide.....  
 1,1-Dichloroethene.....  
 1,1-Dichloroethane.....  
 Trans-1,2-Dichloroethene.....  
 Chloroform.....  
 1,2-Dichloroethane.....  
 2-Butanone.....  
 1,1,1-Trichloroethane.....  
 Carbon Tetrachloride.....  
 Vinyl Acetate.....  
 Bromodichloromethane.....  
 1,2-Dichloropropane.....  
 Trans-1,3-Dichloropropene.....  
 Trichloroethene.....  
 Dibromochloromethane.....  
 1,1,2-Trichloroethane.....  
 Benzene.....  
 cis-1,3-Dichloropropene.....  
 2-Chloroethylvinylether.....  
 Bromoform.....  
 4-Methyl-2-pentanone.....  
 2-Hexanone.....

10 U            13 U

=====fl=====fl=====fl=====fl=====fl=====fl

=====  
Case Number: 23664

SDG:#267

Client: BAKER

Page: 4  
-----

Cust ID: TB63R02 TRIP BLK

=====  
=====fl=====fl=====fl=====fl=====fl=====fl=====fl

Tetrachloroethene.....  
1,1,2,2-Tetrachloroethane.....  
Toluene.....  
Chlorobenzene.....  
Ethylbenzene.....  
Styrene.....  
Total Xylenes.....

WESTON LYTICS  
GC/MS DATA SUMMARY  
SEMI-VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664    SDG: #267    Client: BAKER Page: 1

Sample Information	Matrix:	Water	Water	Water	Water	Water	Water
	D.F.:	1	1	1	1	1	1
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Phenol.....							
bis(2-Chloroethyl) Ether.....							
2-Chlorophenol.....							
1,3-Dichlorobenzene.....							
1,4-Dichlorobenzene.....							
Benzyl Alcohol.....							
1,2-Dichlorobenzene.....							
2-Methylphenol.....							
bis(2-Chloroisopropyl) Ether.....							
4-Methylphenol.....							
N-Nitroso-di-n-propylamine.....							
Hexachloroethane.....							
Nitrobenzene.....							
Isophorone.....							
2-Nitrophenol.....							
2,4-Dimethylphenol.....							
Benzoic Acid(2).....							
bis(2-Chloroethoxy)Methane.....							
2,4-Dichlorophenol.....							
1,2,4-Trichlorobenzene.....							
Naphthalene.....							
4-Chloroaniline.....							
Hexachlororbutadiene.....							
4-Chloro-3-methylphenol.....							
2-Methylnaphthalene.....							
Hexachlorocyclopentadiene.....							

Cust ID: 01R0820RE 43GW011 43GW021 43GW031 43SW03 44SW02

	fl	fl	fl	fl	fl	fl
2,4,6-Trichlorophenol.....	UJ					
2,4,5-Trichlorophenol(2).....	UJ					
2-Chloronaphthalene.....						
2-Nitroaniline(2).....						
Dimethyl Phthalate.....						
Acenaphthylene.....						
3-Nitroaniline(2).....						
Acenaphthene.....						
2,4-Dinitrophenol(2).....	UJ					
4-Nitrophenol(2).....	UJ					
Dibenzofuran.....						
2,4-Dinitrotoluene.....						
2,6-Dinitrotoluene.....						
Diethyl Phthalate.....						
4-Chlorophenyl-phenylether.....						
Fluorene.....						
4-Nitroaniline(2).....						
4,6-Dinitro-2-methylphenol(2).....	UJ					
N-Nitrosodiphenylamine(1).....						
4-Bromophenyl-phenylether.....						
Hexachlorobenzene.....						
Pentachlorophenol(2).....	UJ					
Phenanthrene.....						
Anthracene.....						
di-n-Butyl Phthalate.....						
Fluoranthene.....						
Pyrene.....						
Butyl Benzyl Phthalate.....						
3,3'-Dichlorobenzidine(3).....						
Benzo(a)Anthracene.....						
bis(2-Ethylhexyl)Phthalate.....						
Chrysene.....						
di-n-Octyl Phthalate.....						
Benzo(b)Fluoranthene.....						
Benzo(k)Fluoranthene.....						
Benzo(a)Pyrene.....						
Indeno(1,2,3-cd)Pyrene.....						
Dib (a,h)Anthracene.....						
Ber (g,h,i)Perylene.....						

WESTON ANALYTICS  
GC/MS DATA SUMMARY

SEMI-VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664

SDG: #267

Client: BAKER

Page: 2

Sample Information	Cust ID:	63R02	63SW01	63SW01D	63SW02
	Matrix:	Water	Water	Water	Water
	D.F.:	1	1	1	1
	Units:	ug/L	ug/L	ug/L	ug/L

====fl=====fl=====fl=====fl=====fl=====fl

Phenol.....  
bis(2-Chloroethyl) Ether.....  
2-Chlorophenol.....  
1,3-Dichlorobenzene.....  
1,4-Dichlorobenzene.....  
Benzyl Alcohol.....  
1,2-Dichlorobenzene.....  
2-Methylphenol.....  
bis(2-Chloroisopropyl) Ether.....  
4-Methylphenol.....  
N-Nitroso-di-n-propylamine.....  
Hexachloroethane.....  
Nitrobenzene.....  
Isophorone.....  
2-Nitrophenol.....  
2,4-Dimethylphenol.....  
Benzoic Acid(2).....  
bis(2-Chloroethoxy) Methane.....  
2,4-Dichlorophenol.....  
1,2,4-Trichlorobenzene.....  
Naphthalene.....  
4-Chloroaniline.....  
Hexachlororbutadiene.....  
4-Chloro-3-methylphenol.....  
2-Methylnaphthalene.....  
Hexachlorocyclopentadiene.....

Cust ID:    63R02    63SW01    63SW01D    63SW02

=====  
=====fl=====fl=====fl=====fl=====fl=====fl=====fl  
2,4,6-Trichlorophenol.....  
2,4,5-Trichlorophenol(2).....  
2-Chloronaphthalene.....  
2-Nitroaniline(2).....  
Dimethyl Phthalate.....  
Acenaphthylene.....  
3-Nitroaniline(2).....  
Acenaphthene.....  
2,4-Dinitrophenol(2).....  
4-Nitrophenol(2).....  
Dibenzofuran.....  
2,4-Dinitrotoluene.....  
2,6-Dinitrotoluene.....  
Diethyl Phthalate.....  
4-Chlorophenyl-phenylether.....  
Fluorene.....  
4-Nitroaniline(2).....  
4,6-Dinitro-2-methylphenol(2).....  
N-Nitrosodiphenylamine(1).....  
4-Bromophenyl-phenylether.....  
Hexachlorobenzene.....  
Pentachlorophenol(2).....  
Phenanthrene.....  
Anthracene.....  
di-n-Butyl Phthalate.....  
Fluoranthene.....  
Pyrene.....  
Butyl Benzyl Phthalate.....  
3,3'-Dichlorobenzidine(3).....  
Benzo(a)Anthracene.....  
bis(2-Ethylhexyl)Phthalate.....  
Chrysene.....  
di-n-Octyl Phthalate.....  
Benzo(b)Fluoranthene.....  
Benzo(k)Fluoranthene.....  
Benzo(a)Pyrene.....  
Indeno(1,2,3-cd)Pyrene.....  
Dib    (a,h)Anthracene.....  
Ben    j,h,i)Perylene.....  
=====



WESTON ANALYTICS  
PESTICIDE/PCB's  
CLP LIST

=====  
Case Number: 23664     SDG: #267     Client: BAKER     Page: 1

	Cust ID:	01R0820	43GW011	43GW021	43GW031	43SW03	44SW02
Sample Information	Matrix:	Water	Water	Water	Water	Water	Water
	D.F.:	1	1	1	1	1	1
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
		fl	fl	fl	fl	fl	fl

- Alpha-BHC.....
- Beta-BHC.....
- Delta-BHC.....
- Gamma-BHC (Lindane).....
- Heptachlor.....
- Aldrin.....
- Heptachlor Epoxide.....
- Endosulfan I.....
- Dieldrin.....
- 4,4'-DDE.....
- Endrin.....
- Endosulfan II.....
- 4,4'-DDD.....
- Endosulfan Sulfate.....
- 4,4'-DDT.....
- Methoxychlor.....
- Endrin Ketone.....
- Alpha Chlordane.....
- Gamma Chlordane.....
- Toxaphene.....
- Aroclor-1016.....
- Aroclor-1221.....
- Aroclor-1232.....
- Aroclor-1242.....
- Aroclor-1248.....
- Aroclor-1254.....
- Aroclor-1260.....

WESTON ANALYTICS  
PESTICIDE/PCB's  
CLP LIST

=====  
Case Number: 23664    SDG: #267    Client: BAKER    Page: 2  
-----

	Cust ID:	63R02	63SW01	63SW01D	63SW02
Sample Information	Matrix:	Water	Water	Water	Water
	D.F.:	1	1	1	1
	Units:	ug/L	ug/L	ug/L	ug/L
		====fl=====	====fl=====	====fl=====	====fl=====

Alpha-BHC.....  
Beta-BHC.....  
Delta-BHC.....  
Gamma-BHC (Lindane).....  
Heptachlor.....  
Aldrin.....  
Heptachlor Epoxide.....  
Endosulfan I.....  
Dieldrin.....  
4,4'-DDE.....  
Endrin.....  
Endosulfan II.....  
4,4'-DDD.....  
Endosulfan Sulfate.....  
4,4'-DDT.....  
Methoxychlor.....  
Endrin Ketone.....  
Alpha Chlordane.....  
Gamma Chlordane.....  
Toxaphene.....  
Aroclor-1016.....  
Aroclor-1221.....  
Aroclor-1232.....  
Aroclor-1242.....  
Aroclor-1248.....  
Aroclor-1254.....  
Aroclor-1260.....

ATTACHMENT III

VOLATILE CALIBRATION  
SUMMARY OF CRITERIA OUTLIERS

CASE: 23664 SPG # 267  
CLIENT: Baker

I.C    I.C    I.C    C.C    C.C    C.C    C.C

DATE/TIME OF CALIBRATION	7-17-91	7-25-91	8-17-91	8-22-91	8-17-91	8-18-91	8-28-91
INSTRUMENT ID	0WA03	F 50051	F-50053	0WA03	F 50051	F 50051	F 50053
Chloromethane			1.RSD=74				
Bromomethane				%D=31.4			
Vinyl Chloride							
Chloroethane							
Methylene Chloride							
Acetone							
Carbon Disulfide							
1,1-Dichloroethene							
1,1-Dichloroethane							
1,2-Dichloroethene (total)							
Chloroform							
1,2-Dichloroethane				%D=32			
2-Butanone				RRF=0.02	%D=29.7		
1,1,1-Trichloroethane							
Carbon Tetrachloride				%D=35			
Vinyl Acetate					%D=31	%D=30	
Bromodichloromethane							
1,2-Dichloropropane							
Cis-1,3-dichloropropene				%D=38			
Trichloroethene							
Dibromochloromethane							
1,1,2-Trichloroethane							
Benzene							
Trans-1,3-dichloropropene				%D=49			%D=26
Bromoform							
4-Methyl-2-pentanone					%D=32	%D=26	
2-Hexanone	%RSD=31.2				%D=32		
Tetrachloroethene							
1,1,2,2-Tetrachloroethane					%D=38	%D=30.4	
Toluene							
Chlorobenzene							
Ethylbenzene							
Styrene							
Xylene (total)							
ASSOCIATED SAMPLES				635W01D	435W03	FB63A02	01R020
					445W02	MS	43Cw011
					63R02	MSD	43Cw024
					635W01		43Cw033
					635W02		Lab Out
					FB4303		"
					FB6301		21
					FB6301D		21
					FB6302		
					TV-PB1K		

VALIDATION CRITERIA

CASE:  
LAB:

EXCEPTION CRITERIA:		I-C	E-C	C-C	C-C	C-C	C-C
Initial Calib. 73% RSD Continuing Minimum RF 72.5% RPD 0.05		8-4-91	8-29	8-13	8-14	8-25	8-30
		F50052	F50052	F50052	F50052	F50052	F50052
100-22-2 *	Phenol						
111-44-4	bis(2-Chloroethyl)Ether						
95-67-8	2-Chlorophenol						
541-73-1	1, 3-Dichlorobenzene						
106-46-7 *	1, 4-Dichlorobenzene						
100-51-6	Benzyl Alcohol						
95-30-1	1, 2-Dichlorobenzene						
95-48-7	2-Methylphenol						
39638-32-9	bis(2-chloroisopropyl)Ether						
106-44-5	4-Methylphenol						
621-64-7	N-Nitroso-Di-n-Propylamine						
67-72-1	Hexachloroethane						
96-95-3	Nitrobenzene						
78-59-1	Isophorone						
88-75-5 *	2-Nitrophenol						
105-67-9	2, 4-Dimethylphenol						
65-85-0	Benzoic Acid (2)						
111-91-1	bis(2-Chloroethoxy)Methane						
120-83-2 *	2, 4-Dichlorophenol						
120-82-1	1, 2, 4-Trichlorobenzene						
91-20-3	Naphthalene						
106-47-8	4-Chloroaniline						
87-68-3 *	Hexachlorobutadiene						
59-50-7 *	4-Chloro-3-Methylphenol						
91-57-6	2-Methylnaphthalene						
77-47-4 *	Hexachlorocyclopentadiene						
88-06-2 *	2, 4, 6-Trichlorophenol						
95-95-4	2, 4, 5-Trichlorophenol (2)						
91-58-7	2-Chloronaphthalene						
88-74-4	2-Nitroaniline (2)						
100-1-3	Dimethyl Phthalate						
100-1-8	Acenaphthylene						
100-1-2	3-Nitroaniline (2)						
83-32-9 *	Acenaphthene						
61-28-6 **	2, 4-Dinitrophenol (2)					10-55	
100-02-7 **	4-Nitrophenol (2)						
132-64-9	Dibenzofuran						
121-14-2	2, 4-Dinitrotoluene						
806-20-2	2, 6-Dinitrotoluene						
84-66-2	Diallylphthalate						
7005-72-3	4-Chlorophenyl-phenylether						
86-73-7	Fluorene						
100-01-6	4-Nitroaniline (2)						
534-52-1	4, 6-Dinitro-2-Methylphenol (2)					70-47	
86-30-6 *	N-Nitrosodiphenylamine (1)						
101-55-3	4-Bromophenyl-phenylether						
118-74-1	Hexachlorobenzene						
87-86-5 *	Pentachlorophenol (2)						
85-01-8	Phenanthrene						
120-12-7	Anthracene						
84-74-2	Di-n-Butylphthalate					10-235	
206-44-0 *	Fluoranthene						
129-00-0	Pyrene						
85-66-7	Butylbenzylphthalate						
81-94-1	3, 3'-Dichlorobenzidine (2)						
56-55-3	Benzo(a)Anthracene						
117-81-7	bis(2-Ethylhexyl)Phthalate						
218-01-9	Chrysene						
117-84-0 *	Di-n-Octyl Phthalate						
205-99-2	Benzo(b)Fluoranthene						
207-08-9	Benzo(k)Fluoranthene						
80-32-8 *	Benzo(a)Pyrene						
193-39-5	Indeno(1, 2, 3-cd)Pyrene						
100-1-3	Obenzo(a,h)Anthracene						
100-1-2	Benzo(a,h,i)Perylene						

(\*) Cannot be separated from diphenylamine

435603 448602 0110826 01108206  
 63802 m  
 635601 mD  
 635600  
 675607  
 476601  
 476602  
 436603

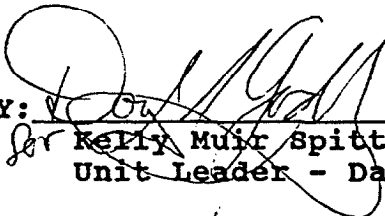
✓

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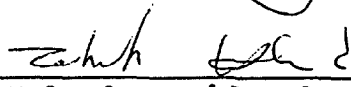
**ORGANIC QUALITY ASSURANCE REVIEW**  
**SITE: BAKER (CLEAN)**  
**CASE: 23664**  
**SDG: 121**

**REVIEW PERFORMED BY**  
**THE ANALYTICS DIVISION**  
**OF**  
**ROY F. WESTON, INC.**

bcc: WDTimbath/JWmentz/PROG F;  
DPBlack/RPWattras /PF; EMacDonald

PREPARED BY:   
for Kelly Muir Spittler  
Unit Leader - Data Validation

10-8-91  
Date

VERIFIED BY:   
Zohreh Hamid, Ph.D.  
Section Manager - Data Validation

10-8-91  
Date

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SITE: BAKER (CLEAN)  
CASE: 23664  
SDG: 121

### INTRODUCTION

This quality assurance review is based upon a review of all data generated from one (1) soil sample collected on 8-21-91. The sample was analyzed according to criteria set forth in the Contract Laboratory Program (CLP) for TCL target compounds.

This review has been performed in accordance with the confirmation method. The reported analytical results are presented as a summary of the data in Attachment II. All of the analytical data were examined to determine the usability of the analytical results and also to determine contractual compliance relative to the analytical requirements and deliverables specified for CLP method. The applicable qualifier codes have been placed next to the results in the data summary to indicate the qualitative and/or quantitative reliability. The details of this evaluation review are presented in the memo section of this report.

All data have been validated with regard to usability according to the quality assurance guidelines set forth in the USEPA Functional Guidelines for evaluation of organic analysis for completion of the Data Validation Report Forms and preparation of the final data validation report. If you have any questions or comments on this data review, please call Zohreh Hamid at (215) 344-3745.

### QUALITY ASSURANCE REVIEW

The analysis of the sample was performed by CompuChem Laboratories, Inc.

The findings offered in this report are based upon a rigorous review of the following criteria:

- \*•Holding times
- \*•GC/MS tuning
  - Calibration
  - Blanks
- \*•Surrogate recoveries
- \*•Matrix spike/spike duplicate
- \*•Internal standard
- \*•Instrument performance
- \*•Compound identification
- \*•Compound quantitations
- \*•Data completeness

\* = Criteria are met for the parameters.

Overall the data are considered representative and no major problems were encountered during the sample analysis.

## EVALUATION BY FRACTION

I. Volatiles

\_\_\_\_ Holding Time  
\_\_\_\_ Surrogate Recovery  
X MS/MSD  
X Blank  
\_\_\_\_ GC/MS Tuning  
X Initial Calibration  
X Continuing Calibration  
\_\_\_\_ Compound ID (HSL, TIC)  
\_\_\_\_ Standards  
\_\_\_\_ Spectra Quality  
\_\_\_\_ Chromatography  
\_\_\_\_ Data Completeness

OVERVIEW

This portion of the case consisted of one soil sample analyzed within the holding time for Volatile target compounds.

ISSUES

The laboratory blank contains methylene chloride (10 ug/kg), acetone (13 ug/kg), and 1,1,2,2-Tetrachloroethane (1 ug/kg). The results for acetone and methylene chloride are flagged "U" and should be considered as laboratory artifact due to the blank contamination.

The %RSD for acetone (45) exceeded the 30% requirement limit. The result in the sample for this compound is considered not detected and is flagged "U" due to the blank contamination, therefore, no more qualifier codes have been applied.

The %D for 4-methyl-2-pentanone (80%) and 2-hexanone (43%) exceeded the 25% QC limit. These compounds were not detected in the sample; however, the reported quantitation limit for 4-Methyl-2-Pentanone which %D exceeded 50% is qualified estimated "UJ".

The sample recovery for Toluene (140%) exceeded the upper QC limit of 139% in the matrix spike duplicate. The spike recovery for this compound was within the QC limit in the matrix spike sample, therefore, the data are not impacted.



## EVALUATION BY FRACTION

II. Base/Neutral/Acids

Holding Time  
 Extraction Time  
 Surrogate Recovery  
 Blank  
 MS/MSD  
 GC/MS Tuning  
 Initial Calibration  
 Continuing Calibration  
 Compound ID (HSL, TIC)  
 Standards  
 Spectra Quality  
 Chromatography  
 Data Completeness

OVERVIEW

One sample was extracted and analyzed within the holding time for Semivolatile fraction.

ISSUES

The bis(2-ethylhexyl)phthalate was detected in the sample as well as the associated method blank at levels less than CRQL. The reported sample result is elevated to the corresponding sample CRQL and is considered as not detected in the sample. Also, Benzoic acid was detected in the laboratory blank. However, this compound was not detected in this sample. Therefore, the data are not affected.

Two TIC's (aromatic compounds) were reported in the sample. These TIC's were not detected in the blank and the source of these compounds should be investigated regarding to the field sampling.

A few compounds had %RSD and/or %D above 30% and 25% in initial and continuing calibrations. The data are not affected since these compounds were not detected in the sample and the outliers were less than 50%.

**EVALUATION BY FRACTION****III. Pesticides/PCB**

\_\_\_\_ Holding Time  
\_\_\_\_ Extraction Time  
\_\_\_\_ Surrogate Recovery  
\_\_\_\_ MS/MSD  
\_\_\_\_ Blank  
\_\_\_\_ Linearity Calibration  
\_\_\_\_ DDT/Endrin Degradation  
\_\_\_\_ Analytical Sequence  
\_\_\_\_ DBC Retention Time  
\_\_\_\_ Continuing Calibration  
\_\_\_\_ Retention Time Window  
\_\_\_\_ Standards  
\_\_\_\_ Chromatography  
\_\_\_\_ HSL Compounds  
\_\_\_\_ Data Completeness

**OVERVIEW**

The TCL compounds were not detected in the sample. All surrogate, matrix spike and matrix spike recoveries were within the QC limits. The initial and continuing calibrations were within the acceptable levels. Overall no problems were associated to the analysis of this sample.

**ATTACHMENT I**  
**GLOSSARY OF DATA QUALIFIER CODES**



## GLOSSARY OF DATA QUALIFIERS

### CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds):

- U = NOT DETECTED, SUBSTANTIALLY ABOVE THE LEVEL REPORTED IN LABORATORY OR FIELD BLANKS.
- R = UNRELIABLE RESULT. ANALYTE MAY OR MAY NOT BE PRESENT IN THE SAMPLE. SUPPORTING DATA NECESSARY TO CONFIRM RESULT.
- N = NEGATED COMPOUND WAS CONSIDERED AS NOT PRESENT IN THE SAMPLE.

(NO CODE) = CONFIRMED IDENTIFICATION

### CODES RELATING TO QUANTITATION

(can be used for both positive results and sample quantitation limits):

- J = ANALYTE PRESENT. REPORTED VALUE MAY NOT BE ACCURATE OR PRECISE.
- L = ANALYTE PRESENT. REPORTED VALUE MAY BE BIASED LOW. ACTUAL VALUE IS EXPECTED TO BE HIGHER.
- UJ = THE REPORTED QUANTITATION LIMITS ARE QUALIFIED ESTIMATED.
- UL = NOT DETECTED. QUANTITATION LIMIT MAY BE HIGHER.

### OTHER CODES

- Q = NO ANALYTICAL RESULT.

**ATTACHMENT II  
DATA SUMMARIES**

WESTON ANALYTICS  
 GC/MS DATA SUMMARY  
 VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664

SDG#: 121

Client: Baker

Page: 1

Cust ID: 44SB0406

Sample Information

Matrix: Soil  
 D.F.: 1  
 Units: ug/kg

Compound Name	Concentration	Units
Chloromethane.....		
Bromomethane.....		
Vinyl Chloride.....		
Chloroethane.....		
Methylene Chloride.....	41	U
Acetone.....	53	U
Carbon Disulfide.....		
1,1-Dichloroethene.....		
1,1-Dichloroethane.....		
Trans-1,2-Dichloroethene.....		
Chloroform.....		
1,2-Dichloroethane.....		
2-Butanone.....		
1,1,1-Trichloroethane.....		
Carbon Tetrachloride.....		
Vinyl Acetate.....		
Bromodichloromethane.....		
1,2-Dichloropropane.....		
Trans-1,3-Dichloropropene.....		
Trichloroethene.....		
Dibromochloromethane.....		
1,1,2-Trichloroethane.....		
Benzene.....		
cis-1,3-Dichloropropene.....		
2-Chloroethylvinylether.....		
Bromoform.....		
4-Methyl-2-pentanone.....		UJ
2-Hexanone.....		

=====  
Case Number: 23664

SDG#: 121

Client: Baker

Page: 1  
-----

Cust ID: 44SB0406

=====  
-----fl-----fl-----fl-----fl-----fl-----fl-----fl-----  
Tetrachloroethene.....  
1,1,2,2-Tetrachloroethane.....  
Toluene.....  
Chlorobenzene.....  
Ethylbenzene.....  
Styrene.....  
Total Xylenes.....





=====  
Client Number: 23664

SDG: 121

Client: Baker

Page: 1

-----  
Cust ID: 44SB0406

=====  
=====fl=====fl=====fl=====fl=====fl=====fl=====fl  
2,4,6-Trichlorophenol.....  
2,4,5-Trichlorophenol(2).....  
2-Chloronaphthalene.....  
2-Nitroaniline(2).....  
Dimethyl Phthalate.....  
Acenaphthylene.....  
3-Nitroaniline(2).....  
Acenaphthene.....  
2,4-Dinitrophenol(2).....  
4-Nitrophenol(2).....  
Dibenzofuran.....  
2,4-Dinitrotoluene.....  
2,6-Dinitrotoluene.....  
Diethyl Phthalate.....  
4-Chlorophenyl-phenylether.....  
Fluorene.....  
4-Nitroaniline(2).....  
4,6-Dinitro-2-methylphenol(2).....  
N-Nitrosodiphenylamine(1).....  
4-Bromophenyl-phenylether.....  
Hexachlorobenzene.....  
Pentachlorophenol(2).....  
Phenanthrene.....  
Anthracene.....  
di-n-Butyl Phthalate.....  
Fluoranthene.....  
Pyrene.....  
Butyl Benzyl Phthalate.....  
3,3'-Dichlorobenzidine(3).....  
Benzo(a)Anthracene.....  
bis(2-Ethylhexyl)Phthalate.....  
Chrysene.....  
di-n-Octyl Phthalate.....  
Benzo(b)Fluoranthene.....  
Benzo(k)Fluoranthene.....  
Benzo(a)Pyrene.....  
Indeno(1,2,3-cd)Pyrene.....  
Dibenz(a,h)Anthracene.....  
Ber j,h,i)Perylene.....  
410 U

WESTON ANALYTICS  
PESTICIDES/PCB'S  
CLP LIST

=====  
Case Number: 23664      SDG#: 121      Client: Baker      Page: 1  
=====

Cust ID: 44SB0406

Sample  
Information

Matrix: Soil  
D.F.: 1  
Units: ug/kg

=====  
fl=====fl=====fl=====fl=====fl=====fl

Alpha-BHC.....  
Beta-BHC.....  
Delta-BHC.....  
Gamma-BHC (Lindane).....  
Heptachlor.....  
Aldrin.....  
Heptachlor Epoxide.....  
Endosulfan I.....  
Dieldrin.....  
4,4'-DDE.....  
Endrin.....  
Endosulfan II.....  
4,4'-DDD.....  
Endosulfan Sulfate.....  
4,4'-DDT.....  
Methoxychlor.....  
Endrin Ketone.....  
Alpha Chlordane.....  
Gamma Chlordane.....  
Toxaphene.....  
Aroclor-1016.....  
Aroclor-1221.....  
Aroclor-1232.....  
Aroclor-1242.....  
Aroclor-1248.....  
Aroclor-1254.....  
Aroclor-1260.....

ATTACHMENT III

**VOLATILE CALIBRATION  
SUMMARY OF CRITERIA OUTLIERS**

CASE: 23664 SDC #121  
 CLIENT: Baker

I-C      C-C

DATE/TIME OF CALIBRATION		8-29-71					
INSTRUMENT ID		13					
Chloromethane							
Bromomethane							
Vinyl Chloride							
Chloroethane							
Methylene Chloride							
Acetone	RSD = 45						
Carbon Disulfide							
1,1-Dichloroethene							
1,1-Dichloroethane							
1,2-Dichloroethene (total)							
Chloroform							
1,2-Dichloroethane							
2-Butanone							
1,1,1-Trichloroethane							
Carbon Tetrachloride							
Vinyl Acetate							
Bromodichloromethane							
1,2-Dichloropropane							
Cis-1,3-dichloropropene							
Trichloroethene							
Dibromochloromethane							
1,1,2-Trichloroethane							
Benzene							
Trans-1,3-dichloropropene							
Bromoform							
4-Methyl-2-pentanone		RD = 80					
2-Hexanone		RD = 43					
Tetrachloroethene							
1,1,2,2-Tetrachloroethane							
Toluene							
Chlorobenzene							
Ethylbenzene							
Styrene							
Xylene (total)							
ASSOCIATED SAMPLES		0406					

SEMIVOLATILE CALIBRATION  
SUMMARY OF CRITERIA OUTLIERS

CASE: 23664 SDG-121  
CLIENT: Baker

J.C C-C

DATE/TIME OF CALIBRATION	3-29-11	8-30-11							
INSTRUMENT ID	04	04							
Phenol									
Bis(2-chloroethoxy)ether									
2-Chlorophenol									
1,3-Dichlorobenzene									
1,4-Dichlorobenzene									
Benzyl Alcohol									
1,2-Dichlorobenzene									
2-Methylphenol									
Bis(2-chloroisopropyl)ether		%D=32							
4-Methylphenol									
N-Nitroso-Di-n-propylamine									
Hexachloroethane									
Nitrobenzene									
Isophorone									
2-Nitrophenol									
2,4-Dimethylphenol									
Benzoic Acid	%SD=33	%D=32							
Bis(2-chloroethoxy)methane									
2,4-Dichlorophenol									
1,2,4-Trichlorobenzene									
Naphthalene									
4-Chloroaniline									
Hexachlorobutadiene									
4-Chloro-3-methylphenol									
2-Methylnaphthalene									
Hexachlorocyclopentadiene									
2,4,6-Trichlorophenol									
2,4,5-Trichlorophenol									
2-Chloronaphthalene									
2-Nitroaniline		%D=39							
Dimethylphthalate									
Acenaphthylene									
2,6-Dinitrotoluene									
3-Nitroaniline		%D=89							
Acenaphthene									
2,4-Dinitrophenol		%D=27							
4-Nitrophenol									
Dibenzofuran									
2,4-Dinitrotoluene									
Diethylphthalate									
4-Chlorophenyl-phenylether									
Fluorene									
4-Nitroaniline		%D=26							
4,6-Dinitro-2-methylphenol									
N-N-trosodiphenylamine									
4-Bromophenyl-phenylether									
Hexachlorobenzene									
Pentachlorophenol									
Phenanthrene									
Anthracene									
Di-n-butylphthalate									
Fluoranthene									
Pyrene	%SD=40								
Butylbenzylphthalate									
3,3'-Dichlorobenzidine	%SD=35								
Benzo(a)anthracene									
Chrysene									
Bis(2-ethylhexyl)phthalate									
Di-n-octylphthalate									
Benzo(b)fluoranthene									
Benzo(k)fluoranthene									
Benzo(a)pyrene									
Indeno(1,2,3-cd)pyrene									
Dibenzo(a,h)anthracene									
Benzo(g,h,i)perylene									
ASSOCIATED SAMPLES		0406							



1 WESTON WAY  
WEST CHESTER, PA 19380-1449  
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**ORGANIC QUALITY ASSURANCE REVIEW**  
**SITE: BAKER (CLEAN)**  
**CASE: 23664**  
**SDG: 101**

**REVIEW PERFORMED BY**  
**THE ANALYTICS DIVISION**  
**OF**  
**ROY F. WESTON, INC.**

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10-25-91  
Date

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SITE: BAKER (CLEAN)  
CASE: 23664  
SDG: 101

### INTRODUCTION

This quality assurance review is based upon a review of all data generated from twenty (20) soil samples collected on 8-9,22-91. The samples were analyzed according to criteria set forth in the Contract Laboratory Program (CLP) for TCL target compounds.

This review has been performed in accordance with the confirmation method. The reported analytical results are presented as a summary of the data in Attachment II. All of the analytical data were examined to determine the usability of the analytical results and also to determine contractual compliance relative to the analytical requirements and deliverables specified for CLP method. The applicable qualifier codes have been placed next to the results in the data summary to indicate the qualitative and/or quantitative reliability. The details of this evaluation review are presented in the memo section of this report.

All data have been validated with regard to usability according to the quality assurance guidelines set forth in the USEPA Functional Guidelines for evaluation of organic analysis for completion of the Data Validation Report Forms and preparation of the final data validation report. If you have any questions or comments on this data review, please Zohreh Hamid at (215) 344-3745.

### QUALITY ASSURANCE REVIEW

The analyses of the samples were performed by CompuChem Laboratories, Inc.

The findings offered in this report are based upon a rigorous review of the following criteria:

- \* · Holding times
- \* · GC/MS tuning
- Calibration
- Blanks
- Surrogate recoveries
- Matrix spike/spike duplicate
- \* · Internal standard
- \* · Instrument performance
- Compound identification
- Compound quantitations
- Data completeness

\* = All criteria were met for this classification.

## EVALUATION BY FRACTION

I. Volatiles

- Holding Time
- Surrogate Recovery
- MS/MSD
- Blank
- GC/MS Tuning
- Initial Calibration
- Continuing Calibration
- Compound ID (HSL, TIC)
- Standards
- Spectra Quality
- Chromatography
- Data Completeness

OVERVIEW

Twenty (20) soil samples were analyzed for TCL volatile target compounds.

The surrogate, and internal standard recoveries were within the QC limits. Problems associated with this sample analyses are listed in the following section.

ISSUES

The relative response factor (RRF) for 2-butanone in initial calibration analyzed on 8-21-91 (instrument ID = 3) and the corresponding continuing calibration were less than 0.05. Therefore, the reported quantitation limit for the associated sample (44MW0106) is rejected and is qualified "R" in the data summary.

A few compounds had %RSD and/or %D above 30% and 25% in initial and continuing calibrations. These compounds with the exception of acetone and methylene chloride (Common laboratory contaminants) were not detected in the samples. Therefore, no qualifier codes have been applied to the sample results. The %D for vinyl acetate (76%) and 4-methyl-2-pentanone (73%) exceeded the 50%. The associated sample quantitation limits are qualified estimated. (These outliers are submitted in Attachment III.)

The % moisture in samples 44SD01 (71%), and 44SD02 (78%) exceeded 50%. Consequently, the quantitation limits and the results are





elevated. The target compounds with the exception of acetone and methylene chloride were not detected in these samples. Therefore, the data is considered as representative.

The laboratory blanks contained methylene chloride and acetone at levels less than 3x CRQL. The sample results which are not substantially above the blank levels are flagged "U" and should be considered as not detected in the sample.

Due to the high levels of non-target compounds and background contamination, sample 44MW0106 was analyzed according to the medium level analysis.

The relative percent difference (RPD) for 1,1-dichloromethane (24%), Trichloroethane (27%) and toluene (26%) exceeded the requirement limit in the low level QC sample analysis. Also, all RPD's were exceeded in the medium level analysis. Since the spike recoveries for all compounds were within the QC limits, the data are accepted without the qualifier codes.

Sample 44MW0106MS was analyzed four days outside the holding time. The data for this sample is qualified estimated.

Two TIC compounds were detected in sample 44MW0106. Also one TIC spectrum was included in the data package for blank VBLKW5. This TIC was not listed on Form I VOA-TIC. This discrepancy should be clarified by the laboratory.

1,1,2,2-tetrachlorethane was reported in blank VBLKN9 at level "1 ug/kg." This compound was not detected in the samples, therefore, there is no impact to the data.

## EVALUATION BY FRACTION

II. Base/Neutral/Acids

Holding Time  
 Extraction Time  
 Surrogate Recovery  
 Blank  
 MS/MSD  
 GC/MS Tuning  
 Initial Calibration  
 Continuing Calibration  
 Compound ID (HSL, TIC)  
 Standards  
 Spectra Quality  
 Chromatography  
 Data Completeness

OVERVIEW

This portion of the case consisted of twenty (20) soil samples extracted/analyzed within the holding times for Semivolatile target compounds.

All surrogate, internal standard and spike recoveries were within the quality control limits. The minor problems associated with this batch of sample analyses are listed in the following section.

The %RSDs and %Ds for several compounds exceeded the 30% and 25% requirement limits in the initial and continuing calibrations. The reported results and the quantitations are qualified accordingly. These outliers are listed on the Semivolatile Calibration Summary (Attachment III).

The results for samples 44SD01 and 44SD02 are qualified estimated. The results and the corresponding detection limits are elevated in these two samples because the % moistures were (71% and 78%) above 50%.

Up to twenty-two (22) TICs were detected in the samples. These compounds are benzene derivatives, PNAs and the aliphatic hydrocarbons. Aldol condensation products were also report as TIC in the samples as well as the blanks. The reported results for this compound should be disregarded. Unknown alkane, fluorophenol, tetrachloroethane and tribromophenols were reported as TICs in the laboratory blank.



QC ORGANIC DATA REVIEW  
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Benzoic acid and bis(2-ethylhexyl)phthalates were detected in the laboratory blanks. The reported sample results are considered as the laboratory contamination and are flagged "U" for the associated samples.

A few compounds were reported as target compounds in the samples. The results are flagged "J", because the reported values were less than the corresponding CRQLs.

Two different Form VIIIs have been submitted for blank "SBLK42". The retention times in one of the forms are outside the requirement limits. This should be clarified by the laboratory.

## EVALUATION BY FRACTION

III. Pesticides/PCB

Holding Time  
 Extraction Time  
 Surrogate Recovery  
 MS/MSD  
 Blank  
 Linearity Calibration  
 DDT/Endrin Degradation  
 Analytical Sequence  
 Continuing Calibration  
 Retention Time Window  
 Standards  
 Chromatography  
 HSL Compounds  
 Data Completeness

OVERVIEW

This portion of the case consisted of twenty (20) soil samples.

The samples were extracted/analyzed within the holding time specified in the Contract Laboratory Program (CLP).

ISSUES

DDE and DDD were reported in some samples at levels above the CRQL. These compounds were confirmed with GC/MS according to the CLP protocols. The high levels of these compounds in samples 44SD01 and 44SD02 could be attributed to the high levels of % moisture. The concentration of these compounds in the sediment samples (wet base) are approximately one-fourth (1/4) of the reported concentrations. The reported results for these compounds are qualified estimated. Also 4,4-DDT were detected in these two samples at levels less than CRQL. The reported detection limits are qualified estimated for DDT in the samples.

The matrix spike recovery for endrin (141%) was above the control limit of 139%. The recovery of this compound was within the QC limit in the matrix spike duplicate, and since the RPD was within the requirement limit, no qualifier codes have been applied.

The confirmation analyses were not identified on Form IX with the exception of the standard analyzed on 8-30-91 at 14:37 and 15:06 on OV-101 column. This should be clarified by the laboratory.



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Due to the saturation problems, the early elevated peaks could not be resolved to the corresponding base line in sample 44MW0306. The reported quantitation limits for the early elevated compounds are qualified estimated.

The DBC surrogate recovery (165) was above the 150% QC limit in sample 44SB0300. The target compounds were not detected in this sample, therefore, the data are not impacted.

A few compounds had %D above 15% in the initial analysis. However, these standards were analyzed at the end of the sample analysis, therefore, no qualifier codes have been applied.

DDD was detected on both columns in sample 44MW0106 at levels above CRQL. This compound was not reported on Form I. The reported quantitation limit for this compound is qualified estimated. This discrepancy should be clarified by the laboratory.

ATTACHMENT I  
GLOSSARY OF DATA QUALIFIER CODES



## GLOSSARY OF DATA QUALIFIERS

### CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds):

- U = NOT DETECTED, SUBSTANTIALLY ABOVE THE LEVEL REPORTED IN LABORATORY OR FIELD BLANKS.
- R = UNRELIABLE RESULT. ANALYTE MAY OR MAY NOT BE PRESENT IN THE SAMPLE. SUPPORTING DATA NECESSARY TO CONFIRM RESULT.
- N = NEGATED COMPOUND WAS CONSIDERED AS NOT PRESENT IN THE SAMPLE.

(NO CODE) = CONFIRMED IDENTIFICATION

### CODES RELATING TO QUANTITATION

(can be used for both positive results and sample quantitation limits):

- J = ANALYTE PRESENT. REPORTED VALUE MAY NOT BE ACCURATE OR PRECISE.
- L = ANALYTE PRESENT. REPORTED VALUE MAY BE BIASED LOW. ACTUAL VALUE IS EXPECTED TO BE HIGHER.
- UJ = THE REPORTED QUANTITATION LIMITS ARE QUALIFIED ESTIMATED.
- UL = NOT DETECTED. QUANTITATION LIMIT MAY BE HIGHER.

### OTHER CODES

- Q = NO ANALYTICAL RESULT.

**ATTACHMENT II  
DATA SUMMARIES**



WESTON ANALYTICS  
GC/MS DATA SUMMARY  
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664    SDG: #101    Client: BAKER    Page: 1

Cust ID: 44MW0100    44MW0100D    44MW0106    44MW0200    44MW02035    44MW0300

Sample Information	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	MED	1	1	1
	Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
		fl	fl	fl	fl	fl	fl
Chloromethane.....							
Bromomethane.....							
Vinyl Chloride.....							
Chloroethane.....							
Methylene Chloride.....		21 U	34 U	1100 U	37 U	31 U	34 U
Acetone.....		16 U	61 U	1500 U	50 U	59 U	86 U
Carbon Disulfide.....							
1,1-Dichloroethene.....							
1,1-Dichloroethane.....							
Trans-1,2-Dichloroethene.....							
Chloroform.....							
1,2-Dichloroethane.....							
2-Butanone.....							
1,1,1-Trichloroethane.....							
Carbon Tetrachloride.....							
Vinyl Acetate.....							
Bromodichloromethane.....							
1,2-Dichloropropane.....							
Trans-1,3-Dichloropropene.....							
Trichloroethene.....							
Dibromochloromethane.....							
1,1,2-Trichloroethane.....							
Benzene.....							
cis-1,3-Dichloropropene.....							
2-Chloroethylvinylether.....							
Bromoform.....							
4-Methyl-2-pentanone.....		UJ	UJ		UJ	UJ	UJ
2-Hexanone.....							

R

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Case Number: 23664    SDG: #101    Client: BAKER  
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Page: 1

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Cust ID: 44MW0100    44MW0100D    44MW0106    44MW0200    44MW02035    44MW0300  
=====

=====  
=====fl=====fl=====fl=====fl=====fl=====fl=====fl  
Tetrachloroethene.....  
1,1,2,2-Tetrachloroethane.....  
Toluene.....  
Chlorobenzene.....  
Ethylbenzene.....  
Styrene.....  
Total Xylenes.....  
=====

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664    SDG: #101    Client: BAKER Page: 2

	Cust ID: 44MW0306	44SB0100	44SB0102	44SB0200	44SB0200D	44SB0206
Sample Information	Matrix: Soil	Soil	Soil	Soil	Soil	Soil
	D.F.: 1	1	1	1	1	1
	Units: ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Chloromethane.....						
Bromomethane.....						
Vinyl Chloride.....						
Chloroethane.....						
Methylene Chloride.....	20 U	41 U	39 U	30 U	35 U	32 U
Acetone.....	65 U	37 U	33 U	18 U	14 U	19 U
Carbon Disulfide.....						
1,1-Dichloroethene.....						
1,1-Dichloroethane.....						
Trans-1,2-Dichloroethene.....						
Chloroform.....						
1,2-Dichloroethane.....						
2-Butanone.....						
1,1,1-Trichloroethane.....						
Carbon Tetrachloride.....						
Vinyl Acetate.....						
Bromodichloromethane.....						
1,2-Dichloropropane.....						
Trans-1,3-Dichloropropene.....						
Trichloroethene.....						
Dibromochloromethane.....						
1,1,2-Trichloroethane.....						
Benzene.....						
cis-1,3-Dichloropropene.....						
2-Chloroethylvinylether.....						
Bromoform.....						
4-Methyl-2-pentanone.....	UJ	UJ	UJ	UJ	UJ	UJ
2-Hexanone.....						

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Case Number: 23664    SDG: #101    Client: BAKER

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Cust ID: 44MW0306    44SB0100    44SB0102    44SB0200    44SB0200D    44SB0206

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=====fl=====fl=====fl=====fl=====fl=====fl=====fl

Tetrachloroethene.....  
1,1,2,2-Tetrachloroethane.....  
Toluene.....  
Chlorobenzene.....  
Ethylbenzene.....  
Styrene.....  
Total Xylenes.....

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

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Case Number: 23664    SDG: #101    Client: BAKER    Page: 3  
=====

	Cust ID: 44SB0300	44SB0306	44SB0400	44SD01	44SD02	63SD01
Sample Information	Matrix: Soil	Soil	Soil	Soil	Soil	Soil
	D.F.: 1	1	1	1	1	1
	Units: ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
	fl	fl	fl	fl	fl	fl

Chloromethane.....						
Bromomethane.....						
Vinyl Chloride.....						
Chloroethane.....						
Methylene Chloride.....	21 U	24 U	45 U	34 U	53 U	30 U
Acetone.....		13 U	68 U		31 U	27 U
Carbon Disulfide.....			2 J			
1,1-Dichloroethene.....						
1,1-Dichloroethane.....						
Trans-1,2-Dichloroethene.....						
Chloroform.....						
1,2-Dichloroethane.....						
2-Butanone.....						
1,1,1-Trichloroethane.....						
Carbon Tetrachloride.....						
Vinyl Acetate.....						
Bromodichloromethane.....						
1,2-Dichloropropane.....						
Trans-1,3-Dichloropropene.....						
Trichloroethene.....						
Dibromochloromethane.....						
1,1,2-Trichloroethane.....						
Benzene.....						
cis-1,3-Dichloropropene.....						
2-Chloroethylvinylether.....						
Bromoform.....						
4-Methyl-2-pentanone.....	UJ	UJ	UJ			
2-Hexanone.....						

=====  
Case Number: 23664      SDG: #101      Client: BAKER

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Cust ID: 44SB0300    44SB0306    44SB0400    44SD01    44SD02    63SD01

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=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====fl

Tetrachloroethene.....  
1,1,2,2-Tetrachloroethane.....  
Toluene.....  
Chlorobenzene.....  
Ethylbenzene.....  
Styrene.....  
Total Xylenes.....

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

=====  
Case Number: 23664    SDG: #101    Client: BAKER  
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Cust ID:    63SD01D            63SD02

Sample  
Information

Matrix:        Soil            Soil  
D.F.:            1                1  
Units:           ug/kg            ug/kg

=====  
fl=====fl=====fl=====fl=====fl=====fl

Chloromethane.....  
Bromomethane.....  
Vinyl Chloride.....  
Chloroethane.....  
Methylene Chloride.....  
Acetone.....  
Carbon Disulfide.....  
1,1-Dichloroethene.....  
1,1-Dichloroethane.....  
Trans-1,2-Dichloroethene.....  
Chloroform.....  
1,2-Dichloroethane.....  
2-Butanone.....  
1,1,1-Trichloroethane.....  
Carbon Tetrachloride.....  
Vinyl Acetate.....  
Bromodichloromethane.....  
1,2-Dichloropropane.....  
Trans-1,3-Dichloropropene.....  
Trichloroethene.....  
Dibromochloromethane.....  
1,1,2-Trichloroethane.....  
Benzene.....  
cis-1,3-Dichloropropene.....  
2-Chloroethylvinylether.....  
Bromoform.....  
4-Methyl-2-pentanone.....  
2-Hexanone.....

21 U            67 U  
18 U            24 U

=====  
Case Number: 23664    SDG: #101    Client: BAKER  
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Cust ID: 63SD01D    63SD02

=====  
=====fl=====fl=====fl=====fl=====fl=====fl=====fl  
Tetrachloroethene.....  
1,1,2,2-Tetrachloroethane.....  
Toluene.....  
Chlorobenzene.....  
Ethylbenzene.....  
Styrene.....  
Total Xylenes.....



WESTON ANALYTICS  
GC/MS DATA SUMMARY  
SEMI-VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664    SDG: #101    Client: BAKER    Page: 1

Sample Information	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	1	1	1
	Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Phenol.....							
bis(2-Chloroethyl) Ether.....							
2-Chlorophenol.....							
1,3-Dichlorobenzene.....							
1,4-Dichlorobenzene.....							
Benzyl Alcohol.....							
1,2-Dichlorobenzene.....							
2-Methylphenol.....							
bis(2-Chloroisopropyl) Ether.....							
4-Methylphenol.....							
N-Nitroso-di-n-propylamine.....							UJ
Hexachloroethane.....							
Nitrobenzene.....							
Isophorone.....							
2-Nitrophenol.....							
2,4-Dimethylphenol.....							
Benzoic Acid(2).....				2100 U		UJ	
bis(2-Chloroethoxy)Methane.....							
2,4-Dichlorophenol.....							
1,2,4-Trichlorobenzene.....							
Naphthalene.....							
4-Chloroaniline.....							UJ
Hexachlororbutadiene.....							
4-Chloro-3-methylphenol.....							
2-Methylnaphthalene.....							
Hexachlorocyclopentadiene.....							

Cust ID: 44MW0100 44MW0100D 44MW0106 44MW0200 44MW02035 44MW0300

=====f1=====f1=====f1=====f1=====f1=====f1=====f1

2,4,6-Trichlorophenol.....  
2,4,5-Trichlorophenol(2).....  
2-Chloronaphthalene.....  
2-Nitroaniline(2).....  
Dimethyl Phthalate.....  
Acenaphthylene.....  
3-Nitroaniline(2).....  
Acenaphthene.....  
2,4-Dinitrophenol(2).....  
4-Nitrophenol(2).....  
Dibenzofuran.....  
2,4-Dinitrotoluene.....  
2,6-Dinitrotoluene.....  
Diethyl Phthalate.....  
4-Chlorophenyl-phenylether.....  
Fluorene.....  
4-Nitroaniline(2).....  
4,6-Dinitro-2-methylphenol(2).....  
N-Nitrosodiphenylamine(1).....  
4-Bromophenyl-phenylether.....  
Hexachlorobenzene.....  
Pentachlorophenol(2).....  
Phenanthrene.....  
Anthracene.....  
di-n-Butyl Phthalate.....  
Fluoranthene.....  
Pyrene.....  
Butyl Benzyl Phthalate.....  
3,3'-Dichlorobenzidine(3).....  
Benzo(a)Anthracene.....  
bis(2-Ethylhexyl)Phthalate.....  
Chrysene.....  
di-n-Octyl Phthalate.....  
Benzo(b)Fluoranthene.....  
Benzo(k)Fluoranthene.....  
Benzo(a)Pyrene.....  
Indeno(1,2,3-cd)Pyrene.....  
Dibenz(a,h)Anthracene.....  
Benzo(g,h,i)Perylene.....

UJ

UJ

76 J

UJ

380 U

420 U

370 U

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
SEMI-VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664    SDG: #101    Client: BAKER Page: 2

Cust ID: 44MW0306    44SB0100    44SB0102    44SB0200    44SB0200D    44SB0206

Sample Information	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	1	1	1
	Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
		fl	fl	fl	fl	fl	fl

Phenol.....						
bis(2-Chloroethyl) Ether.....						
2-Chlorophenol.....						
1,3-Dichlorobenzene.....						
1,4-Dichlorobenzene.....						
Benzyl Alcohol.....						
1,2-Dichlorobenzene.....						
2-Methylphenol.....						
bis(2-Chloroisopropyl) Ether.....						
4-Methylphenol.....						
N-Nitroso-di-n-propylamine.....	UJ		UJ			
Hexachloroethane.....						
Nitrobenzene.....						
Isophorone.....						
2-Nitrophenol.....						
2,4-Dimethylphenol.....						
Benzoic Acid(2).....			42 J	39 J	64 J	
bis(2-Chloroethoxy)Methane.....						
2,4-Dichlorophenol.....						
1,2,4-Trichlorobenzene.....						
Naphthalene.....	1100					
4-Chloroaniline.....		UJ		UJ		
Hexachlororbutadiene.....						
4-Chloro-3-methylphenol.....						
2-Methylnaphthalene.....	170 J					
Hexachlorocyclopentadiene.....						

Cust ID: 44MW0306 44SB0100 44SB0102 44SB0200 44SB0200D 44SB0206

=====fl=====fl=====fl=====fl=====fl=====fl=====fl

2,4,6-Trichlorophenol.....					
2,4,5-Trichlorophenol(2).....					
2-Chloronaphthalene.....					
2-Nitroaniline(2).....					
Dimethyl Phthalate.....					
Acenaphthylene.....	120 J				
3-Nitroaniline(2).....					
Acenaphthene.....					
2,4-Dinitrophenol(2).....					
4-Nitrophenol(2).....		UJ		UJ	
Dibenzofuran.....	100 J				
2,4-Dinitrotoluene.....					
2,6-Dinitrotoluene.....					
Diethyl Phthalate.....					
4-Chlorophenyl-phenylether.....					
Fluorene.....	100 J				
4-Nitroaniline(2).....					
4,6-Dinitro-2-methylphenol(2).....					
N-Nitrosodiphenylamine(1).....					
4-Bromophenyl-phenylether.....					
Hexachlorobenzene.....					
Pentachlorophenol(2).....					
Phenanthrene.....	320 J				
Anthracene.....					
di-n-Butyl Phthalate.....					
Fluoranthene.....	160 J				
Pyrene.....	100 J				
Butyl Benzyl Phthalate.....					
3,3'-Dichlorobenzidine(3).....			UJ	UJ	UJ
Benzo(a)Anthracene.....					
bis(2-Ethylhexyl)Phthalate.....					
Chrysene.....					
di-n-Octyl Phthalate.....					
Benzo(b)Fluoranthene.....					
Benzo(k)Fluoranthene.....					
Benzo(a)Pyrene.....					
Indeno(1,2,3-cd)Pyrene.....					
Dibenz(a,h)Anthracene.....					
Benzo(g,h,i)Perylene.....					

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
SEMI-VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664    SDG: #101    Client: BAKER    Page: 3

Sample Information	Cust ID: 44SB0300	44SB0306	44SB0400	44SD01	44SD02	63SD01
Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
D.F.:	1	1	1	1	1	1
Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Phenol.....						
bis(2-Chloroethyl) Ether.....						
2-Chlorophenol.....						
1,3-Dichlorobenzene.....						
1,4-Dichlorobenzene.....						
Benzyl Alcohol.....						
1,2-Dichlorobenzene.....						
2-Methylphenol.....				140 J		
bis(2-Chloroisopropyl) Ether.....						
4-Methylphenol.....						
N-Nitroso-di-n-propylamine.....						
Hexachloroethane.....						
Nitrobenzene.....						
Isophorone.....						
2-Nitrophenol.....						
2,4-Dimethylphenol.....						
Benzoic Acid(2).....	160 J	67 J		1800 J	1000 J	UJ
bis(2-Chloroethoxy)Methane.....						
2,4-Dichlorophenol.....						
1,2,4-Trichlorobenzene.....						
Naphthalene.....						
4-Chloroaniline.....						
Hexachlororbutadiene.....						
4-Chloro-3-methylphenol.....						
2-Methylnaphthalene.....				110 J		
Hexachlorocyclopentadiene.....						

Cust ID: 44SB0300 44SB0306 44SB0400 44SD01 44SD02 63SD01

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2,4,6-Trichlorophenol.....			
2,4,5-Trichlorophenol(2).....			
2-Chloronaphthalene.....			
2-Nitroaniline(2).....			
Dimethyl Phthalate.....			
Acenaphthylene.....			
3-Nitroaniline(2).....			
Acenaphthene.....			
2,4-Dinitrophenol(2).....		UJ	UJ
4-Nitrophenol(2).....			UJ
Dibenzofuran.....			
2,4-Dinitrotoluene.....			
2,6-Dinitrotoluene.....			
Diethyl Phthalate.....			
4-Chlorophenyl-phenylether.....			
Fluorene.....			
4-Nitroaniline(2).....			
4,6-Dinitro-2-methylphenol(2).....			
N-Nitrosodiphenylamine(1).....			
4-Bromophenyl-phenylether.....			
Hexachlorobenzene.....			
Pentachlorophenol(2).....			
Phenanthrene.....			
Anthracene.....			
di-n-Butyl Phthalate.....		140 J	170 J
Fluoranthene.....			
Pyrene.....			
Butyl Benzyl Phthalate.....			280 J
3,3'-Dichlorobenzidine(3).....			
Benzo(a)Anthracene.....			
bis(2-Ethylhexyl) Phthalate.....		220 J	290 J
Chrysene.....			
di-n-Octyl Phthalate.....			
Benzo(b)Fluoranthene.....			
Benzo(k)Fluoranthene.....			
Benzo(a)Pyrene.....			
Indeno(1,2,3-cd)Pyrene.....	UJ	UJ	UJ
Dibenz(a,h)Anthracene.....	UJ	UJ	UJ
Benzo(g,h,i)Perylene.....	UJ	UJ	UJ

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
SEMI-VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

=====  
Case Number: 23664    SDG: #101    Client: BAKER  
-----

Page: 4

Cust ID: 63SD01D                  63SD02

Sample Information	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	1	1	1
	Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
		=====fl	=====fl	=====fl	=====fl	=====fl	=====fl

Phenol.....  
bis(2-Chloroethyl)Ether.....  
2-Chlorophenol.....  
1,3-Dichlorobenzene.....  
1,4-Dichlorobenzene.....  
Benzyl Alcohol.....  
1,2-Dichlorobenzene.....  
2-Methylphenol.....  
bis(2-Chloroisopropyl)Ether.....  
4-Methylphenol.....  
N-Nitroso-di-n-propylamine.....  
Hexachloroethane.....  
Nitrobenzene.....  
Isophorone.....  
2-Nitrophenol.....  
2,4-Dimethylphenol.....  
Benzoic Acid(2).....  
bis(2-Chloroethoxy)Methane.....  
2,4-Dichlorophenol.....  
1,2,4-Trichlorobenzene.....  
Naphthalene.....  
4-Chloroaniline.....  
Hexachlororbutadiene.....  
4-Chloro-3-methylphenol.....  
2-Methylnaphthalene.....  
Hexachlorocyclopentadiene.....

UJ

Cust ID: 63SD01D 63SD02

	fl	fl	fl	fl	fl	fl
2,4,6-Trichlorophenol.....						
2,4,5-Trichlorophenol(2).....						
2-Chloronaphthalene.....						
2-Nitroaniline(2).....						
Dimethyl Phthalate.....						
Acenaphthylene.....						
3-Nitroaniline(2).....						
Acenaphthene.....						
2,4-Dinitrophenol(2).....					UJ	
4-Nitrophenol(2).....						
Dibenzofuran.....						
2,4-Dinitrotoluene.....						
2,6-Dinitrotoluene.....						
Diethyl Phthalate.....						
4-Chlorophenyl-phenylether.....						
Fluorene.....						
4-Nitroaniline(2).....						
4,6-Dinitro-2-methylphenol(2).....						
N-Nitrosodiphenylamine(1).....						
4-Bromophenyl-phenylether.....						
Hexachlorobenzene.....						
Pentachlorophenol(2).....						
Phenanthrene.....						
Anthracene.....						
di-n-Butyl Phthalate.....						
Fluoranthene.....						
Pyrene.....						
Butyl Benzyl Phthalate.....						
3,3'-Dichlorobenzidine(3).....						
Benzo(a)Anthracene.....						
bis(2-Ethylhexyl)Phthalate.....						
Chrysene.....						
di-n-Octyl Phthalate.....						
Benzo(b)Fluoranthene.....						
Benzo(k)Fluoranthene.....						
Benzo(a)Pyrene.....						
Indeno(1,2,3-cd)Pyrene.....						
Dibenz(a,h)Anthracene.....						
Benzo(g,h,i)Perylene.....						



WESTON ANALYTICS  
PESTICIDE/PCB's  
CLP LIST

=====  
Case Number: 23664    SDG: #101    Client: BAKER    Page: 1  
=====

	Cust ID: 44MW0100	44MW0100D	44MW0106	44MW0200	44MW0300	44MW0306
Sample Information	Matrix: Soil	Soil	Soil	Soil	Soil	Soil
	D.F.: 1	1	1	1	1	1
	Units: ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
	=====fl=====	=====fl=====	=====fl=====	=====fl=====	=====fl=====	=====fl=====

Alpha-BHC.....						UJ
Beta-BHC.....						UJ
Delta-BHC.....						UJ
Gamma-BHC (Lindane).....						UJ
Heptachlor.....						
Aldrin.....						
Heptachlor Epoxide.....						
Endosulfan I.....						
Dieldrin.....						
4,4'-DDE.....						
Endrin.....						
Endosulfan II.....						
4,4'-DDD.....				UJ		48
Endosulfan Sulfate.....						
4,4'-DDT.....						
Methoxychlor.....						
Endrin Ketone.....						
Alpha Chlordane.....						
Gamma Chlordane.....						
Toxaphene.....						
Aroclor-1016.....						UJ
Aroclor-1221.....						UJ
Aroclor-1232.....						
Aroclor-1242.....						
Aroclor-1248.....						
Aroclor-1254.....						
Aroclor-1260.....						

WESTON ANALYTICS  
 PESTICIDE/PCB's  
 CLP LIST

=====  
 Case Number: 23664    SDG: #101    Client: BAKER    Page: 2  
 =====

Cust ID: 44MW02035    44SB0100    44SB0102    44SB0200    44SB0200D    44SB0206

Sample Information	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	1	1	1
	Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
		=====fl=====	=====fl=====	=====fl=====	=====fl=====	=====fl=====	=====fl=====

Alpha-BHC.....  
 Beta-BHC.....  
 Delta-BHC.....  
 Gamma-BHC (Lindane).....  
 Heptachlor.....  
 Aldrin.....  
 Heptachlor Epoxide.....  
 Endosulfan I.....  
 Dieldrin.....  
 4,4'-DDE.....  
 Endrin.....  
 Endosulfan II.....  
 4,4'-DDD.....  
 Endosulfan Sulfate.....  
 4,4'-DDT.....  
 Methoxychlor.....  
 Endrin Ketone.....  
 Alpha Chlordane.....  
 Gamma Chlordane.....  
 Toxaphene.....  
 Aroclor-1016.....  
 Aroclor-1221.....  
 Aroclor-1232.....  
 Aroclor-1242.....  
 Aroclor-1248.....  
 Aroclor-1254.....  
 Aroclor-1260.....

30                    39

WESTON ANALYTICS  
PESTICIDE/PCB's  
CLP LIST

=====  
Case Number: 23664    SDG: #101    Client: BAKER    Page: 3  
=====

	Cust ID: 44SB0300	44SB0306	44SB0400	44SD01	44SD02	63SD01
Sample Information	Matrix: Soil	Soil	Soil	Soil	Soil	Soil
	D.F.: 1	1	1	1	1	1
	Units: ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
	=====fl	=====fl	=====fl	=====fl	=====fl	=====fl

Alpha-BHC.....						
Beta-BHC.....						
Delta-BHC.....						
Gamma-BHC (Lindane).....						
Heptachlor.....						
Aldrin.....						
Heptachlor Epoxide.....						
Endosulfan I.....						
Dieldrin.....						
4,4'-DDE.....				1000 J	660 J	
Endrin.....						
Endosulfan II.....						
4,4'-DDD.....				1000 J	250 J	
Endosulfan Sulfate.....						
4,4'-DDT.....				UJ	UJ	
Methoxychlor.....						
Endrin Ketone.....						
Alpha Chlordane.....						
Gamma Chlordane.....						
Toxaphene.....						
Aroclor-1016.....						
Aroclor-1221.....						
Aroclor-1232.....						
Aroclor-1242.....						
Aroclor-1248.....						
Aroclor-1254.....						
Aroclor-1260.....						

WESTON ANALYTICS  
PESTICIDE/PCB'S  
CLP LIST

=====  
Case Number: 23664    SDG: #101    Client: BAKER    Page: 4  
=====

=====  
Cust ID:    63D01D    63SD02  
Sample Information    Matrix:    Soil    Soil  
                          D.F.:    1    1  
                          Units:    ug/kg    ug/kg  
=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====

Alpha-BHC.....  
Beta-BHC.....  
Delta-BHC.....  
Gamma-BHC (Lindane).....  
Heptachlor.....  
Aldrin.....  
Heptachlor Epoxide.....  
Endosulfan I.....  
Dieldrin.....  
4,4'-DDE.....  
Endrin.....  
Endosulfan II.....  
4,4'-DDD.....  
Endosulfan Sulfate.....  
4,4'-DDT.....  
Methoxychlor.....  
Endrin Ketone.....  
Alpha Chlordane.....  
Gamma Chlordane.....  
Toxaphene.....  
Aroclor-1016.....  
Aroclor-1221.....  
Aroclor-1232.....  
Aroclor-1242.....  
Aroclor-1248.....  
Aroclor-1254.....  
Aroclor-1260.....

**ATTACHMENT III**

**VOLATILE CALIBRATION  
SUMMARY OF CRITERIA OUTLIERS**

CASE: 23664 SDC #101  
CLIENT: Baker

	I.C	I.C	I.C	I.C	E.C	C.C	C.C
DATE/TIME OF CALIBRATION	8-21-91	8-17-91	8-27-91	8-20-91	8-30-91	9-6-91	8-18-
INSTRUMENT ID	03	0WA13	13	18	03	03	0A3A10
Chloromethane						%D=49	
Bromomethane		%D=30.8					
Vinyl Chloride							
Chloroethane		:					%D=3
Methylene Chloride							
Acetone		%RSD=42		%RSD=52.5			
Carbon Disulfide		%RSD=50.6	%RSD=44		%D=59	%D=49	
1,1-Dichloroethene							
1,1-Dichloroethane							
1,2-Dichloroethene(total)							
Chloroform							
1,2-Dichloroethane						%D=41.9	
2-Butanone	RRF=0.026				RRF=0.027	RRF=0.32	
1,1,1-Trichloroethane							
Carbon Tetrachloride						%D=35	
Vinyl Acetate					%D=35	%D=76	
Bromodichloromethane							
1,2-Dichloropropane							
Cis-1,3-dichloropropene							
Trichloroethene							
Dibromochloromethane							
1,1,2-Trichloroethane							
Benzene							
Trans-1,3-dichloropropene							
Bromoform							
4-Methyl-2-pentanone							
2-Hexanone					%D=29	%D=47	
Tetrachloroethene							
1,1,2,2-Tetrachloroethane							
Toluene							
Chlorobenzene							
Ethylbenzene							
Styrene							
Xylene(total)							
ASSOCIATED SAMPLES					44MW0106	44MW0106	44SD0
							44SD02

VOLATILE CALIBRATION  
SUMMARY OF CRITERIA OUTLIERS

CASE: 23664 906-#101

CLIENT: Baker

C.C      C.C

DATE/TIME OF CALIBRATION	8-27-71	8-20-71				
INSTRUMENT ID	13	18				
Chloromethane		%P=30				
Bromomethane						
Vinyl Chloride						
Chloroethane						
Methylene Chloride		%P=28				
Acetone						
Carbon Disulfide						
1,1-Dichloroethene						
1,1-Dichloroethane						
1,2-Dichloroethene (total)						
Chloroform						
1,2-Dichloroethane						
2-Butanone						
1,1,1-Trichloroethane						
Carbon Tetrachloride						
Vinyl Acetate						
Bromodichloromethane						
1,2-Dichloropropane						
Cis-1,3-dichloropropene						
Trichloroethene						
Dibromochloromethane						
1,1,2-Trichloroethane						
Benzene						
Trans-1,3-dichloropropene						
Bromoform						
4-Methyl-2-pentanone	%D=73	%D=36				
2-Hexanone	%D=32	%D=74				
Tetrachloroethene						
1,1,2,2-Tetrachloroethane						
Toluene						
Chlorobenzene						
Ethylbenzene						
Styrene						
Xylene (total)						
ASSOCIATED SAMPLES	44Mw0100	635D01				
	01001D	635D01D				
	0200	635D02				
	02075	MS				
	0300	MSD				
	0706					
	445B0100					
	0102					
	0200					
	02000					

0206  
0700  
-211

SEMIVOLATILE CALIBRATION SUMMARY

23664

101

Baker

I ✓ I ✓ I ✓ C ✓ C ✓ C ✓ C ✓ C ✓ C ✓ C ✓ C ✓

EXCEPTION CRITERIA:	8,23	8,27	8,29	8,30	9,03	9,18	8,30	8,31	8,15	8,17		
INIT %RSD >30%												
CONT %D >25%												
MIN RRF 0.05	04	06	52	04	04	04	06	06	52	52		
Phenol												
Bis(2-chloroethyl)ether												
2-Chlorophenol												
1,3-Dichlorobenzene												
1,4-Dichlorobenzene												
Benzyl Alcohol					26					77		
1,2-Dichlorobenzene												
2-Methylphenol												
Bis(2-chloroisopropyl)ether				32	26							
4-Methylphenol												
N-Nitroso-Di-n-propylamine						53						
Hexachloroethane												
Nitrobenzene												
Isophorone												
2-Nitrophenol												
2,4-Dimethylphenol					29	27						
Benzoic Acid	33	43		32	51	40		28		56		
Bis(2-chloroethoxy)methane						31						
2,4-Dichlorophenol												
1,2,4-Trichlorobenzene												
Naphthalene												
4-Chloroaniline						57		27				
Hexachlorobutadiene												
4-Chloro-3-methylphenol												
2-Methylnaphthalene												
Hexachlorocyclopentadiene						28						
2,4,6-Trichlorophenol												
2,4,5-Trichlorophenol												
2-Chloronaphthalene												
2-Nitroaniline				39								
Dimethylphthalate												
Acenaphthylene												
2,6-Dinitrotoluene												
3-Nitroaniline				39	51	47						
Acenaphthene												
2,4-Dinitrophenol		37									50	
4-Nitrophenol					47	56					45	
Dibenzofuran												
2,4-Dinitrotoluene												
Diethylphthalate												
4-Chlorophenyl-phenylether												
Fluorene												
4-Nitroaniline					43	34					33	
4,6-Dinitro-2-methylphenol											48	
N-Nitrosodiphenylamine												
4-Bromophenyl-phenylether												
Hexachlorobenzene												
Pentachlorophenol												
Phenanthrene												
Anthracene												
Di-n-butylphthalate												
Fluoranthene												
Pyrene	40											
Butylbenzylphthalate												
3,3'-Dichlorobenzidine	35							81	28			
Benzo(a)anthracene												
Chrysene												
Bis(2-ethylhexyl)phthalate												
Di-n-octylphthalate												
Benzo(b)fluoranthene												
Benzo(k)fluoranthene												
Benzo(a)pyrene												
Indeno(1,2,3-cd)pyrene									100			
Dibenzo(a,h)anthracene		32							100			
Benzo(g,h,i)perylene									100			

100 020 300 208 300 810 801  
 100 506 102 306 0.0  
 106 100 200





1 WESTON WAY  
WEST CHESTER, PA 19380-1449  
PHONE: 215-692-3030  
FAX: 215-430-3124

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ORGANIC QUALITY ASSURANCE REVIEW  
SITE: BAKER (CLEAN)  
CASE: 23664  
SDG: 21

REVIEW PERFORMED BY  
THE ANALYTICS DIVISION  
OF  
ROY F. WESTON, INC.

PREPARED BY: Kelly Muir Spittler  
Kelly Muir Spittler  
Unit Leader - Data Validation

9-9-91  
Date

VERIFIED BY: Zohreh Hamid  
Zohreh Hamid, Ph.D.  
Section Manager - Data Validation

9-9-91  
Date

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SITE: BAKER (CLEAN)  
CASE: 23664  
SDG: # 21

INTRODUCTION

This quality assurance review is based upon a review of all data generated from twenty (20) soil samples collected on 7/24-28/91. The samples were analyzed according to criteria set forth in contract laboratory program (CLP) for TCL target compounds.

This review has been performed in accordance with the confirmation method. The reported analytical results are presented as a summary of the data in Attachment III. All of the analytical data were examined to determine the usability of the analytical results and also to determine contractual compliance relative to the analytical requirements and deliverables specified for CLP method. The applicable qualifier codes have been placed next to the results in the data summary to indicate the qualitative and/or quantitative reliability. The details of this evaluation review are presented in the memo section of this report.

All data have been validated with regard to usability according to the quality assurance set forth in the Functional Guidelines for evaluation of organic analysis for completion of the Data Validation Report Forms and preparation of the final data validation report. If you have any questions or comments on this data review, please call Zohreh Hamid at (215) 344-3745.

QUALITY ASSURANCE REVIEW

The analyses of the samples were performed by CompuChem Laboratories, Inc.

The findings offered in this report are based upon a rigorous review of the following criteria:

- Data completeness
- Holding times
- \* • GC/MS tuning
- Calibration
- \* • Blanks
- Surrogate recoveries
- \* • Matrix spike/spike duplicate
- \* • Internal standard
- \* • Instrument performance
- \* • Compound identification
- \* • Compound quantitations
  
- \* Criteria are met for the parameters.



SITE: BAKER (CLEAN)  
CASE: 23664  
SDG: #21  
PAGE 2 OF 6

## EVALUATION BY FRACTION

### I. Volatiles

- Holding Time
- Surrogate Recovery
- MS/MSD
- Blank
- GC/MS Tuning
- Initial Calibration
- Continuing Calibration
- Compound ID (HSL, TIC)
- Standards
- Spectra Quality
- Chromatography
- Data Completeness

### OVERVIEW

Twenty soil samples were analyzed within the holding time for volatile target compounds.

The surrogate recoveries and internal standards criteria were within the QC limits. The matrix spike/spike duplicate recoveries met the quality control limits. Overall, no major problems were encountered during the sample analysis and the data are considered representative.

### ISSUES

Methylene chloride and acetone are detected in the laboratory method blanks at levels less than 5x CRQL. These compounds were reported in the samples at the comparable levels to the blanks. Therefore, the reported results are elevated to CRQL and are flagged "U" and should be considered as quantitation limits.

Up to six (6) compounds had %RSD and/or %D above 30% and 25% in initial and continuing calibration. The %Differences for acetone in all calibrations and 2-hexanone on calibration analyzed on 7-30-91 are exceeded 50%. Also %Ds for methylene chloride was 99.9% and 69% in continuing calibration standards analyzed on 7-30-91 and 8-1-91, respectively. The reported results for acetone and methylene chloride have already been qualified due to the blank contamination. The reported quantitation limits for 2-hexanone are qualified estimated for the associated samples.



SITE: BAKER (CLEAN)  
CASE: 23664  
SDG: #21  
PAGE 3 OF 6

## EVALUATION BY FRACTION

### II. Base/Neutral/Acids

Holding Time  
 Extraction Time  
 Surrogate Recovery  
 Blank  
 MS/MSD  
 GC/MS Tuning  
 Initial Calibration  
 Continuing Calibration  
 Compound ID (HSL, TIC)  
 Standards  
 Spectra Quality  
 Chromatography  
 Data Completeness

### OVERVIEW

Twenty (20) soil samples were extracted/analyzed according to the Contract Laboratory Program (CLP) for semivolatile target compounds.

All surrogate recoveries, internal standard areas and matrix spike analysis were within the control limits. The contractual holding time was met for all samples. The minor problem associated with the analysis are listed in the following section.

### ISSUES

The chromatogram for samples 01S131400 and DISB1600 elevated due to the non target compound contaminations. Surrogate and internal standard recoveries were within the established control limits, therefore, the quantitation of the data are not impacted.

Aldol condensation products, solvent contaminants and unknown hydrocarbons were reported as TIC compounds in the samples. Most of the unknowns could be grouped as aliphatic hydrocarbons and PNAs, however, specific compounds could not be identified with the exception of sulfur.

Instrument ID on form V for initial calibration analysis performed on 8-4-91 is inadvertently identified as #20. This ID number should be changed to #21. The form V should be corrected and resubmitted by the laboratory.

**WESTON**

SITE: BAKER (CLEAN)  
CASE: 23664  
SDG: #21  
PAGE 4 OF 6

Di-n-butylphthalate and bis(2-ethylhexyl)phthalate were detected in the samples at level less than CRQL. These compounds are also detected in the laboratory blanks at levels less than 5x the CRQL. Therefore, the reported sample results are elevated to the corresponding CRQL, are flagged "U," and should be considered as detection limits.

Benzo(a)pyrene was detected in sample 01SB1716 at a level above the CRQL.

Up to twelve (12) compounds had %D above 25% in continuing calibrations. These compounds were not detected in the samples, also the percent differences were less than 50%, with the exception of 2,4,6-trichlorophenol in the calibration analyzed on 08-02-91. The reported quantitation limits for this compound are qualified "UJ" in the data summary for the associated samples.



SITE: BAKER (CLEAN)  
CASE: 23664  
SDG: #21  
PAGE 5 OF 6

EVALUATION BY FRACTION

III. Pesticides/PCB

- Holding Time
- Extraction Time
- Surrogate Recovery
- MS/MSD
- Blank
- Linearity Calibration
- DDT/Endrin Degradation
- Analytical Sequence
- DBC Retention Time
- Continuing Calibration
- Retention Time Window
- Standards
- Chromatography
- HSL Compounds
- Data Completeness

OVERVIEW

Twenty (20) samples were extracted/analyzed for Pesticides/PCB target compounds.

ISSUES

The DBC surrogate recovery criteria are not met in the following samples:

<u>Sample ID</u>	<u>%Recovery</u>	<u>QC Limits</u>
01SB1600	3%	20-150
01SB1416	0%	20-150
01SB1500	0%	20-150
01SB1500D	0%	20-150
43SBO200	12%	20-150

The laboratory case narrative stated that these samples were reextracted/reanalyzed, however, the reanalysis data are not included in the data package.

The reported sample data for samples 01SB1416, 01SB1500 and 01SB1500D are qualified estimated due to the 0% surrogate recovery. The other samples which have recoveries above 0% are not qualified because the DBC recovery is advisory limit in the Pesticide/PCB fraction.

**WESTON**

SITE: BAKER (CLEAN)

CASE: 23664

SDG: #21

PAGE 6 OF 6

The confirmation analysis was performed on 8/2-4/91 on the RTX-1701 column. The corresponding quantitation analysis was not performed for the associated samples (01SB1600, 01SB1616 and 01SB0913). Only Endosulfan II, DDT and endrin ketone were quantified in this column, therefore, the reported data are considered "tentative" and are qualified estimated.

The QC samples (MS & MSD) were extracted one day outside the 10-day extraction holding time. Even though the reported data are considered estimated for these QC samples, the corresponding sample results are not impacted.

**ATTACHMENT I**  
**GLOSSARY OF DATA QUALIFIER CODES**





## GLOSSARY OF DATA QUALIFIERS

### CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds):

- U = NOT DETECTED, SUBSTANTIALLY ABOVE THE LEVEL REPORTED IN LABORATORY OR FIELD BLANKS.
- R = UNRELIABLE RESULT. ANALYTE MAY OR MAY NOT BE PRESENT IN THE SAMPLE. SUPPORTING DATA NECESSARY TO CONFIRM RESULT.
- N = NEGATED COMPOUND WAS CONSIDERED AS NOT PRESENT IN THE SAMPLE.

(NO CODE) = CONFIRMED IDENTIFICATION

### CODES RELATING TO QUANTITATION

(can be used for both positive results and sample quantitation limits):

- J = ANALYTE PRESENT. REPORTED VALUE MAY NOT BE ACCURATE OR PRECISE.
- L = ANALYTE PRESENT. REPORTED VALUE MAY BE BIASED LOW. ACTUAL VALUE IS EXPECTED TO BE HIGHER.
- UJ = THE REPORTED QUANTITATION LIMITS ARE QUALIFIED ESTIMATED.
- UL = NOT DETECTED. QUANTITATION LIMIT MAY BE HIGHER.

### OTHER CODES

- Q = NO ANALYTICAL RESULT.

**ATTACHMENT II  
DATA SUMMARY**

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664    SDG#21    Client:    BAKER    Page: 1

Sample Information	Cust ID: 01SB0913	01SB1000	01SB1100	01SB1116	01SB1200	01SB1216
Matrix:	01SB1016 Soil	Soil	Soil	Soil	Soil	Soil
D.F.:	1	1	1	1	1	1
Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg

Chloromethane.....						
Bromomethane.....						
Vinyl Chloride.....						
Chloroethane.....						
Methylene Chloride.....	20 U	8 U	9 U	7 U	30 U	11 U
Acetone.....	11 U	38 U	34 U	15 U	10 U	15 U
Carbon Disulfide.....						
1,1-Dichloroethene.....						
1,1-Dichloroethane.....						
Trans-1,2-Dichloroethene.....						
Chloroform.....						
1,2-Dichloroethane.....						
2-Butanone.....						
1,1,1-Trichloroethane.....						
Carbon Tetrachloride.....						
Vinyl Acetate.....						
Bromodichloromethane.....						
1,2-Dichloropropane.....						
Trans-1,3-Dichloropropene.....						
Trichloroethene.....						
Dibromochloromethane.....						
1,1,2-Trichloroethane.....						
Benzene.....						
cis-1,3-Dichloropropene.....						
Bromoform.....						
4-Methyl-2-pentanone.....				UJ	UJ	UJ
2-Hexanone.....						UJ

=====  
Case Number: 23664

Client: BAKER

Page: 1

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Cust ID: 01SB1400 01SB1416 01SB1500 01SB1500D 01SB1516 01SB0913

=====  
=====fl=====fl=====fl=====fl=====fl=====fl=====fl

Tetrachloroethene.....  
1,1,2,2-Tetrachloroethane.....  
Toluene.....  
Chlorobenzene.....  
Ethylbenzene.....  
Styrene.....  
Total Xylenes.....

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664      SDG#21      Client:      BAKER Page: 2

Sample Information	Cust ID: 01SB1400    01SB1416    01SB1500    01SB1500D    01SB1516    01SB1600						
	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	1	1	1
Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg

Chloromethane.....							
Bromomethane.....							
Vinyl Chloride.....							
Chloroethane.....							
Methylene Chloride.....	5 U	7 U	34 U	6 U	9 U	23 U	
Acetone.....	13 U	18 U	13 U	22 U	26 U	11 U	
Carbon Disulfide.....							
1,1-Dichloroethene.....							
1,1-Dichloroethane.....							
Trans-1,2-Dichloroethene.....							
Chloroform.....							
1,2-Dichloroethane.....							
2-Butanone.....							
1,1,1-Trichloroethane.....							
Carbon Tetrachloride.....							
Vinyl Acetate.....							
Bromodichloromethane.....							
1,2-Dichloropropane.....							
Trans-1,3-Dichloropropene.....							
Trichloroethene.....							
Dibromochloromethane.....							
1,1,2-Trichloroethane.....							
Benzene.....							
cis-1,3-Dichloropropene.....							
Bromoform.....							
4-Methyl-2-pentanone.....							
2-Hexanone.....	UJ	UJ		UJ	UJ		

=====  
Case Number: 23664

Client: BAKER

Page: 2

-----  
Cust ID: 01SB1400 01SB1416 01SB1500 01SB1500D 01SB1516 01SB1600

=====  
-----fl-----fl-----fl-----fl-----fl-----fl-----fl

Tetrachloroethene.....  
1,1,2,2-Tetrachloroethane.....  
Toluene.....  
Chlorobenzene.....  
Ethylbenzene.....  
Styrene.....  
Total Xylenes.....

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664    SDG#21    Client:    BAKER    S0    Page: 3

Cust ID: 01SB1616    01SB1700    01SB1716    01SB1800    435BD200    435DB2000D

Sample  
Information

	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	1	1	1
	Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg

=====f1=====f1=====f1=====f1=====f1=====f1=====

Chloromethane.....							
Bromomethane.....							
Vinyl Chloride.....							
Chloroethane.....							
Methylene Chloride.....	20 U	20 U	35 U	16 U	27 U	22 U	
Acetone.....	42 U	13 U	13 U	15 U	94 U	23 U	
Carbon Disulfide.....							
1,1-Dichloroethene.....							
1,1-Dichloroethane.....							
Trans-1,2-Dichloroethene.....							
Chloroform.....							
1,2-Dichloroethane.....							
2-Butanone.....							
1,1,1-Trichloroethane.....							
Carbon Tetrachloride.....							
Vinyl Acetate.....							
Bromodichloromethane.....							
1,2-Dichloropropane.....							
Trans-1,3-Dichloropropene.....							
Trichloroethene.....							
Dibromochloromethane.....							
1,1,2-Trichloroethane.....							
Benzene.....							
cis-1,3-Dichloropropene.....							
Bromoform.....							
4-Methyl-2-pentanone.....							
2-Hexanone.....							

=====  
Case Number: 23664

Client: BAKER

Page: 3  
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Cust ID: 01SB1616 01SB1700 01SB1716 01SB1800 435BD200 435DB2000D

=====  
=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====fl  
Tetrachloroethene.....  
1,1,2,2-Tetrachloroethane.....  
Toluene.....  
Chlorobenzene.....  
Ethylbenzene.....  
Styrene.....  
Total Xylenes.....



WESTON ANALYTICS  
GC/MS DATA SUMMARY  
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664     SDG#21     Client:     BAKER

Cust ID: 435B0204     635B0500

Sample  
Information

Matrix:     Soil     Soil  
D.F.:        1        1  
Units:       ug/kg     ug/kg

=====  
=====fl=====fl=====fl=====fl=====fl=====fl

Chloromethane.....  
Bromomethane.....  
Vinyl Chloride.....  
Chloroethane.....  
Methylene Chloride.....  
Acetone.....  
Carbon Disulfide.....  
1,1-Dichloroethene.....  
1,1-Dichloroethane.....  
Trans-1,2-Dichloroethene.....  
Chloroform.....  
1,2-Dichloroethane.....  
2-Butanone.....  
1,1,1-Trichloroethane.....  
Carbon Tetrachloride.....  
Vinyl Acetate.....  
Bromodichloromethane.....  
1,2-Dichloropropane.....  
Trans-1,3-Dichloropropene.....  
Trichloroethene.....  
Dibromochloromethane.....  
1,1,2-Trichloroethane.....  
Benzene.....  
cis-1,3-Dichloropropene.....  
Bromoform.....  
4-Methyl-2-pentanone.....  
2-Hexanone.....

21 U     20 U  
37 U     18 U

=====  
Case Number: 23664

Client: BAKER

Page: 4  
-----

Cust ID: 435B0204 635B0500

=====  
-----fl-----fl-----fl-----fl-----fl-----fl-----  
Tetrachloroethene.....  
1,1,2,2-Tetrachloroethane.....  
Toluene.....  
Chlorobenzene.....  
Ethylbenzene.....  
Styrene.....  
Total Xylenes.....

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
SEMI-VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number:	23664	SDG#21	Client:	BAKER				Page: 1
Sample Information	Cust ID:	01SB0913	01SB1000	01SB1100	01SB1116	01SB1200	01SB1216	
Matrix:	Soil							
D.F.:	1							
Units:	ug/kg							

- Phenol.....
- bis(2-Chloroethyl) Ether.....
- 2-Chlorophenol.....
- 1,3-Dichlorobenzene.....
- 1,4-Dichlorobenzene.....
- Benzyl Alcohol.....
- 1,2-Dichlorobenzene.....
- 2-Methylphenol.....
- bis(2-Chloroisopropyl) Ether.....
- 4-Methylphenol.....
- N-Nitroso-di-n-propylamine.....
- Hexachloroethane.....
- Nitrobenzene.....
- Isophorone.....
- 2-Nitrophenol.....
- 2,4-Dimethylphenol.....
- Benzoic Acid(2).....
- bis(2-Chloroethoxy) Methane.....
- 2,4-Dichlorophenol.....
- 1,2,4-Trichlorobenzene.....
- Naphthalene.....
- 4-Chloroaniline.....
- Hexachlororbutadiene.....
- 4-Chloro-3-methylphenol.....
- 2-Methylnaphthalene.....
- Hexachlorocyclopentadiene.....

=====fl=====fl=====fl=====fl=====fl=====fl

Case Number: 23664

Client: BAKER

Page: 1

Cust ID: 01SB0913 01SB1000 01SB1100 01SB1116 01SB1200 01SB1216

	fl	fl	fl	fl	fl	fl
2,4,6-Trichlorophenol.....	UJ		UJ			
2,4,5-Trichlorophenol(2).....						
2-Chloronaphthalene.....						
2-Nitroaniline(2).....						
Dimethyl Phthalate.....						
Acenaphthylene.....						
3-Nitroaniline(2).....						
Acenaphthene.....						
2,4-Dinitrophenol(2).....						
4-Nitrophenol(2).....						
Dibenzofuran.....						
2,4-Dinitrotoluene.....						
2,6-Dinitrotoluene.....						
Diethyl Phthalate.....						
4-Chlorophenyl-phenylether.....						
Fluorene.....						
4-Nitroaniline(2).....						
4,6-Dinitro-2-methylphenol(2).....						
N-Nitrosodiphenylamine(1).....						
4-Bromophenyl-phenylether.....						
Hexachlorobenzene.....						
Pentachlorophenol(2).....						
Phenanthrene.....						
Anthracene.....						
di-n-Butyl Phthalate.....				340 U		
Fluoranthene.....						
Pyrene.....						
Butyl Benzyl Phthalate.....						
3,3'-Dichlorobenzidine(3).....						
Benzo(a)Anthracene.....						
bis(2-Ethylhexyl)Phthalate.....	370 U	340 U	340 U	340 U	340 U	420 U
Chrysene.....						
di-n-Octyl Phthalate.....						
Benzo(b)Fluoranthene.....						
Benzo(k)Fluoranthene.....						
Benzo(a)Pyrene.....						
Indro (1,2,3-cd)Pyrene.....						
Dik (a,h)Anthracene.....						
Benzo(g,h,i)Perylene.....						

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
SEMI-VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664	SDG#21	Client: BAKER					Page: 2
	Cust ID: 01SB1400	01SB1416	01SB1500	01SB1500D	01SB1516	01SB1600	
Sample Information	Matrix: Soil	Soil	Soil	Soil	Soil	Soil	
	D.F.: 1	1	1	1	1	1	
	Units: ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	
	====fl=====	fl=====	fl=====	fl=====	fl=====	fl=====	

- Phenol.....
- bis(2-Chloroethyl) Ether.....
- 2-Chlorophenol.....
- 1,3-Dichlorobenzene.....
- 1,4-Dichlorobenzene.....
- Benzyl Alcohol.....
- 1,2-Dichlorobenzene.....
- 2-Methylphenol.....
- bis(2-Chloroisopropyl) Ether.....
- 4-Methylphenol.....
- N-Nitroso-di-n-propylamine.....
- Hexachloroethane.....
- Nitrobenzene.....
- Isophorone.....
- 2-Nitrophenol.....
- 2,4-Dimethylphenol.....
- Benzoic Acid(2).....
- bis(2-Chloroethoxy)Methane.....
- 2,4-Dichlorophenol.....
- 1,2,4-Trichlorobenzene.....
- Naphthalene.....
- 4-Chloroaniline.....
- Hexachlororbutadiene.....
- 4-Chloro-3-methylphenol.....
- 2-Methylnaphthalene.....
- Hexachlorocyclopentadiene.....

=====  
 Case Number: 23664  
 -----

Client: BAKER

Page: 2  
 -----

Cust ID: 01SB1400 01SB1416 01SB1500 01SB1500D 01SB1516 01SB1600  
 -----

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 fl=====fl=====fl=====fl=====fl=====fl=====fl=====

2,4,6-Trichlorophenol.....					
2,4,5-Trichlorophenol(2).....					
2-Chloronaphthalene.....					
2-Nitroaniline(2).....					
Dimethyl Phthalate.....					
Acenaphthylene.....					
3-Nitroaniline(2).....					
Acenaphthene.....					
2,4-Dinitrophenol(2).....					
4-Nitrophenol(2).....					
Dibenzofuran.....					
2,4-Dinitrotoluene.....					
2,6-Dinitrotoluene.....					
Diethyl Phthalate.....					
4-Chlorophenyl-phenylether.....					
Fluorene.....					
4-Nitroaniline(2).....					
4,6-Dinitro-2-methylphenol(2).....					
N-Nitrosodiphenylamine(1).....					
4-Bromophenyl-phenylether.....					
Hexachlorobenzene.....					
Pentachlorophenol(2).....					
Phenanthrene.....					
Anthracene.....					
di-n-Butyl Phthalate.....			360 U		350 U
Fluoranthene.....					
Pyrene.....					
Butyl Benzyl Phthalate.....					
3,3'-Dichlorobenzidine(3).....					
Benzo(a)Anthracene.....					
bis(2-Ethylhexyl)Phthalate.....	360 U	360 U	360 U	360 U	350 U
Chrysene.....					
di-n-Octyl Phthalate.....					
Benzo(b)Fluoranthene.....					
Benzo(k)Fluoranthene.....					
Benzo(a)Pyrene.....					
Indeno(1,2,3-cd)Pyrene.....					
Di(a,h)Anthracene.....					
Ben(g,h,i)Perylene.....					

WESTON ANALYTICS  
 GC/MS DATA SUMMARY  
 SEMI-VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664      SDG#21      Client: BAKER      Page: 3

Sample Information	Cust ID:	01SB1616	01SB11700	01SB1716	01SB1800	43SB0200	43SB0200D
Matrix:	Soil	Soil	Soil	Soil	Soil	Soil	Soil
D.F.:	1	1	1	1	1	1	1
Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg

- =====  
 Phenol.....fl  
 bis(2-Chloroethyl) Ether.....fl  
 2-Chlorophenol.....fl  
 1,3-Dichlorobenzene.....fl  
 1,4-Dichlorobenzene.....fl  
 Benzyl Alcohol.....fl  
 1,2-Dichlorobenzene.....fl  
 2-Methylphenol.....fl  
 bis(2-Chloroisopropyl) Ether.....fl  
 4-Methylphenol.....fl  
 N-Nitroso-di-n-propylamine.....fl  
 Hexachloroethane.....fl  
 Nitrobenzene.....fl  
 Isophorone.....fl  
 2-Nitrophenol.....fl  
 2,4-Dimethylphenol.....fl  
 Benzoic Acid(2).....fl  
 bis(2-Chloroethoxy)Methane.....fl  
 2,4-Dichlorophenol.....fl  
 1,2,4-Trichlorobenzene.....fl  
 Naphthalene.....fl  
 4-Chloroaniline.....fl  
 Hexachlororbutadiene.....fl  
 4-Chloro-3-methylphenol.....fl  
 2-Methylnaphthalene.....fl  
 Hexachlorocyclopentadiene.....fl





WESTON ANALYTICS  
GC/MS DATA SUMMARY  
SEMI-VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

=====  
Case Number: 23664      SDG#21      Client:      BAKER      Page: 4  
=====

Cust ID: 43SB0204      63SB0500

Sample Information      Matrix:      Soil      Soil  
  D.F.:      1            1  
  Units:      ug/kg      ug/kg

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=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====

- Phenol.....
- bis(2-Chloroethyl) Ether.....
- 2-Chlorophenol.....
- 1,3-Dichlorobenzene.....
- 1,4-Dichlorobenzene.....
- Benzyl Alcohol.....
- 1,2-Dichlorobenzene.....
- 2-Methylphenol.....
- bis(2-Chloroisopropyl) Ether.....
- 4-Methylphenol.....
- N-Nitroso-di-n-propylamine.....
- Hexachloroethane.....
- Nitrobenzene.....
- Isophorone.....
- 2-Nitrophenol.....
- 2,4-Dimethylphenol.....
- Benzoic Acid(2).....
- bis(2-Chloroethoxy) Methane.....
- 2,4-Dichlorophenol.....
- 1,2,4-Trichlorobenzene.....
- Naphthalene.....
- 4-Chloroaniline.....
- Hexachlororbutadiene.....
- 4-Chloro-3-methylphenol.....
- 2-Methylnaphthalene.....
- Hexachlorocyclopentadiene.....

Cust ID: 43SB0204 63SB0500

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=====fl=====fl=====fl=====fl=====fl=====fl=====fl

- 2,4,6-Trichlorophenol.....
- 2,4,5-Trichlorophenol(2).....
- 2-Chloronaphthalene.....
- 2-Nitroaniline(2).....
- Dimethyl Phthalate.....
- Acenaphthylene.....
- 3-Nitroaniline(2).....
- Acenaphthene.....
- 2,4-Dinitrophenol(2).....
- 4-Nitrophenol(2).....
- Dibenzofuran.....
- 2,4-Dinitrotoluene.....
- 2,6-Dinitrotoluene.....
- Diethyl Phthalate.....
- 4-Chlorophenyl-phenylether.....
- Fluorene.....
- 4-Nitroaniline(2).....
- 4,6-Dinitro-2-methylphenol(2).....
- N-Nitrosodiphenylamine(1).....
- 4-Bromophenyl-phenylether.....
- Hexachlorobenzene.....
- Pentachlorophenol(2).....
- Phenanthrene.....
- Anthracene.....
- di-n-Butyl Phthalate.....
- Fluoranthene.....
- Pyrene.....
- Butyl Benzyl Phthalate.....
- 3,3'-Dichlorobenzidine(3).....
- Benzo(a)Anthracene.....
- bis(2-Ethylhexyl)Phthalate.....
- Chrysene.....
- di-n-Octyl Phthalate.....
- Benzo(b)Fluoranthene.....
- Benzo(k)Fluoranthene.....
- Benzo(a)Pyrene.....
- Indeno(1,2,3-cd)Pyrene.....
- Di(a,h)Anthracene.....
- Ben(g,h,i)Perylene.....

WESTON ANALYTICS  
PESTICIDE/PCB's  
CLP LIST

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Case Number: 23664   SDG#21           Client:      BAKER                               Page: 1
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Cust ID: 01SB0913   01SB1000   01SB1100   01SB1116   01SB1200   01SB1216
Sample Information   Matrix:     Soil       Soil       Soil       Soil       Soil       Soil
                   D.F.:       1          1          1          1          1          1
                   Units:     ug/kg      ug/kg      ug/kg      ug/kg      ug/kg      ug/kg
=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====

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```

Alpha-BHC..... UJ
Beta-BHC..... UJ
Delta-BHC..... UJ
Gamma-BHC (Lindane)..... UJ
Heptachlor..... UJ
Aldrin..... UJ
Heptachlor Epoxide..... UJ
Endosulfan I..... UJ
Dieldrin..... UJ
4,4'-DDE..... UJ
Endrin..... UJ
Endosulfan II..... UJ
4,4'-DDD..... UJ
Endosulfan Sulfate..... UJ
4,4'-DDT..... UJ
Methoxychlor..... UJ
Endrin Ketone..... UJ
Alpha Chlordane..... UJ
Gamma Chlordane..... UJ
Toxaphene..... UJ
Aroclor-1016..... UJ
Aroclor-1221..... UJ
Aroclor-1232..... UJ
Aroclor-1242..... UJ
Aroclor-1248..... UJ
Aroclor-1254..... UJ
Aroclor-1260..... UJ

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WESTON ANALYTICS  
PESTICIDE/PCB's  
CLP LIST

=====  
Case Number: 23664    SDC#21    Client:    BAKER    Page: 2  
=====

	Cust ID: 01SB1400	01SB1416	01SB1500	01SB1500D	01SB1516	01SB1600
Sample Information	Matrix: Soil	Soil	Soil	Soil	Soil	Soil
	D.F.: 1	1	1	1	1	1
	Units: ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
	=====fl=====	=====fl=====	=====fl=====	=====fl=====	=====fl=====	=====fl=====

Alpha-BHC.....	UJ	UJ	UJ	UJ	UJ
Beta-BHC.....	UJ	UJ	UJ	UJ	UJ
Delta-BHC.....	UJ	UJ	UJ	UJ	UJ
Gamma-BHC (Lindane).....	UJ	UJ	UJ	UJ	UJ
Heptachlor.....	UJ	UJ	UJ	UJ	UJ
Aldrin.....	UJ	UJ	UJ	UJ	UJ
Heptachlor Epoxide.....	UJ	UJ	UJ	UJ	UJ
Endosulfan I.....	UJ	UJ	UJ	UJ	UJ
Dieldrin.....	UJ	UJ	UJ	UJ	UJ
4,4'-DDE.....	UJ	UJ	UJ	UJ	UJ
Endrin.....	UJ	UJ	UJ	UJ	UJ
Endosulfan II.....	UJ	UJ	UJ	UJ	UJ
4,4'-DDD.....	UJ	UJ	UJ	UJ	UJ
Endosulfan Sulfate.....	UJ	UJ	UJ	UJ	UJ
4,4'-DDT.....	UJ	UJ	UJ	UJ	UJ
Methoxychlor.....	UJ	UJ	UJ	UJ	UJ
Endrin Ketone.....	UJ	UJ	UJ	UJ	UJ
Alpha Chlordane.....	UJ	UJ	UJ	UJ	UJ
Gamma Chlordane.....	UJ	UJ	UJ	UJ	UJ
Toxaphene.....	UJ	UJ	UJ	UJ	UJ
Aroclor-1016.....	UJ	UJ	UJ	UJ	UJ
Aroclor-1221.....	UJ	UJ	UJ	UJ	UJ
Aroclor-1232.....	UJ	UJ	UJ	UJ	UJ
Aroclor-1242.....	UJ	UJ	UJ	UJ	UJ
Aroclor-1248.....	UJ	UJ	UJ	UJ	UJ
Aroclor-1254.....	UJ	UJ	UJ	UJ	UJ
Aroclor-1260.....	UJ	UJ	UJ	UJ	UJ

WESTON ANALYTICS  
PESTICIDE/PCB's  
CLP LIST

=====  
Case Number: 23664    SDG#21    Client:    BAKER    Page: 3  
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Cust ID: 01SB1616    01SB1700    01SB1716    01SB1800    43SB0200    43SB0200D

Sample Information    Matrix:    Soil    Soil    Soil    Soil    Soil    Soil

                     D.F.:           1        1        1        1        1        1

                     Units:    ug/kg   ug/kg   ug/kg   ug/kg   ug/kg   ug/kg

=====fl=====fl=====fl=====fl=====fl=====fl

Alpha-BHC..... UJ  
Beta-BHC..... UJ  
Delta-BHC..... UJ  
Gamma-BHC (Lindane)..... UJ  
Heptachlor..... UJ  
Aldrin..... UJ  
Heptachlor Epoxide..... UJ  
Endosulfan I..... UJ  
Dieldrin..... UJ  
4,4'-DDE..... UJ  
Endrin..... UJ  
Endosulfan II..... UJ  
4,4'-DDD..... UJ  
Endosulfan Sulfate..... UJ  
4,4'-DDT..... UJ  
Methoxychlor..... UJ  
Endrin Ketone..... UJ  
Alpha Chlordane..... UJ  
Gamma Chlordane..... UJ  
Toxaphene..... UJ  
Aroclor-1016..... UJ  
Aroclor-1221..... UJ  
Aroclor-1232..... UJ  
Aroclor-1242..... UJ  
Aroclor-1248..... UJ  
Aroclor-1254..... UJ  
Aroclor-1260..... UJ



**ATTACHMENT III**  
**SUPPORT DOCUMENTATION**

SEMIVOLATILE CALIBRATION  
SUMMARY OF CRITERIA OUTLIERS

CASE:  
CLIENT:

	I-C	C-C	C-C	I-C	C-C	C-C	C-C	I-C	C
DATE/TIME OF CALIBRATION	7-31	8-2	8-2	8-4	8-5	8-5	8-6	8-4	8-4
INSTRUMENT ID	20	20	20	24	24	21	21	52	52
Phenol									
Bis(2-chloroethoxy)ether									
2-Chlorophenol									
1,3-Dichlorobenzene									
1,4-Dichlorobenzene									
Benzyl Alcohol									
1,2-Dichlorobenzene									
2-Methylphenol									
Bis(2-chloroisopropyl)ether						%D = 45			
4-Methylphenol									
N-Nitroso-Di-n-propylamine									
Hexachloroethane									
Nitrobenzene									
Isophorone									
2-Nitrophenol									
2,4-Dimethylphenol									
Benzoic Acid							%D = 30		
Bis(2-chloroethoxy)methane									
2,4-Dichlorophenol									
1,2,4-Trichlorobenzene									
Naphthalene									
4-Chloroaniline									
Hexachlorobutadiene									
4-Chloro-3-methylphenol									
2-Methylnaphthalene									
Hexachlorocyclopentadiene									
2,4,6-Trichlorophenol			%D = 54						
2,4,5-Trichlorophenol									
2-Chloronaphthalene									
2-Nitroaniline						%D = 40			
Dimethylphthalate									
Acenaphthylene									
2,6-Dinitrotoluene									
3-Nitroaniline		%D = 27					%D = 27		%D = 28
Acenaphthene									
2,4-Dinitrophenol			%D = 46						
4-Nitrophenol									
Dibenzofuran									
2,4-Dinitrotoluene									
Diethylphthalate									
4-Chlorophenyl-phenylether									
Fluorene									
4-Nitroaniline									
4,6-Dinitro-2-methylphenol			%D = 30						
N-N-trosodiphenylamine									
4-Bromophenyl-phenylether									
Hexachlorobenzene									
Pentachlorophenol									
Phenanthrene									
Anthracene									
Di-n-butylphthalate									
Fluoranthene									
Pyrene									
Butylbenzylphthalate									
3,3'-Dichlorobenzidine									
Benzo(a)anthracene									
Chrysene									
Bis(2-ethylhexyl)phthalate									
Di-n-octylphthalate									
Benzo(b)fluoranthene		%RSD = 77							
Benzo(k)fluoranthene		%RSD = 77							
Benzo(a)pyrene									
Indeno(1,2,3-cd)pyrene		%D = 26							
Dibenzo(a,h)anthracene							%D = 27		
Benzo(g,h,i)perylene					%D = 29		%D = 27		
ASSOCIATED SAMPLES		1500	0913		1000	1216	581K		8200
		1600	1100			1400			0200D
		1616				1200			6204
		1700				1416			0500
		1716				1116			81K6
		1800				1500			



**VOLATILE CALIBRATION  
SUMMARY OF CRITERIA OUTLIERS**

CASE: 23664 SDC-#21  
CLIENT: Baker

I-C      C-C      C-C      C-C      C-C

DATE/TIME OF CALIBRATION	7-30-91	7-30-91	7-30-91	7-31-91	8-1-91		
INSTRUMENT ID	54	54	54	54	54		
Chloromethane							
Bromomethane							
Vinyl Chloride							
Chloroethane							
Methylene Chloride	%RSD=44	%D=100			%D=69		
Acetone	%RSD=66	%D=86	%D=325	%D=53	%D=71		
Carbon Disulfide							
1,1-Dichloroethene							
1,1-Dichloroethane							
1,2-Dichloroethene (total)							
Chloroform							
1,2-Dichloroethane							
2-Butanone		%D=36					
1,1,1-Trichloroethane							
Carbon Tetrachloride							
Vinyl Acetate		%D=40	%D=28				
Bromodichloromethane							
1,2-Dichloropropane							
Cis-1,3-dichloropropene							
Trichloroethene							
Dibromochloromethane							
1,1,2-Trichloroethane							
Benzene							
Trans-1,3-dichloropropene							
Bromoform							
4-Methyl-2-pentanone		%D=42	%D=26				
2-Hexanone		%D=51	%D=33				
Tetrachloroethene							
1,1,2,2-Tetrachloroethane							
Toluene							
Chlorobenzene							
Ethylbenzene							
Styrene							
Xylene (total)							
ASSOCIATED SAMPLES	all sample	1000	0913	1200	0500		
		1100	1500	0200			
		1116	1600	02000			
		1216	1616	0204			
		1400	1700				
		1416	1716				
		1500D	1800				
		1516					
		MS					
		MSD					



SD. 19003-62-SRU

cc: W D Trimbath / J W Mentz / PROG F ; DP Black  
E P MacDonald ; R P Wathras / PF

✓  
MAX  
LAB  
TRIP

**ORGANIC QUALITY ASSURANCE REVIEW  
BAKER (CLEAN)  
CASE 23664  
SDG: #247**

**REVIEW PERFORMED BY  
THE ANALYTICS DIVISION  
OF  
ROY F. WESTON, INC.**

PREPARED BY: Kelly Muir Spittler  
Kelly Muir Spittler  
Unit Leader - Data Validation

10-1-91  
Date

VERIFIED BY: Zohreh Hamid  
Zohreh Hamid, Ph.D.  
Section Manager - Data Validation

10-1-91  
Date



SITE: BAKER (CLEAN)  
CASE: 23664  
SDG: #247

INTRODUCTION

This quality assurance review is based upon a review of all data generated from twenty (20) water samples for volatile and ten (10) water samples for semivolatile and pesticide/PCB analysis collected on 7/25,30/91 & 8/6,9/91. The samples were analyzed according to criteria set forth in the Contract Laboratory Program (CLP) for TCL target compounds.

This review has been performed in accordance with the confirmation method. The reported analytical results are presented as a summary of the data in Attachment II. All of the analytical data were examined to determine the usability of the analytical results and also to determine contractual compliance relative to the analytical requirements and deliverables specified for CLP method. The applicable qualifier codes have been placed next to the results in the data summary to indicate the qualitative and/or quantitative reliability. The details of this evaluation review are presented in the memo section of this report.

All data have been validated with regard to usability according to the quality assurance set forth in the Functional Guidelines for evaluation of organic analysis for completion of the Data Validation Report Forms and preparation of the final data validation report. If you have any questions or comments on this data review, please call Zohreh Hamid at (215) 344-3745.

QUALITY ASSURANCE REVIEW

The analyses of the samples were performed by CompuChem Laboratories, Inc.

The findings offered in this report are based upon a rigorous review of the following criteria:

- . Data completeness
- . Holding times
- \* . GC/MS tuning
- . Calibration
- . Blanks
- . Surrogate recoveries
- . Matrix spike/spike duplicate
- \* . Internal standard
- \* . Instrument performance
- \* . Compound identification
- \* . Compound quantitations
  
- \* Criteria are met for the parameters.



EVALUATION BY FRACTION

I. Volatiles

Holding Time  
 Surrogate Recovery  
 MS/MSD  
 Blank  
 GC/MS Tuning  
 Initial Calibration  
 Continuing Calibration  
 Compound ID (HSL, TIC)  
 Standards  
 Spectra Quality  
 Chromatography  
 Data Completeness

Ten (10) water samples and ten trip blanks/lab pure samples were analyzed within the holding time for volatile target compounds. The sample identified as Lab pure is distinguished by the receipt date in the data summary.

All surrogate, internal standard and spike recoveries were within the CLP contract requirement control limits. Overall, the data are considered representative. The minor issues are listed in the following section.

The RRF for 2-butanone was less than 0.05 in continuing calibrations analyzed on 7-31-91 and 8-1-91. The reported detection limits for the affected samples (01-R-01 & lab pure) are rejected.

The %RSD were within the 30% QC limit in all initial calibrations with the exception of 2-hexanone (31%) and vinyl acetate (42%) in calibrations analyzed on 7-17-91 and 6-24-91 respectively. These compounds were not detected in the samples; therefore, the data are not impacted.

A few compounds had %D above 25% in continuing calibrations. The % differences were less than 50% with the exception of vinyl acetate (53) in continuing calibration analysis performed on 8-6-91. The affected sample quantitation limits (65-R-01 & lab pure) were qualified estimated.



QA ORGANIC DATA REVIEW  
BAKER  
CASE 23664-SDG#247  
PAGE 3 OF 7

Acetone and methylene chloride were detected in the samples and trip blanks, as well as the laboratory blanks. The reported sample results are qualified "U" and should be considered as the sample detection limit.

2-Hexanone was reported on the form 1 for the sample "Lab pure" received on 8-8-91. This compound was crossed out in the quantitation reports and the corresponding spectrum was not included in the data package. This should be clarified by the laboratory.

1,1,2-Trichloro, 1,2,2-trifluoroethane was reported in the blank (VB1K IC) analyzed on 8-9-91. This compound is considered as a TIC in this batch.

## EVALUATION BY FRACTION

II. Base/Neutral/Acids

Holding Time  
 Extraction Time  
 Surrogate Recovery  
 Blank  
 MS/MSD  
 GC/MS Tuning  
 Initial Calibration  
 Continuing Calibration  
 Compound ID (HSL, TIC)  
 Standards  
 Spectra Quality  
 Chromatography  
 Data Completeness

Ten water samples were extracted and analyzed within the holding time for semivolatile target compounds.

The surrogate recovery of (0%) was obtained for phenol-d5 in sample 01-R-01. The reported quantitation limits for acid compounds are considered as false negatives. This sample was not reextracted/reanalyzed as required by the CLP protocol. The laboratory case narrative stated that insufficient sample remains for reextraction. Therefore, the reported quantitation limits for acid compounds are rejected and are qualified "R" in the data summary.

Four compounds had %D above 25%, but less than 50%. Since, these compounds were not detected in the samples, the reported sample data are not impacted.

Target compounds were not detected in the samples at levels above the CRQL. The non-target compounds were reported in the sample. These compounds are tabulated and included in this data review for further investigation. The unknowns identified as solvent contaminations are not tabulated as TICs, since these compounds are considered as laboratory artifacts.

The laboratory blanks were free of target compound contamination. Non-target compounds were not detected in the blanks with the exception of unknown oxygenated alkene in blank SBLK29. The sample data are not impacted, since this compound was not accepted as TIC and was reported as solvent contaminants in the associated samples.



QA ORGANIC DATA REVIEW  
BAKER  
CASE 23664-SDG#247  
PAGE 5 OF 7

SEMIVOLATILE TENTATIVELY IDENTIFIED COMPOUND							
COMPOUND NAME	01-R-01	43 SW01	43 SW02	44 SW01	65 SW01	65 SW02	65 SW03
Chlorinated unknown	X						
Benzamide,N,N-Dimethyl -3-methyl		X			X		
Benzene, (iodomethyl)			X	X			
Benzene Derivative			X			X	X
Octacosane			X	X			
Tetrahydrofuran derivative			X				
Hexanoic acid derivative					X		

## EVALUATION BY FRACTION

III. Pesticides/PCB

Holding Time  
 Extraction Time  
 Surrogate Recovery  
 MS/MSD  
 Blank  
 Linearity Calibration  
 DDT/Endrin Degradation  
 Analytical Sequence  
 DBC Retention Time  
 Continuing Calibration  
 Retention Time Window  
 Standards  
 Chromatography  
 HSL Compounds  
 Data Completeness

This portion of the case consisted of ten water samples analyzed for pesticide/PCB target compounds according to the criteria set forth in the Contract Laboratory Protocol (CLP).

The extraction holding time is exceeded by five (5) days for sample 01-R-01. The laboratory case narrative stated that, this sample was inadvertently spiked with spiking solution. The reported quantitation limits are qualified estimated and are flagged "UJ" in the data summary.

The matrix spike/spike duplicate sample analyses were not performed for this set of the sample analyses data. The laboratory case narrative stated that the original and reextraction analysis of the MS and MSD failed the QC requirements and insufficient sample volume was available to extract this sample a third time. Therefore, duplicate blank spikes were analyzed and reported.

The blank spike recoveries were within the QC limits. The RPDs for gamma-BHC (36%), heptachlor (22%) and Aldrin (24%) were above the QC limits. However, the data are not impacted and are not qualified based on these outliers, since the spike recovery and RPDs have advisory limits in the pesticide/PCB fraction.





QA ORGANIC DATA REVIEW  
BAKER  
CASE 23664-SDG#247  
PAGE 7 OF 7

A few compounds had %D above 15% and 20% in the primary and confirmation analysis. However, the data are not impacted, since these standards were analyzed at the end of the sample analysis.

The DBC surrogate recovery for sample 65SW03 (171%) exceeded quality control limit of 154%. Since the target compounds were not detected in this sample, no qualifier codes have been applied.

**ATTACHMENT I**  
**GLOSSARY OF DATA QUALIFIER CODES**



## GLOSSARY OF DATA QUALIFIERS

### CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds):

- U = NOT DETECTED, SUBSTANTIALLY ABOVE THE LEVEL REPORTED IN LABORATORY OR FIELD BLANKS.
- R = UNRELIABLE RESULT. ANALYTE MAY OR MAY NOT BE PRESENT IN THE SAMPLE. SUPPORTING DATA NECESSARY TO CONFIRM RESULT.
- N = NEGATED COMPOUND WAS CONSIDERED AS NOT PRESENT IN THE SAMPLE.

(NO CODE) = CONFIRMED IDENTIFICATION

### CODES RELATING TO QUANTITATION

(can be used for both positive results and sample quantitation limits):

- J = ANALYTE PRESENT. REPORTED VALUE MAY NOT BE ACCURATE OR PRECISE.
- L = ANALYTE PRESENT. REPORTED VALUE MAY BE BIASED LOW. ACTUAL VALUE IS EXPECTED TO BE HIGHER.
- UJ = THE REPORTED QUANTITATION LIMITS ARE QUALIFIED ESTIMATED.
- UL = NOT DETECTED. QUANTITATION LIMIT MAY BE HIGHER.

### OTHER CODES

- Q = NO ANALYTICAL RESULT.

**ATTACHMENT II  
DATA SUMMARY**

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

=====  
Case Number: 23664    SDG#: 247    Client: BAKER    Page: 1  
-----

	Cust ID:	01-R-01	43SW01	43SW02	43SW04	43SW05	44SW01
Sample Information	Matrix:	Water	Water	Water	Water	Water	Water
	D.F.:	1	1	1	1	1	1
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
		fl	fl	fl	fl	fl	fl

Chloromethane.....							
Bromomethane.....							
Vinyl Chloride.....							
Chloroethane.....							
Methylene Chloride.....				5 U	5 U	5 U	5 U
Acetone.....			14 U				
Carbon Disulfide.....				2 J	3 J	1 J	18
1,1-Dichloroethene.....							
1,1-Dichloroethane.....							
Trans-1,2-Dichloroethene.....							
Chloroform.....	22						
1,2-Dichloroethane.....							
2-Butanone.....		R					
1,1,1-Trichloroethane.....							
Carbon Tetrachloride.....							
Vinyl Acetate.....							
Bromodichloromethane.....	12						
1,2-Dichloropropane.....							
Trans-1,3-Dichloropropene.....							
Trichloroethene.....							
Dibromochloromethane.....	7						
1,1,2-Trichloroethane.....							
Benzene.....							
cis-1,3-Dichloropropene.....							
2-Chloroethylvinylether.....							
Bromoform.....							
4-Methyl-2-pentanone.....							
2-Hexanone.....							

Case Number: 23664    SDG#: 247    Client: BAKER

Page: 1

Cust ID: 01-R-01    43SW01    43SW02    43SW04    43SW05    44SW01

====fl=====fl=====fl=====fl=====fl=====fl=====fl====  
Tetrachloroethene.....  
1,1,2,2-Tetrachloroethane.....  
Toluene.....  
Chlorobenzene.....  
Ethylbenzene.....  
Styrene.....  
Total Xylenes.....

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

7,  
↓

Case Number: 23664    SDG#: 247    Client: BAKER    Page: 2

Sample Information	Cust ID:	65-R-01	65SW01	65SW02	65SW03	LAB PURE 7/27	LAB PURE 8/1
	Matrix:	Water	Water	Water	Water	Water	Water
	D.F.:	1	1	1	1	1	1
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L

	fl	fl	fl	fl	fl	fl
Chloromethane.....						
Bromomethane.....						
Vinyl Chloride.....						
Chloroethane.....						
Methylene Chloride.....		5 U			12 U	5 U
Acetone.....					9 J	5 U
Carbon Disulfide.....					1 J	10 U
1,1-Dichloroethene.....						
1,1-Dichloroethane.....						
Trans-1,2-Dichloroethene.....						
Chloroform.....						
1,2-Dichloroethane.....						
2-Butanone.....						R
1,1,1-Trichloroethane.....						
Carbon Tetrachloride.....						
Vinyl Acetate.....						UJ
Bromodichloromethane.....						
1,2-Dichloropropane.....						
Trans-1,3-Dichloropropene.....						
Trichloroethene.....						
Dibromochloromethane.....						
1,1,2-Trichloroethane.....						
Benzene.....						
cis-1,3-Dichloropropene.....						
2-Chloroethylvinylether.....						
Bromoform.....						
4-Methyl-2-pentanone.....						
2-Hexanone.....						

=====  
Case Number: 23664    SDG#: 247    Client: BAKER  
-----

Page: 2

Cust ID: 65-R-01    65SW01    65SW02    65SW03    LAB PURE    LAB PURE  
   7/27            8/1

=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====  
Tetrachloroethene.....  
1,1,2,2-Tetrachloroethane.....  
Toluene.....  
Chlorobenzene.....  
Ethylbenzene.....  
Styrene.....  
Total Xylenes.....



WESTON ANALYTICS  
GC/MS DATA SUMMARY  
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

65

Case Number: 23664    SDG#: 247    Client: BAKER

Page: 3

Sample Information	Cust ID: LAB PURE	TB4301	TB4304	TB4305	TB4401	TRIP
	8/8					
Matrix:	Water	Water	Water	Water	Water	Water
D.F.:	1	1	1	1	1	1
Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	fl	fl	fl	fl	fl	fl

Chloromethane.....						
Bromomethane.....						
Vinyl Chloride.....						
Chloroethane.....						
Methylene Chloride.....	20 U	18 U	21 U	9 U	12 U	7 U
Acetone.....	15		10 U			
Carbon Disulfide.....						
1,1-Dichloroethene.....						
1,1-Dichloroethane.....						
Trans-1,2-Dichloroethene.....						
Chloroform.....						
1,2-Dichloroethane.....						
2-Butanone.....						
1,1,1-Trichloroethane.....						
Carbon Tetrachloride.....						
Vinyl Acetate.....						
Bromodichloromethane.....						
1,2-Dichloropropane.....						
Trans-1,3-Dichloropropene.....						
Trichloroethene.....						
Dibromochloromethane.....						
1,1,2-Trichloroethane.....						
Benzene.....						
cis-1,3-Dichloropropene.....						
2-Chloroethylvinylether.....						
Bromoform.....						
4-Methyl-2-pentanone.....						
2-Hexanone.....						

Case Number: 23664    SDG#: 247    Client: BAKER

Page: 3

Cust ID: LAB PURE  
8/8

TB4301

TB4304

TB4305

TB4401

TRIP

=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====

Tetrachloroethene.....  
1,1,2,2-Tetrachloroethane.....  
Toluene.....  
Chlorobenzene.....  
Ethylbenzene.....  
Styrene.....  
Total Xylenes.....

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

---

Case Number: 23664    SDG#: 247    Client: BAKER    Page: 4

---

Sample Information    Cust ID: TRIP 2    TRIP BLK

Matrix: Water    Water

D.F.: 1    1

Units: ug/L    ug/L

---

fl====fl====fl====fl====fl====fl====fl

Chloromethane.....		
Bromomethane.....		
Vinyl Chloride.....		
Chloroethane.....		
Methylene Chloride.....	19 U	14 U
Acetone.....		16
Carbon Disulfide.....		
1,1-Dichloroethene.....		
1,1-Dichloroethane.....		
Trans-1,2-Dichloroethene.....		
Chloroform.....		
1,2-Dichloroethane.....		
2-Butanone.....		
1,1,1-Trichloroethane.....		
Carbon Tetrachloride.....		
Vinyl Acetate.....		
Bromodichloromethane.....		
1,2-Dichloropropane.....		
Trans-1,3-Dichloropropene.....		
Trichloroethene.....		
Dibromochloromethane.....		
1,1,2-Trichloroethane.....		
Benzene.....		
cis-1,3-Dichloropropene.....		
2-Chloroethylvinylether.....		
Bromoform.....		
4-Methyl-2-pentanone.....		
2-Hexanone.....		

=====  
Case Number: 23664    SDG#: 247    Client: BAKER  
-----

Page: 4

Cust ID:    TRIP 2    TRIP BLK

=====  
=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====  
Tetrachloroethene.....  
1,1,2,2-Tetrachloroethane.....  
Toluene.....  
Chlorobenzene.....  
Ethylbenzene.....  
Styrene.....  
Total Xylenes.....

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
SEMI-VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664    SDG#: 247    Client: BAKER Page: 1

Sample Information	Cust ID:	01-R-01	43SW01	43SW02	43SW04	43SW05	44SW01
Matrix:	Water	Water	Water	Water	Water	Water	Water
D.F.:	1	1	1	1	1	1	1
Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Phenol.....	R						
bis(2-Chloroethyl) Ether.....							
2-Chlorophenol.....	R						
1,3-Dichlorobenzene.....							
1,4-Dichlorobenzene.....							
Benzyl Alcohol.....							
1,2-Dichlorobenzene.....							
2-Methylphenol.....	R						
bis(2-Chloroisopropyl) Ether.....							
4-Methylphenol.....	R						
N-Nitroso-di-n-propylamine.....							
Hexachloroethane.....							
Nitrobenzene.....							
Isophorone.....							
2-Nitrophenol.....	R						
2,4-Dimethylphenol.....	R						
Benzoic Acid(2).....	R			2 J			
bis(2-Chloroethoxy)Methane.....							
2,4-Dichlorophenol.....	R						
1,2,4-Trichlorobenzene.....							
Naphthalene.....							
4-Chloroaniline.....							
Hexachlororbutadiene.....							
4-Chloro-3-methylphenol.....	R						
2-Methylnaphthalene.....							
Hexachlorocyclopentadiene.....							

Cust ID: 01-R-01 43SW01 43SW02 43SW04 43SW05 44SW01

	fl	fl	fl	fl	fl	fl
2,4,6-Trichlorophenol.....	R					
2,4,5-Trichlorophenol(2).....	R					
2-Chloronaphthalene.....						
2-Nitroaniline(2).....						
Dimethyl Phthalate.....						
Acenaphthylene.....						
3-Nitroaniline(2).....						
Acenaphthene.....						
2,4-Dinitrophenol(2).....	R					
4-Nitrophenol(2).....	R					
Dibenzofuran.....						
2,4-Dinitrotoluene.....						
2,6-Dinitrotoluene.....						
Diethyl Phthalate.....						
4-Chlorophenyl-phenylether.....						
Fluorene.....						
4-Nitroaniline(2).....						
4,6-Dinitro-2-methylphenol(2).....	R					
N-Nitrosodiphenylamine(1).....						
4-Bromophenyl-phenylether.....						
Hexachlorobenzene.....						
Pentachlorophenol(2).....	R					
Phenanthrene.....						
Anthracene.....						
di-n-Butyl Phthalate.....						
Fluoranthene.....						
Pyrene.....						
Butyl Benzyl Phthalate.....						
3,3'-Dichlorobenzidine(3).....						
Benzo(a)Anthracene.....						
bis(2-Ethylhexyl) Phthalate.....						
Chrysene.....						
di-n-Octyl Phthalate.....						
Benzo(b) Fluoranthene.....						
Benzo(k) Fluoranthene.....						
Benzo(a) Pyrene.....						
Indeno(1,2,3-cd) Pyrene.....						
Dibenz(a,h) Anthracene.....						
Benzo(g,h,i) Perylene.....						

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
SEMI-VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664    SDG#: 247    Client: BAKER

Page: 2

Sample Information	Cust ID:	65-R-21	65SW01	65SW02	65SW03
	Matrix:	Water	Water	Water	Water
	D.F.:	1	1	1	1
	Units:	ug/L	ug/L	ug/L	ug/L

Phenol.....  
bis(2-Chloroethyl) Ether.....  
2-Chlorophenol.....  
1,3-Dichlorobenzene.....  
1,4-Dichlorobenzene.....  
Benzyl Alcohol.....  
1,2-Dichlorobenzene.....  
2-Methylphenol.....  
bis(2-Chloroisopropyl) Ether.....  
4-Methylphenol.....  
N-Nitroso-di-n-propylamine.....  
Hexachloroethane.....  
Nitrobenzene.....  
Isophorone.....  
2-Nitrophenol.....  
2,4-Dimethylphenol.....  
Benzoic Acid(2).....  
bis(2-Chloroethoxy) Methane.....  
2,4-Dichlorophenol.....  
1,2,4-Trichlorobenzene.....  
Naphthalene.....  
4-Chloroaniline.....  
Hexachlororbutadiene.....  
4-Chloro-3-methylphenol.....  
2-Methylnaphthalene.....  
Hexachlorocyclopentadiene.....

f1=====f1=====f1=====f1=====f1=====f1

Cust ID: 65-R-2 65SW01 65SW02 65SW03

	fl	fl	fl	fl	fl	fl
2,4,6-Trichlorophenol.....						
2,4,5-Trichlorophenol(2).....						
2-Chloronaphthalene.....						
2-Nitroaniline(2).....						
Dimethyl Phthalate.....						
Acenaphthylene.....						
3-Nitroaniline(2).....						
Acenaphthene.....						
2,4-Dinitrophenol(2).....						
4-Nitrophenol(2).....						
Dibenzofuran.....						
2,4-Dinitrotoluene.....						
2,6-Dinitrotoluene.....						
Diethyl Phthalate.....						
4-Chlorophenyl-phenylether.....						
Fluorene.....						
4-Nitroaniline(2).....						
4,6-Dinitro-2-methylphenol(2).....						
N-Nitrosodiphenylamine(1).....						
4-Bromophenyl-phenylether.....						
Hexachlorobenzene.....						
Pentachlorophenol(2).....						
Phenanthrene.....						
Anthracene.....						
di-n-Butyl Phthalate.....						
Fluoranthene.....						
Pyrene.....						
Butyl Benzyl Phthalate.....						
3,3'-Dichlorobenzidine(3).....						
Benzo(a)Anthracene.....						
bis(2-Ethylhexyl) Phthalate.....	2	J		12		
Chrysene.....						
di-n-Octyl Phthalate.....						
Benzo(b)Fluoranthene.....						
Benzo(k)Fluoranthene.....						
Benzo(a)Pyrene.....						
Indeno(1,2,3-cd)Pyrene.....						
Dibenz(a,h)Anthracene.....						
Benzo(g,h,i)Perylene.....						



**ATTACHMENT III**  
**SUPPORT DOCUMENTATION**

VOLATILE CALIBRATION  
SUMMARY OF CRITERIA OUTLIERS

CASE: 23664 247

CLIENT: Baker

✓  
C-C    ✓  
C-C    ✓  
C-C    ✓  
C-C    ✓

DATE/TIME OF CALIBRATION	8-17-91	8-18-91	8-6-91	8-19-91			
INSTRUMENT ID	F50051	F50051	F50053	F50053			
	712511	7123	6-24				
Chloromethane			%D=31				
Bromomethane							
Vinyl Chloride							
Chloroethane							
Methylene Chloride							
Acetone				%D=56			
Carbon Disulfide							
1,1-Dichloroethene							
1,1-Dichloroethane							
1,2-Dichloroethene (total)							
Chloroform							
1,2-Dichloroethane	%D=26						
2-Butanone	%D=30						
1,1,1-Trichloroethane			%D=35				
Carbon Tetrachloride			%D=36				
Vinyl Acetate	%D=31	%D=30	%D=33				
Bromodichloromethane							
1,2-Dichloropropane							
Cis-1,3-dichloropropene							
Trichloroethene							
Dibromochloromethane							
1,1,2-Trichloroethane							
Benzene							
Trans-1,3-dichloropropene	%D=26						
Bromoform			%D=36				
4-Methyl-2-pentanone	%D=32	%D=26					
2-Hexanone	%D=32						
Tetrachloroethene							
1,1,2,2-Tetrachloroethane	%D=38	%D=30					
Toluene							
Chlorobenzene							
Ethylbenzene							
Styrene							
Xylene (total)							
ASSOCIATED SAMPLES	435W01	Tr.PB1	65-R-01	TP#704			
	435W02		Lab P0481				
	435W04						
	435W03						
	445W01						



WESTON ANALYTICS  
PESTICIDE/PCB's  
CLP LIST

Case Number: 23664     SDG#: 247     Client: BAKER Page: 1

	Cust ID:	01-R-01	43SW01	43SW02	43SW04	43SW05	44SW01
Sample Information	Matrix:	Water	Water	Water	Water	Water	Water
	D.F.:	1	1	1	1	1	1
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L

Alpha-BHC.....	UJ
Beta-BHC.....	UJ
Delta-BHC.....	UJ
Gamma-BHC (Lindane).....	UJ
Heptachlor.....	UJ
Aldrin.....	UJ
Heptachlor Epoxide.....	UJ
Endosulfan I.....	UJ
Dieldrin.....	UJ
4,4'-DDE.....	UJ
Endrin.....	UJ
Endosulfan II.....	UJ
4,4'-DDD.....	UJ
Endosulfan Sulfate.....	UJ
4,4'-DDT.....	UJ
Methoxychlor.....	UJ
Endrin Ketone.....	UJ
Alpha Chlordane.....	UJ
Gamma Chlordane.....	UJ
Toxaphene.....	UJ
Aroclor-1016.....	UJ
Aroclor-1221.....	UJ
Aroclor-1232.....	UJ
Aroclor-1242.....	UJ
Aroclor-1248.....	UJ
Aroclor-1254.....	UJ
Aroclor-1260.....	UJ

WESTON ANALYTICS  
PESTICIDE/PCB's  
CLP LIST

=====  
Case Number: 23664      SDG#: 247      Client: BAKER      Page: 2  
-----

	Cust ID:	65-R-01	65SW01	65SW02	65SW03
Sample Information	Matrix:	Water	Water	Water	Water
	D.F.:	1	1	1	1
	Units:	ug/L	ug/L	ug/L	ug/L
		fl	fl	fl	fl

Alpha-BHC.....  
Beta-BHC.....  
Delta-BHC.....  
Gamma-BHC (Lindane).....  
Heptachlor.....  
Aldrin.....  
Heptachlor Epoxide.....  
Endosulfan I.....  
Dieldrin.....  
4,4'-DDE.....  
Endrin.....  
Endosulfan II.....  
4,4'-DDD.....  
Endosulfan Sulfate.....  
4,4'-DDT.....  
Methoxychlor.....  
Endrin Ketone.....  
Alpha Chlordane.....  
Gamma Chlordane.....  
Toxaphene.....  
Aroclor-1016.....  
Aroclor-1221.....  
Aroclor-1232.....  
Aroclor-1242.....  
Aroclor-1248.....  
Aroclor-1254.....  
Aroclor-1260.....



1 WESTON WAY  
WEST CHESTER, PA 19380-1449  
PHONE: 215-692-3030  
FAX: 215-430-3124

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**ORGANIC QUALITY ASSURANCE REVIEW**  
**SITE: BAKER (CLEAN)**  
**CASE: 23664**  
**SDG: 277**

**REVIEW PERFORMED BY**  
**THE ANALYTICS DIVISION**  
**OF**  
**ROY F. WESTON, INC.**

**PREPARED BY:**

Zohreh Hamid, Ph.D.  
Section Manager - Data Validation

10-28-91  
Date

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SITE: BAKER (CLEAN)  
CASE: 23664  
SDG: #277

INTRODUCTION

This quality assurance review is based upon a review of all data generated from eighteen (18) water samples for volatile and twelve (12) water samples for semivolatile and pesticide/PCB analysis collected on 8 - 21, 22, 23, 24 - 1991. The samples were analyzed according to criteria set forth in the Contract Laboratory Program (CLP) for TCL target compounds.

This review has been performed in accordance with the confirmation method. The reported analytical results are presented as a summary of the data in Attachment II. All of the analytical data were examined to determine the usability of the analytical results and also to determine contractual compliance relative to the analytical requirements and deliverables specified for CLP method. The applicable qualifier codes have been placed next to the results in the data summary to indicate the qualitative and/or quantitative reliability. The details for this evaluation review are presented in the memo section of this report.

All data have been validated with regard to usability according to the quality assurance set forth in the Functional Guidelines for evaluation of organic analysis for completion of the Data Validation Report Forms and preparation of the final data validation report. If you have any questions or comments on this data review, please call Zohreh Hamid at (215) 344-3745.

QUALITY ASSURANCE REVIEW

The analyses of the samples were performed by CompuChem Laboratories, Inc.

The findings offered in this report are based upon a rigorous review of the following criteria:

- . Data completeness
- . Holding times
- \* . GC/MS tuning
- . Calibration
- . Surrogate recoveries
- . Matrix spike/spike duplicate
- \* . Internal standard
- \* . Instrument performance
- \* . Compound identification
- \* . Compound quantitations
  
- \* Criteria are met for the parameters.

## EVALUATION BY FRACTION

## I. Volatiles

Holding Time  
 Surrogate Recovery  
 MS/MSD  
 Blank  
 GC/MS Tuning  
 Initial Calibration  
 Continuing Calibration  
 Compound ID (HSL, TIC)  
 Standards  
 Spectra Quality  
 Chromatography  
 Data Completeness

Twelve (12) water samples and six (6) lab pure samples were analyzed within the holding time for volatile target compounds.

All surrogate and internal standard recoveries were within the CLP contract requirement control limits. Overall, the data are satisfactory. The minor issues are listed in the following section.

The RRF for 2-butanone was less than 0.05 in continuing calibration analyzed on 9-2,3-91. The reported detection limits for the affected samples (all samples with the exception of sample 43GW031D, Labpure 31D, Labpure 1, and Labpure 2) are rejected.

The %RSDs were within the 30% QC limit in all initial calibrations with the exception of chloromethane (34%) in calibrations analyzed on 8-17-91. This compound was not detected in the samples; therefore, the data are not impacted.

A few compounds had %D above 25% in continuing calibrations. The % difference were less than 50% with the exception of bromomethane (%D = 73%) and carbon tetrachloride (%D = 50%) in continuing calibration analyzed on 9-3-91. These compounds were not detected in the samples, therefore, quantitation limits are qualified estimated for the affected samples.

The chain-of-custodies for lab pure samples were not included in the data package. These documents should be submitted by the respective laboratory.





QC ORGANIC DATA REVIEW  
BAKER (CLEAN)  
CASE: 23664  
SDG: 277  
PAGE 3 of 8

Acetone and methylene chloride were detected in the samples and Lab pure samples, as well as the laboratory blanks. The reported sample results are qualified "U" and should be considered as the sample detection limit.

The unknown cyclic hydrocarbons were detected as Tentatively Identified Compounds (TIC's) in a few samples.

The sample ID in the Baker memo (Labpure 31) did not coincide the sample ID in the data package (Labpure 13). The reviewer could not verify the sample ID since the chain-of-custody for this sample was not included in the data package.

The matrix spike recoveries for benzene (134) and trichloroethene (122) were above the upper QC limit of 127 and 120 in matrix spike samples. However, the spike recoveries for all compounds met the control limits in the spike duplicate sample, therefore, the data are not impacted.

Carbon disulfide, chloroform, toluene and chlorobenzene were detected at low concentrations in the samples.

## EVALUATION BY FRACTION

II. Base/Neutral/Acids

Holding Time  
 Extraction Time  
 Surrogate Recovery  
 Blank  
 MS/MSD  
 GC/MS Tuning  
 Initial Calibration  
 Continuing Calibration  
 Compound ID (HSL, TIC)  
 Standards  
 Spectra Quality  
 Chromatography  
 Data Completeness

Twelve water samples were extracted and analyzed within the holding time for semivolatile target compounds.

The 2-fluorophenol surrogate recovery (10%) was less than the lower control limit of 21% in SBLK00. This blank was not reanalyzed. The associated sample data (63GW-021) are qualified estimated.

Target compounds were not detected in the samples at levels above the CRQL with the exception of six compounds in sample 44GW031D. The non-target compounds were reported in the samples. These compounds are tabulated and included in this data review for further investigation. The unknowns identified as solvent contaminations are not tabulated as TICs, since these compounds are considered as laboratory artifacts.

The laboratory blanks were free of target compound contamination. Also, non-target compounds were not detected in the blanks.

All %RSDs and RRFs were within the control limits with the exception of %RSD for 2,4-dinitrophenol in initial calibration analyzed on 9-4-91. Also, the %D for one compound exceeded 25% QC limit on calibration standard analyzed on 9-5-91. These compounds were not detected in the associated samples. Therefore, the data are not impacted.

The surrogate recovery for 2-fluorophenol exceeded the 100% QC limit in sample 63GW-021 (108) and sample 63R-0823 (107). Also, the tribromophenol surrogate recovery (125%) was above the control



QC ORGANIC DATA REVIEW  
BAKER (CLEAN)  
CASE: 23664  
SDG: 277  
PAGE 5 of 8

limit of 123 in sample 44GW-031. However, the surrogate recovery criteria (i.e.: no more than one (1) outlier in each fraction and not less than 10%) are met.

Benzyl alcohol and benzoic acid were not listed on Form Is in samples 44GW031D, 63GW-021 and 44GW-011. Instead, Carbozol was listed on the Form I. The review of the quantitation reports showed that these compounds were quantified correctly. Therefore the data are not affected. However, the Form I should be corrected and resubmitted.

Benzoic acid was detected in sample 63GW-021 at level (3 ug/L) less than CRQL. This compound was not listed of Form I. The amount for this compound is listed on the data summary.

Bis(2-ethylhexyl)phthalate was detected in sample 44GW-031D at a level less than 1/10 of CRQL. However, chrysene was detected at level "3 ug/L" in this sample. The result of "3 ug/L" was inadvertently listed for bis(2-ethhexyl)phthalate. The reported result for this compound is rejected and the actual result for chrysene was listed in the data summary.

The matrix spike/spike duplicate analysis was not performed on this batch of samples. The case narrative stated that due to the low sample volume, the matrix QC sample analysis was not performed. Instead, one set of blank spike/spike duplicate analysis was accompanying the data. All spike recoveries in the blank spike samples were within the QC limits.

TABLE I  
 TIC

COMPOUND NAME	44GW-011	44GW-031D	63GW-021	65GW-011
Cyclic Aliphatic	X			
Dimethylantracene	X			
Octahydrophenanthrene derivatives	X	X		
Sulfor mole		X		
Aliphatic hydrocarbons		X		
Methylnaphthalene		X		
Benzamide derivatives		X		X
oxetane derivative			X	



EVALUATION BY FRACTION

III. Pesticides/PCB

- Holding Time
- Extraction Time
- Surrogate Recovery
- MS/MSD
- Blank
- Linearity Calibration
- DDT/Endrin Degradation
- Analytical Sequence
- DBC Retention Time
- Continuing Calibration
- Retention Time Window
- Standards
- Chromatography
- HSL Compounds
- Data Completeness

This portion of the case consisted of twelve water samples analyzed for pesticide/PCB target compounds according to the criteria set forth in the Contract Laboratory Protocol (CLP).

The following spike recoveries were outside the QC limits:

<u>Compound Name</u>	<u>% Recovery MS/MSP</u>	<u>QC Limit</u>
Heptachlor	-/281	40 - 131
Aldrin	-/152	40 - 120

Also the RPD for these two compounds exceeded the QC limits. Since the target compounds were not detected in the samples, the data are accepted without the qualifier codes

The DBC surrogate recovery (189) was above the upper control limit of 154 in sample 63GW-011. The target compounds were not detected in this sample. therefore, the data are not impacted.

A few compounds had %D above the 15% and 20% requirement limits, but in the primary and confirmation analysis respectively. The data are not impacted, since the samples were analyzed prior to these standards.

DDD was detected in sample 65GW021 at level (0.53 ug/L) above the CRQL. No other target compounds were detected in the samples.

WESTON

QC ORGANIC DATA REVIEW  
BAKER (CLEAN)  
CASE: 23664  
SDG: 277  
PAGE 8 of 8

The DBC percent differences were outside the 2.0% criteria in IndA and IndB analyzed on 9-5-91 on the packed column (Column ID 2250-2401) The analysis was stopped and the samples were not analyzed under these standards. Therefore, the data are not impacted.

Due to the poor resolution, the peaks for early elevated compounds were not resolved in the chromatograms in samples 44GW-031 and 44GW-031D. The reported quantitation limits for these compounds are qualified estimated.

**ATTACHMENT I**  
**GLOSSARY OF DATA QUALIFIER CODES**



## GLOSSARY OF DATA QUALIFIERS

### CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds):

- U = NOT DETECTED, SUBSTANTIALLY ABOVE THE LEVEL REPORTED IN LABORATORY OR FIELD BLANKS.
- R = UNRELIABLE RESULT. ANALYTE MAY OR MAY NOT BE PRESENT IN THE SAMPLE. SUPPORTING DATA NECESSARY TO CONFIRM RESULT.
- N = NEGATED COMPOUND WAS CONSIDERED AS NOT PRESENT IN THE SAMPLE.

(NO CODE) = CONFIRMED IDENTIFICATION

### CODES RELATING TO QUANTITATION

(can be used for both positive results and sample quantitation limits):

- J = ANALYTE PRESENT. REPORTED VALUE MAY NOT BE ACCURATE OR PRECISE.
- L = ANALYTE PRESENT. REPORTED VALUE MAY BE BIASED LOW. ACTUAL VALUE IS EXPECTED TO BE HIGHER.
- UJ = THE REPORTED QUANTITATION LIMITS ARE QUALIFIED ESTIMATED.
- UL = NOT DETECTED. QUANTITATION LIMIT MAY BE HIGHER.

### OTHER CODES

- Q = NO ANALYTICAL RESULT.



**ATTACHMENT II  
DATA SUMMARIES**



WESTON ANALYTICS  
PESTICIDE/PCB's  
CLP LIST

Case Number: 23664    SDG: 277    CLIENT: BAKER    Page: 2

Cust ID: 63W-021    63W-031    63R-0823    65GW-011    65GW-021    65GW-031

Sample  
Information

Matrix:	Water	Water	Water	Water	Water	Water
D.F.:	1	1	1	1	1	1
Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L

=====fl=====fl=====fl=====fl=====fl=====fl

- Alpha-BHC.....
- Beta-BHC.....
- Delta-BHC.....
- Gamma-BHC (Lindane).....
- Heptachlor.....
- Aldrin.....
- Heptachlor Epoxide.....
- Endosulfan I.....
- Dieldrin.....
- 4,4'-DDE.....
- Endrin.....
- Endosulfan II.....
- 4,4'-DDD.....
- Endosulfan Sulfate.....
- 4,4'-DDT.....
- Methoxychlor.....
- Endrin Ketone.....
- Alpha Chlordane.....
- Gamma Chlordane.....
- Toxaphene.....
- Aroclor-1016.....
- Aroclor-1221.....
- Aroclor-1232.....
- Aroclor-1242.....
- Aroclor-1248.....
- Aroclor-1254.....
- Aroclor-1260.....

0.53

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
SEMI-VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664    SDG: 277    CLIENT: BAKER    Page: 1

Cust ID: 43GW-031D    44GW-011    44GW-021    44GW-031    44GW-031D    63GW-011

Sample Information	Matrix:	Water	Water	Water	Water	Water	Water
	D.F.:	1	1	1	1	1	1
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L

Phenol.....							
bis(2-Chloroethyl) Ether.....							
2-Chlorophenol.....							
1,3-Dichlorobenzene.....							
1,4-Dichlorobenzene.....							
Benzyl Alcohol.....							
1,2-Dichlorobenzene.....							
2-Methylphenol.....							
bis(2-Chloroisopropyl) Ether.....							
4-Methylphenol.....							
N-Nitroso-di-n-propylamine.....							
Hexachloroethane.....							
Nitrobenzene.....							
Isophorone.....							
2-Nitrophenol.....							
2,4-Dimethylphenol.....							
Benzoic Acid(2).....							
bis(2-Chloroethoxy)Methane.....							
2,4-Dichlorophenol.....							
1,2,4-Trichlorobenzene.....							
Naphthalene.....						62	
4-Chloroaniline.....							
Hexachlororbutadiene.....							
4-Chloro-3-methylphenol.....							
2-Methylnaphthalene.....						14	
Hexachlorocyclopentadiene.....							

Case Number: 23664

SDG: 277

CLIENT: BAKER

Page: 1

Cust ID: 43GW-031D 44GW-011 44GW-021 44GW-031 44GW-031D 63GW-011

2,4,6-Trichlorophenol.....	
2,4,5-Trichlorophenol(2).....	
2-Chloronaphthalene.....	
2-Nitroaniline(2).....	
Dimethyl Phthalate.....	
Acenaphthylene.....	
3-Nitroaniline(2).....	
Acenaphthene.....	16
2,4-Dinitrophenol(2).....	
4-Nitrophenol(2).....	
Dibenzofuran.....	8 J
2,4-Dinitrotoluene.....	
2,6-Dinitrotoluene.....	
Diethyl Phthalate.....	
4-Chlorophenyl-phenylether.....	
Fluorene.....	10
4-Nitroaniline(2).....	
4,6-Dinitro-2-methylphenol(2).....	
N-Nitrosodiphenylamine(1).....	
4-Bromophenyl-phenylether.....	
Hexachlorobenzene.....	
Pentachlorophenol(2).....	
Phenanthrene.....	24
Anthracene.....	3 J
di-n-Butyl Phthalate.....	
Fluoranthene.....	14
Pyrene.....	9 J
Butyl Benzyl Phthalate.....	
3,3'-Dichlorobenzidine(3).....	
Benzo(a)Anthracene.....	3 J
Chrysene.....	3 J
Bis(2-Ethylhexyl)phthalate.....	3 R
di-n-Octyl Phthalate.....	
Benzo(b)Fluoranthene.....	
Benzo(k)Fluoranthene.....	
Benzo(a)Pyrene.....	
Indeno(1,2,3-cd)Pyrene.....	
Dik(a,h)Anthracene.....	
Benzo(g,h,i)Perylene.....	

=====fl=====fl=====fl=====fl=====fl=====fl=====fl

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
SEMI-VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

*6/14/2 at these? y, M/L*

Case Number: 23664    SDG: 277    CLIENT: BAKER    Page: 2

Cust ID: 63GW-021    63GW-031    63R-0823    63GW-011    63GW-021    63GW-031

Sample Information	Matrix:	Water	Water	Water	Water	Water	Water
	D.F.:	1	1	1	1	1	1
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L

=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====	
Phenol.....	UJ
bis(2-Chloroethyl) Ether.....	UJ
2-Chlorophenol.....	UJ
1,3-Dichlorobenzene.....	UJ
1,4-Dichlorobenzene.....	UJ
Benzyl Alcohol.....	UJ
1,2-Dichlorobenzene.....	UJ
2-Methylphenol.....	UJ
bis(2-Chloroisopropyl) Ether.....	UJ
4-Methylphenol.....	UJ
N-Nitroso-di-n-propylamine.....	UJ
Hexachloroethane.....	UJ
Nitrobenzene.....	UJ
Isophorone.....	UJ
2-Nitrophenol.....	UJ
2,4-Dimethylphenol.....	UJ
Benzoic Acid(2).....	3 J
bis(2-Chloroethoxy)Methane.....	UJ
2,4-Dichlorophenol.....	UJ
1,2,4-Trichlorobenzene.....	UJ
Naphthalene.....	UJ
4-Chloroaniline.....	UJ
Hexachlororbutadiene.....	UJ
4-Chloro-3-methylphenol.....	UJ
2-Methylnaphthalene.....	UJ
Hexachlorocyclopentadiene.....	UJ

Cust ID: 63GW-021

63GW-031

63R-0823

63GW-011

63GW-021

63GW-031

	f1	f1	f1	f1	f1	f1
2,4,6-Trichlorophenol.....	UJ					
2,4,5-Trichlorophenol(2).....	UJ					
2-Chloronaphthalene.....	UJ					
2-Nitroaniline(2).....	UJ					
Dimethyl Phthalate.....	UJ					
Acenaphthylene.....	UJ					
3-Nitroaniline(2).....	UJ					
Acenaphthene.....	UJ					
2,4-Dinitrophenol(2).....	UJ					
4-Nitrophenol(2).....	UJ					
Dibenzofuran.....	UJ					
2,4-Dinitrotoluene.....	UJ					
2,6-Dinitrotoluene.....	UJ					
Diethyl Phthalate.....	UJ					
4-Chlorophenyl-phenylether.....	UJ					
Fluorene.....	UJ					
4-Nitroaniline(2).....	UJ					
4,6-Dinitro-2-methylphenol(2).....	UJ					
N-Nitrosodiphenylamine(1).....	UJ					
4-Bromophenyl-phenylether.....	UJ					
Hexachlorobenzene.....	UJ					
Pentachlorophenol(2).....	UJ					
Phenanthrene.....	UJ					
Anthracene.....	UJ					
di-n-Butyl Phthalate.....	UJ					
Fluoranthene.....	UJ					
Pyrene.....	UJ					
Butyl Benzyl Phthalate.....	UJ					
3,3'-Dichlorobenzidine(3).....	UJ					
Benzo(a)Anthracene.....	UJ					
Chrysene.....	UJ					
Bis(2-Ethylhexyl)phthalate.....	9 J					
di-n-Octyl Phthalate.....	UJ					
Benzo(b)Fluoranthene.....	UJ					
Benzo(k)Fluoranthene.....	UJ					
Benzo(a)Pyrene.....	UJ					
Indeno(1,2,3-cd)Pyrene.....	UJ					
Di(a,h)Anthracene.....	UJ					
Ben(g,h,i)Perylene.....	UJ					

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664    SDG: 277    CLIENT: BAKER    Page: 1

Sample Information	Cust ID: 43GW031D	44GW-011	44GW-021	44GW-031	44GW031D	63GW-011
Matrix:	Water	Water	Water	Water	Water	Water
D.F.:	1	1	1	1	1	1
Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	fl	fl	fl	fl	fl	fl
Chloromethane.....						
Bromomethane.....	UL	UJ	UJ	UJ	UJ	UJ
Vinyl Chloride.....						
Chloroethane.....						
Methylene Chloride.....	8 U				5 U	5 U
Acetone.....						
Carbon Disulfide.....		6			2 J	
1,1-Dichloroethene.....						
1,1-Dichloroethane.....						
Trans-1,2-Dichloroethene.....						
Chloroform.....						
1,2-Dichloroethane.....						
2-Butanone.....	R	R	R	R	R	R
1,1,1-Trichloroethane.....						
Carbon Tetrachloride.....	UJ	UJ	UJ	UJ	UJ	
Vinyl Acetate.....						
Bromodichloromethane.....						
1,2-Dichloropropane.....						
Trans-1,3-Dichloropropene.....						
Trichloroethene.....						
Dibromochloromethane.....						
1,1,2-Trichloroethane.....						
Benzene.....						
cis-1,3-Dichloropropene.....						
2-Chloroethylvinylether.....						
Bromoform.....						
4-Methyl-2-pentanone.....						
2-Hexanone.....						



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Case Number: 23664    SDG: 277    CLIENT: BAKER  
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Page: 1

Cust ID: 43GW031D    44GW-011    44GW-021    44GW-031    44GW031D    63GW-011

=====  
-----fl-----fl-----fl-----fl-----fl-----fl-----  
Tetrachloroethene.....  
1,1,2,2-Tetrachloroethane.....  
Toluene.....  
Chlorobenzene.....  
Ethylbenzene.....  
Styrene.....  
Total Xylenes.....

3 J

2 J

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664    SDG: 277    CLIENT: BAKER    Page: 2

Cust ID: 63GW-021    63GW-031    63R-0823    65GW-011    65GW-021    65GW-031

Sample Information	Matrix:	Water	Water	Water	Water	Water	Water
	D.F.:	1	1	1	1	1	1
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
		fl	fl	fl	fl	fl	fl

Chloromethane.....							
Bromomethane.....		UJ	UJ	UJ	UJ	UJ	UJ
Vinyl Chloride.....							
Chloroethane.....							
Methylene Chloride.....					5 U		5 U
Acetone.....					10 U		
Carbon Disulfide.....		1 J	1 J				
1,1-Dichloroethene.....							
1,1-Dichloroethane.....							
Trans-1,2-Dichloroethene.....							
Chloroform.....				2 J			
1,2-Dichloroethane.....							
2-Butanone.....		R	R	R	R	R	R
1,1,1-Trichloroethane.....							
Carbon Tetrachloride.....		UJ	UJ	UJ	UJ	UJ	UJ
Vinyl Acetate.....							
Bromodichloromethane.....							
1,2-Dichloropropane.....							
Trans-1,3-Dichloropropene.....							
Trichloroethene.....							
Dibromochloromethane.....							
1,1,2-Trichloroethane.....							
Benzene.....							
cis-1,3-Dichloropropene.....							
2-Chloroethylvinylether.....							
Bromoform.....							
4-Methyl-2-pentanone.....							
2-Hexanone.....							

=====  
Case Number: 23664

SDG: 277

CLIENT: BAKER ✓

Page: 2 ✓

-----  
Cust ID: 63GW-021

63GW-031

63R-0823

65GW-011

65GW-021

65GW-031

=====  
-----fl=====fl=====fl=====fl=====fl=====fl  
Tetrachloroethene.....  
1,1,2,2-Tetrachloroethane.....  
Toluene.....  
Chlorobenzene.....  
Ethylbenzene.....  
Styrene.....  
Total Xylenes.....





ATTACHMENT III

**VOLATILE CALIBRATION  
SUMMARY OF CRITERIA OUTLIERS**

CASE: 23664 SDC # 277  
CLIENT: Baker

DATE/TIME OF CALIBRATION	7-17-91	8-17-91	9-2-91	9-3-91	8-29-91		
INSTRUMENT ID	OWA03	F50053	OWA03	OWA03	F50053		
Chloromethane		34.2	36	33.5			
Bromomethane			3?	73			
Vinyl Chloride							
Chloroethane				26			
Methylene Chloride							
Acetone				28			
Carbon Disulfide				34			
1,1-Dichloroethene							
1,1-Dichloroethane							
1,2-Dichloroethene (total)							
Chloroform							
1,2-Dichloroethane							
2-Butanone			0-038	9-024			
1,1,1-Trichloroethane				40			
Carbon Tetrachloride				50			
Vinyl Acetate							
Bromodichloromethane							
1,2-Dichloropropane							
Cis-1,3-dichloropropene				28			
Trichloroethene							
Dibromochloromethane							
1,1,2-Trichloroethane							
Benzene							
Trans-1,3-dichloropropene				39			
Bromoform							
4-Methyl-2-pentanone			30	33			
2-Hexanone							
Tetrachloroethene			30				
1,1,2,2-Tetrachloroethane							
Toluene							
Chlorobenzene							
Ethylbenzene							
Styrene							
Xylene (total)							
ASSOCIATED SAMPLES			LabPurcell	The rest	476-0710		
				9/10	Lab Pur 310		
				8-1/2	Lab Pur 1		
					2		

EXCEPTION CRITERIA

CASE:

LAB:

IC ✓ I.C ✓ F.C ✓ C-C ✓ C-C ✓ C-C ✓ C-C ✓

CC * : *X	EXCEPTION CRITERIA:	8,29	9,4	9,9	8-70	8-31	9-5	9-10	9-11
5-2 *	Phenol	F 50057	F 50057	F 50057	11:18	13:25	18:07	19:10	12:13
111-44-4	bis(2-Chloroethyl)Ether								
95-87-8	2-Chlorophenol								
541-73-1	1, 3-Dichlorobenzene								
106-46-7 *	1, 4-Dichlorobenzene								
100-81-6	Benzyl Alcohol								
95-50-1	1, 2-Dichlorobenzene								
95-48-7	2-Methylphenol								
39438-32-9	bis(2-chloroisopropyl)Ether								
106-44-5	4-Methylphenol								
621-84-7 **	N-Nitroso-Di-n-Propylamine								
67-72-1	Hexachloroethane								
98-95-3	Nitrobenzene								
78-59-1	Isophorone								
88-75-5 *	2-Nitrophenol								
105-67-9	2, 4-Dimethylphenol								
65-85-0	Benzoic Acid (2)								
111-91-1	bis(2-Chloroethoxy)Methane								
120-83-2 *	2, 4-Dichlorophenol								
120-82-1	1, 2, 4-Trichlorobenzene								
91-20-3	Naphthalene								
106-47-8	4-Chloroaniline								
87-68-3 *	Hexachlorobutadiene								
59-50-7 *	4-Chloro-3-Methylphenol								
91-57-6	2-Methylnaphthalene								
77-47-4 **	Hexachlorocyclopentadiene								
88-06-2 *	2, 4, 6-Trichlorophenol								
95-95-4	2, 4, 5-Trichlorophenol (2)								
91-58-7	2-Chloronaphthalene								
88-74-4	2-Nitroaniline (2)								
133-11-3	Dimethyl Phthalate								
1-8	Acenaphthylene								
2	3-Nitroaniline (2)								
60-32-9 *	Acenaphthene								
61-28-6 **	2, 4-Dinitrophenol (2)		37						
100-02-7 **	4-Nitrophenol (2)								
132-84-9	Dibenzofuran								
121-14-2	2, 4-Dinitrotoluene								
606-20-2	2, 6-Dinitrotoluene								
84-86-2	Diethylphthalate								
7005-72-3	4-Chlorophenyl-phenylether								
86-73-7	Fluorene								
100-01-8	4-Nitroaniline (2)								
534-52-1	4, 6-Dinitro-2-Methylphenol (2)								
86-30-8 *	N-Nitrosodiphenylamine (1)								
101-55-3	4-Bromophenyl-phenylether								
118-74-1	Hexachlorobenzene								
87-86-5 *	Pentachlorophenol (2)								
85-01-8	Phenanthrene								
120-12-7	Anthracene								
84-74-2	Di-n-Butylphthalate								
206-44-0 *	Fluoranthene								
129-00-0	Pyrene								
85-68-7	Butylbenzylphthalate								
91-94-1	3, 3'-Dichlorobenzidine (2)								
56-55-3	Benz(a)Anthracene						2P=26		
117-81-7	bis(2-Ethylhexyl)Phthalate								
218-01-8	Chrysene								
117-84-0 *	Di-n-Octyl Phthalate								
205-99-2	Benzofluoranthene								
207-08-9	Benzofluoranthene								
50-32-8 *	Benz(a)Pyrene								
193-39-5	Indeno(1, 2, 3-cd)Pyrene								
17-70-3	Dibenz(a, h)Anthracene								
1-2	Benzofg, h, i)Perylene								

Cannot be separated from diphenylamine

436w0340 BS-2 446w021 44-011 63-011  
 656w011 44-0310 44-011 B1K  
 656w021 836w02 114  
 65-011 636w011 114  
 BS1 63R-0323



**VOLATILE CALIBRATION  
SUMMARY OF CRITERIA OUTLIERS**

CASE: 23664 80G-#1  
CLIENT: Baker

	I-C	C-C	C-C	C-C	C-C	I-C	
DATE/TIME OF CALIBRATION	7-10-91	7-27-91	7-28-91	7-29-91	7-30-91	6-27-91	7-31-91
INSTRUMENT ID	13	13	13	13	13	18	18
Chloromethane				%D=31.4	%D=37.5		
Bromomethane							%D=48
Vinyl Chloride							
Chloroethane							
Methylene Chloride						%RSD=43	%D=37
Acetone	%RSD=41	%D=38				%RSD=41	
Carbon Disulfide							
1,1-Dichloroethene							
1,1-Dichloroethane							
1,2-Dichloroethene (total)							
Chloroform							
1,2-Dichloroethane							
2-Butanone	%D=30.2	%D=37			%D=36	%RSD=43	%D=75
1,1,1-Trichloroethane							
Carbon Tetrachloride							
Vinyl Acetate		%D=28.5		%D=25.8	%D=41		%D=47
Bromodichloromethane							%D=5
1,2-Dichloropropane							
Cis-1,3-dichloropropene							
Trichloroethene							%D=27
Dibromochloromethane			%D=28.6				%D=77
1,1,2-Trichloroethane							
Benzene							
Trans-1,3-dichloropropene							
Bromoform			%D=27.3				%D=99
4-Methyl-2-pentanone		%D=47	%D=55		%D=41		
2-Hexanone		%D=64.8	%D=55	%D=49	%D=64		
Tetrachloroethene							%D=47
1,1,2,2-Tetrachloroethane		%D=30.6			%D=32		%D=30
Toluene							
Chlorobenzene							
Ethylbenzene							
Styrene							
Xylene (total)							
ASSOCIATED SAMPLES		0200	0114	0100	0600		0700
		0300	0214	05135	0713		
		0400	03135	0613	0800		
		0500	04145	1316	0813		
		0100 MS			0900		
		0100 MSB			0913		
					1300		




1 WESTON WAY  
WEST CHESTER, PA 19380-1449  
PHONE: 215-692-3030  
FAX: 215-430-3124

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ORGANIC QUALITY ASSURANCE REVIEW  
SITE: BAKER (CLEAN)  
CASE: 23664  
SDG: 61

REVIEW PERFORMED BY  
THE ANALYTICS DIVISION  
OF  
ROY F. WESTON, INC.

VERIFIED BY:   
Zohreh Hamid, Ph.D.  
Section Manager - Data Validation

11-6-91  
Date

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SITE: BAKER (CLEAN)  
CASE: 23664  
SDG: # 61

INTRODUCTION

This quality assurance review is based upon a review of all data generated from twenty (20) soil samples collected from 7-29-91 to 8-7-91. The samples were analyzed according to criteria set forth in contract laboratory program (CLP) for TCL target compounds.

This review has been performed in accordance with the confirmation method. The reported analytical results are presented as a summary of the data in Attachment II. All of the analytical data were examined to determine the usability of the analytical results and also to determine the contractual compliance relative to the analytical requirements and deliverables specified for CLP method. The applicable qualifier codes have been placed next to the results in the data summary to indicate the qualitative and/or quantitative reliability. The details of this evaluation review are presented in the memo section of this report.

All data have been validated with regard to usability according to the quality assurance guidelines set forth in the Functional Guidelines for evaluation of organic analysis for completion of the Data Validation Report Forms and preparation of the final data validation report. If you have any questions or comments on this data review, please call Zohreh Hamid at (215) 344-3745.

QUALITY ASSURANCE REVIEW

The analysis of the sample were performed by CompuChem Laboratories, Inc.

The findings offered in this report are based upon a rigorous review of the following criteria:

- Data completeness
- Holding times
- GC/MS tuning
- Calibration
- Blanks
- Surrogate recoveries
- \* • Matrix spike/spike duplicate
- \* • Internal standard
- \* • Instrument performance
- \* • Compound identification
- \* • Compound quantitations
  
- \* Criteria are met for the parameters.



Site: Baker  
Case: 23664  
SDG: #61  
Page 2 of 6

## EVALUATION BY FRACTION

### I. Volatiles

Holding Time  
 Surrogate Recovery  
 MS/MSD  
 Blank  
 GC/MS Tuning  
 Initial Calibration  
 Continuing Calibration  
 Compound ID (HSL, TIC)  
 Standards  
 Spectra Quality  
 Chromatography  
 Data Completeness

Twenty soil samples were analyzed within the 10-day required holding time for volatile target compounds.

The surrogate, internal standard and spike recoveries were within the control limits. Overall the data are representative and no major problems were encountered during the sample analysis. Minor issues and the reviewer comments are listed in the following sections.

Methylene chloride and acetone were detected in the laboratory blanks at levels less than "5x the CRQL". The reported sample results which are not substantially above the blank contaminations are qualified "U" and should be accepted as the sample detection limits. Also, 1,1,2,2-tetrachlorethane was reported in the blank analyzed on 8-4-91. This compound was not detected in these samples, therefore, no qualifier codes have been applied.

The blank "VBLKQ8" analyzed on 8-4-91 was free of acetone contamination, however, the associated samples contained this compound at levels less than 5x CRQL. The reported sample results are considered as a laboratory and/or field contamination and should not be considered as hits in the samples. Therefore, the reported sample results in the data summary are flagged "U".

Chloroform was detected in sample 65SB0212 at a level of "1 ug/kg". This could be considered as an laboratory analysis artifact, and the reported results should be disregarded.



Site: Baker  
Case: 23664  
SDG: #61  
Page 3 of 6

The %RSD and %D for acetone and methylene chloride exceeded 30% and 25% requirement limits. These compounds have been qualified due to the blank contaminations, therefore, no further qualifier codes are required. Six more compounds had %D above 25%. These compounds were listed on calibration summary (attachment III) and were not detected in the samples. The reported quantitation limits for the compounds with %D above 50% are qualified estimated.

The relative response factor (RRF) for 2-butanone was less than the 0.05 requirement limit in the initial calibration analyzed on 8-15-91 and its corresponding continuing calibration. The quantitation report for the affected sample (sample 65 MW0100) is rejected and is qualified "R" in the data summary.

## EVALUATION BY FRACTION

II. Base/Neutral/Acids

- Holding Time
- Extraction Time
- Surrogate Recovery
- Blank
- MS/MSD
- GC/MS Tuning
- Initial Calibration
- Continuing Calibration
- Compound ID (HSL, TIC)
- Standards
- Spectra Quality
- Chromatography
- Data Completeness

This portion of the case consisted of twenty (20) soil samples analyzed for semivolatile target compounds.

The extraction holding time was exceeded for sample 65 MW0100 by nine (9) days. The reported results and the quantitation reports are qualified estimated.

Benzo(b)fluoranthene and benzo(k)fluoranthene are coeluted in samples 65MW0100 and 65B0200. The reported results are considered for both isomers and are qualified estimated.

The laboratory blanks contained di-n-butylphthalate and bis(2-ethylhexyl) phthalate at levels less than CRQL. The reported sample results which are not substantially above the blanks level are adjusted to the corresponding sample's CRQL and are flagged "U". The laboratory blank (SB1K34) analyzed on 8-23-91 contained 2,4-dinitrotoluene at level less than CRQL. This compound was not detected in the samples, therefore, the data are not impacted.

Bis(2-ethylhexyl)phthalate was detected in sample 65MW0300 at a relatively high level (5900ug/kg). The source of this compound in the aforementioned sample should be investigated in the sampling field since the levels of this compound in all laboratory blanks and the associated samples were less than CRQLs.

All %RSD and RRF met the criteria in initial calibration. The %D for six compounds (non CCC's) exceeded the 25% QC limits in the continuing calibrations. These compounds (listed in calibration summary, attachment III), are not detected in the samples. The reported quantitation limit for benzoic acid, with a %D above 50%, is qualified estimated for the affected sample (65MW0111).



Site: Baker  
Case: 23664  
SDG: #61  
Page 5 of 6

**Note:**

The injection DFTPP tune date (8-27-91) on form V and the corresponding GC/MS tune spectrum did not coincide the associated calibration date (8-29-91). (See the Attachment III). The laboratory has been contacted. This discrepancy should be clarified by the laboratory. Therefore, the acceptance of the associated sample data (sample 65MW0100) is dependent upon the resubmission of the requested data.



Site: Baker  
Case: 23664  
SDG: #61  
Page 6 of 6

EVALUATION BY FRACTION

III. Pesticides/PCB

- Holding Time
- Extraction Time
- Surrogate Recovery
- MS/MSD
- Blank
- Linearity Calibration
- DDT/Endrin Degradation
- Analytical Sequence
- DBC Retention Time
- Continuing Calibration
- Retention Time Window
- Standards
- Chromatography
- HSL Compounds
- Data Completeness

Twenty soil samples were extracted/analyzed within the specified holding time for Pesticide/PCB target compounds.

The DBC surrogate recovery criteria (0%) was below the lower control limit in sample (65SB04095). The reported detection limits are qualified estimated. Overall the data for other samples are considered representative and no major problems were encountered during the sample analysis.

Many compounds had %D above 15% and 20% in calibration standards, however, these standards were analyzed at the end of the sample analysis, therefore, these data are not impacted.

The first page of the analytical sequence was not included in the data package for standards analyzed on 08/05-7/91 on RTX-1701 column (ID = 46). The samples were not affected, however, the first page of the analytical sequence should be submitted by the laboratory for the data completeness.



**ATTACHMENT I**  
**GLOSSARY OF DATA QUALIFIER CODES**



## GLOSSARY OF DATA QUALIFIERS

### CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds):

- U = NOT DETECTED, SUBSTANTIALLY ABOVE THE LEVEL REPORTED IN LABORATORY OR FIELD BLANKS.
- R = UNRELIABLE RESULT. ANALYTE MAY OR MAY NOT BE PRESENT IN THE SAMPLE. SUPPORTING DATA NECESSARY TO CONFIRM RESULT.
- N = NEGATED COMPOUND WAS CONSIDERED AS NOT PRESENT IN THE SAMPLE.

(NO CODE) = CONFIRMED IDENTIFICATION

### CODES RELATING TO QUANTITATION

(can be used for both positive results and sample quantitation limits):

- J = ANALYTE PRESENT. REPORTED VALUE MAY NOT BE ACCURATE OR PRECISE.
- L = ANALYTE PRESENT. REPORTED VALUE MAY BE BIASED LOW. ACTUAL VALUE IS EXPECTED TO BE HIGHER.
- UJ = THE REPORTED QUANTITATION LIMITS ARE QUALIFIED ESTIMATED.
- UL = NOT DETECTED. QUANTITATION LIMIT MAY BE HIGHER.

### OTHER CODES

- Q = NO ANALYTICAL RESULT.

**ATTACHMENT II  
DATA SUMMARIES**

**ATTACHMENT II  
DATA SUMMARIES**

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664    SDG#: 61    Client: BAKER    Page: 1

Sample Information	Cust ID: 43SB0300	43SB0400	43SB0403	65MW0100	65MW0111	65MW0200
	Matrix: Soil	Soil	Soil	Soil	Soil	Soil
	D.F.: 1	1	1	1	1	1
	Units: ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
	fl	fl	fl	fl	fl	fl
Chloromethane.....						
Bromomethane.....						
Vinyl Chloride.....						
Chloroethane.....						
Methylene Chloride.....	18 U	18 U	23 U	17 U	28 U	16 U
Acetone.....	18 U	15 U	27 U		43 U	14 U
Carbon Disulfide.....						
1,1-Dichloroethene.....						
1,1-Dichloroethane.....						
Trans-1,2-Dichloroethene.....						
Chloroform.....						
1,2-Dichloroethane.....						
2-Butanone.....	UJ	UJ	UJ	R		UJ
1,1,1-Trichloroethane.....						
Carbon Tetrachloride.....						
Vinyl Acetate.....						
Bromodichloromethane.....						
1,2-Dichloropropane.....						
Trans-1,3-Dichloropropene.....						
Trichloroethene.....						
Dibromochloromethane.....						
1,1,2-Trichloroethane.....						
Benzene.....						
cis-1,3-Dichloropropene.....						
2-Chloroethylvinylether.....						
Bromoform.....						
4-Methyl-2-pentanone.....					UJ	
2-Hexanone.....					UJ	



WESTON ANALYTICS  
GC/MS DATA SUMMARY  
SEMI-VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

=====  
Case Number: 23664    SDG#: 61    Client:    BAKER    Page: 1  
-----

	Cust ID: 43SB0300	43SB0400	43SB0403	65MW0100	65MW0111	65MW0200
Sample Information	Matrix: Soil	Soil	Soil	Soil	Soil	Soil
	D.F.: 1	1	1	1	1	1
	Units: ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
	=====fl	=====fl	=====fl	=====fl	=====fl	=====fl

Phenol.....  
bis(2-Chloroethyl) Ether.....  
2-Chlorophenol.....  
1,3-Dichlorobenzene.....  
1,4-Dichlorobenzene.....  
Benzyl Alcohol.....  
1,2-Dichlorobenzene.....  
2-Methylphenol.....  
bis(2-Chloroisopropyl) Ether.....  
4-Methylphenol.....  
N-Nitroso-di-n-propylamine.....  
Hexachloroethane.....  
Nitrobenzene.....  
Isophorone.....  
2-Nitrophenol.....  
2,4-Dimethylphenol.....  
Benzoic Acid(2).....  
bis(2-Chloroethoxy) Methane.....  
2,4-Dichlorophenol.....  
1,2,4-Trichlorobenzene.....  
Naphthalene.....  
4-Chloroaniline.....  
Hexachlororbutadiene.....  
4-Chloro-3-methylphenol.....  
2-Methylnaphthalene.....  
Hexachlorocyclopentadiene.....

R

58

UJ

WESTON ANALYTICS  
 PESTICIDE/PCB's  
 CLP LIST

=====  
 Case Number: 23664    SDG#: 61    Client:    BAKER    Page: 1  
 =====

	Cust ID: 43SB0300	43SB0400	43SB0403	65MW0100	65MW0111	65MW0200
Sample Information	Matrix: Soil	Soil	Soil	Soil	Soil	Soil
	D.F.: 1	1	1	1	1	1
	Units: ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
	=====fl	=====fl	=====fl	=====fl	=====fl	=====fl

Alpha-BHC.....  
 Beta-BHC.....  
 Delta-BHC.....  
 Gamma-BHC (Lindane).....  
 Heptachlor.....  
 Aldrin.....  
 Heptachlor Epoxide.....  
 Endosulfan I.....  
 Dieldrin.....  
 4,4'-DDE..... 72  
 Endrin.....  
 Endosulfan II.....  
 4,4'-DDD..... 39  
 Endosulfan Sulfate.....  
 4,4'-DDT.....  
 Methoxychlor.....  
 Endrin Ketone.....  
 Alpha Chlordane.....  
 Gamma Chlordane.....  
 Toxaphene.....  
 Aroclor-1016.....  
 Aroclor-1221.....  
 Aroclor-1232.....  
 Aroclor-1242.....  
 Aroclor-1248.....  
 Aroclor-1254.....  
 Aroclor-1260.....



WESTON ANALYTICS  
GC/MS DATA SUMMARY  
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

=====  
Case Number: 23664      SDG#: 61      Client: BAKER      Page: 2  
=====

	Cust ID: 65MW0206	65MW0300	65M0311	65MW0311D	65SB0100	65SB0107
Sample Information	Matrix: Soil	Soil	Soil	Soil	Soil	Soil
	D.F.: 1	1	1	1	1	1
	Units: ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg

	fl	fl	fl	fl	fl	fl
Chloromethane.....						
Bromomethane.....						
Vinyl Chloride.....						
Chloroethane.....						
Methylene Chloride.....	18 U	16 U	15 U	14 U	21 U	24 U
Acetone.....	22 U	13 U	15 U	14 U	49 U	28 U
Carbon Disulfide.....						
1,1-Dichloroethene.....						
1,1-Dichloroethane.....						
Trans-1,2-Dichloroethene.....						
Chloroform.....						
1,2-Dichloroethane.....						
2-Butanone.....	UJ	UJ	UJ	UJ		
1,1,1-Trichloroethane.....						
Carbon Tetrachloride.....						
Vinyl Acetate.....						
Bromodichloromethane.....						
1,2-Dichloropropane.....						
Trans-1,3-Dichloropropene.....						
Trichloroethene.....						
Dibromochloromethane.....						
1,1,2-Trichloroethane.....						
Benzene.....						
cis-1,3-Dichloropropene.....						
2-Chloroethylvinylether.....						
Bromoform.....						
4-Methyl-2-pentanone.....						
2-Hexanone.....						

=====  
Case Number: 23664    SDG#: 61    Client: BAKER

Page: 2

-----  
Cust ID: 65MW0206    65MW0300    65M0311    65MW0311D    65SB0100    65SB0107

=====  
-----fl-----fl-----fl-----fl-----fl-----fl-----fl-----  
Tetrachloroethene.....  
1,1,2,2-Tetrachloroethane.....  
Toluene.....  
Chlorobenzene.....  
Ethylbenzene.....  
Styrene.....  
Total Xylenes.....

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
SEMI-VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

=====  
Case Number: 23664    SDG#: 61    Client: BAKER    Page: 2  
=====

	Cust ID: 65MW0206	65MW0300	65MW0311	65MW0311D	65SB0100	65SB0107
Sample Information	Matrix: Soil	Soil	Soil	Soil	Soil	Soil
	D.F.: 1	1	1	1	1	1
	Units: ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
	=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====					

Phenol.....  
bis(2-Chloroethyl) Ether.....  
2-Chlorophenol.....  
1,3-Dichlorobenzene.....  
1,4-Dichlorobenzene.....  
Benzyl Alcohol.....  
1,2-Dichlorobenzene.....  
2-Methylphenol.....  
bis(2-Chloroisopropyl) Ether.....  
4-Methylphenol.....  
N-Nitroso-di-n-propylamine.....  
Hexachloroethane.....  
Nitrobenzene.....  
Isophorone.....  
2-Nitrophenol.....  
2,4-Dimethylphenol.....  
Benzoic Acid(2).....  
bis(2-Chloroethoxy)Methane.....  
2,4-Dichlorophenol.....  
1,2,4-Trichlorobenzene.....  
Naphthalene.....  
4-Chloroaniline.....  
Hexachlororbutadiene.....  
4-Chloro-3-methylphenol.....  
2-Methylnaphthalene.....  
Hexachlorocyclopentadiene.....

WESTON ANALYTICS  
PESTICIDE/PCB's  
CLP LIST

=====  
Case Number: 23664    SDG#: 61    Client:    BAKER    Page: 2  
=====

-----  
Cust ID: 65MW0206    65MW0300    65MW0311    65MW0311D    65SB0100    65SB0107  
-----  
Sample Information    Matrix:    Soil    Soil    Soil    Soil    Soil    Soil  
D.F.:    1    1    1    1    1    1  
Units:    ug/kg    ug/kg    ug/kg    ug/kg    ug/kg    ug/kg  
=====fl=====fl=====fl=====fl=====fl=====fl=====fl

Alpha-BHC.....  
Beta-BHC.....  
Delta-BHC.....  
Gamma-BHC (Lindane).....  
Heptachlor.....  
Aldrin.....  
Heptachlor Epoxide.....  
Endosulfan I.....  
Dieldrin.....  
4,4'-DDE.....  
Endrin.....  
Endosulfan II.....  
4,4'-DDD.....  
Endosulfan Sulfate.....  
4,4'-DDT.....  
Methoxychlor.....  
Endrin Ketone.....  
Alpha Chlordane.....  
Gamma Chlordane.....  
Toxaphene.....  
Aroclor-1016.....  
Aroclor-1221.....  
Aroclor-1232.....  
Aroclor-1242.....  
Aroclor-1248.....  
Aroclor-1254.....  
Aroclor-1260.....

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

=====  
Case Number: 23664    SDG#: 61    Client: BAKER    Page: 3  
=====

	Cust ID: 65SB0200	65SB0212	65SB0300	65SB0313	65SB0400	65SB04095
Sample Information	Matrix: Soil	Soil	Soil	Soil	Soil	Soil
	D.F.: 1	1	1	1	1	1
	Units: ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
	=====fl	=====fl	=====fl	=====fl	=====fl	=====fl

Chloromethane.....						
Bromomethane.....						
Vinyl Chloride.....						
Chloroethane.....						
Methylene Chloride.....	21 U	30 U	23 U	26 U	25 U	23 U
Acetone.....	11 U	31 U	28 U	23 U	17 U	19 U
Carbon Disulfide.....						
1,1-Dichloroethene.....						
1,1-Dichloroethane.....						
Trans-1,2-Dichloroethene.....						
Chloroform.....		1 J				
1,2-Dichloroethane.....						
2-Butanone.....						
1,1,1-Trichloroethane.....						
Carbon Tetrachloride.....						
Vinyl Acetate.....						
Bromodichloromethane.....						
1,2-Dichloropropane.....						
Trans-1,3-Dichloropropene.....						
Trichloroethene.....						
Dibromochloromethane.....						
1,1,2-Trichloroethane.....						
Benzene.....						
cis-1,3-Dichloropropene.....						
2-Chloroethylvinylether.....						
Bromoform.....						
4-Methyl-2-pentanone.....						
2-Hexanone.....						

Case Number: 23664     SDG#: 61     Client: BAKER

Page: 3

Cust ID: 65SB0200     65SB0212     65SB0300     65SB0313     65SB0400     65SB04095

====f1=====f1=====f1=====f1=====f1=====

Tetrachloroethene.....  
1,1,2,2-Tetrachloroethane.....  
Toluene.....  
Chlorobenzene.....  
Ethylbenzene.....  
Styrene.....  
Total Xylenes.....

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
SEMI-VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number:	23664	SDG#:	61	Client:	BAKER			Page:	3
	Cust ID:	65SB0200	65SB0212	65SB0300	65SB0313	65SB0400	65SB04095		
Sample Information	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
	D.F.:	1	1	1	1	1	1	1	
	Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	

- =====~~fl~~=====~~fl~~=====~~fl~~=====~~fl~~=====~~fl~~=====~~fl~~=====~~fl~~=====~~fl~~=====~~fl~~=====~~fl~~=====
- Phenol.....
  - bis(2-Chloroethyl) Ether.....
  - 2-Chlorophenol.....
  - 1,3-Dichlorobenzene.....
  - 1,4-Dichlorobenzene.....
  - Benzyl Alcohol.....
  - 1,2-Dichlorobenzene.....
  - 2-Methylphenol.....
  - bis(2-Chloroisopropyl) Ether.....
  - 4-Methylphenol.....
  - N-Nitroso-di-n-propylamine.....
  - Hexachloroethane.....
  - Nitrobenzene.....
  - Isophorone.....
  - 2-Nitrophenol.....
  - 2,4-Dimethylphenol.....
  - Benzoic Acid(2).....
  - bis(2-Chloroethoxy) Methane.....
  - 2,4-Dichlorophenol.....
  - 1,2,4-Trichlorobenzene.....
  - Naphthalene.....
  - 4-Chloroaniline.....
  - Hexachlororbutadiene.....
  - 4-Chloro-3-methylphenol.....
  - 2-Methylnaphthalene.....
  - Hexachlorocyclopentadiene.....

WESTON ANALYTICS  
PESTICIDE/PCB's  
CLP LIST

=====  
Case Number: 23664    SDG#: 61    Client:    BAKER    Page: 3  
=====

	Cust ID:	65SB0200	65SB0212	65SB0300	65SB0313	65SB0400	65SB0500
Sample Information	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	1	1	1
	Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg

=====  
fl=====fl=====fl=====fl=====fl=====fl=====fl

Alpha-BHC.....							
Beta-BHC.....							
Delta-BHC.....							
Gamma-BHC (Lindane).....							
Heptachlor.....							
Aldrin.....							
Heptachlor Epoxide.....							
Endosulfan I.....							
Dieldrin.....							
4,4'-DDE.....	41					35	
Endrin.....							
Endosulfan II.....							
4,4'-DDD.....							
Endosulfan Sulfate.....							
4,4'-DDT.....	47					18	
Methoxychlor.....							
Endrin Ketone.....							
Alpha Chlordane.....							
Gamma Chlordane.....							
Toxaphene.....							
Aroclor-1016.....							
Aroclor-1221.....							
Aroclor-1232.....							
Aroclor-1242.....							
Aroclor-1248.....							
Aroclor-1254.....				230			
Aroclor-1260.....							



WESTON ANALYTICS  
GC/MS DATA SUMMARY  
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664 SDG#: 61 Client: BAKER

Page: 4

Cust ID: 65SB0500 65SB0507

Sample  
Information

Matrix: Soil Soil  
D.F.: 1 1  
Units: ug/kg ug/kg

	fl	fl	fl	fl	fl	fl
Chloromethane.....						
Bromomethane.....						
Vinyl Chloride.....						
Chloroethane.....						
Methylene Chloride.....	20 U		15 U			
Acetone.....	13 U		16 U			
Carbon Disulfide.....						
1,1-Dichloroethene.....						
1,1-Dichloroethane.....						
Trans-1,2-Dichloroethene.....						
Chloroform.....						
1,2-Dichloroethane.....						
2-Butanone.....				UJ		
1,1,1-Trichloroethane.....						
Carbon Tetrachloride.....						
Vinyl Acetate.....						
Bromodichloromethane.....						
1,2-Dichloropropane.....						
Trans-1,3-Dichloropropene.....						
Trichloroethene.....						
Dibromochloromethane.....						
1,1,2-Trichloroethane.....						
Benzene.....						
cis-1,3-Dichloropropene.....						
2-Chloroethylvinylether.....						
Bromoform.....						
4-Methyl-2-pentanone.....						
2-Hexanone.....						

=====  
Case Number: 23664    SDG#: 61    Client: BAKER  
-----

Page: 4

Cust ID: 65SB0500    65SB0507

=====  
=====f1=====f1=====f1=====f1=====f1=====f1  
Tetrachloroethene.....  
1,1,2,2-Tetrachloroethane.....  
Toluene.....  
Chlorobenzene.....  
Ethylbenzene.....  
Styrene.....  
Total Xylenes.....

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
SEMI-VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

=====  
Case Number: 23664      SDG#: 61      Client: BAKER      Page: 4  
-----

Cust ID: 65SB0500      65SB0507

Sample Information      Matrix:      Soil      Soil  
                                 D.F.:      1      1  
                                 Units:      ug/kg      ug/kg

=====  
fl=====fl=====fl=====fl=====fl=====fl=====fl

Phenol.....  
bis(2-Chloroethyl) Ether.....  
2-Chlorophenol.....  
1,3-Dichlorobenzene.....  
1,4-Dichlorobenzene.....  
Benzyl Alcohol.....  
1,2-Dichlorobenzene.....  
2-Methylphenol.....  
bis(2-Chloroisopropyl) Ether.....  
4-Methylphenol.....  
N-Nitroso-di-n-propylamine.....  
Hexachloroethane.....  
Nitrobenzene.....  
Isophorone.....  
2-Nitrophenol.....  
2,4-Dimethylphenol.....  
Benzoic Acid(2).....  
bis(2-Chloroethoxy)Methane.....  
2,4-Dichlorophenol.....  
1,2,4-Trichlorobenzene.....  
Naphthalene.....  
4-Chloroaniline.....  
Hexachlororbutadiene.....  
4-Chloro-3-methylphenol.....  
2-Methylnaphthalene.....  
Hexachlorocyclopentadiene.....

WESTON ANALYTICS  
 PESTICIDE/PCB's  
 CLP LIST

=====  
 Case Number: 23664    SDG#: 61    Client: BAKER    Page: 4  
 -----

Cust ID: 65SB0507    65SB04095

Sample  
 Information

Matrix:    Soil    Soil  
 D.F.:        1        1  
 Units:      ug/kg    ug/kg

=====  
 fl=====fl=====fl=====fl=====fl=====fl

Alpha-BHC.....	UJ
Beta-BHC.....	UJ
Delta-BHC.....	UJ
Gamma-BHC (Lindane).....	UJ
Heptachlor.....	UJ
Aldrin.....	UJ
Heptachlor Epoxide.....	UJ
Endosulfan I.....	UJ
Dieldrin.....	UJ
4,4'-DDE.....	UJ
Endrin.....	UJ
Endosulfan II.....	UJ
4,4'-DDD.....	UJ
Endosulfan Sulfate.....	UJ
4,4'-DDT.....	UJ
Methoxychlor.....	UJ
Endrin Ketone.....	UJ
Alpha Chlordane.....	UJ
Gamma Chlordane.....	UJ
Toxaphene.....	UJ
Aroclor-1016.....	UJ
Aroclor-1221.....	UJ
Aroclor-1232.....	UJ
Aroclor-1242.....	UJ
Aroclor-1248.....	UJ
Aroclor-1254.....	UJ
Aroclor-1260.....	UJ

**ATTACHMENT III**

**VOLATILE CALIBRATION  
SUMMARY OF CRITERIA OUTLIERS**

Page 1 of 2

BASE: 23664 SOG-61  
CLIENT: Baker

	I-C	CC	I-C	C-C	C-C	I-C	CC
DATE/TIME OF CALIBRATION	7-10-91	8-4-91	8-15-91	8-15-91	8-5-91	8-15-91	8-16-91
INSTRUMENT ID	13	13	13	13	13	15	18
Chloromethane							
Bromomethane							
Vinyl Chloride							
Chloroethane							%D=30
Methylene Chloride			%RSD=47		%D=100		
Acetone	%RSD=50	%D=79	%RSD=47		%D=82	%RSD=52	
Carbon Disulfide							
1,1-Dichloroethene							
1,1-Dichloroethane							
1,2-Dichloroethene(total)							
Chloroform							
1,2-Dichloroethane					%D=37		
2-Butanone		%D=100				RRF=0.046	=0.022
1,1,1-Trichloroethane							
Carbon Tetrachloride							
Vinyl Acetate							
Bromodichloromethane							
1,2-Dichloropropane							
Cis-1,3-dichloropropene							
Trichloroethene							
Dibromochloromethane							
1,1,2-Trichloroethane							
Benzene							
Trans-1,3-dichloropropene							
Bromoform					%D=27		%D=45
4-Methyl-2-pentanone					%D=46	%RSD=50	
2-Hexanone					%D=36	%RSD=50	
Tetrachloroethene							
1,1,2,2-Tetrachloroethane							
Toluene							
Chlorobenzene							
Ethylbenzene							
Styrene							
Xylene(total)							
ASSOCIATED SAMPLES		43-300		65M-111	65-500		65M-100
		43-400			MS		
		43-403			MS		
		65M-200					
		65M-206					
		65M-700					
		65M-311					
		65M-311D					
		65-507					

pg. 2 of 2

**VOLATILE CALIBRATION  
SUMMARY OF CRITERIA OUTLIERS**

CASE: 23664 306-61  
CLIENT: Baker

I-C    C-C

DATE/TIME OF CALIBRATION	7-30	8-1					
INSTRUMENT ID	54	54					
Chloromethane							
Bromomethane							
Vinyl Chloride							
Chloroethane							
Methylene Chloride	%RP=43	%D=69					
Acetone	%RP=66	%D=71					
Carbon Disulfide							
1,1-Dichloroethene							
1,1-Dichloroethane							
1,2-Dichloroethene(total)							
Chloroform							
1,2-Dichloroethane							
2-Butanone							
1,1,1-Trichloroethane							
Carbon Tetrachloride							
Vinyl Acetate							
Bromodichloromethane							
1,2-Dichloropropane							
Cis-1,3-dichloropropene							
Trichloroethene							
Dibromochloromethane							
1,1,2-Trichloroethane							
Benzene							
Trans-1,3-dichloropropene							
Bromoform							
4-Methyl-2-pentanone							
2-Hexanone							
Tetrachloroethene							
1,1,2,2-Tetrachloroethane							
Toluene							
Chlorobenzene							
Ethylbenzene							
Styrene							
Xylene(total)							
ASSOCIATED SAMPLES		65-100					
		65-107					
		65-200					
		65-212					
		65-300					
		65-313					
		65-400					
		65-4095					

SEMIVOLATILE CALIBRATION  
SUMMARY OF CRITERIA OUTLIERS

CASE: 23 684 SDS-#61  
CLIENT: Baker

	I.C	I.C	I.C	CC	C.C	CC	CC	CC	C.C	
DATE/TIME OF CALIBRATION	8-4-91	8-4-91	8-29-91	8-6-91	8-7-91	8-4-91	8-23	8-27	8-30	
INSTRUMENT ID	21	52	52	21	21	52	52	52	52	
Phenol										
Bis(2-chloroethoxy)ether										
2-Chlorophenol										
1,3-Dichlorobenzene										
1,4-Dichlorobenzene										
Benzyl Alcohol										
1,2-Dichlorobenzene										
2-Methylphenol										
Bis(2-chloroisopropyl)ether										
4-Methylphenol										
N-Nitroso-Di-n-propylamine										
Hexachloroethane										
Nitrobenzene										
Isophorone										
2-Nitrophenol										
2,4-Dimethylphenol										
Benzoic Acid					XD=70			XD=50		
Bis(2-chloroethoxy)methane										
2,4-Dichlorophenol										
1,2,4-Trichlorobenzene										
Naphthalene										
4-Chloroaniline										
Hexachlorobutadiene										
4-Chloro-3-methylphenol										
2-Methylnaphthalene										
Hexachlorocyclopentadiene										
2,4,6-Trichlorophenol										
2,4,5-Trichlorophenol										
2-Chloronaphthalene										
2-Nitroaniline										
Dimethylphthalate										
Acenaphthylene										
2,6-Dinitrotoluene										
3-Nitroaniline							YD=28			
Acenaphthene										
2,4-Dinitrophenol					XD=28		XD=86			
4-Nitrophenol							XD=36			
Dibenzofuran										
2,4-Dinitrotoluene										
Diethylphthalate										
4-Chlorophenyl-phenylether										
Fluorene										
4-Nitroaniline										
4,6-Dinitro-2-methylphenol										
N-N-trosodiphenylamine										
4-Bromophenyl-phenylether										
Hexachlorobenzene										
Pentachlorophenol										
Phenanthrene										
Anthracene										
Di-n-butylphthalate										
Fluoranthene										
Pyrene										
Butylbenzylphthalate										
3,3'-Dichlorobenzidine										
Benzo(a)anthracene										
Chrysene										
Bis(2-ethylhexyl)phthalate										
Di-n-octylphthalate										
Benzo(b)fluoranthene										
Benzo(k)fluoranthene										
Benzo(a)pyrene										
Indeno(1,2,3-cd)pyrene										
Dibenzo(a,h)anthracene						YD=26				
Benzo(g,h,i)perylene						XD=26				
ASSOCIATED SAMPLES					65-100	65M-200	43-300	65M-111	65M100	81k
					65-107	65M-206	43-400			
					65-200	65M-300	43-403			
					65-212	65M-74	MS			
					65-700	65M-5110	MS P			
					65-713					
					65-400	65-507				



5B  
SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS  
CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: COMPUCHEM, RTP Contract: (2-88)-REVS  
 Lab Code: COMPU Case No.: 23664 SAS No.: \_\_\_\_\_ SDG No.: 61  
 Lab File ID: DV910829B52 DFTPP Injection Date: 08/27/91  
 Instrument ID: 52 DFTPP Injection Time: 1338

*Should  
8-*

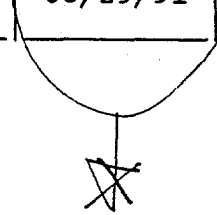
m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	53.9
68	Less than 2.0% of mass 69	0.4 ( 0.9)1
69	Mass 69 relative abundance	45.4
70	Less than 2.0% of mass 69	0.0 ( 0.0)1
127	40.0 - 60.0% of mass 198	42.6
197	Less than 1.0% of mass 198	0.0
198	Base peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.8
275	10.0 - 30.0% of mass 198	19.4
365	Greater than 1.00% of mass 198	1.70
441	Present, but less than mass 443	6.1
442	Greater than 40.0% of mass 198	47.8
443	17.0 - 23.0% of mass 442	9.1 ( 19.1)2

1-Value is % mass 69

2-Value is % mass 442

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD020		HA910829B52	08/29/91	1640
02	SSTD050		HB910829B52	08/29/91	1720
03	SSTD080		HC910829B52	08/29/91	1800
04	SSTD120		HD910829B52	08/29/91	1840
05	SSTD160		HE910829B52	08/29/91	1921
06	SSTD050		HG910829B52	08/29/91	2041
07	65MW0100	436402	GR036402B52	08/29/91	2331



MASS SPECTRUM

08/27/91 13:38:00 + 5:21

SAMPLE: CLP,,,TUNE,50NG,,DFTPP,BNA,TUNE

CONDS.: CAP

TEMP: 270 DEG. C

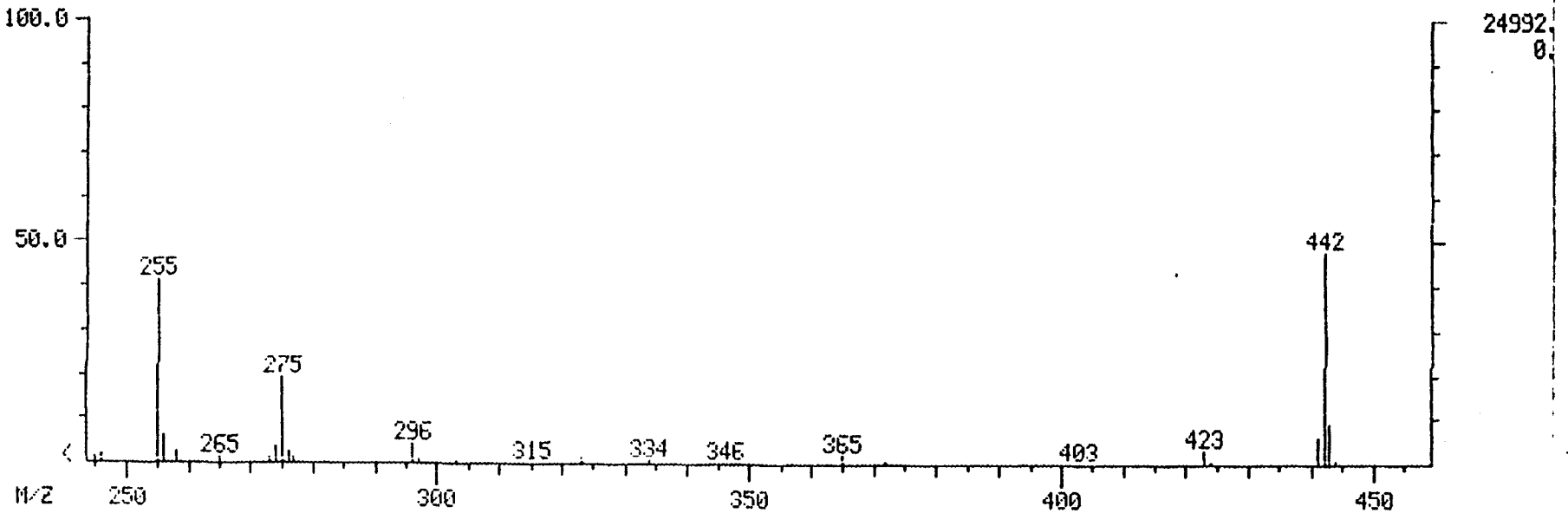
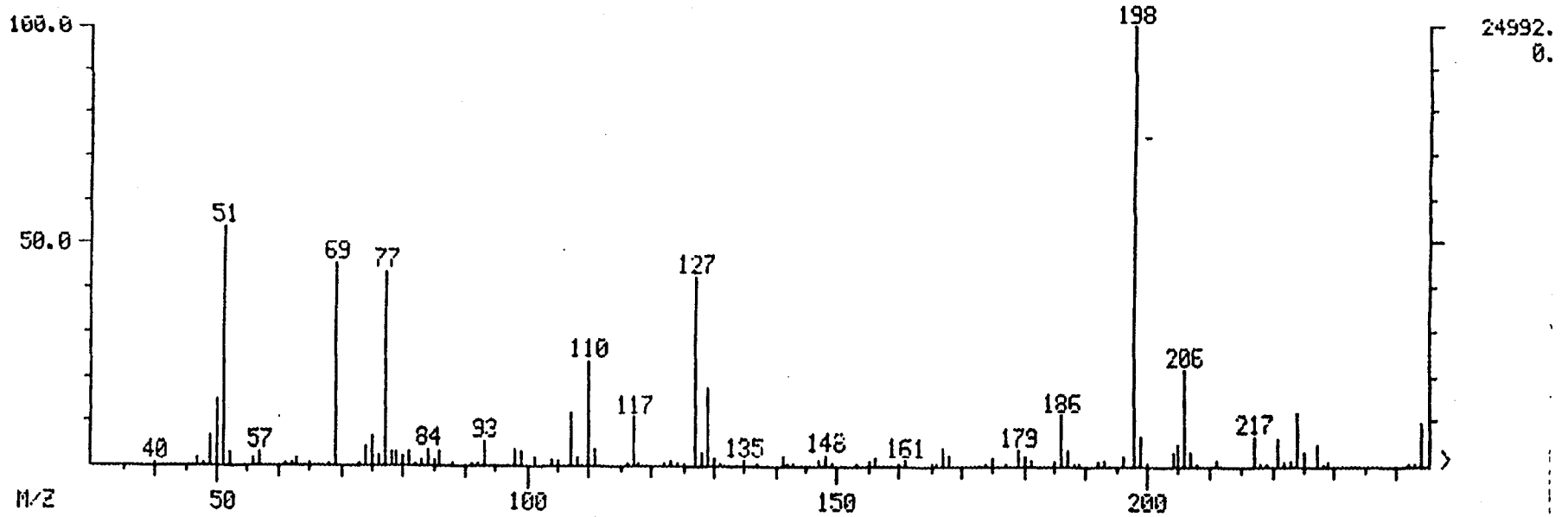
#492 TO #493 SUMMED

DATA: DU910829B52 #492

CALI: CALTAB #3

BASE M/Z: 198

RIC: 189440.



## Mass List

08/27/91 13:38:00 + 5:21

Data: DV910829B52 # 492

Base m/z: 198

Sample: CLP, , TUNE, SONG, , DFTPP, BNA, TUNE

Cali: CALTAB # 3

RIC: 189440.

Conds.: CAP

#492 to #493 summed

Mass	% RA	Inten.	Minima Maxima Mass	Min #	Inten: O % RA	Inten.
40	0.00	0.				193.
444						
47?	1.57	392.	167		4.43	1108.
49?	6.88	1720.	168		2.16	540.
50?	14.77	3692.	174		0.86	216.
51?	53.91	13472.	175		1.56	390.
52?	2.70	676.	177		0.78	194.
56?	1.54	384.	179		3.35	836.
57?	3.25	812.	180		2.23	558.
63?	1.62	406.	181		1.10	276.
65?	0.78	194.	185		1.37	342.
69	45.45	11360.	186		11.24	2808.
74	4.20	1050.	187		3.47	866.
75	6.49	1622.	192		1.07	268.
76	2.21	552.	193		1.12	280.
77	43.85	10960.	196		2.36	590.
78	2.96	740.	198		100.00	24992.
79	2.90	724.	199		6.76	1690.
80	2.24	560.	204		3.00	750.
81	3.08	770.	205		5.07	1268.
82	0.83	208.	206		21.67	5416.
83	0.93	232.	207		3.09	772.
84	3.58	894.	211		0.98	246.
85	1.28	320.	217		6.34	1584.
86	3.12	780.	218		0.79	198.
91	0.79	198.	221		5.92	1480.
93	5.15	1286.	222		1.38	346.
98	3.86	964.	223		1.30	324.
99	2.75	688.	224		12.12	3028.
101	1.65	412.	225		3.19	796.
104	1.10	276.	227		5.09	1272.
105	1.01	252.	229		1.08	270.
107	11.89	2972.	244		9.76	2440.
108	1.87	468.	245		1.27	318.
110	23.21	5800.	246		1.78	446.
111	3.49	872.	255		41.29	10320.
117	10.56	2640.	256		6.13	1532.
118	0.81	202.	258		2.26	564.
122	0.84	210.	265		0.95	238.
123	1.30	326.	273		1.13	282.
127	42.57	10640.	274		3.39	848.
128	3.26	814.	275		19.40	4848.
129	17.54	4384.	276		2.63	658.
130	1.56	390.	277		1.48	370.
135	1.36	340.	296		4.41	1102.
141	2.30	574.	323		1.50	374.
147	1.20	300.	365		1.70	426.
148	2.66	664.	423		2.74	684.
155	1.12	280.	441		6.09	1522.
156	1.74	434.	442		47.82	11952.
161	0.99	248.	443		9.14	2284.
165	0.80	200.	444		0.83	208.



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ORGANIC QUALITY ASSURANCE REVIEW  
SITE: BAKER (CLEAN)  
CASE: 23664  
SDG: 41

REVIEW PERFORMED BY  
THE ANALYTICS DIVISION  
OF  
ROY F. WESTON, INC.

VERIFIED BY: \_\_\_\_\_

*Zohreh Hamid*  
Zohreh Hamid, Ph.D.  
Section Manager - Data Validation

*11-6-91*

Date

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SITE: BAKER (CLEAN)  
CASE: 23664  
SDG: 41

INTRODUCTION

This quality assurance review is based upon a review of all data generated from twenty (20) soil samples collected on 07-26,27,28-91. The samples were analyzed according to criteria set forth in the Contract Laboratory Program (CLP) for TCL Volatile, Semivolatile and Pesticide/PCB target compounds.

This review has been performed in accordance with the confirmation method. The reported analytical results are presented as a summary of the data in Attachment II. All of the analytical data were examined to determine the usability of the analytical results and also to determine contractual compliance relative to the analytical requirements and deliverables specified for CLP method. The applicable qualifier codes have been placed next to the results in the data summary to indicate the qualitative and/or quantitative reliability. The details of this evaluation review are presented in the memo section of this report.

All data have been validated with regard to usability according to the quality assurance guidelines set forth in the USEPA Functional Guidelines for evaluation of organic analysis for completion of the Data Validation Report Forms and preparation of the final data validation report. If you have any questions or comments on this data review, please call Zohreh Hamid at (215) 344-3745.

QUALITY ASSURANCE REVIEW

The analyses of the samples were performed by CompuChem Laboratories, Inc.

The findings offered in this report are based upon a rigorous review of the following criteria:

- \* • Holding times
- \* • GC/MS tuning
- \* • Calibration
- \* • Blanks
- Surrogate recoveries
- Matrix spike/spike duplicate
- Internal standard
- \* • Instrument performance
- \* • Compound identification
- \* • Compound quantitations
- Data completeness
  
- \* = All criteria were met for this classification.

## EVALUATION BY FRACTION

I. Volatiles

Holding Time  
 Surrogate Recovery  
 MS/MSD  
 Blank  
 GC/MS Tuning  
 Initial Calibration  
 Continuing Calibration  
 Compound ID (HSL, TIC)  
 Standards  
 Spectra Quality  
 Chromatography  
 Data Completeness

Twenty (20) soil samples were analyzed within holding time.

The surrogate and internal standard recoveries were within the control limits. All spike recoveries met the CLP criteria. The laboratory blanks had common laboratory contamination at levels less than CRQL. Problems associated with the sample analysis are listed in the following section.

The %D for 2-butanone (99.9%) exceeded 25% in the continuing calibration analyzed on 8-4-91. The reported quantitation limit for the affected sample (633B0406) is rejected and is flagged "R" in the data summary.

The %RSD for methylene chloride and acetone exceeded 30% requirement limits. Also up to eight (8) compounds had %D above 25% in the continuing calibrations. These compounds with the exception of acetone and methylene chloride were not detected in the samples, therefore, the quantitation limits for the compounds with %D above 50% are considered estimated and are flagged "UJ".

Methylene chloride and acetone were detected in the laboratory blanks at levels less than CRQL. The reported sample results which are not substantially above the blank levels are flagged "U" and should be considered as their detection limits. 1,1,2,2-Tetrachloroethane was reported in the blank. This compound was not detected in the samples; therefore, the data are not impacted.



EVALUATION BY FRACTION

II. Base/Neutral/Acids

\_\_\_\_ Holding Time  
\_\_\_\_ Extraction Time  
\_\_\_\_ Surrogate Recovery  
X Blank  
X MS/MSD  
\_\_\_\_ GC/MS Tuning  
X Initial Calibration  
X Continuing Calibration  
\_\_\_\_ Compound ID (HSL, TIC)  
\_\_\_\_ Standards  
\_\_\_\_ Spectra Quality  
\_\_\_\_ Chromatography  
\_\_\_\_ Data Completeness

This portion of the case consisted of twenty (20) soil samples. The samples were extracted/analyzed within the holding times established in USEPA.

All surrogate and internal standard recoveries were within the control limits. Overall the data are representative. The minor problems are listed in the following section.

The following spike recoveries were less than the lower control limits in matrix spike duplicate (MSD) sample.

<u>Compound Name</u>	<u>% Recovery</u>	<u>Lower QC Limit</u>
N-Nitroso-di-n-propylamine	39	41
1,2,4-Trichlorobenzene	37	38

Also, the RPD for 1,2,4-trichlorobenzene and acenaphthene exceeded the control limits. These compounds were not detected in the samples, also, since the spike recoveries met the criteria in matrix spike sample no qualifier codes have been applied to the data.

Di-n-butylphthalate and bis(2-ethylhexyl)phthalate (common laboratory contaminants) are detected in the samples as well as the laboratory blanks at levels less than CRQL. The associated sample results are adjusted to the corresponding sample CRQL, and are flagged "U" in the data summary.

The low concentration of bis(2-ethylhexyl)phthalate in some samples are flagged "J" by the laboratory since the corresponding laboratory blank was free of target compound contamination. However, this compound is considered as the laboratory artifact contamination and the reported results should be disregarded. Therefore, the reported results are adjusted to the corresponding CRQLs and are flagged "U" in the data summary.

Up to 8 compounds had %RSD and/or %D above the 30% and 25% in the initial and continuing calibrations. These compounds were not detected in the samples and since the % differences (%Ds) were less than 50%, the reported sample data are not impacted.

Up to eleven TICs were reported in the samples. Aldol condensation products, and solvent contaminates are reported in the samples as well-as the laboratory blanks. Unknown TICs (Alkane, Siloxane and Benzene derivatives) are reported in the samples.

**Note:**

The quantitation reports and the TIC spectra were not included in the data package for sample 44SB0600. The respective laboratory has been contacted. The acceptance of the sample data is dependent upon the resubmission of the requested documents.





EVALUATION BY FRACTION

III. Pesticides/PCB

- Holding Time
- Extraction Time
- Surrogate Recovery
- MS/MSD
- Blank
- Linearity Calibration
- DDT/Endrin Degradation
- Analytical Sequence
- DBC Retention Time
- Continuing Calibration
- Retention Time Window
- Standards
- Chromatography
- HSL Compounds
- Data Completeness

This case consisted of twenty (20) soil samples analyzed for pesticide/PCB target compounds.

The extraction holding time exceeded for Samples 44SB0600 and 63SB0400 by 10 and 12 days respectively. The reported results and the quantitation limits are qualified estimated.

The (0%) DBC surrogate recovery was obtained for Sample 63SB0400. The laboratory case narrative stated that this sample was re-extracted outside the holding time due to the surrogate recovery below the quality control limit of ten percent (10%). The sample demonstrated the matrix effect. This sample has not been included in the data package.

The quantitation analysis was not performed for samples 44SB0608 and 43SB0506MSD. Only the confirmation analysis was reported and included in the data package. The reported quantitation limits are qualified estimated for the associated samples.

A few compounds had %D above 15% requirement criteria, these standards were analyzed at the end of the sample analysis, therefore, there is no impact to the data.

Compounds were detected in the samples as-well-as the laboratory blanks at levels less than CRQL. Therefore, these compounds were not reported by the laboratory.

**ATTACHMENT I**  
**GLOSSARY OF DATA QUALIFIER CODES**



## GLOSSARY OF DATA QUALIFIERS

### CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds):

- U = NOT DETECTED, SUBSTANTIALLY ABOVE THE LEVEL REPORTED IN LABORATORY OR FIELD BLANKS.
- R = UNRELIABLE RESULT. ANALYTE MAY OR MAY NOT BE PRESENT IN THE SAMPLE. SUPPORTING DATA NECESSARY TO CONFIRM RESULT.
- N = NEGATED COMPOUND WAS CONSIDERED AS NOT PRESENT IN THE SAMPLE.

(NO CODE) = CONFIRMED IDENTIFICATION

### CODES RELATING TO QUANTITATION

(can be used for both positive results and sample quantitation limits):

- J = ANALYTE PRESENT. REPORTED VALUE MAY NOT BE ACCURATE OR PRECISE.
- L = ANALYTE PRESENT. REPORTED VALUE MAY BE BIASED LOW. ACTUAL VALUE IS EXPECTED TO BE HIGHER.
- UJ = THE REPORTED QUANTITATION LIMITS ARE QUALIFIED ESTIMATED.
- UL = NOT DETECTED. QUANTITATION LIMIT MAY BE HIGHER.

### OTHER CODES

- Q = NO ANALYTICAL RESULT.

**ATTACHMENT II  
DATA SUMMARIES**

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

=====  
Case Number: 23664      SDG#: 41      Client: BAKER      Page: 1  
=====

	Cust ID: 01SB1816	43SB0100	43SB0103	43SB0500	43SB0506	44SB0500
Sample Information	Matrix: Soil	Soil	Soil	Soil	Soil	Soil
	D.F.: 1	1	1	1	1	1
	Units: ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
	=====fl=====fl=====fl=====fl=====fl=====fl=====					

Chloromethane.....						
Bromomethane.....						
Vinyl Chloride.....						
Chloroethane.....						
Methylene Chloride.....	37 U	47 U	84 U	29 U	37 U	16 U
Acetone.....	21 U	19 U	16 U	17 U	24 U	11 U
Carbon Disulfide.....						
1,1-Dichloroethene.....						
1,1-Dichloroethane.....						
Trans-1,2-Dichloroethene.....						UJ
Chloroform.....						
1,2-Dichloroethane.....						
2-Butanone.....						
1,1,1-Trichloroethane.....						
Carbon Tetrachloride.....						
Vinyl Acetate.....						
Bromodichloromethane.....						
1,2-Dichloropropane.....						
Trans-1,3-Dichloropropene.....						
Trichloroethene.....						
Dibromochloromethane.....						
1,1,2-Trichloroethane.....						
Benzene.....						
cis-1,3-Dichloropropene.....						
2-Chloroethylvinylether.....						
Bromoform.....						
4-Methyl-2-pentanone.....						
2-Hexanone.....						

=====  
Case Number: 23664    SDG#: 41    Client: BAKER

Page: 1

-----  
Cust ID: 01SB1816    43SB0100    43SB0103    43SB0500    43SB0506    44SB0500

=====  
-----fl-----fl-----fl-----fl-----fl-----fl-----fl-----fl-----  
Tetrachloroethene.....  
1,1,2,2-Tetrachloroethane.....  
Toluene.....  
Chlorobenzene.....  
Ethylbenzene.....  
Styrene.....  
Total Xylenes.....

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

=====  
Case Number: 23664    SDG#: 41    Client: BAKER    Page: 2  
-----

	Cust ID: 44SB0507	44SB0600	44SB0608	63SB0100	63SB0107	63SB0200
Sample Information	Matrix: Soil	Soil	Soil	Soil	Soil	Soil
	D.F.: 1	1	1	1	1	1
	Units: ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
	=====fl	=====fl	=====fl	=====fl	=====fl	=====fl
Chloromethane.....						
Bromomethane.....						
Vinyl Chloride.....						
Chloroethane.....						
Methylene Chloride.....	14 U	25 U	20 U	10 U	42 U	30 U
Acetone.....	12 U	13 U	16 U	12 U	20 U	13 U
Carbon Disulfide.....						
1,1-Dichloroethene.....						
1,1-Dichloroethane.....						
Trans-1,2-Dichloroethene.....	UJ		UJ	UJ	UJ	
Chloroform.....						
1,2-Dichloroethane.....						
2-Butanone.....						
1,1,1-Trichloroethane.....						
Carbon Tetrachloride.....						
Vinyl Acetate.....						
Bromodichloromethane.....						
1,2-Dichloropropane.....						
Trans-1,3-Dichloropropene.....						
Trichloroethene.....						
Dibromochloromethane.....						
1,1,2-Trichloroethane.....						
Benzene.....						
cis-1,3-Dichloropropene.....						
2-Chloroethylvinylether.....						
Bromoform.....						
4-Methyl-2-pentanone.....						
2-Hexanone.....						

Case Number: 23664    SDG#: 41    Client: BAKER

Page: 2

Cust ID: 44SB0507    44SB0600    44SB0608    63SB0100    63SB0107    63SB0200

=====  
=====fl=====fl=====fl=====fl=====fl=====fl=====fl  
Tetrachloroethene.....  
1,1,2,2-Tetrachloroethane.....  
Toluene.....  
Chlorobenzene.....  
Ethylbenzene.....  
Styrene.....  
Total Xylenes.....



WESTON ANALYTICS  
GC/MS DATA SUMMARY  
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

=====  
Case Number: 23664     SDG#: 41     Client: BAKER     Page: 3  
=====

	Cust ID: 63SB02045	63SB0300	63SB03045	63SB0400	63SB0406	63SB0503
Sample Information	Matrix: Soil	Soil	Soil	Soil	Soil	Soil
	D.F.: 1	1	1	1	1	1
	Units: ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
	=====fl	=====fl	=====fl	=====fl	=====fl	=====fl
Chloromethane.....						
Bromomethane.....						
Vinyl Chloride.....						
Chloroethane.....						
Methylene Chloride.....	29 U	11 U	14 U	33 U	19 U	43 U
Acetone.....	27 U	12 U	9 U	22 U	12 U	31 U
Carbon Disulfide.....						
1,1-Dichloroethene.....						
1,1-Dichloroethane.....						
Trans-1,2-Dichloroethene.....	UJ	UJ	UJ			
Chloroform.....						
1,2-Dichloroethane.....						
2-Butanone.....					R	
1,1,1-Trichloroethane.....						
Carbon Tetrachloride.....						
Vinyl Acetate.....						
Bromodichloromethane.....						
1,2-Dichloropropane.....						
Trans-1,3-Dichloropropene.....						
Trichloroethene.....						
Dibromochloromethane.....						
1,1,2-Trichloroethane.....						
Benzene.....						
cis-1,3-Dichloropropene.....						
2-Chloroethylvinylether.....						
Bromoform.....						
4-Methyl-2-pentanone.....						
2-Hexanone.....						

=====  
Case Number: 23664    SDG#: 41    Client: BAKER  
-----

Page: 3

-----  
Cust ID: 63SB02045    63SB0300    63SB03045    63SB0400    63SB0406    63SB0503  
-----

=====  
-----f1-----f1-----f1-----f1-----f1-----f1-----  
Tetrachloroethene.....  
1,1,2,2-Tetrachloroethane.....  
Toluene..... 2 J  
Chlorobenzene.....  
Ethylbenzene.....  
Styrene.....  
Total Xylenes..... 3 J

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664      SDG#: 41      Client: BAKER

Page: 4

Cust ID: 63SB0600      63SB06045

Sample Information	Matrix:	Soil	Soil
	D.F.:	1	1
	Units:	ug/kg	ug/kg

	fl	fl	fl	fl	fl	fl
Chloromethane.....						
Bromomethane.....						
Vinyl Chloride.....						
Chloroethane.....						
Methylene Chloride.....	44 U		93 U			
Acetone.....	20 U		38 U			
Carbon Disulfide.....						
1,1-Dichloroethene.....						
1,1-Dichloroethane.....						
Trans-1,2-Dichloroethene.....						
Chloroform.....						
1,2-Dichloroethane.....						
2-Butanone.....						
1,1,1-Trichloroethane.....						
Carbon Tetrachloride.....						
Vinyl Acetate.....						
Bromodichloromethane.....						
1,2-Dichloropropane.....						
Trans-1,3-Dichloropropene.....						
Trichloroethene.....						
Dibromochloromethane.....						
1,1,2-Trichloroethane.....						
Benzene.....						
cis-1,3-Dichloropropene.....						
2-Chloroethylvinylether.....						
Bromoform.....						
4-Methyl-2-pentanone.....						
2-Hexanone.....						



WESTON ANALYTICS  
GC/MS DATA SUMMARY  
SEMI-VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664 SDG#: 41 Client: BAKER Page: 1

Sample Information	Cust ID: 01SB1816	43SB0100	43SB0103	43SB0506	43SB0500	44SB0500
Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
D.F.:	1	1	1	1	1	1
Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg

- Phenol.....
- bis(2-Chloroethyl) Ether.....
- 2-Chlorophenol.....
- 1,3-Dichlorobenzene.....
- 1,4-Dichlorobenzene.....
- Benzyl Alcohol.....
- 1,2-Dichlorobenzene.....
- 2-Methylphenol.....
- bis(2-Chloroisopropyl) Ether.....
- 4-Methylphenol.....
- N-Nitroso-di-n-propylamine.....
- Hexachloroethane.....
- Nitrobenzene.....
- Isophorone.....
- 2-Nitrophenol.....
- 2,4-Dimethylphenol.....
- Benzoic Acid(2).....
- bis(2-Chloroethoxy) Methane.....
- 2,4-Dichlorophenol.....
- 1,2,4-Trichlorobenzene.....
- Naphthalene.....
- 4-Chloroaniline.....
- Hexachlororbutadiene.....
- 4-Chloro-3-methylphenol.....
- 2-Methylnaphthalene.....
- Hexachlorocyclopentadiene.....

Cust ID: 43SB0300    43SB0400    43SB0403    65MW0100    65MW0111    65MW0200

	f1	f1	f1	f1	f1	f1
2,4,6-Trichlorophenol.....						
2,4,5-Trichlorophenol(2).....						
2-Chloronaphthalene.....						
2-Nitroaniline(2).....						
Dimethyl Phthalate.....						
Acenaphthylene.....						
3-Nitroaniline(2).....						
Acenaphthene.....						
2,4-Dinitrophenol(2).....						
4-Nitrophenol(2).....						
Dibenzofuran.....						
2,4-Dinitrotoluene.....						
2,6-Dinitrotoluene.....						
Diethyl Phthalate.....						
4-Chlorophenyl-phenylether.....						
Fluorene.....						
4-Nitroaniline(2).....						
4,6-Dinitro-2-methylphenol(2).....						
N-Nitrosodiphenylamine(1).....						
4-Bromophenyl-phenylether.....						
Hexachlorobenzene.....						
Pentachlorophenol(2).....						
Phenanthrene.....				42		
Anthracene.....						360 U
di-n-Butyl Phthalate.....						
Fluoranthene.....						
Pyrene.....						
Butyl Benzyl Phthalate.....						
3,3'-Dichlorobenzidine(3).....						
Benzo(a)Anthracene.....						
bis(2-Ethylhexyl)Phthalate.....				380	340 U	360 U
Chrysene.....						
di-n-Octyl Phthalate.....						
Benzo(b)Fluoranthene.....				49*		
Benzo(k)Fluoranthene.....				49*		
Benzo(a)Pyrene.....						
Indeno(1,2,3-cd)Pyrene.....						
Dibenz(a,h)Anthracene.....						
Benzo(g,h,i)Perylene.....						

Cust ID: 01SB1816    43SB0100    43SB0103    43SB0506    43SB0500    44SB0500

=====  
=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====

2,4,6-Trichlorophenol.....				
2,4,5-Trichlorophenol(2).....				
2-Chloronaphthalene.....				
2-Nitroaniline(2).....				
Dimethyl Phthalate.....				
Acenaphthylene.....				
3-Nitroaniline(2).....				
Acenaphthene.....				
2,4-Dinitrophenol(2).....				
4-Nitrophenol(2).....				
Dibenzofuran.....				
2,4-Dinitrotoluene.....				
2,6-Dinitrotoluene.....				
Diethyl Phthalate.....				
4-Chlorophenyl-phenylether.....				
Fluorene.....				
4-Nitroaniline(2).....				
4,6-Dinitro-2-methylphenol(2).....				
N-Nitrosodiphenylamine(1).....				
4-Bromophenyl-phenylether.....				
Hexachlorobenzene.....				
Pentachlorophenol(2).....				
Phenanthrene.....				
Anthracene.....				
di-n-Butyl Phthalate.....	380 U		490 U	
Fluoranthene.....				
Pyrene.....				
Butyl Benzyl Phthalate.....				
3,3'-Dichlorobenzidine(3).....				
Benzo(a)Anthracene.....				
bis(2-Ethylhexyl)Phthalate.....	380 U		490 U	380 U
Chrysene.....				370 U
di-n-Octyl Phthalate.....				
Benzo(b)Fluoranthene.....				
Benzo(k)Fluoranthene.....				
Benzo(a)Pyrene.....				
Indeno(1,2,3-cd)Pyrene.....				
Dibenz(a,h)Anthracene.....				
Benzo(a,h,i)Perylene.....				

WESTON ANALYTICS  
GC/MS LABORATORY SUMMARY  
SEMI-VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664    SDG#: 41    Client: BAKER    Page: 2

Sample Information	Cust ID: 44SB0507		44SB0600		44SB0608		63SB0100		63SB0107		63SB0200	
	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	1	1	1	1	1	1	1	1
Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg

Phenol.....  
bis(2-Chloroethyl) Ether.....  
2-Chlorophenol.....  
1,3-Dichlorobenzene.....  
1,4-Dichlorobenzene.....  
Benzyl Alcohol.....  
1,2-Dichlorobenzene.....  
2-Methylphenol.....  
bis(2-Chloroisopropyl) Ether.....  
4-Methylphenol.....  
N-Nitroso-di-n-propylamine.....  
Hexachloroethane.....  
Nitrobenzene.....  
Isophorone.....  
2-Nitrophenol.....  
2,4-Dimethylphenol.....  
Benzoic Acid(2).....  
bis(2-Chloroethoxy) Methane.....  
2,4-Dichlorophenol.....  
1,2,4-Trichlorobenzene.....  
Naphthalene.....  
4-Chloroaniline.....  
Hexachlororbutadiene.....  
4-Chloro-3-methylphenol.....  
2-Methylnaphthalene.....  
Hexachlorocyclopentadiene.....

R



Cust ID: 44SB0507    44SB0600    44SB0608    63SB0100    63SB0107    63SB0200

	fl	fl	fl	fl	fl	fl
2,4,6-Trichlorophenol.....						
2,4,5-Trichlorophenol(2).....						
2-Chloronaphthalene.....						
2-Nitroaniline(2).....						
Dimethyl Phthalate.....						
Acenaphthylene.....						
3-Nitroaniline(2).....						
Acenaphthene.....						
2,4-Dinitrophenol(2).....						
4-Nitrophenol(2).....						
Dibenzofuran.....						
2,4-Dinitrotoluene.....						
2,6-Dinitrotoluene.....						
Diethyl Phthalate.....						
4-Chlorophenyl-phenylether.....						
Fluorene.....						
4-Nitroaniline(2).....						
4,6-Dinitro-2-methylphenol(2).....						
N-Nitrosodiphenylamine(1).....						
4-Bromophenyl-phenylether.....						
Hexachlorobenzene.....						
Pentachlorophenol(2).....						
Phenanthrene.....						
Anthracene.....						
di-n-Butyl Phthalate.....	400 U				460 U	
Fluoranthene.....						
Pyrene.....						
Butyl Benzyl Phthalate.....						
3,3'-Dichlorobenzidine(3).....						
Benzo(a)Anthracene.....						
bis(2-Ethylhexyl)Phthalate.....	400 U		410 U	400 U	460 U	350 U
Chrysene.....						
di-n-Octyl Phthalate.....						
Benzo(b)Fluoranthene.....						
Benzo(k)Fluoranthene.....						
Benzo(a)Pyrene.....						
Indeno(1,2,3-cd)Pyrene.....						
Dibenz(a,h)Anthracene.....						
Benzo(a,h,i)Perylene.....						

Cust ID: 65MW0206 65MW0300 65MW0311 65MW0311D 65SB0100 65SB0107

=====fl=====fl=====fl=====fl=====fl=====fl=====fl

2,4,6-Trichlorophenol.....						
2,4,5-Trichlorophenol(2).....						
2-Chloronaphthalene.....						
2-Nitroaniline(2).....						
Dimethyl Phthalate.....						
Acenaphthylene.....						
3-Nitroaniline(2).....						
Acenaphthene.....						
2,4-Dinitrophenol(2).....						
4-Nitrophenol(2).....						
Dibenzofuran.....						
2,4-Dinitrotoluene.....						
2,6-Dinitrotoluene.....						
Diethyl Phthalate.....						
4-Chlorophenyl-phenylether.....						
Fluorene.....						
4-Nitroaniline(2).....						
4,6-Dinitro-2-methylphenol(2).....						
N-Nitrosodiphenylamine(1).....						
4-Bromophenyl-phenylether.....						
Hexachlorobenzene.....						
Pentachlorophenol(2).....						
Phenanthrene.....						
Anthracene.....						
di-n-Butyl Phthalate.....	390 U	370 U	370 U	370 U	370 U	420 U
Fluoranthene.....		53 J				
Pyrene.....		53 J				
Butyl Benzyl Phthalate.....		95 J				
3,3'-Dichlorobenzidine(3).....						
Benzo(a)Anthracene.....		42 J				
bis(2-Ethylhexyl) Phthalate.....	390 U	5900	370 U	370 U		
Chrysene.....						
di-n-Octyl Phthalate.....		400				
Benzo(b)Fluoranthene.....						
Benzo(k)Fluoranthene.....						
Benzo(a)Pyrene.....						
Indeno(1,2,3-cd)Pyrene.....						
Dibenz(a,h)Anthracene.....						
Benzo(g,h,i)Perylene.....						

WESTON ANALYTICS  
GC/MS DATA SUMMARY  
SEMI-VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

Case Number: 23664    SDG#: 41    Client: BAKER    Page: 3

Cust ID: 63SB02045    63SB0300    63SB03045    63SB0400    63SB0406    63SB0503

Sample Information	Matrix:	Soil	Soil	Soil	Soil	Soil	Soil
	D.F.:	1	1	1	1	1	1
	Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg

==== fl===== fl===== fl===== fl===== fl===== fl===== fl===== fl===== fl===== fl===== fl===== fl===== fl===== fl===== fl=====

Phenol.....  
bis(2-Chloroethyl) Ether.....  
2-Chlorophenol.....  
1,3-Dichlorobenzene.....  
1,4-Dichlorobenzene.....  
Benzyl Alcohol.....  
1,2-Dichlorobenzene.....  
2-Methylphenol.....  
bis(2-Chloroisopropyl) Ether.....  
4-Methylphenol.....  
N-Nitroso-di-n-propylamine.....  
Hexachloroethane.....  
Nitrobenzene.....  
Isophorone.....  
2-Nitrophenol.....  
2,4-Dimethylphenol.....  
Benzoic Acid(2).....  
bis(2-Chloroethoxy) Methane.....  
2,4-Dichlorophenol.....  
1,2,4-Trichlorobenzene.....  
Naphthalene.....  
4-Chloroaniline.....  
Hexachlororbutadiene.....  
4-Chloro-3-methylphenol.....  
2-Methylnaphthalene.....  
Hexachlorocyclopentadiene.....



WESTON ANALYTICS  
GC/MS DATA SUMMARY  
SEMI-VOLATILE HAZARDOUS SUBSTANCE LIST COMPOUNDS

=====  
Case Number: 23664      SDG#: 41      Client: BAKER      Page: 4  
=====

Cust ID: 63SB0600      63SB06045

Sample Information	Matrix:	Soil	Soil
	D.F.:	1	1
	Units:	ug/kg	ug/kg

=====fl=====fl=====fl=====fl=====fl=====fl=====fl

- Phenol.....
- bis(2-Chloroethyl) Ether.....
- 2-Chlorophenol.....
- 1,3-Dichlorobenzene.....
- 1,4-Dichlorobenzene.....
- Benzyl Alcohol.....
- 1,2-Dichlorobenzene.....
- 2-Methylphenol.....
- bis(2-Chloroisopropyl) Ether.....
- 4-Methylphenol.....
- N-Nitroso-di-n-propylamine.....
- Hexachloroethane.....
- Nitrobenzene.....
- Isophorone.....
- 2-Nitrophenol.....
- 2,4-Dimethylphenol.....
- Benzoic Acid(2).....
- bis(2-Chloroethoxy) Methane.....
- 2,4-Dichlorophenol.....
- 1,2,4-Trichlorobenzene.....
- Naphthalene.....
- 4-Chloroaniline.....
- Hexachlororbutadiene.....
- 4-Chloro-3-methylphenol.....
- 2-Methylnaphthalene.....
- Hexachlorocyclopentadiene.....

Cust ID: 63SB0600 63SB06045

2,4,6-Trichlorophenol.....		
2,4,5-Trichlorophenol(2).....		
2-Chloronaphthalene.....		
2-Nitroaniline(2).....		
Dimethyl Phthalate.....		
Acenaphthylene.....		
3-Nitroaniline(2).....		
Acenaphthene.....		
2,4-Dinitrophenol(2).....		
4-Nitrophenol(2).....		
Dibenzofuran.....		
2,4-Dinitrotoluene.....		
2,6-Dinitrotoluene.....		
Diethyl Phthalate.....		
4-Chlorophenyl-phenylether.....		
Fluorene.....		
4-Nitroaniline(2).....		
4,6-Dinitro-2-methylphenol(2).....		
N-Nitrosodiphenylamine(1).....		
4-Bromophenyl-phenylether.....		
Hexachlorobenzene.....		
Pentachlorophenol(2).....		
Phenanthrene.....		
Anthracene.....		
di-n-Butyl Phthalate.....		
Fluoranthene.....		
Pyrene.....		
Butyl Benzyl Phthalate.....		
3,3'-Dichlorobenzidine(3).....		
Benzo(a)Anthracene.....		
bis(2-Ethylhexyl) Phthalate.....	380 U	410 U
Chrysene.....		
di-n-Octyl Phthalate.....		
Benzo(b)Fluoranthene.....		
Benzo(k)Fluoranthene.....		
Benzo(a)Pyrene.....		
Indeno(1,2,3-cd)Pyrene.....		
Dibenz(a,h)Anthracene.....		
Benzo(g,h,i)Perylene.....		

WESTON ANALYTICS  
PESTICIDE/PCB's  
CLP LIST

```

=====
Case Number: 23664   SDG#: 41   Client:   BAKER                               Page: 1
-----
Cust ID: 01SB1816   43SB0100   43SB0103   43SB0500   43SB0506   44SB0500
Sample
Information          Matrix:   Soil      Soil      Soil      Soil      Soil      Soil
                   D.F.:    1         1         1         1         1         1
                   Units:  ug/kg    ug/kg    ug/kg    ug/kg    ug/kg    ug/kg
=====fl=====fl=====fl=====fl=====fl=====fl=====

```

- Alpha-BHC.....
- Beta-BHC.....
- Delta-BHC.....
- Gamma-BHC (Lindane).....
- Heptachlor.....
- Aldrin.....
- Heptachlor Epoxide.....
- Endosulfan I.....
- Dieldrin.....
- 4,4'-DDE.....
- Endrin.....
- Endosulfan II.....
- 4,4'-DDD.....
- Endosulfan Sulfate.....
- 4,4'-DDT.....
- Methoxychlor.....
- Endrin Ketone.....
- Alpha Chlordane.....
- Gamma Chlordane.....
- Toxaphene.....
- Aroclor-1016.....
- Aroclor-1221.....
- Aroclor-1232.....
- Aroclor-1242.....
- Aroclor-1248.....
- Aroclor-1254.....
- Aroclor-1260.....









Cust ID: 65SB0200    65SB0212    65SB0300    65SB0313    65SB0400    65SB04095

	fl	fl	fl	fl	fl	fl	
2,4,6-Trichlorophenol.....							
2,4,5-Trichlorophenol(2).....							
2-Chloronaphthalene.....							
2-Nitroaniline(2).....							
Dimethyl Phthalate.....							
Acenaphthylene.....							
3-Nitroaniline(2).....							
Acenaphthene.....							
2,4-Dinitrophenol(2).....							
4-Nitrophenol(2).....							
Dibenzofuran.....							
2,4-Dinitrotoluene.....							
2,6-Dinitrotoluene.....							
Diethyl Phthalate.....							
4-Chlorophenyl-phenylether.....							
Fluorene.....							
4-Nitroaniline(2).....							
4,6-Dinitro-2-methylphenol(2).....							
N-Nitrosodiphenylamine(1).....							
4-Bromophenyl-phenylether.....							
Hexachlorobenzene.....							
Pentachlorophenol(2).....							
Phenanthrene.....	43	J					
Anthracene.....							
di-n-Butyl Phthalate.....	360	U	390	U	380	U	
Fluoranthene.....	120	J			180	U	
Pyrene.....	98	J			360	U	
Butyl Benzyl Phthalate.....						410	U
3,3'-Dichlorobenzidine(3).....							
Benzo(a)Anthracene.....	65	J					
bis(2-Ethylhexyl)Phthalate.....							
Chrysene.....	60	J					
di-n-Octyl Phthalate.....							
Benzo(b)Fluoranthene.....	130*	J					
Benzo(k)Fluoranthene.....	130*	J					
Benzo(a)Pyrene.....	54	J					
Indeno(1,2,3-cd)Pyrene.....							
Dibenz(a,h)Anthracene.....							
Ben: (a,h,i)Perylene.....							

\*: Coefficient

Cust ID: 65SB0500    65SB0507

	f1	f1	f1	f1	f1	f1
2,4,6-Trichlorophenol.....						
2,4,5-Trichlorophenol(2).....						
2-Chloronaphthalene.....						
2-Nitroaniline(2).....						
Dimethyl Phthalate.....						
Acenaphthylene.....						
3-Nitroaniline(2).....						
Acenaphthene.....						
2,4-Dinitrophenol(2).....						
4-Nitrophenol(2).....						
Dibenzofuran.....						
2,4-Dinitrotoluene.....						
2,6-Dinitrotoluene.....						
Diethyl Phthalate.....						
4-Chlorophenyl-phenylether.....						
Fluorene.....						
4-Nitroaniline(2).....						
4,6-Dinitro-2-methylphenol(2).....						
N-Nitrosodiphenylamine(1).....						
4-Bromophenyl-phenylether.....						
Hexachlorobenzene.....						
Pentachlorophenol(2).....						
Phenanthrene.....						
Anthracene.....						
di-n-Butyl Phthalate.....	360 U		440 U			
Fluoranthene.....						
Pyrene.....						
Butyl Benzyl Phthalate.....						
3,3'-Dichlorobenzidine(3).....						
Benzo(a)Anthracene.....						
bis(2-Ethylhexyl) Phthalate.....			440 U			
Chrysene.....						
di-n-Octyl Phthalate.....						
Benzo(b)Fluoranthene.....						
Benzo(k)Fluoranthene.....						
Benzo(a)Pyrene.....						
Indeno(1,2,3-cd)Pyrene.....						
Dibenz(a,h)Anthracene.....						
Benzo(g,h,i)Perylene.....						

ATTACHMENT III

**VOLATILE CALIBRATION  
SUMMARY OF CRITERIA OUTLIERS**

CASE: 23664 906-41  
CLIENT: Baker

	E-C	C-C	I-C	C-C	I-C	C-C
DATE/TIME OF CALIBRATION	7-10-91	8-4-91	7-31-91	8-1-91	7-30-91	7-31-91
INSTRUMENT ID	13	13	53	53	54	54
Chloromethane						
Bromomethane						%D=27
Vinyl Chloride						
Chloroethane						
Methylene Chloride			%RSD=49	%D=57	%RSD=43	
Acetone	%RSD=56	%D=79	%RSD=93		%RSD=66	%D=83
Carbon Disulfide						
1,1-Dichloroethene						
1,1-Dichloroethane						
1,2-Dichloroethene (total)				%D=61		
Chloroform						
1,2-Dichloroethane						
2-Butanone		%D=99.9				%D=27
1,1,1-Trichloroethane						
Carbon Tetrachloride						
Vinyl Acetate						%D=36.4
Bromodichloromethane						
1,2-Dichloropropane						
Cis-1,3-dichloropropene						
Trichloroethene						
Dibromochloromethane						
1,1,2-Trichloroethane						
Benzene						
Trans-1,3-dichloropropene						
Bromoform						
4-Methyl-2-pentanone						%D=39
2-Hexanone						%D=34
Tetrachloroethene						
1,1,2,2-Tetrachloroethane						
Toluene						
Chlorobenzene						
Ethylbenzene						
Styrene						
Xylene (total)						
ASSOCIATED SAMPLES		63-406		44-500		01-816
				44-507		43-100
				44-608		43-103
				63-100		43-500
				63-107		43-506
				63-2045		44-600
				63-300		63-200
				63-3045		63-400
						63-503
						63-6045

ms  
m.p

CASE: 23664 *9/16/41*  
 CLIENT: Baker

SEMIVOLATILE CALIBRATION  
 SUMMARY OF CRITERIA OUTLIERS

	I-C	C-C	C-C	C-C	I-C	C-C	C-C
DATE/TIME OF CALIBRATION	7-31-91	8-4-91	8-5-91	8-8-91	8-4-91	8-5-91	8-6-91
INSTRUMENT ID	20	20	20	20	52	52	52
Phenol							
Bis(2-chloroethoxy)ether							
2-Chlorophenol							
1,3-Dichlorobenzene							
1,4-Dichlorobenzene							
Benzyl Alcohol							
1,2-Dichlorobenzene							
2-Methylphenol							
Bis(2-chloroisopropyl)ether							
4-Methylphenol							
N-Nitroso-Di-n-propylamine							
Hexachloroethane							
Nitrobenzene							
Isophorone							
2-Nitrophenol							
2,4-Dimethylphenol							
Benzoic Acid							
Bis(2-chloroethoxy)methane							
2,4-Dichlorophenol							
1,2,4-Trichlorobenzene							
Naphthalene							
4-Chloroaniline							
Hexachlorobutadiene							
4-Chloro-3-methylphenol							
2-Methylnaphthalene							
Hexachlorocyclopentadiene		%D = 27					
2,4,6-Trichlorophenol							
2,4,5-Trichlorophenol							
2-Chloronaphthalene							
2-Nitroaniline							
Dimethylphthalate							
Acenaphthylene							
2,6-Dinitrotoluene							
3-Nitroaniline		%D = 44	%D = 26	%D = 29.8			
Acenaphthene							
2,4-Dinitrophenol		%D = 27					
4-Nitrophenol		%D = 26					
Dibenzofuran							
2,4-Dinitrotoluene							
Diethylphthalate							
4-Chlorophenyl-phenylether							
Fluorene							
4-Nitroaniline		%D = 36					
4,6-Dinitro-2-methylphenol							
N-N-trosodiphenylamine							
4-Bromophenyl-phenylether							
Hexachlorobenzene							
Pentachlorophenol							
Phenanthrene							
Anthracene							
Di-n-butylphthalate							
Fluoranthene							
Pyrene							
Butylbenzylphthalate							
3,3'-Dichlorobenzidine		%D = 38	%D = 38	%D = 27			
Benzo(a)anthracene							
Chrysene							
Bis(2-ethylhexyl)phthalate							
Di-n-octylphthalate							
Benzo(b)fluoranthene	36.6 *						
Benzo(k)fluoranthene	36.6	%D = 42					
Benzo(a)pyrene							
Indeno(1,2,3-cd)pyrene							
Dibenzo(a,h)anthracene							
Benzo(g,h,i)perylene							
ASSOCIATED SAMPLES		43-103	44-500	63-107		43-100	
			44-507			43-500	
			44-608			43-506	
			63-100			44-600	
			63-7045			63-200	
			63-300			63-200	
			67-704c			67-501	

\* Corrupted

63-300  
 67-704c  
 63-100  
 43-500  
 43-506  
 44-600  
 63-200  
 63-200  
 67-501

1190  
 22-606



1 WESTON WAY  
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**INORGANIC QUALITY ASSURANCE REVIEW  
BAKER ENVIRONMENTAL  
CASE: 50024  
SDG: 664291**

**REVIEW PERFORMED BY  
THE ANALYTICS DIVISION  
OF  
ROY F. WESTON, INC.**

bcc: WDTimbath/JWmentz/PROG F;  
DPBlack/RPWatras | PF; EMacDonald

PREPARED BY:   
Douglas J. Godfrey  
Project Scientist - Data Validation

10-8-91  
Date

VERIFIED BY:   
Zohreh Hamid, Ph.D.  
Section Manager - Data Validation

10-8-91  
Date

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**BAKER ENVIRONMENTAL  
COMPUCHEM LABORATORIES**

**CASE: 50024**

**SDG: 664291**

The laboratory's portion of SDG 664291 consisted of sixteen (16) water samples analyzed for Target Analyte List (TAL) metals and Cyanide by Compuchem Laboratories.

The laboratory reported no problems with the samples received on 7/28/1991 and 8/1,8,10/1991.

The laboratory performed the analyses according to the procedures set forth in the USEPA CLP method (7/88). The initial and continuing calibration verification samples were within the acceptable control limits. Problems affecting the data usability are discussed in the following sections. A list of the samples with the criteria deficiencies and qualifier codes are summarized in TABLE I. A glossary of qualifier codes is presented in Attachment I.

**Major Issues**

The spike recovery of (0%) was obtained for "CN". Also the post-digestion spike recovery (73%) was less than the requirement limit of 75%. The possibility of false negative exist. Cyanide was not detected in the samples, therefore, the reported detection limits are rejected and are qualified "R" in the data summary.

The analytical spike recovery for "Tl" in sample 65-R-01 was less than 40%. The reported detection limit is rejected.

**Minor Issues**

The preparation blank contained Al, Ca, Fe, Na, and Zn above the IDL. All associated sample results  $\geq$  IDL but  $\leq$  5x the blank levels are qualified "U" due to the blank contaminations. The reported sample results are qualified as follows:

The reported sample results for "Al" and "Fe" were  $\geq$  5x the highest blank contamination levels with the exception of "Fe" in samples 01-R-01, 63-R-02, and 65-R-01. Therefore, the reported result for these analytes are considered as true values and are not qualified due to the blank contaminations.

The results for "Ca" and "Zn" for the samples which are not substantially above 5x the blank contaminations are flagged "U" and should be considered as detection limits.



The matrix spike percent recoveries for Sb (58.8) and Tl (71.3) were below the CLP control limits of 75%. All associated sample detection limits are qualified as estimated.

The result for "Pb" in samples 43-SW-03, 44-SW-01, 44-SW-02, and 65-SW-02 were determined by the method of standard addition (MSA). The results were within the linear range with correlation coefficient of  $\geq 0.995$ . Therefore, the results are accepted without qualifier codes.

The following analytical spike recoveries were outside the QC limit of 85-115%.

Sample ID	Analyte	% Recovery
01-R-01	As, Se, Tl	117, 81.2, 80.2
43-SW-01	Pb, Tl	75.9, 69.9
43-SW-02	As, Pb, Tl	118.2, 74.2, 39.7
43-SW-03	Tl	60.9
43-SW-04	As, Pb, Tl	119.6, 83.1, 59.2
43-SW-05	Pb, Tl	69.3, 65.3
44-SW-01	Se, Tl	68.2, 61
44-SW-02	As, Se, Tl	121.2, 75.4, 70.6
63-R-02	As, Se, Tl	80.1, 66, 77.7
63-SW-01	Pb, Tl	61.2, 59.6
63-SW-01D	Pb, Tl	55.2, 51.6
63-SW-02	Pb, Se, Tl	61.9, 83.8, 50.4
65-R-01	As, Se	130.6, 123.8
65-SW-01	Se	59.5
65-SW-02	Tl	70.2
65-SW-03	Pb, Tl	68.1, 72

The reported results in the samples are qualified estimated if the % recovery exceeded 115%. However, the detection limits are accepted unqualified. If the % recovery were less than 85% the reported results and the detection limits are qualified estimated.

**WESTON**

The calibration blank analyzed at the end of the analysis contained some elements at levels less than CRDL. The sample data are not impacted, since the samples were analyzed prior to this standard.

TABLE I

Sample ID	Analyte	+ Result	- DL	Comments
All samples	CN		R	1
65-R-01,	Tl		R	2
All samples	Se, Tl		UJ	3
65-R-01	Tl		R	2
All samples	Se, Tl		UJ	3
All samples with exception of 65-SW-01	Tl		UJ	4
01-R-01, 44-SW-01, 44-SW-02, 63-R-01, 63-SW-02, 65-R-01, 65-SW-01	Se		UJ	4
43-SW-01, 43-SW-02, 43-SW-03, 43-SW-05, 63-SW-01, 63-SW-01D, 63-SW-02, 65-SW-03	Pb	J		4
01-R-01, 63-R-02, 65-R-01	Fe	U		6
63-R-02, 65-R-01,	Ca, Na	U		6
All samples with exception of 43-SW-03, 44-SW-01, 44-SW-02, 43-SW-04	Zn	U		6

Comments

1. The "0%" recovery has been obtained for the matrix spike sample, the reported detection limits are rejected.
2. The analytical spike recovery was below 40%. The reported detection limit is rejected.
3. Due to the low matrix spike recoveries, the reported results and the detection limits are qualified estimated.
4. The analytical spike recovery was less than 85% but above 40%. The reported results and the detection limits are qualified estimated.
5. The analytical spike recovery exceeded the upper QC range. The reported result is qualified.
6. Due to the blank concentrations, the reported sample results which are  $\geq$ IDL but  $\leq$ 5x the blank levels are qualified "U".

**ATTACHMENT I**  
**GLOSSARY OF DATA QUALIFIER CODES**

## GLOSSARY OF DATA QUALIFIERS

### CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds):

- U = NOT DETECTED, SUBSTANTIALLY ABOVE THE LEVEL REPORTED IN LABORATORY OR FIELD BLANKS.
- R = UNRELIABLE RESULT. ANALYTE MAY OR MAY NOT BE PRESENT IN THE SAMPLE. SUPPORTING DATA NECESSARY TO CONFIRM RESULT.
- N = NEGATED COMPOUND WAS CONSIDERED AS NOT PRESENT IN THE SAMPLE.

(NO CODE) = CONFIRMED IDENTIFICATION

### CODES RELATING TO QUANTITATION

(can be used for both positive results and sample quantitation limits):

- J = ANALYTE PRESENT. REPORTED VALUE MAY NOT BE ACCURATE OR PRECISE.
- L = ANALYTE PRESENT. REPORTED VALUE MAY BE BIASED LOW. ACTUAL VALUE IS EXPECTED TO BE HIGHER.
- UJ = THE REPORTED QUANTITATION LIMITS ARE QUALIFIED ESTIMATED.
- UL = NOT DETECTED. QUANTITATION LIMIT MAY BE HIGHER.

### OTHER CODES

- Q = NO ANALYTICAL RESULT.

**ATTACHMENT II  
DATA SUMMARIES**





CASE NUMBER: 50024 SD-#664291

CLIENT NAME:

DATA VALIDATION - INORGANIC SUMMARY										
LAB/CLIENT ID:	445W01	445W02	63R02	635W01	635W01P	635W02				
MATRIX:	Water	Water	Water	Water	Water	Water				
UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L				
Aluminum	6930	2860	60.2	1170	1110	1030				
Antimony										
Arsenic	9.3			UJ						
Barium	75.5	41.7		26.9	29.0	34.8				
Beryllium										
Cadmium										
Calcium	60100	44500	119	U	1570	1610	2520			
Chromium	13.3									
Cobalt										
Copper	24.0	11.1		6.3	7					
Iron	24500	8780	91.0	U	1040	1110	1090			
Lead	44.1	17.7		3.0	J	2.6	J	2.9	J	
Magnesium	11000	7870		746	795	845				
Manganese	104	84.6		10.4	10.6	13.6				
Mercury										
Nickel	9.6		12.5	10.2						
Potassium	3350	2690								
Selenium		UJ		UJ		UJ		UJ		UJ
Silver										
Sodium	85600	60100	412	U	4150	4560	4780			
Thallium		UJ		UJ		UJ		UJ		UJ
Vanadium	34.1	10.1								
Zinc	153	83.	10.4	U	39.7	U	12.7	U	40.1	U
Cyanide		R		R		R		R		R

CASE NUMBER: 50024 SP-#66421

CLIENT NAME:

DATA VALIDATION - INORGANIC SUMMARY							
LAB/CLIENT ID:	65-R-01	65SW01	65SW02	65SW03			
MATRIX:	water	water	water	water			
UNITS:	ug/L	ug/L	ug/L	ug/L			
Aluminum	74.2	6816	519	504			
Antimony							
Arsenic							
Barium	2.5	22.3	15.2	14.9			
Beryllium							
Cadmium							
Calcium	39.6	U 5100	14800	9730			
Chromium		8.5					
Cobalt							
Copper		21.6	5.8	11.9			
Iron	137	U 2420	273	542			
Lead		13.8	6.2	2.8	J		
Magnesium		858	987	1350			
Manganese		44.1	24.5	20.9			
Mercury							
Nickel				12.7			
Potassium		1960					
Selenium		UJ	UJ	UJ	UJ		
Silver							
Sodium	454	U 1650	2660	4690			
Thallium		R	UJ	UJ	UJ		
Vanadium		6.8					
Zinc	9.3	U 67.2	U 35.6	U 39.7	U		
Cyanide		R	R	R	R		

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INORGANIC QUALITY ASSURANCE REVIEW  
BAKER ENVIRONMENTAL  
CASE: 50024  
SDG: 664164

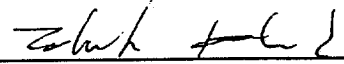
REVIEW PERFORMED BY  
THE ANALYTICS DIVISION  
OF  
ROY F. WESTON, INC.

bcc: WDTribbath/JWmentz/PROG F;  
DPBlack/RPWatras /PF; EMacDonald

PREPARED BY: 

Douglas J. Godfrey  
Project Scientist - Data Validation

10-8-91  
Date

VERIFIED BY: 

Zohreh Hamid, Ph.D.  
Section Manager - Data Validation

10-8-91  
Date

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**BAKER ENVIRONMENTAL  
COMPUCHEM LABORATORIES**

**CASE: 50024**

**SDG: 664164**

The laboratory's portion of SDG 664164 consisted of twenty (20) soil samples analyzed for the inorganic Target Analyte List metal (TAL) and Cyanide by Compuchem Laboratories.

The laboratory reported no problems with the receipt of the samples received on 7-30-1991.

The laboratory performed the analyses according to the procedures set forth in the USEPA CLP method (7/88). The initial and continuing calibration verification samples were within acceptable control limits. Problems affecting the data usability are discussed in the following sections. A list of the samples with the criteria deficiencies and qualifier codes are summarized in TABLE I. A glossary of qualifier codes is presented in Attachment I.

Issues

The calibration blanks contained Al, Ba, Be, Ca, Fe, Mn, and Zn above the IDL. All associated sample results  $\geq$  IDL but  $\leq$  5x the blank levels are qualified "U" due to the blank contamination.

The results for Al and Fe in all samples were  $\geq$  5x the blank contamination levels, therefore, the qualifier codes have not been applied to these analytes due to the laboratory artifact.

The preparation blank contained "Na" at levels comparable to the sample results. Therefore, the results for all samples are flagged "U" and should be considered as sample detection limits.

The preparation blank and calibration blanks contained "Ca" at levels less than CRDL. The reported sample results which are not substantially above the blank levels are qualified in the data summary.

The low amount of "Zn" was detected in the preparation blank. The level of this analyte in the samples were above 5x the associated blank level. Even though, the data are not contractually qualified, the low results of "Zn" in the sample could be attributed to the laboratory artifact contamination.



The matrix spike percent recovery for Ag (61.7) was below the CLP control limit of 75%. All associated sample detection limits are qualified estimated.

The relative percent duplicate for Pb (29.8) exceeded 20% contract requirement limits. The reported sample results are flagged with "\*" by the laboratory. However, since the value of RPD did not exceed 35% the data are considered acceptable, and qualifier codes were not applied to these soil samples.

Due to the matrix interferences the analytical spike recovery for Pb was outside the control limits in Sample 63SB0406. The result for this analyte was determined by the Method of Standard Additions (MSA). The correlation coefficient for this analyte (0.999) was above the acceptable limit of 0.995. Therefore, the reported result is accepted.

The analytical post spike recoveries were above the upper QC limit of 115% in the following samples.

<u>Sample</u>	<u>Analyte</u>	<u>%Recovery</u>
43SB0506	Se	120
63SB0400	Se	120
43SB0100	As	126.9
43SB0103	As	119
43SB0500	As	121.8
44SB608	As	118
63SB02045	As	117
63SB0503	As	131

These analyte were not detected in the samples, therefore, the data are not impacted.



TABLE I

Sample ID	Analyte	+ Result	- QL	Comments
01SB1816, 43SB0100, 43SB0506, 44SB0507, 44SB0608, 63SB0200, 63SB02045, 63SB0503, 63SB0600, 43SB0500, 63SB06045	Ba	U	--	1
63SB0107, 63SB0406	Be	U	--	1
All samples with the exception of 43SB0103, 44SB0500, 44SB0600, 63SB0406	Ca	U	--	1
01SB1816, 43SB0100, 43SB0506, 44SB0507, 44SB0608, 63SB02045	Mn	U	--	1
All samples	Na	U	--	1
All samples	Ag		UJ	2

Comments

1. Due to the preparation and/or the calibration blanks contaminations, the reported results which are  $\geq$  IDL but  $\leq$  5x the blank level are qualified "U" and should be considered as the sample detection limits.
2. Due to the matrix spike recovery below the lower control limits indicating matrix possible matrix problems, the reported quantitation limits are considered estimated.

**ATTACHMENT I**  
**GLOSSARY OF DATA QUALIFIER CODES**



## GLOSSARY OF DATA QUALIFIERS

### CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds):

- U = NOT DETECTED, SUBSTANTIALLY ABOVE THE LEVEL REPORTED IN LABORATORY OR FIELD BLANKS.
- R = UNRELIABLE RESULT. ANALYTE MAY OR MAY NOT BE PRESENT IN THE SAMPLE. SUPPORTING DATA NECESSARY TO CONFIRM RESULT.
- N = NEGATED COMPOUND WAS CONSIDERED AS NOT PRESENT IN THE SAMPLE.

(NO CODE) = CONFIRMED IDENTIFICATION

### CODES RELATING TO QUANTITATION

(can be used for both positive results and sample quantitation limits):

- J = ANALYTE PRESENT. REPORTED VALUE MAY NOT BE ACCURATE OR PRECISE.
- L = ANALYTE PRESENT. REPORTED VALUE MAY BE BIASED LOW. ACTUAL VALUE IS EXPECTED TO BE HIGHER.
- UJ = THE REPORTED QUANTITATION LIMITS ARE QUALIFIED ESTIMATED.
- UL = NOT DETECTED. QUANTITATION LIMIT MAY BE HIGHER.

### OTHER CODES

- Q = NO ANALYTICAL RESULT.



**ATTACHMENT II  
DATA SUMMARIES**







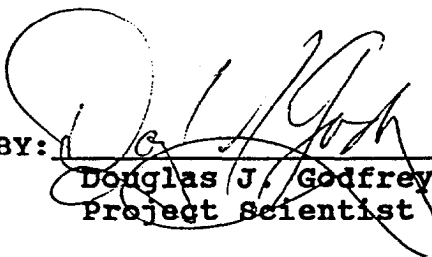


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INORGANIC QUALITY ASSURANCE REVIEW  
BAKER ENVIRONMENTAL  
CASE: 50024  
SDG: 664184

REVIEW PERFORMED BY  
THE ANALYTICS DIVISION  
OF  
ROY F. WESTON, INC.

bcc: WDTribbath/JWmentz/PROG F;  
DPBlack/RPWatras | PF; EP MacDonald

PREPARED BY:   
Douglas J. Godfrey  
Project Scientist - Data Validation

10-8-91  
Date

VERIFIED BY:   
Zohreh Hamid, Ph.D.  
Section Manager - Data Validation

10-8-91  
Date

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BAKER ENVIRONMENTAL  
COMPUCHEM LABORATORIES

CASE: 50024

SDG: 664184

The laboratory's portion of SDG 664184 consisted of twenty (20) soil samples analyzed for Target Analyte List metals (TAL) and Cyanide by Compuchem Laboratories.

The laboratory reported no problems with the receipt or subsequent analyses of the samples received on 8-1,8-91.

The laboratory performed the analyses according to the procedures set forth in the USEPA CLP method (7/88). Problems affecting the data usability are discussed in the following sections. A list of the samples with the criteria deficiencies and qualifier codes is summarized in TABLE I. A glossary of qualifier codes is presented in Attachment I.

Issues

The preparation blank contained Al, Ca, Fe, and Na at levels less than CRQL, but above the IDL. All associated sample results  $\geq$  IDL but  $\leq$  5x the blank level should be qualified "U". The concentration of "Al" and "Fe" were above 5 times the blank contaminations. The reported results are considered as true values and are not qualified based on the blank contaminations. The results for "Na" are qualified "U" in the data summary due to the blank contamination. Also, the results for "Ca" in Sample 43SB0300, 43SB0400, 43SB0403 and 65SB0507 are flagged "U" and should be considered as the detection limits.

Due to the matrix interferences or the analytical problems the matrix spike recoveries for "Sb" (64.3%) and "Ag" (63.9%) were below the lower control limit of 75%. These analytes were not detected in the samples, therefore, the reported detection limits are considered biased low and are qualified estimated.

The sample matrix duplicate for "Al" (23.2%), and "Fe" (28.6%) were outside the control limit of 20% which indicates a non-homogeneous or the laboratory problems. Since the RPD's were less than 35% the reported results could be accepted without the qualifier codes.

The % difference for "Al" (19.6) was above the 10% QC limit in ICP serial dilutions which indicates a chemical/physical interference or the laboratory analytical problems. The reported results for Al are considered estimated and are flagged "J" in the data summary.



The result for "Pb" in Sample 65MW0100 is considered estimated. This analyte was determined by the Method of Standard Addition (MSA), however, the correlation coefficient obtained during the analysis did not meet the CLP linearity guidelines (0.995 or greater correlation coefficient).

The analytical post matrix spike recoveries were above the upper QC value of 115% for the following samples.

Sample ID	Analyte	% Recovery
65MW0100	As	119.9
65SB0200	As	130
65SB0300	As	117.4
65SB0313	As/Sb	120.5/117.2
65SB0400	As/Tl	127.3/115.7
65SB04095	As	116.2

The result for these analyses are qualified estimated, however, the reported detection limits are not impacted.

Sample 65MW0100 and 65MW0111 were flagged "W" for Tl in Form 1. The validator inspects the data. The analytical post spike recoveries were within the control range of 85-115% in the raw data. Therefore, the Form I's should be corrected and resubmitted for these two samples.

The continuing calibration blank contained some element contaminations. The data are not affected since the samples were not analyzed under these calibration blanks.

TABLE I

Sample ID	Analyte	+ Result	- DL	Comments
All samples	Na	U	--	1
43SB0300, 43SB0400, 43SB0403, 65SB0507	Ca	U	--	1
All samples	Sb, Ag	--	UJ	2
All samples	Al	J	--	3
65M0100	Pb	J	--	4
65MW0300	As	J	--	5





Comments

1. Due to the preparation blank contaminations, the sample results  $\geq$  IDL but  $\leq$  5x the blank level contaminations are qualified "U".
2. Due to the matrix spike recoveries outside the control limits, the reported data are considered estimated.
3. Due to the chemical or physical interferences and/or the laboratory analysis problem the 10% criteria is exceeded in ICP in serial dilution samples.
4. The correlation coefficient did not meet the linearity calibration.
5. The analytical post matrix spike is above the 115% QC limit.

**ATTACHMENT I**  
**GLOSSARY OF DATA QUALIFIER CODES**



## GLOSSARY OF DATA QUALIFIERS

### CODES RELATING TO IDENTIFICATION

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- N = NEGATED COMPOUND WAS CONSIDERED AS NOT PRESENT IN THE SAMPLE.

(NO CODE) = CONFIRMED IDENTIFICATION

### CODES RELATING TO QUANTITATION

(can be used for both positive results and sample quantitation limits):

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- UL = NOT DETECTED. QUANTITATION LIMIT MAY BE HIGHER.

### OTHER CODES

- Q = NO ANALYTICAL RESULT.

**ATTACHMENT II  
DATA SUMMARIES**













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FAX: 215-430-3124


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**INORGANIC QUALITY ASSURANCE REVIEW  
BAKER ENVIRONMENTAL  
CASE: 50024  
SDG: 664307**

**REVIEW PERFORMED BY  
THE ANALYTICS DIVISION  
OF  
ROY F. WESTON, INC.**

CC: WD Trimbath / JW Mentz;  
EP MacDonald; RP Wattas / PF;  
Prog F.  
S.O. # 19003-SRN  
subfile# 10

PREPARED BY:

  
Zohreh Hamid, Ph.D.  
Section Manager - Data Validation

10-24-91  
Date

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**BAKER ENVIRONMENTAL  
COMPUCHEM LABORATORIES**

**CASE: 50024**

**SDG: 664307**

The laboratory's portion of SDG 664307 consisted of sixteen (16) water samples analyzed for the inorganic Target Analysis List TAL and Cyanide by CompuChem Laboratories.

The laboratory reported no problems with the analysis of the samples received on 8-21,23,24,26-91.

The laboratory performed the analyses according to the procedures set forth in the USEPA CLP method (7/88). Problems affecting the data usability are discussed in the following sections. A list of the samples with the criteria deficiencies and qualifier codes is presented in Attachment I.

Issues

Due to the matrix interferences or the analytical problems the matrix spike recovery for CN (0.0%) was below the lower control limit of 75%. This analyte was not detected in the samples, therefore the possibility of false negative exist. The reported detection limit for this analyte is rejected.

The preparation blank contained "Al", "Ca", "Fe", "Mg", "Za", and Na at levels less than CRDL, but above the IDL. All associated sample results  $\geq$  IDL but  $\leq$  5x the blank levels should be qualified "U".

The concentration of "Al", "Ca", "Mg", "Na", "Zn" and "Fe" were above 5 times the blank contaminations in the samples. The reported results are considered as true values and are not qualified based on the blank contaminations with the exception of "Al" and "Fe" in samples (01R0820 and 63R0823) and "Ca", "Na" and "Zn" in sample 63R0823.

The RPD for "Zn" (88.6) exceeded the 20% criteria. The reported sample results are qualified estimated.

"As" in samples 44GW-011 and 65GW021 were determined by ICP. Also "As" in sample 44GW-011 was determined by Method of Standard Addition (MSA). Comparison of the results did not give an acceptable reproducibility (570 ug/L vs. 58.4ug/L). The reported result for "As" in this sample is rejected.



The results for "Pb" in samples 44GW-011, 44GW-031, 44GW-031D and 63GW-021 were determined by ICP analyses. Also "Pb" in sample 44GW-011 was analyzed by "MSA". Comparison of ICP and MSA results gave not an acceptable reproducibility. The reported result for "Pb" in this sample is rejected.

The analytical post matrix spike recovery for "As" exceeded the 115% requirement limit in several samples. the reported detection limits are not qualified, however, the corresponding sample results are qualified "J" in the data summary.

The analytical spike recoveries for "Se" in all samples with the exception of sample "63GW021" were outside the QC limits of 85 - 115%. The result and detection limits are qualified estimated.

The analytical spike recoveries for "Pb" in sample "63R-0823" (80%) and "63GW-031" (131.6) were outside the QC limit. The reported results are biased and are qualified in the data summary.

The sample ID for sample "01R0820" was not listed on Form XIV in analysis of mercury. This form should be resubmitted. Also the sample ID for sample "44GW-31" was not listed on Form XIII in analysis of mercury. This form should be corrected and resubmitted by the laboratory.

The sample "43GW011" was listed on the Baker Environmental memo dated September 27, 1991. This sample was not included in the data packages. Instead, the results for sample BG5-1 was submitted along with the data package. Also, the laboratory sample ID "439634" was assigned to the sample "43GW011" in the chain-of-custody. The same laboratory ID number was assigned to sample BG5-1 on the entire data package. The chain-of-custody for sample BG5-1 was not included in the data package. It is this reviewer's opinion that sample "43GW011" is the same as "BG5-1. However, this discrepancy should be clarified by the respective client and the laboratory.

Sample 44GW-011 was inadvertently listed as 43GW011 in the case narrative. The case narrative should be corrected and resubmitted by the laboratory.

The Sample ID "43GW0301" on the chain-of-custody" did not coincide with the Sample ID "43GW031" in the data package. This sample was identified as "43GW031" on the bottles.



TABLE I

SAMPLE ID	ANALYTE	RESULTS	-QL	COMMENTS
All samples	CN		R	1
All samples	Zn	J		2
44GW-011	As, Pb		R	3
44GW-031D 65GW-011	As	J		4
All samples with the exception of sample 63GW021	Se		UJ	5
63R-0823 63GW-031	Pb	J		5
01R0820, 63R0823	Al, Fe	U		6
63R0823	Ca, Na, Zn	U		6

Comments

1. Due to the analytical problems, the spike recovery of 0% was obtained for CN. The reported detection limits are rejected.
2. Due to the analytical problems or matrix interference, the RPD exceeded 20% QC limit.
3. Due to the analytical problems, the reproducibility of the analyte failed the 50% requirement limit.
4. Due to the high recovery of analytical spike, the reported result is qualified estimated.
5. Due to the interference or analytical problems, the analytical spike was outside the QC limit. The reported results and the detection limits are qualified estimated.
6. Due to the preparation blank contaminations, the reported sample results which are not substantially above the blank level are qualified "U".

**ATTACHMENT I**  
**GLOSSARY OF DATA QUALIFIER CODES**



## GLOSSARY OF DATA QUALIFIERS

### CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds):

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- N = NEGATED COMPOUND WAS CONSIDERED AS NOT PRESENT IN THE SAMPLE.

(NO CODE) = CONFIRMED IDENTIFICATION

### CODES RELATING TO QUANTITATION

(can be used for both positive results and sample quantitation limits):

- J = ANALYTE PRESENT. REPORTED VALUE MAY NOT BE ACCURATE OR PRECISE.
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- UJ = THE REPORTED QUANTITATION LIMITS ARE QUALIFIED ESTIMATED.
- UL = NOT DETECTED. QUANTITATION LIMIT MAY BE HIGHER.

### OTHER CODES

- Q = NO ANALYTICAL RESULT.

**ATTACHMENT II  
DATA SUMMARIES**

53524 / 664307

1

CASE NUMBER:

CLIENT NAME:

DATA VALIDATION - INORGANIC SUMMARY						
LAB/CLIENT ID:	01R0820	43GW021	43GW031	43GW031D	44GW-011	44GW-021
Unit	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Matrix	water	water	water	water	water	water
Aluminum	251 U	177000	66000	78300	537000	73000
Antimony						
Arsenic		23.4			570 R	
Barium	9.5	745	220	233	3180	315
Beryllium		4.2	1.5	1.7	36.6	1.4
Cadmium		6.9			32.0	
Calcium	27700	10300	22300	20800	191000	2480
Chromium		249	161	181	895	126
Cobalt		27.7			93.2	
Copper		67.8	104	94.8	313	28.6
Iron	37.3 U	105000	126000	134000	662000	150000
Lead		28.8	27.7	42.3	508 R	15.8
Magnesium	2210	11800	6800	7400	35700	3640
Manganese		297	72.6	74.1	1730	88.0
Mercury			0.24		1.1	
Nickel		143	20.5	29.4	486	21.9
Potassium	1290	10900	5190	6010	32500	4540
Selenium		UJ	UJ	UJ	8.4 J	UJ
Silver						
Sodium	7830	14600	22100	17900	7500	4060
Thallium					2.7	
Vanadium		233	122	140	759	184
Zinc	63.2 J	661 J	214 J	300 J	2800 J	87.3 J
Cyanide						





50024/664307

436W011

CASE NUMBER:

CLIENT NAME:

DATA VALIDATION - INORGANIC SUMMARY							
LAB/CLIENT ID:	65GW011	65GW021	65GW031	BG5-1			
Unit	ug/L	ug/L	ug/L	ug/L			
Matrix	Water	Water	Water	Water			
Aluminum	278000	364000	42200	124000			
Antimony							
Arsenic	9.9 J	308					
Barium	384	638	105	689			
Beryllium	3.6	4.9		3.1			
Cadmium							
Calcium	181000	82000	33300	91900			
Chromium	228	364	50.1	177			
Cobalt	24.3	20.3		6.7			
Copper	60.5	127	28.2	64.2			
Iron	76300	129000	26800	70700			
Lead	58.4	132	19.1	16.5			
Magnesium	22700	15100	7010	9720			
Manganese	474	251	56.2	220			
Mercury	.29						
Nickel	75.4	84.3	19.4	33.8			
Potassium	13400	14600	4730	8210			
Selenium		UJ	UJ	UJ	UJ		
Silver							
Sodium	11700	8630	3850	9160			
Thallium							
Vanadium	263	433	59.8	165			
Zinc	253 J	406 J	148 J	192 J			
Cyanide							



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**INORGANIC QUALITY ASSURANCE REVIEW  
BAKER ENVIRONMENTAL**

**CASE: 50024**

**SDG: 664204**

**REVIEW PERFORMED BY  
THE ANALYTICS DIVISION  
OF  
ROY F. WESTON, INC.**

**PREPARED BY:**

*Zohreh Hamid*

**Zohreh Hamid, Ph.D.  
Section Manager - Data Validation**

*10-18-91*

**Date**

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**BAKER ENVIRONMENTAL  
COMPUCHEM LABORATORIES**

**CASE: 50024**

**SDG: 664204**

The laboratory's portion of SDG 664204 consisted of twenty (20) soil samples analyzed for the inorganic Target Analyte List (TAL) and Cyanide by Compuchem Laboratories.

The laboratory reported no problems with the analysis of the samples received on 8-8,9,10-91.

The laboratory performed the analyses according to the procedures set forth in the USEPA CLP method (7/88). Problems affecting the data usability are discussed in the following sections. A list of the samples with the criteria deficiencies and qualifier codes is summarized in TABLE I. A glossary of the qualifier codes is presented in Attachment I.

Issues

The preparation blank contained "Al", "Ca", "Fe", "Mn", "Zn", and Na at levels less than CRDL, but above the IDL. All associated sample results  $\geq$  IDL but  $\leq$  5x the blank levels should be qualified "U".

The concentration of "Al", "Mg", and "Fe" were above 5 times the blank contaminations. The reported results are considered as true values and are not qualified based on the blank contaminations.

The results for "Na" in all samples with the exception of sample 43SD02 are qualified "U" and should be considered as detection limits in the samples. The results for "Ca" and "Zn" which are not above 5x the blank concentrations are flagged "U" in the data summary.

The continuing calibration blank contained "Ba" and "Be" at levels less than CRDL. The reported sample results are qualified accordingly.

Due to the matrix interferences or the analytical problems the matrix spike recovery for "Ag" (60.5%) were below the lower control limit of 75%. This analyte was not detected in the samples, therefore, the reported detection limits are considered biased low and are qualified estimated.



Due to the low level of % solid in the following samples, the reported results and the detection limits are elevated. The results on the wet bases in these samples are approximately one-fourth (1/4) of the dry bases. Since the % solid is less than 50% the reported data in these soil samples are qualified estimated.

<u>Sample ID</u>	<u>% Solid</u>
43SD01	23%
43SD02	25%
44SD02	22%

The analytical post matrix spike recoveries for "Se" was above the 115% in twelve samples. Also the recovery of this analyte was less than 85% in Samples 65SD01 (81.4%) and 63MW0304 (80.5%). "Se" was not detected in any samples. Therefore the excessive analytical spike recoveries does not affect the data, however, the reported detection limits for Samples 65SD01 and 63MW0304 are qualified estimated.

The analytical post matrix spike recoveries for "As" were above the 115% in ten samples. This analyte was not detected in the corresponding sample with the exception of Samples 44SD02, and 63MW0200. The reported results in these two samples are qualified estimated.

The analytical spike recovery for Tl in Samples 44SD02 (68.1%), 43SD01 (73.5%), 43SD02 (63.7%) and 43SD03 (69.9%) were less than 85% QC limit. The data might be biased low and therefore, the reported detection limits are qualified estimated (UJ).

According to Form XIII, Cyanide was prepared on 8-12-91. The Form XIV was dated 8-10-91 for the analysis of this analyte for all samples. This discrepancy should be clarified by the laboratory and the correct forms should be resubmitted for the completeness of the data package.

Due to the matrix interferences or the laboratory problems, the analysis of "Pb" was performed according to the Method of Standard Addition (MSA) for Samples 43MW0202 and 43MW0300. The linearity (0.995 or greater correlation) did not meet in Sample 43MW0300. The reported result in this sample is qualified estimated. Also the reported result for this analyte in Sample 65SD03 is qualified estimated, because the analytical matrix spike recovery (84.5) was less than the lower QC limit of 85%.



Sample 43SD02 was inadvertently listed as 63MW0300 on the Form XIV for the "Pb" analysis. This form should be corrected and resubmitted.

Sample 63MW01 was listed as 63MW0105 in the chain-of-custody. The laboratory indicated that the sample 63MW0105 was received and logged in as 63MW01.

The "Tl" in Sample 43SD04 was listed on Form XIV under two different analysis data. The analysis performed on 9-4-91 at 5:38 should be disregarded.

TABLE I

Sample ID	Analyte	+Result	-QL	Comments
All samples	Ag	--	UJ	1
43SD01, 43SD02, 44SD02	All analytes	J	UJ	2
65SD01, 63MW0304	Se	--	UJ	3
44SD02, 63MW0200	As	J	--	4
44SD02, 43SD01, 43SD02, 43SD03	Tl	--	UJ	3
65SD03	Pb		UJ	3
43MW0300	Pb	J		7
All samples with the exception of 43SD02	Na	U	--	5
43MW0202, 63MW0100, 63MW0200, 63MW0206, 63MW0300, 63MW0304	Ca	U	--	5
63MW0100, 63MW0206, 63MW0300, 63MW0304, 65SD02	Zn	U	--	5
All samples with the exception of 43SD01, 43SD02, 44SD02, 65SD01	Ba	U	--	6

## Comments

1. Due to the interferences or the analytical problems, the spike recovery was below the control limit of 75%. The reported detection limits are qualified estimated.
2. Due to the high level of % moisture, the reported results and detection limits are elevated. The results are considered estimated.
3. Due to the low analytical spike recovery, the data might be biased low. The detection limits and the results are qualified estimated.
4. Due to the analytical spike recovery above the 115% the reported results might be biased high.
5. Due to the blank contaminations, the reported sample results which are not substantially above the blank concentration are qualified "U".
6. Due to the calibration blank contaminations, the reported results which are  $\geq$  IDL and  $\leq$  5x the blank contamination are qualified "U".
7. The linearity did not meet the requirement criteria in the MSA analysis method. The result is qualified estimated.

:nwb



**INFORMATION REGARDING REPORT CONTENT**

All data have been validated with regard to the usability according to NJDEP CLP guidelines. If you have any questions or comments on this review, please contact Zohreh Hamid at 215-344-3745.

**INORGANIC ATTACHMENTS**

- 1) Attachment I                      Glossary of Qualifier Codes.
- 2) Attachment II                     Data Summary.
- 3) Attachment III                    Data Validation for Inorganics.
- 4) Attachment IV                    Support Documentation.



**ATTACHMENT I**  
**GLOSSARY OF DATA QUALIFIER CODES**



## GLOSSARY OF DATA QUALIFIERS

### CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds):

- B** = NOT DETECTED, SUBSTANTIALLY ABOVE THE LEVEL REPORTED IN LABORATORY OR FIELD BLANKS.
- R** = UNRELIABLE RESULT. ANALYTE MAY OR MAY NOT BE PRESENT IN THE SAMPLE. SUPPORTING DATA NECESSARY TO CONFIRM RESULT.
- N** = NEGATED COMPOUND WAS CONSIDERED AS NOT PRESENT IN THE SAMPLE.

(NO CODE) = CONFIRMED IDENTIFICATION

### CODES RELATING TO QUANTITATION

(can be used for both positive results and sample quantitation limits):

- J** = ANALYTE PRESENT. REPORTED VALUE MAY NOT BE ACCURATE OR PRECISE.
- UJ** = THE REPORTED QUANTITATION LIMITS ARE QUALIFIED ESTIMATED.

### OTHER CODES

- Q** = NO ANALYTICAL RESULT.

**ATTACHMENT II  
DATA SUMMARIES**



CASE NUMBER: 50024 SAC # 43SD02

CLIENT NAME: Baker

DATA VALIDATION - INORGANIC SUMMARY												
LAB/CLIENT ID:	43SD02		43SD03		43SD04		43SD05		44SD02		63MW01	
MATRIX:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
UNITS:	MG/KG		MG/KG		MG/KG		MG/KG		MG/KG		MG/KG	
Aluminium	4510	J	1850		1520		1170		13800	J	13600	
Antimony		UJ								UJ		
Arsenic		UJ							50	J		
Barium	32.6	J	5.2	U	11.3	U	9.7	U	45.4	J	15.2	U
Beryllium		UJ								UJ		
Cadmium		UJ								UJ		
Calcium	3330	J	7550		6880		4400		6460	J	955	
Chromium	5.0	J	3.6		4.2		2.9		22.4	J	12.6	
Cobalt		UJ								UJ	1.5	
Copper	9.2	J	1.9		3.6		2.6		26.3	J	2.9	
Iron	2850	J	787		1720		1290		10900	J	3270	
Lead	56.0	J	7.4		28.2		8.5		126	J	3.6	
Magnesium	1800	J	185		170		259		1260	J	340	
Manganese	8.9	J	6.7		6.5		6.8		22.5	J	8.7	
Mercury		UJ								UJ		
Nickel		UJ	3.7		3.5				16.1	J	5.6	
Potassium		UJ								UJ	644	
Selenium		UJ								UJ		
Silver		UJ		UJ		UJ		UJ		UJ		UJ
Sodium	2930	J	130	U	179	U	345	U	1580	U	126	U
Thallium		UJ		UJ						UJ		
Vanadium	12.9	J	3.6		5.0		4.0		43.7	J	13.7	
Zinc	26.9	J	11.6		96.2		10.5		139	J	6.6	
Cyanide		UJ								UJ		







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INORGANIC QUALITY ASSURANCE REVIEW  
BAKER ENVIRONMENTAL  
CASE: 50024  
SDG: 664204

REVIEW PERFORMED BY  
THE ANALYTICS DIVISION  
OF  
ROY F. WESTON, INC.

PREPARED BY: \_\_\_\_\_

*Zohreh Hamid*  
Zohreh Hamid, Ph.D.  
Section Manager - Data Validation

*10-18-91*  
Date

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**BAKER ENVIRONMENTAL  
COMPUCHEM LABORATORIES**

**CASE: 50024**

**SDG: 664204**

The laboratory's portion of SDG 664204 consisted of twenty (20) soil samples analyzed for the inorganic Target Analyte List (TAL) and Cyanide by Compuchem Laboratories.

The laboratory reported no problems with the analysis of the samples received on 8-8,9,10-91.

The laboratory performed the analyses according to the procedures set forth in the USEPA CLP method (7/88). Problems affecting the data usability are discussed in the following sections. A list of the samples with the criteria deficiencies and qualifier codes is summarized in TABLE I. A glossary of the qualifier codes is presented in Attachment I.

**Issues**

The preparation blank contained "Al", "Ca", "Fe", "Mn", "Za", and Na at levels less than CRDL, but above the IDL. All associated sample results  $\geq$  IDL but  $\leq$  5x the blank levels should be qualified "U".

The concentration of "Al", "Mg", and "Fe" were above 5 times the blank contaminations. The reported results are considered as true values and are not qualified based on the blank contaminations.

The results for "Na" in all samples with the exception of sample 43SD02 are qualified "U" and should be considered as detection limits in the samples. The results for "Ca" and "Zn" which are not above 5x the blank concentrations are flagged "U" in the data summary.

The continuing calibration blank contained "Ba" and "Be" at levels less than CRDL. The reported sample results are qualified accordingly.

Due to the matrix interferences or the analytical problems the matrix spike recovery for "Ag" (60.5%) were below the lower control limit of 75%. This analyte was not detected in the samples, therefore, the reported detection limits are considered biased low and are qualified estimated.



Due to the low level of % solid in the following samples, the reported results and the detection limits are elevated. The results on the wet bases in these samples are approximately one-fourth (1/4) of the dry bases. Since the % solid is less than 50% the reported data in these soil samples are qualified estimated.

<u>Sample ID</u>	<u>% Solid</u>
43SD01	23%
43SD02	25%
44SD02	22%

The analytical post matrix spike recoveries for "Se" was above the 115% in twelve samples. Also the recovery of this analyte was less than 85% in Samples 65SD01 (81.4%) and 63MW0304 (80.5%). "Se" was not detected in any samples. Therefore the excessive analytical spike recoveries does not affect the data, however, the reported detection limits for Samples 65SD01 and 63MW0304 are qualified estimated.

The analytical post matrix spike recoveries for "As" were above the 115% in ten samples. This analyte was not detected in the corresponding sample with the exception of Samples 44SD02, and 63MW0200. The reported results in these two samples are qualified estimated.

The analytical spike recovery for Tl in Samples 44SD02 (68.1%), 43SD01 (73.5%), 43SD02 (63.7%) and 43SD03 (69.9%) were less than 85% QC limit. The data might be biased low and therefore, the reported detection limits are qualified estimated (UJ).

According to Form XIII, Cyanide was prepared on 8-12-91. The Form XIV was dated 8-10-91 for the analysis of this analyte for all samples. This discrepancy should be clarified by the laboratory and the correct forms should be resubmitted for the completeness of the data package.

Due to the matrix interferences or the laboratory problems, the analysis of "Pb" was performed according to the Method of Standard Addition (MSA) for Samples 43MW0202 and 43MW0300. The linearity (0.995 or greater correlation) did not meet in Sample 43MW0300. The reported result in this sample is qualified estimated. Also the reported result for this analyte in Sample 65SD03 is qualified estimated, because the analytical matrix spike recovery (84.5) was less than the lower QC limit of 85%.



Sample 43SD02 was inadvertently listed as 63MW0300 on the Form XIV for the "Pb" analysis. This form should be corrected and resubmitted.

Sample 63MW01 was listed as 63MW0105 in the chain-of-custody. The laboratory indicated that the sample 63MW0105 was received and logged in as 63MW01.

The "Tl" in Sample 43SD04 was listed on Form XIV under two different analysis data. The analysis performed on 9-4-91 at 5:38 should be disregarded.

TABLE I

Sample ID	Analyte	+Result	-QL	Comments
All samples	Ag	--	UJ	1
43SD01, 43SD02, 44SD02	All analytes	J	UJ	2
65SD01, 63MW0304	Se	--	UJ	3
44SD02, 63MW0200	As	J	--	4
44SD02, 43SD01, 43SD02, 43SD03	Tl	--	UJ	3
65SD03	Pb		UJ	3
43MW0300	Pb	J		7
All samples with the exception of 43SD02	Na	U	--	5
43MW0202, 63MW0100, 63MW0200, 63MW0206, 63MW0300, 63MW0304	Ca	U	--	5
63MW0100, 63MW0206, 63MW0300, 63MW0304, 65SD02	Zn	U	--	5
All samples with the exception of 43SD01, 43SD02, 44SD02, 65SD01	Ba	U	--	6



### Comments

1. Due to the interferences or the analytical problems, the spike recovery was below the control limit of 75%. The reported detection limits are qualified estimated.
2. Due to the high level of % moisture, the reported results and detection limits are elevated. The results are considered estimated.
3. Due to the low analytical spike recovery, the data might be biased low. The detection limits and the results are qualified estimated.
4. Due to the analytical spike recovery above the 115% the reported results might be biased high.
5. Due to the blank contaminations, the reported sample results which are not substantially above the blank concentration are qualified "U".
6. Due to the calibration blank contaminations, the reported results which are  $\geq$  IDL and  $\leq$  5x the blank contamination are qualified "U".
7. The linearity did not meet the requirement criteria in the MSA analysis method. The result is qualified estimated.

:nwb



**INFORMATION REGARDING REPORT CONTENT**

All data have been validated with regard to the usability according to NJDEP CLP guidelines. If you have any questions or comments on this review, please contact Zohreh Hamid at 215-344-3745.

**INORGANIC ATTACHMENTS**

- |    |                |                                 |
|----|----------------|---------------------------------|
| 1) | Attachment I   | Glossary of Qualifier Codes.    |
| 2) | Attachment II  | Data Summary.                   |
| 3) | Attachment III | Data Validation for Inorganics. |
| 4) | Attachment IV  | Support Documentation.          |

**ATTACHMENT I**  
**GLOSSARY OF DATA QUALIFIER CODES**

CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds):

- U* **B** = NOT DETECTED, SUBSTANTIALLY ABOVE THE LEVEL REPORTED IN LABORATORY OR FIELD BLANKS.
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- N** = NEGATED COMPOUND WAS CONSIDERED AS NOT PRESENT IN THE SAMPLE.

(NO CODE) = CONFIRMED IDENTIFICATION

CODES RELATING TO QUANTITATION

(can be used for both positive results and sample quantitation limits):

- J** = ANALYTE PRESENT. REPORTED VALUE MAY NOT BE ACCURATE OR PRECISE.
- UJ** = THE REPORTED QUANTITATION LIMITS ARE QUALIFIED ESTIMATED.

OTHER CODES

- Q** = NO ANALYTICAL RESULT.

**ATTACHMENT II  
DATA SUMMARIES**





CASE NUMBER: 50024 506-43502

CLIENT NAME: Baker

DATA VALIDATION - INORGANIC SUMMARY												
LAB/CLIENT ID:	43SD02		43SD03		43SD04		43SD05		44SD02		63HW010	
MATRIX:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
UNITS:	MG/KG		MG/KG		MG/KG		MG/KG		MG/KG		MG/KG	
Aluminum	4510	J	1850		1520		1970		13800	J	13600	
Antimony		UJ								UJ		
Arsenic		UJ							5.0	J		
Barium	32.6	J	5.2	U	11.3	U	9.7	U	45.4	J	15.2	U
Beryllium		UJ								UJ		
Cadmium		UJ								UJ		
Calcium	3330	J	7550		6880		4400		6460	J	95.5	
Chromium	5.0	J	3.6		4.2		2.9		22.0	J	12.6	
Cobalt		UJ								UJ	1.5	
Copper	9.2	J	1.9		3.6		2.6		26.3	J	2.9	
Iron	2850	J	787		1720		1290		10900	J	3270	
Lead	56.0	J	7.4		28.2		8.5		12.6	J	3.6	
Magnesium	1800	J	185		170		259		1260	J	340	
Manganese	8.9	J	6.7		6.5		6.8		22.5	J	8.7	
Mercury		UJ								UJ		
Nickel		UJ	3.7		3.5				16.1	J	5.6	
Potassium		UJ								UJ	644	
Selenium		UJ								UJ		
Silver		UJ		UJ		UJ		UJ		UJ		UJ
Sodium	2930	J	130	U	179	U	345	U	1580	U	126	U
Thallium		UJ		UJ						UJ		
Vanadium	12.9	J	3.6		5.0		4.0		43.7	J	13.7	
Zinc	26.9	J	11.6		96.2		10.5		139	J	6.6	
Cyanide		UJ								UJ		







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**INORGANIC QUALITY ASSURANCE REVIEW  
BAKER ENVIRONMENTAL  
CASE: 50024  
SDG: 664224**

**REVIEW PERFORMED BY  
THE ANALYTICS DIVISION  
OF  
ROY F. WESTON, INC.**

PREPARED BY: \_\_\_\_\_

*Zohreh Hamid*  
Zohreh Hamid, Ph.D.  
Section Manager - Data Validation

*10-21-91*

Date

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BAKER ENVIRONMENTAL  
COMPUCHEM LABORATORIES

CASE: 50024

SDG: 664224

The laboratory's portion of SDG 664224 consisted of twenty (20) soil samples analyzed for the inorganic Target Analyte List (TAL) and Cyanide by Compuchem Laboratories.

The laboratory reported no problems with the analysis of the samples received on 8-10,23-1991.

The laboratory performed the analyses according to the procedures set forth in the USEPA CLP method (7/88). Problems affecting the data usability are discussed in the following sections. A list of the samples with the criteria deficiencies and qualifier codes is summarized in TABLE I. A glossary of qualifier codes is presented in Attachment I.

### Issues

The preparation blank contained "Al", "Ca", "Fe", and Na at levels less than CRDL. All associated sample results  $\geq$  IDL but  $\leq$  5x the blank levels should be qualified "U".

The concentration of "Al", and "Fe" were above 5 times the blank contaminations. The reported results are considered as true values and are not qualified based on the blank contaminations.

The results for "Na" in all samples are qualified "U" and should be considered as detection limits in the samples. Those results for "Ca" which are not above 5 x the blank concentrations are flagged "U" in the data summary.

The continuing calibration blank contained "Ba" and "Be" at levels less than CDRL. The reported sample results are not impacted since the samples were not associated to these calibration blanks.

Due to the matrix interferences or the analytical problems the matrix spike recovery for "Ag" (51.0%), "Cu" (60.4%) and Ag (63.9%) were below the lower control limit of 75%. Silver was not detected in the samples, therefore, the reported detection limits are considered biased and are qualified estimated. Also the results for "Al" and "Cu" might be biased low, and the sample results are qualified estimated in the data summary.

Due to the low level of % solid in the following samples, the reported results and the detection limits are elevated. The results on the wet bases in these samples are approximately one-fourth (1/4) of the dry bases. Since the % solid is less than 50% the reported data in these soil samples are qualified estimated.



<u>Sample ID</u>	<u>% Solid</u>
44SD01	29
44SD02	22

The matrix duplicate analysis for "Al" (62.2), "Cr" (39.7), "Cu" (115.8), "Fe" (34.3) and Zn (25.3) were above 20% required limits. The reported detection limits and the results for the aforementioned analytes with the exception of "Zn" are qualified estimated in the data summary. (The results for "Zn" in all samples are accepted without the qualifier codes since the RPD for this analyte was less than the 30% requirement limits established in the Data Validation SOP for the soil samples.

The analytical post-matrix sample recovery for "As" in samples 44MW0100D and 44MW0200 were above the 115% limit. The reported result is considered biased high and qualified "J" in the data summary. Also, these criteria are exceeded the upper Control Limit for Se in up to ten samples, however this analyte was not detected in the samples, therefore the reported data are not impacted. The analytical sample recovery for Tl in sample 44SD02 (79.2%) was below the lower control limit of 85%. The reported detection limit for this analyte is qualified estimated.

The analysis for "Pb" in samples 44MW0106, 44MW0306 and 63SD02 were performed according to the Method of Standard Addition (MSA). The linearity was met the criteria and the reported results are accepted.

Sample 44MW0200 was not listed on form XIII for "Hg" analysis. Also the forms XIV for all samples for "Hg" and "CN" which were prepared on 8-14-91 (44SD01, 44SD01 Dup, 44SD01S, 44SD02, 63SD01, 63SD01D and 63SD02) were missing from the data package. The raw data have been inspected. All sample analysis have been included in the raw data, therefore the data are accepted however, the forms XIV for "Hg" and "CN" should be submitted for the aforementioned samples.

The cyanide preparation date was inadvertently listed on form XIII for Sample 44MW02035. This sample has been prepared on 8-28-91. The date should be corrected and the form XIII for this analyte should be resubmitted by the respective laboratory.



TABLE I

Sample ID	Analyte	+ Result	-DL	Comment
All Samples	Ag, Cu, Sb	J	UJ	1
All Samples	Al, Cr, Cu, Fe	J	UJ	2
44SD01, 44SD02	All	J	UJ	3
44MW0100D, 44MW0200,	As	J		4
44SD02	Tl		UJ	5
All Samples	Na	U		6
44MW02035, 44SB0102, 64SD01, 63SD01D	Ca	U		6

#### Comments

1. Due to the interferences or sample matrix problems, the spike recovery was less than 75% control limit. The reported results and the detection limits are biased low and the possibility of false negative exist.
2. Due to the matrix inhomogeneity or the analysis problems, the matrix duplicate analysis exceeded 30%. The reported results and detection limits are considered estimated.
3. Due to the high level of % moisture in the samples, the reported results and the detection limits are elevated.
4. Due to the interferences and/or the analysis problems, the analytical sample recovery exceeded 115%. The reported results are qualified estimated.
5. Due to the interferences and/or the analysis problems, the analytical sample recovery was below the lower control limit of 85%. The reported result and the detection limits are qualified estimated.
6. Due to the preparation blank contamination, the reported results in the sample which are  $\geq$  IDL and  $\leq$  5x the blank contamination are qualified U.



ATTACHMENT I  
GLOSSARY OF DATA QUALIFIER CODES



## GLOSSARY OF DATA QUALIFIERS

### CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds):

- B = NOT DETECTED, SUBSTANTIALLY ABOVE THE LEVEL REPORTED IN LABORATORY OR FIELD BLANKS.
- R = UNRELIABLE RESULT. ANALYTE MAY OR MAY NOT BE PRESENT IN THE SAMPLE. SUPPORTING DATA NECESSARY TO CONFIRM RESULT.
- N = NEGATED COMPOUND WAS CONSIDERED AS NOT PRESENT IN THE SAMPLE.

(NO CODE) = CONFIRMED IDENTIFICATION

### CODES RELATING TO QUANTITATION

(can be used for both positive results and sample quantitation limits):

- J = ANALYTE PRESENT. REPORTED VALUE MAY NOT BE ACCURATE OR PRECISE.
- UJ = THE REPORTED QUANTITATION LIMITS ARE QUALIFIED ESTIMATED.

### OTHER CODES

- Q = NO ANALYTICAL RESULT.

**ATTACHMENT II  
DATA SUMMARIES**





CASE NUMBER:

CLIENT NAME:

DATA VALIDATION - INORGANIC SUMMARY						
LAB/CLIENT ID:	44SB0306	44SB0306	44SB0400	44SD01	44SD02	63SD01
Unit:	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG	MG/KG
Matrix:	So.1	So.1	So.1	So.1	So.1	So.1
Aluminum	7110 J	4070 J	12000 J	15700 J	10900 J	803 J
Antimony	UJ	UJ	UJ	UJ	UJ	UJ
Arsenic	4.1		4.9	5.3 J	UJ	
Barium	12.8	7.3	13.4	51.7 J	38.6 J	3.7
Beryllium				UJ	UJ	
Cadmium				UJ	UJ	
Calcium	4180	763	1600	9600 J	10700 J	48.1 U
Chromium	10 J	4.9 J	19.1 J	26.7 J	23.5 J	1.7 J
Cobalt				UJ	UJ	
Copper	2.0 J	1.9 J	2.6 J	79.5 J	79.1 J	76.8 J
Iron	7340 J	2090 J	16100 J	11300 J	10200 J	376 J
Lead	7.3	6.3	12.5	143 J	144 J	3.4
Magnesium	293	129	503	1410 J	1880 J	36.5
Manganese	5.8	4.1	9.2	37.5 J	78.8 J	2.7
Mercury				UJ	UJ	
Nickel	2.0	6.1	6.9	28.9 J	26.9 J	8.2
Potassium	267		536	799 J	UJ	
Selenium	1.1			UJ	UJ	
Silver	UJ	UJ	UJ	UJ	UJ	UJ
Sodium	143 U	155 U	180 U	897 U	1640 U	178 U
Thallium				UJ	UJ	
Vanadium	14.7	7.0	28.2	49.4 J	42.8 J	1.6
Zinc	4.0	3.4	7.4	168 J	149 J	3.5
Cyanide				UJ	UJ	





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*IN* ORGANIC QUALITY ASSURANCE REVIEW  
SITE: BAKER (CLEAN)  
CASE: 50024  
SDG: 664244

REVIEW PERFORMED BY  
THE ANALYTICS DIVISION  
OF  
ROY F. WESTON, INC.

PREPARED BY: \_\_\_\_\_

A handwritten signature in black ink, appearing to read "Zohreh Hamid".

Zohreh Hamid, Ph.D.  
Section Manager - Data Validation

10-25-91

Date

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**BAKER ENVIRONMENTAL  
COMPUCHEM LABORATORIES**

**CASE: 50024**

**SDG: 664244**

The laboratory's portion of SDG 664244 consisted of one (1) soil sample analyzed for the inorganic Target Analysis List (TAL) and Cyanide by CompChem Laboratories.

The laboratory reported no problems with the analysis of the sample received on 8-23-91.

The laboratory performed the analyses according to the procedures set forth in the USEPA CLP method (7/88). Problems affecting the data usability are discussed in the following sections. A list of the samples with the criteria deficiencies and qualifier codes is presented in Attachment I.

**ISSUES**

The preparation blank contained "Al", "Ca", "Fe", "Mg", "Zn", and "Na" at levels less than CRDL, but above the IDL. All associated sample results  $\geq$  IDL but  $\leq$  5x the blank levels should be qualified "U".

The results for "Al", "Fe", and "Mg" were above the blank contamination and are considered as true values. The reported results for "Ca", "Na" and "Zn" are qualified "U" in the data summary and should be considered as the laboratory contaminants.

Also, the continuing calibration blanks contained "Ba", "Be", "Fe", and "Mg" at levels above IDL and less than CRDLs. The reported sample results are qualified accordingly.

The matrix spike recoveries for "Sb" (55.9%), "Pb" (128.3 %), "Se" (66.4%) and "Ag" (65.5%) were outside the QC limit of 75-125%. The reported result for "Pb" is considered biased high and is qualified "J". Also, the reported detection limits for "Se", "Sb" and "Ag" are considered as biased low and are qualified "UJ" in the data summary.

The analytical matrix duplicate for "Mn" (58.2%) was above the 20% QC limit. The result for this analyte is qualified estimated.

The analytical spike recovery for "Se" (72.6%) was less than 85%. The reported result is qualified estimated.



TABLE I

<u>SAMPLE ID</u>	<u>ANALYTE</u>	<u>+ RESULTS</u>	<u>- QC</u>	<u>COMMENTS</u>
44SB0406	Ba, Cu, Na, Zn	U		1
44SB0406	Pb, Sb, Se, Ag	UJ	J	2
44SB0406	Mn		J	3
44SB0406	Se	UJ		4

COMMENTS

1. Due to the laboratory artifact and the blank contamination, the reported results are qualified "U" and should be considered as detection limits.
2. Due to the matrix interferences or analytical problems, the analysis spike recovery was outside the QC limit. The reported sample results detection limit are qualified estimated.
3. Due to the matrix interferences, or the laboratory analysis problems, the matrix sample duplicate exceeded 20% QC limit. The reported result is qualified estimated.
4. The analytical spike duplicate was less than the 85 % QC limit.



#### INFORMATION REGARDING DATA

All data were reviewed according to EPA Functional Guidelines; as well as the criteria established in the Standard Chlorine QAPP. All data have been validated with regard to usability.

#### ATTACHMENTS

1. Attachment I - Glossary of Data Qualifier Codes
2. Attachment II - Data Summary by Method

All positive results for the target analytes with the qualifier codes, if applicable and all unusable detection limits (qualified "R")

**ATTACHMENT I**  
**GLOSSARY OF DATA QUALIFIER CODES**



## GLOSSARY OF DATA QUALIFIERS

### CODES RELATING TO IDENTIFICATION

(confidence concerning presence or absence of compounds):

- U = NOT DETECTED, SUBSTANTIALLY ABOVE THE LEVEL REPORTED IN LABORATORY OR FIELD BLANKS.
- R = UNRELIABLE RESULT. ANALYTE MAY OR MAY NOT BE PRESENT IN THE SAMPLE. SUPPORTING DATA NECESSARY TO CONFIRM RESULT.
- N = NEGATED COMPOUND WAS CONSIDERED AS NOT PRESENT IN THE SAMPLE.

(NO CODE) = CONFIRMED IDENTIFICATION

### CODES RELATING TO QUANTITATION

(can be used for both positive results and sample quantitation limits):

- J = ANALYTE PRESENT. REPORTED VALUE MAY NOT BE ACCURATE OR PRECISE.
- L = ANALYTE PRESENT. REPORTED VALUE MAY BE BIASED LOW. ACTUAL VALUE IS EXPECTED TO BE HIGHER.
- UJ = THE REPORTED QUANTITATION LIMITS ARE QUALIFIED ESTIMATED.
- UL = NOT DETECTED. QUANTITATION LIMIT MAY BE HIGHER.

### OTHER CODES

- Q = NO ANALYTICAL RESULT.

**ATTACHMENT II  
DATA SUMMARIES**

