Y/EN - 5289 /V4

Y-12

OAK RIDGE
Y-12
PLANT

MARTIN MARIETTA

Final Report from VFL Technologies for the Pilot-Scale Thermal Treatment of Lower East Fork Poplar Creek Floodplain Soils

LEFPC Appendices
Volume 4
Appendix V-C

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MARTIN MARIETTA ENERGY
SYSTEMS, INC.
managing the
Oak Ridge, Y-12 Plant
Oak Ridge, Tennessee
under contract DE-AC05-84OR21400
for the
U.S. Department of Energy

MANAGED BY
MARTIN MARIETTA ENERGY SYSTEMS, INC.
FOR THE UNITED STATES
DEPARTMENT OF ENERGY

MASTER

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APPENDIX V - C

FINAL VERIFICATION RUN DATA PACKAGE

Volatiles

Semivolatiles

TCLP Volatiles

MASTER

Volatiles

LSDG: 32140

EcoTek LSI
EcoTek Laboratory Services Incorporated

CASE NARRATIVE FOR VOLATILE ORGANIC ANALYSIS USING SW-846 METHOD 8240

CLIENT: Nuclear Fuel Services, Inc.
LSDG: 32136
PROJECT: LEFPC

Analytical Summary

Seventeen (17) soil and six (6) water samples were received on May 17, 1994 for volatile organics analysis per Method 8240 protocol. Analyses were performed per request on May 20 through 27, 1994.

Procedural Summary

- Analysis - Volatile organic analyses are performed by Gas Chromatographic/Mass Spectrometric analysis on Hewlett Packard 5890/5970 GC/MSD system and Hewlett Packard 5890/5971A GC/MSD system, all configured for electron impact ionization.

  A five (5) milliliter aliquot of a low level water/liquid sample is purged in a sparging vessel prior to analysis. A five (5) gram aliquot of a low level soil/solid sample is purged in five (5) milliliters of reagent water in a sparging vessel prior to analysis. The medium soil matrix analysis involves extracting five (5) grams of sample in five (5) milliliters of methanol and injecting one hundred (100) microliters of extract into five (5) milliliters of reagent water for purging, unless otherwise noted. If dilutions are required, smaller amounts of sample or extract are purged, as needed to bring analyte concentration within the instrument's calibration range or to prevent system damage from high concentrations of non-target volatiles.

  Samples are purged via a Tekmar LSC-2/ALS and/or OI 4460A/OIC MPM-16 on to traps composed of silica gel/charcoal/Tenax. Chromatography is performed on a seventy-five (75) meter, 0.53mm DB-624 megabore capillary column, temperature programmed to achieve chromatographic resolution of target analytes. As compounds elute, they are ionized, filtered through a quadrupole mass filter and quantified to determine analyte concentrations in the sample. Detection limits or practical quantitation limits (PQL's) are expressed in the final report as the minimum value that can be detected with confidence. PQLs are factored for initial sample volume, percent moistures, and final extract volumes along with any necessary dilution.

- Scope and Limitations - This method is limited to those volatile compounds that have boiling points below 200°C and that are insoluble or slightly insoluble in water. Oily samples or samples high in hydrocarbon content are not readily amenable to this analysis. Hydrocarbons have poor desorption efficiencies; therefore, sorbent traps may become contaminated, requiring extended bakeouts and/or maintenance.

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CASE NARRATIVE FOR VOLATILE ORGANIC ANALYSIS USING SW-846 METHOD 8240(cont'd)

CLIENT: Nuclear Fuel Services, Inc.
LSDG: 32136
PROJECT: LEFPC

Furthermore, oils, as well as other complex matrices, often generate elevated baselines, interfering with instrument identification and quantification of target analytes. Dilutions of such samples are often required to prevent instrument damage, resulting in higher detection limits.

QA/QC

Method blanks were analyzed with the sample group and found to be free of all target analytes with the exception of methylene chloride and acetone. Methylene chloride and acetone are common laboratory contaminants that are frequently present in volatile method blanks. When these analytes are detected in a sample, they are "B" flagged to indicate that these analytes were found in the associated blank as well as in the sample. It indicates possible/probable blank/sample contamination and warns the data user to make appropriate considerations for these factors during data evaluation.

Method QC, consisting of matrix spike and matrix spike duplicate analyses or blank spike and blank spike duplicate analyses, was performed with sample of this case. Water QC was performed on sample 1661B-102. Soil QC was batched as a blank spike and blank spike duplicate. Precision and accuracy results for all spiked analytes were acceptable in both sets of QC.

General

The reports of the TCL compounds identified and quantified in the samples are contained in the following sections of the data package. Also included are the appropriate calibration and quality control data where applicable. Data is obtained from a HP RTE-A series computer with Aquarius software and/or Mustang II Dos-based computer with EnviroQuant software.

Medium soil analysis of samples 1661B-170, 1661B-181, 1661B-187, 1661B-196, 1661B-204 and 1661B-220 were prepared by extracting four (4) grams of sample in ten (10) milliliters of methanol and injecting one hundred (100) microliters of extract into five (5) milliliters of reagent water for purging, unlike other medium level soils.

The following details dilution schemes for sample reported herein:

- Low soil samples 1661B-107, 1661B-113 were analyzed at 5x dilutions only.

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CASE NARRATIVE FOR VOLATILE ORGANIC ANALYSIS
USING SW-846 METHOD 8240(cont'd)

CLIENT: Nuclear Fuel Services, Inc.
LSDG: 32136
PROJECT: LEFPC

- Low soil samples 1661B-71 and 1661B-132, initially analyzed at a 1x dilution, required diluted reanalysis at a 5x dilution, to bring target analyte concentrations into the instrument's linear range of calibration.

- Samples 1661B-98, 1661B-117, 1661B-123 and 1661B-127, initially analyzed at a 1x dilution, required diluted reanalysis as a medium soil, to bring target analyte concentrations into the instrument's linear range of calibration.

- Samples 1661B-147, 1661B-156, 1661B-165, 1661B-170 and 1661B-181, initially analyzed at a 5x dilution, required diluted reanalysis as a medium soil, to bring target analyte concentrations into the instrument's linear range of calibration.

- Samples 1661B-187, 1661B-196 and 1661B-204 were analyzed only as medium soil matrices within holding time, bringing target analyte concentrations into the instrument's linear range of calibration. Because initial analyses were judged to have been too dilute, these samples underwent less dilute reanalyses outside of holding time and confirmed the reported acetone concentrations, for which the initial dilutions were performed. The less dilute reanalyses indicated low concentrations of additional target analytes also which have been reported herein and are "J" flagged as estimated to reflect their analysis outside of holding time.

- Water sample 1661B-227/228 was initially analyzed at a 1x dilution. Diluted reanalyses were performed at 500x and 1000x dilutions to bring 2-butanone and acetone concentrations, respectively, into the instrument's linear range of calibration.

- Soil sample 1661B-220, was initially analyzed as a medium soil matrix. Reanalysis was subsequently performed at a 1x dilution, when analytical results revealed the initial analysis to have been too dilute. This reanalysis was performed outside of the methodologically prescribed holding time and therefore the analytical results have been "J" flagged as estimated to reflect this breach of holding time.

- All other samples were analyzed at a 1x dilution utilizing a five (5) milliliter and five (5) gram aliquot of sample for waters and soils respectively.

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CASE NARRATIVE FOR VOLATILE ORGANIC ANALYSIS USING SW-846 METHOD 8240(cont'd)

CLIENT: Nuclear Fuel Services, Inc.
LSDG: 32136
PROJECT: LEFPC

The analytes acetone and 2-butanone were found native to most all samples associated with this case at concentrations often warranting medium soil dilutions. However, 2-butanone was not confirmable in many of these medium soil dilutions because of overdilution. Therefore, analytical results for samples 1661B-98, 1661B-117, 1661B-123, 1661B-127, 1661B-156 of 2-butanone are taken from the initial, more concentrated analyses and subsequently "J" flagged as estimated because the reported results represent quantitated concentrations that exceeded the linear range of calibration during analysis.

In the more concentrated analyses of several samples associated with this case, surrogate responses were noncompliant due to matrix interferences. Upon dilution, however, these matrix interferences were diluted out, resulting in surrogate compliance. In these instances, reports of target analyte concentrations taken from the less dilute analyses for these samples are "J" flagged as estimated to reflect these surrogate noncompliances.

The pH of all water samples was recorded at time of analysis.

GC/MS Section Supervisor (designee)

7/1/94
Date

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Volatile Organic Analytical Results
SW-846 Method 8240

Client:	Nuclear Fuel Services, Inc.	Client Sample No.:	1661B-71
Lab Sample ID:	3213601	Client Reference No.:	LEFPC
Matrix:	Soil	Date Received:	5/17/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
74873	Chloromethane	5/23/94	1	BQL	13	
74839	Bromomethane	5/23/94	1	BQL	13	
75014	Vinyl Chloride	5/23/94	1	BQL	13	
75003	Chloroethane	5/23/94	1	BQL	13	
75092	Methylene Chloride	5/23/94	1	33	6	B
67641	Acetone	5/26/94	5	1100	630	
75150	Carbon Disulfide	5/23/94	1	BQL	6	
75354	1,1-Dichloroethene	5/23/94	1	BQL	6	
75343	1,1-Dichloroethane	5/23/94	1	BQL	6	
540590	1,2-Dichloroethene (total)	5/23/94	1	BQL	6	
67663	Chloroform	5/23/94	1	BQL	6	
107062	1,2-Dichloroethane	5/23/94	1	BQL	6	
78933	2-Butanone	5/23/94	1	180	130	
71556	1,1,1-Trichloroethane	5/23/94	1	BQL	6	
56235	Carbon Tetrachloride	5/23/94	1	4	6	J
108054	Vinyl Acetate	5/23/94	1	BQL	63	
75274	Bromodichloromethane	5/23/94	1	BQL	6	
78875	1,2-Dichloropropane	5/23/94	1	BQL	6	
10061015	cis-1,3-Dichloropropene	5/23/94	1	BQL	6	
79016	Trichloroethene	5/23/94	1	BQL	6	
124481	Dibromochloromethane	5/23/94	1	BQL	6	
79005	1,1,2-Trichloroethane	5/23/94	1	BQL	6	

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Lab Sample ID: 3213601				Client Sample No.: 1661B-71		
CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
71432	Benzene	5/23/94	1	BQL	6	
10061026	Trans-1,3-Dichloropropene	5/23/94	1	BQL	6	
75252	Bromoform	5/23/94	1	BQL	6	
108101	4-Methyl-2-pentanone	5/23/94	1	BQL	63	
591786	2-Hexanone	5/23/94	1	BQL	63	
127184	Tetrachloroethene	5/23/94	1	BQL	6	
79345	1,1,2,2-Tetrachloroethane	5/23/94	1	BQL	6	
108883	Toluene	5/23/94	1	8	6	
108907	Chlorobenzene	5/23/94	1	BQL	6	
100414	Ethylbenzene	5/23/94	1	BQL	6	
100425	Styrene	5/23/94	1	BQL	6	
1330207	Xylene (total)	5/23/94	1	BQL	6	
110758	2-Chloroethyl vinyl ether	5/23/94	1	BQL	13	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213601 *Client Sample No.:* 1661B-71

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/23/94	50	102	81-117	
Bromofluorobenzene	5/23/94	50	91	74-121	
1,2-Dichloroethane-d4	5/23/94	50	94	70-121	
Toluene-d8	5/26/94	50	99	81-117	
Bromofluorobenzene	5/26/94	50	99	74-121	
1,2-Dichloroethane-d4	5/26/94	50	103	70-121	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Organic Analytical Results
SW-846 Method 8240

Client: Nuclear Fuel Services, Inc.
Client Sample No.: 1661B-98
Lab Sample ID: 3213602
Client Reference No.: LEFPC
Matrix: Soil
Date Received: 5/17/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
74873	Chloromethane	5/23/94	1	BQL	13	
74839	Bromomethane	5/23/94	1	BQL	13	
75014	Vinyl Chloride	5/23/94	1	BQL	13	
75003	Chloroethane	5/23/94	1	BQL	13	
75092	Methylene Chloride	5/23/94	1	41	6	B
67641	Acetone	5/25/94	50	2100	6400	BJ
75150	Carbon Disulfide	5/23/94	1	BQL	6	
75354	1,1-Dichloroethene	5/23/94	1	BQL	6	
75343	1,1-Dichloroethane	5/23/94	1	BQL	6	
540590	1,2-Dichloroethene (total)	5/23/94	1	BQL	6	
67663	Chloroform	5/23/94	1	BQL	6	
107062	1,2-Dichloroethane	5/23/94	1	BQL	6	
78933	2-Butanone	5/23/94	1	280	130	JE
71556	1,1,1-Trichloroethane	5/23/94	1	BQL	6	
56235	Carbon Tetrachloride	5/23/94	1	6	6	J
108054	Vinyl Acetate	5/23/94	1	BQL	64	
75274	Bromodichloromethane	5/23/94	1	BQL	6	
78875	1,2-Dichloropropane	5/23/94	1	BQL	6	
10061015	cis-1,3-Dichloropropene	5/23/94	1	BQL	6	
79016	Trichloroethene	5/23/94	1	BQL	6	
124481	Dibromochloromethane	5/23/94	1	BQL	6	
79005	1,1,2-Trichloroethane	5/23/94	1	BQL	6	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: 3213602				Client Sample No.: 1661B-98		
CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
71432	Benzene	5/23/94	1	BQL	6	
10061026	Trans-1,3-Dichloropropene	5/23/94	1	BQL	6	
75252	Bromoform	5/23/94	1	BQL	6	
108101	4-Methyl-2-pentanone	5/23/94	1	BQL	64	
591786	2-Hexanone	5/23/94	1	BQL	64	
127184	Tetrachloroethene	5/23/94	1	BQL	6	
79345	1,1,2,2-Tetrachloroethane	5/23/94	1	BQL	6	
108883	Toluene	5/23/94	1	12	6	
108907	Chlorobenzene	5/23/94	1	BQL	6	
100414	Ethylbenzene	5/23/94	1	BQL	6	
100425	Styrene	5/23/94	1	BQL	6	
1330207	Xylene (total)	5/23/94	1	BQL	6	
110758	2-Chloroethyl vinyl ether	5/23/94	1	BQL	13	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213602 *Client Sample No.:* 1661B-98

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/23/94	50	116	81-117	
Bromofluorobenzene	5/23/94	50	85	74-121	
1,2-Dichloroethane-d4	5/23/94	50	97	70-121	
Toluene-d8	5/25/94	50	98	81-117	
Bromofluorobenzene	5/25/94	50	96	74-121	
1,2-Dichloroethane-d4	5/25/94	50	95	70-121	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Organic Analytical Results
SW-846 Method 8240

Client:	Nuclear Fuel Services, Inc.	Client Sample No.:	1661B-107
Lab Sample ID:	3213603	Client Reference No.:	LEFPC
Matrix:	Soil	Date Received:	5/17/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
74873	Chloromethane	5/23/94	5	BQL	62	
74839	Bromomethane	5/23/94	5	BQL	62	
75014	Vinyl Chloride	5/23/94	5	BQL	62	
75003	Chloroethane	5/23/94	5	BQL	62	
75092	Methylene Chloride	5/23/94	5	120	31	B
67641	Acetone	5/23/94	5	1200	620	B
75150	Carbon Disulfide	5/23/94	5	BQL	31	
75354	1,1-Dichloroethene	5/23/94	5	BQL	31	
75343	1,1-Dichloroethane	5/23/94	5	BQL	31	
540590	1,2-Dichloroethene (total)	5/23/94	5	BQL	31	
67663	Chloroform	5/23/94	5	BQL	31	
107062	1,2-Dichloroethane	5/23/94	5	BQL	31	
78933	2-Butanone	5/23/94	5	240	620	J
71556	1,1,1-Trichloroethane	5/23/94	5	BQL	31	
56235	Carbon Tetrachloride	5/23/94	5	BQL	31	
108054	Vinyl Acetate	5/23/94	5	BQL	310	
75274	Bromodichloromethane	5/23/94	5	BQL	31	
78875	1,2-Dichloropropane	5/23/94	5	BQL	31	
10061015	cis-1,3-Dichloropropene	5/23/94	5	BQL	31	
79016	Trichloroethene	5/23/94	5	BQL	31	
124481	Dibromochloromethane	5/23/94	5	BQL	31	
79005	1,1,2-Trichloroethane	5/23/94	5	BQL	31	

EcoTek LSI
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Lab Sample ID: 3213603				Client Sample No.: 1661B-107		
CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
71432	Benzene	5/23/94	5	BQL	31	
10061026	Trans-1,3-Dichloropropene	5/23/94	5	BQL	31	
75252	Bromoform	5/23/94	5	BQL	31	
108101	4-Methyl-2-pentanone	5/23/94	5	BQL	310	
591786	2-Hexanone	5/23/94	5	BQL	310	
127184	Tetrachloroethene	5/23/94	5	BQL	31	
79345	1,1,2,2-Tetrachloroethane	5/23/94	5	BQL	31	
108883	Toluene	5/23/94	5	21	31	J
108907	Chlorobenzene	5/23/94	5	BQL	31	
100414	Ethylbenzene	5/23/94	5	BQL	31	
100425	Styrene	5/23/94	5	BQL	31	
1330207	Xylene (total)	5/23/94	5	BQL	31	
110758	2-Chloroethyl vinyl ether	5/23/94	5	BQL	62	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213603 *Client Sample No.:* 1661B-107

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/23/94	50	103	81-117	
Bromofluorobenzene	5/23/94	50	93	74-121	
1,2-Dichloroethane-d4	5/23/94	50	94	70-121	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency. Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Organic Analytical Results
SW-846 Method 8240

Client: Nuclear Fuel Services, Inc.
Client Sample No.: 1661B-113
Lab Sample ID: 3213604
Client Reference No.: LEFPC
Matrix: Soil
Date Received: 5/17/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
74873	Chloromethane	5/23/94	5	BQL	62	
74839	Bromomethane	5/23/94	5	BQL	62	
75014	Vinyl Chloride	5/23/94	5	BQL	62	
75003	Chloroethane	5/23/94	5	BQL	62	
75092	Methylene Chloride	5/23/94	5	120	31	B
67641	Acetone	5/23/94	5	990	620	B
75150	Carbon Disulfide	5/23/94	5	BQL	31	
75354	1,1-Dichloroethene	5/23/94	5	BQL	31	
75343	1,1-Dichloroethane	5/23/94	5	BQL	31	
540590	1,2-Dichloroethene (total)	5/23/94	5	BQL	31	
67663	Chloroform	5/23/94	5	BQL	31	
107062	1,2-Dichloroethane	5/23/94	5	BQL	31	
78933	2-Butanone	5/23/94	5	190	620	J
71556	1,1,1-Trichloroethane	5/23/94	5	BQL	31	
56235	Carbon Tetrachloride	5/23/94	5	BQL	31	
108054	Vinyl Acetate	5/23/94	5	BQL	310	
75274	Bromodichloromethane	5/23/94	5	BQL	31	
78875	1,2-Dichloropropane	5/23/94	5	BQL	31	
10061015	cis-1,3-Dichloropropene	5/23/94	5	BQL	31	
79016	Trichloroethene	5/23/94	5	BQL	31	
124481	Dibromochloromethane	5/23/94	5	BQL	31	
79005	1,1,2-Trichloroethane	5/23/94	5	BQL	31	

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Lab Sample ID: 3213604				Client Sample No.: 1661B-113		
CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
71432	Benzene	5/23/94	5	BQL	31	
10061026	Trans-1,3-Dichloropropene	5/23/94	5	BQL	31	
75252	Bromoform	5/23/94	5	BQL	31	
108101	4-Methyl-2-pentanone	5/23/94	5	BQL	310	
591786	2-Hexanone	5/23/94	5	BQL	310	
127184	Tetrachloroethene	5/23/94	5	BQL	31	
79345	1,1,2,2-Tetrachloroethane	5/23/94	5	BQL	31	
108883	Toluene	5/23/94	5	18	31	J
108907	Chlorobenzene	5/23/94	5	BQL	31	
100414	Ethylbenzene	5/23/94	5	BQL	31	
100425	Styrene	5/23/94	5	BQL	31	
1330207	Xylene (total)	5/23/94	5	BQL	31	
110758	2-Chloroethyl vinyl ether	5/23/94	5	BQL	62	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213604 *Client Sample No.:* 1661B-113

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/23/94	50	104	81-117	
Bromofluorobenzene	5/23/94	50	96	74-121	
1,2-Dichloroethane-d4	5/23/94	50	97	70-121	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency. Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Organic Analytical Results
SW-846 Method 8240

Client:	Nuclear Fuel Services, Inc.	Client Sample No.:	1661B-117
Lab Sample ID:	3213605	Client Reference No.:	LEFPC
Matrix:	Soil	Date Received:	5/17/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
74873	Chloromethane	5/23/94	1	BQL	13	
74839	Bromomethane	5/23/94	1	BQL	13	
75014	Vinyl Chloride	5/23/94	1	BQL	13	
75003	Chloroethane	5/23/94	1	BQL	13	
75092	Methylene Chloride	5/23/94	1	54	6	B
67641	Acetone	5/25/94	50	1000	6300	BJ
75150	Carbon Disulfide	5/23/94	1	BQL	6	
75354	1,1-Dichloroethene	5/23/94	1	BQL	6	
75343	1,1-Dichloroethane	5/23/94	1	BQL	6	
540590	1,2-Dichloroethene (total)	5/23/94	1	BQL	6	
67663	Chloroform	5/23/94	1	BQL	6	
107062	1,2-Dichloroethane	5/23/94	1	BQL	6	
78933	2-Butanone	5/23/94	1	300	130	JE
71556	1,1,1-Trichloroethane	5/23/94	1	BQL	6	
56235	Carbon Tetrachloride	5/23/94	1	14	6	J
108054	Vinyl Acetate	5/23/94	1	BQL	63	
75274	Bromodichloromethane	5/23/94	1	BQL	6	
78875	1,2-Dichloropropane	5/23/94	1	BQL	6	
10061015	cis-1,3-Dichloropropene	5/23/94	1	BQL	6	
79016	Trichloroethene	5/23/94	1	BQL	6	
124481	Dibromochloromethane	5/23/94	1	BQL	6	
79005	1,1,2-Trichloroethane	5/23/94	1	BQL	6	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: 3213605				Client Sample No.: 1661B-117		
CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
71432	Benzene	5/23/94	1	BQL	6	
10061026	Trans-1,3-Dichloropropene	5/23/94	1	BQL	6	
75252	Bromoform	5/23/94	1	BQL	6	
108101	4-Methyl-2-pentanone	5/23/94	1	BQL	63	
591786	2-Hexanone	5/23/94	1	BQL	63	
127184	Tetrachloroethene	5/23/94	1	3	6	J
79345	1,1,2,2-Tetrachloroethane	5/23/94	1	BQL	6	
108883	Toluene	5/23/94	1	17	6	J
108907	Chlorobenzene	5/23/94	1	BQL	6	
100414	Ethylbenzene	5/23/94	1	BQL	6	
100425	Styrene	5/23/94	1	BQL	6	
1330207	Xylene (total)	5/23/94	1	BQL	6	
110758	2-Chloroethyl vinyl ether	5/23/94	1	BQL	13	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213605 *Client Sample No.:* 1661B-117

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/23/94	50	120	81-117	***
Bromofluorobenzene	5/23/94	50	87	74-121	
1,2-Dichloroethane-d4	5/23/94	50	99	70-121	
Toluene-d8	5/25/94	50	99	81-117	
Bromofluorobenzene	5/25/94	50	96	74-121	
1,2-Dichloroethane-d4	5/25/94	50	97	70-121	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Organic Analytical Results
SW-846 Method 8240

Client:	Nuclear Fuel Services, Inc.	Client Sample No.:	1661B-123
Lab Sample ID:	3213606	Client Reference No.:	LEFPC
Matrix:	Soil	Date Received:	5/17/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
74873	Chloromethane	5/23/94	1	BQL	12	
74839	Bromomethane	5/23/94	1	BQL	12	
75014	Vinyl Chloride	5/23/94	1	BQL	12	
75003	Chloroethane	5/23/94	1	BQL	12	
75092	Methylene Chloride	5/23/94	1	58	6	B
67641	Acetone	5/25/94	50	910	6200	BJ
75150	Carbon Disulfide	5/23/94	1	BQL	6	
75354	1,1-Dichloroethene	5/23/94	1	BQL	6	
75343	1,1-Dichloroethane	5/23/94	1	BQL	6	
540590	1,2-Dichloroethene (total)	5/23/94	1	BQL	6	
67663	Chloroform	5/23/94	1	BQL	6	
107062	1,2-Dichloroethane	5/23/94	1	BQL	6	
78933	2-Butanone	5/23/94	1	280	120	JE
71556	1,1,1-Trichloroethane	5/23/94	1	BQL	6	
56235	Carbon Tetrachloride	5/23/94	1	13	6	
108054	Vinyl Acetate	5/23/94	1	BQL	62	
75274	Bromodichloromethane	5/23/94	1	BQL	6	
78875	1,2-Dichloropropane	5/23/94	1	BQL	6	
10061015	cis-1,3-Dichloropropene	5/23/94	1	BQL	6	
79016	Trichloroethene	5/23/94	1	BQL	6	
124481	Dibromochloromethane	5/23/94	1	BQL	6	
79005	1,1,2-Trichloroethane	5/23/94	1	BQL	6	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: 3213606				Client Sample No.: 1661B-123		
CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
71432	Benzene	5/23/94	1	BQL	6	
10061026	Trans-1,3-Dichloropropene	5/23/94	1	BQL	6	
75252	Bromoform	5/23/94	1	BQL	6	
108101	4-Methyl-2-pentanone	5/23/94	1	BQL	62	
591786	2-Hexanone	5/23/94	1	BQL	62	
127184	Tetrachloroethene	5/23/94	1	2	6	J
79345	1,1,2,2-Tetrachloroethane	5/23/94	1	BQL	6	
108883	Toluene	5/23/94	1	15	6	
108907	Chlorobenzene	5/23/94	1	BQL	6	
100414	Ethylbenzene	5/23/94	1	BQL	6	
100425	Styrene	5/23/94	1	BQL	6	
1330207	Xylene (total)	5/23/94	1	BQL	6	
110758	2-Chloroethyl vinyl ether	5/23/94	1	BQL	12	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213606 *Client Sample No.:* 1661B-123

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/23/94	50	114	81-117	
Bromofluorobenzene	5/23/94	50	77	74-121	
1,2-Dichloroethane-d4	5/23/94	50	95	70-121	
Toluene-d8	5/25/94	50	101	81-117	
Bromofluorobenzene	5/25/94	50	95	74-121	
1,2-Dichloroethane-d4	5/25/94	50	96	70-121	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency. Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Organic Analytical Results
SW-846 Method 8240

Client:	Nuclear Fuel Services, Inc.	Client Sample No.:	1661B-127
Lab Sample ID:	3213607	Client Reference No.:	LEFPC
Matrix:	Soil	Date Received:	5/17/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
74873	Chloromethane	5/23/94	1	BQL	12	
74839	Bromomethane	5/23/94	1	BQL	12	
75014	Vinyl Chloride	5/23/94	1	BQL	12	
75003	Chloroethane	5/23/94	1	BQL	12	
75092	Methylene Chloride	5/23/94	1	58	6	BJ
67641	Acetone	5/25/94	50	6000	6200	BJ
75150	Carbon Disulfide	5/23/94	1	BQL	6	
75354	1,1-Dichloroethene	5/23/94	1	BQL	6	
75343	1,1-Dichloroethane	5/23/94	1	BQL	6	
540590	1,2-Dichloroethene (total)	5/23/94	1	BQL	6	
67663	Chloroform	5/23/94	1	BQL	6	
107062	1,2-Dichloroethane	5/23/94	1	BQL	6	
78933	2-Butanone	5/23/94	1	270	120	JE
71556	1,1,1-Trichloroethane	5/23/94	1	BQL	6	
56235	Carbon Tetrachloride	5/23/94	1	6	6	J
108054	Vinyl Acetate	5/23/94	1	BQL	62	
75274	Bromodichloromethane	5/23/94	1	BQL	6	
78875	1,2-Dichloropropane	5/23/94	1	BQL	6	
10061015	cis-1,3-Dichloropropene	5/23/94	1	BQL	6	
79016	Trichloroethene	5/23/94	1	BQL	6	
124481	Dibromochloromethane	5/23/94	1	BQL	6	
79005	1,1,2-Trichloroethane	5/23/94	1	BQL	6	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: 3213607				Client Sample No.: 1661B-127		
CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
71432	Benzene	5/23/94	1	BQL	6	
10061026	Trans-1,3-Dichloropropene	5/23/94	1	BQL	6	
75252	Bromoform	5/23/94	1	BQL	6	
108101	4-Methyl-2-pentanone	5/23/94	1	BQL	62	
591786	2-Hexanone	5/23/94	1	BQL	62	
127184	Tetrachloroethene	5/23/94	1	3	6	J
79345	1,1,2,2-Tetrachloroethane	5/23/94	1	BQL	6	
108883	Toluene	5/23/94	1	16	6	J
108907	Chlorobenzene	5/23/94	1	BQL	6	
100414	Ethylbenzene	5/23/94	1	BQL	6	
100425	Styrene	5/23/94	1	BQL	6	
1330207	Xylene (total)	5/23/94	1	BQL	6	
110758	2-Chloroethyl vinyl ether	5/23/94	1	BQL	12	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213607 *Client Sample No.:* 1661B-127

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/23/94	50	118	81-117	***
Bromofluorobenzene	5/23/94	50	77	74-121	
1,2-Dichloroethane-d4	5/23/94	50	98	70-121	
Toluene-d8	5/25/94	50	98	81-117	
Bromofluorobenzene	5/25/94	50	95	74-121	
1,2-Dichloroethane-d4	5/25/94	50	95	70-121	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Organic Analytical Results
SW-846 Method 8240

Client:	Nuclear Fuel Services, Inc.	Client Sample No.:	1661B-132
Lab Sample ID:	3213608	Client Reference No.:	LEFPC
Matrix:	Soil	Date Received:	5/17/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
74873	Chloromethane	5/23/94	1	BQL	13	
74839	Bromomethane	5/23/94	1	BQL	13	
75014	Vinyl Chloride	5/23/94	1	BQL	13	
75003	Chloroethane	5/23/94	1	BQL	13	
75092	Methylene Chloride	5/23/94	1	66	6	BJ
67641	Acetone	5/26/94	5	970	640	
75150	Carbon Disulfide	5/23/94	1	BQL	6	
75354	1,1-Dichloroethene	5/23/94	1	BQL	6	
75343	1,1-Dichloroethane	5/23/94	1	BQL	6	
540590	1,2-Dichloroethene (total)	5/23/94	1	BQL	6	
67663	Chloroform	5/23/94	1	BQL	6	
107062	1,2-Dichloroethane	5/23/94	1	BQL	6	
78933	2-Butanone	5/23/94	1	170	130	J
71556	1,1,1-Trichloroethane	5/23/94	1	BQL	6	
56235	Carbon Tetrachloride	5/23/94	1	15	6	J
108054	Vinyl Acetate	5/23/94	1	BQL	64	
75274	Bromodichloromethane	5/23/94	1	BQL	6	
78875	1,2-Dichloropropane	5/23/94	1	BQL	6	
10061015	cis-1,3-Dichloropropene	5/23/94	1	BQL	6	
79016	Trichloroethene	5/23/94	1	BQL	6	
124481	Dibromochloromethane	5/23/94	1	BQL	6	
79005	1,1,2-Trichloroethane	5/23/94	1	BQL	6	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: 3213608				Client Sample No.: 1661B-132		
CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
71432	Benzene	5/23/94	1	BQL	6	
10061026	Trans-1,3-Dichloropropene	5/23/94	1	BQL	6	
75252	Bromoform	5/23/94	1	BQL	6	
108101	4-Methyl-2-pentanone	5/23/94	1	BQL	64	
591786	2-Hexanone	5/23/94	1	BQL	64	
127184	Tetrachloroethene	5/23/94	1	4	6	J
79345	1,1,2,2-Tetrachloroethane	5/23/94	1	BQL	6	
108883	Toluene	5/23/94	1	17	6	J
108907	Chlorobenzene	5/23/94	1	BQL	6	
100414	Ethylbenzene	5/23/94	1	BQL	6	
100425	Styrene	5/23/94	1	BQL	6	
1330207	Xylene (total)	5/23/94	1	BQL	6	
110758	2-Chloroethyl vinyl ether	5/23/94	1	BQL	13	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213608 *Client Sample No.:* 1661B-132

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/23/94	50	126	81-117	***
Bromofluorobenzene	5/23/94	50	75	74-121	
1,2-Dichloroethane-d4	5/23/94	50	98	70-121	
Toluene-d8	5/26/94	50	82	81-117	
Bromofluorobenzene	5/26/94	50	103	74-121	
1,2-Dichloroethane-d4	5/26/94	50	103	70-121	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Organic Analytical Results
SW-846 Method 8240

Client:	Nuclear Fuel Services, Inc.	Client Sample No.:	1661B-102
Lab Sample ID:	3213609	Client Reference No.:	LEFPC
Matrix:	Water	Date Received:	5/17/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/L	PQL ug/L	Note
74873	Chloromethane	5/20/94	1	BQL	10	
74839	Bromomethane	5/20/94	1	BQL	10	
75014	Vinyl Chloride	5/20/94	1	BQL	10	
75003	Chloroethane	5/20/94	1	BQL	10	
75092	Methylene Chloride	5/20/94	1	16	5	B
67641	Acetone	5/20/94	1	54	100	BJ
75150	Carbon Disulfide	5/20/94	1	BQL	5	
75354	1,1-Dichloroethene	5/20/94	1	BQL	5	
75343	1,1-Dichloroethane	5/20/94	1	BQL	5	
540590	1,2-Dichloroethene (total)	5/20/94	1	BQL	5	
67663	Chloroform	5/20/94	1	BQL	5	
107062	1,2-Dichloroethane	5/20/94	1	BQL	5	
78933	2-Butanone	5/20/94	1	90	100	J
71556	1,1,1-Trichloroethane	5/20/94	1	BQL	5	
56235	Carbon Tetrachloride	5/20/94	1	BQL	5	
108054	Vinyl Acetate	5/20/94	1	BQL	50	
75274	Bromodichloromethane	5/20/94	1	BQL	5	
78875	1,2-Dichloropropane	5/20/94	1	BQL	5	
10061015	cis-1,3-Dichloropropene	5/20/94	1	BQL	5	
79016	Trichloroethene	5/20/94	1	BQL	5	
124481	Dibromochloromethane	5/20/94	1	BQL	5	
79005	1,1,2-Trichloroethane	5/20/94	1	BQL	5	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: 3213609				Client Sample No.: 1661B-102		
CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/L	PQL ug/L	Note
71432	Benzene	5/20/94	1	BQL	5	
10061026	Trans-1,3-Dichloropropene	5/20/94	1	BQL	5	
75252	Bromoform	5/20/94	1	BQL	5	
108101	4-Methyl-2-pentanone	5/20/94	1	BQL	50	
591786	2-Hexanone	5/20/94	1	BQL	50	
127184	Tetrachloroethene	5/20/94	1	BQL	5	
79345	1,1,2,2-Tetrachloroethane	5/20/94	1	BQL	5	
108883	Toluene	5/20/94	1	BQL	5	
108907	Chlorobenzene	5/20/94	1	BQL	5	
100414	Ethylbenzene	5/20/94	1	BQL	5	
100425	Styrene	5/20/94	1	BQL	5	
1330207	Xylene (total)	5/20/94	1	BQL	5	
110758	2-Chloroethyl vinyl ether	5/20/94	1	BQL	10	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213609 *Client Sample No.:* 1661B-102

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/20/94	50	98	88-110	
Bromofluorobenzene	5/20/94	50	98	86-115	
1,2-Dichloroethane-d4	5/20/94	50	97	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Organic Analytical Results
SW-846 Method 8240

Client:	Nuclear Fuel Services, Inc.	Client Sample No.:	1661B-147
Lab Sample ID:	3213610	Client Reference No.:	LEFPC
Matrix:	Soil	Date Received:	5/17/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
74873	Chloromethane	5/23/94	5	BQL	52	
74839	Bromomethane	5/23/94	5	BQL	52	
75014	Vinyl Chloride	5/23/94	5	BQL	52	
75003	Chloroethane	5/23/94	5	BQL	52	
75092	Methylene Chloride	5/23/94	5	190	26	BJ
67641	Acetone	5/25/94	50	500	5200	BJ
75150	Carbon Disulfide	5/23/94	5	BQL	26	
75354	1,1-Dichloroethene	5/23/94	5	BQL	26	
75343	1,1-Dichloroethane	5/23/94	5	BQL	26	
540590	1,2-Dichloroethene (total)	5/23/94	5	BQL	26	
67663	Chloroform	5/23/94	5	BQL	26	
107062	1,2-Dichloroethane	5/23/94	5	BQL	26	
78933	2-Butanone	5/23/94	5	570	520	J
71556	1,1,1-Trichloroethane	5/23/94	5	BQL	26	
56235	Carbon Tetrachloride	5/23/94	5	BQL	26	
108054	Vinyl Acetate	5/23/94	5	BQL	260	
75274	Bromodichloromethane	5/23/94	5	BQL	26	
78875	1,2-Dichloropropane	5/23/94	5	BQL	26	
10061015	cis-1,3-Dichloropropene	5/23/94	5	BQL	26	
79016	Trichloroethene	5/23/94	5	BQL	26	
124481	Dibromochloromethane	5/23/94	5	BQL	26	
79005	1,1,2-Trichloroethane	5/23/94	5	BQL	26	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: 3213610				Client Sample No.: 1661B-147		
CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
71432	Benzene	5/23/94	5	92	26	J
10061026	Trans-1,3-Dichloropropene	5/23/94	5	BQL	26	
75252	Bromoform	5/23/94	5	BQL	26	
108101	4-Methyl-2-pentanone	5/23/94	5	BQL	260	
591786	2-Hexanone	5/23/94	5	BQL	260	
127184	Tetrachloroethene	5/23/94	5	BQL	26	
79345	1,1,2,2-Tetrachloroethane	5/23/94	5	BQL	26	
108883	Toluene	5/23/94	5	260	26	J
108907	Chlorobenzene	5/23/94	5	BQL	26	
100414	Ethylbenzene	5/23/94	5	20	26	J
100425	Styrene	5/23/94	5	BQL	26	
1330207	Xylene (total)	5/23/94	5	57	26	J
110758	2-Chloroethyl vinyl ether	5/23/94	5	BQL	52	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213610 *Client Sample No.:* 1661B-147

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/23/94	50	139	81-117	***
Bromofluorobenzene	5/23/94	50	59	74-121	***
1,2-Dichloroethane-d4	5/23/94	50	90	70-121	
Toluene-d8	5/25/94	50	100	81-117	
Bromofluorobenzene	5/25/94	50	96	74-121	
1,2-Dichloroethane-d4	5/25/94	50	96	70-121	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Organic Analytical Results
SW-846 Method 8240

Client:	Nuclear Fuel Services, Inc.	Client Sample No.:	1661B-156
Lab Sample ID:	3213611	Client Reference No.:	LEFPC
Matrix:	Soil	Date Received:	5/17/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
74873	Chloromethane	5/23/94	5	57	50	J
74839	Bromomethane	5/23/94	5	BQL	50	
75014	Vinyl Chloride	5/23/94	5	BQL	50	
75003	Chloroethane	5/23/94	5	BQL	50	
75092	Methylene Chloride	5/23/94	5	330	25	BJ
67641	Acetone	5/25/94	50	820	5000	BJ
75150	Carbon Disulfide	5/23/94	5	BQL	25	
75354	1,1-Dichloroethene	5/23/94	5	BQL	25	
75343	1,1-Dichloroethane	5/23/94	5	BQL	25	
540590	1,2-Dichloroethene (total)	5/23/94	5	BQL	25	
67663	Chloroform	5/23/94	5	BQL	25	
107062	1,2-Dichloroethane	5/23/94	5	BQL	25	
78933	2-Butanone	5/23/94	5	1100	500	JE
71556	1,1,1-Trichloroethane	5/23/94	5	BQL	25	
56235	Carbon Tetrachloride	5/23/94	5	73	25	J
108054	Vinyl Acetate	5/23/94	5	BQL	250	
75274	Bromodichloromethane	5/23/94	5	BQL	25	
78875	1,2-Dichloropropane	5/23/94	5	BQL	25	
10061015	cis-1,3-Dichloropropene	5/23/94	5	BQL	25	
79016	Trichloroethene	5/23/94	5	BQL	25	
124481	Dibromochloromethane	5/23/94	5	BQL	25	
79005	1,1,2-Trichloroethane	5/23/94	5	BQL	25	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: 3213611				Client Sample No.: 1661B-156		
CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
71432	Benzene	5/23/94	5	160	25	J
10061026	Trans-1,3-Dichloropropene	5/23/94	5	BQL	25	
75252	Bromoform	5/23/94	5	BQL	25	
108101	4-Methyl-2-pentanone	5/23/94	5	92	250	J
591786	2-Hexanone	5/23/94	5	58	250	J
127184	Tetrachloroethene	5/23/94	5	BQL	25	
79345	1,1,2,2-Tetrachloroethane	5/23/94	5	BQL	25	
108883	Toluene	5/23/94	5	450	25	J
108907	Chlorobenzene	5/23/94	5	BQL	25	
100414	Ethylbenzene	5/23/94	5	24	25	J
100425	Styrene	5/23/94	5	BQL	25	
1330207	Xylene (total)	5/23/94	5	85	25	J
110758	2-Chloroethyl vinyl ether	5/23/94	5	BQL	50	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213611 *Client Sample No.:* 1661B-156

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/23/94	50	154	81-117	***
Bromofluorobenzene	5/23/94	50	53	74-121	***
1,2-Dichloroethane-d4	5/23/94	50	94	70-121	
Toluene-d8	5/25/94	50	99	81-117	
Bromofluorobenzene	5/25/94	50	91	74-121	
1,2-Dichloroethane-d4	5/25/94	50	95	70-121	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Organic Analytical Results
SW-846 Method 8240

Client:	Nuclear Fuel Services, Inc.	Client Sample No.:	1661B-165
Lab Sample ID:	3213612	Client Reference No.:	LEFPC
Matrix:	Soil	Date Received:	5/17/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
74873	Chloromethane	5/23/94	5	37	50	J
74839	Bromomethane	5/23/94	5	BQL	50	
75014	Vinyl Chloride	5/23/94	5	BQL	50	
75003	Chloroethane	5/23/94	5	BQL	50	
75092	Methylene Chloride	5/23/94	5	390	25	BJ
67641	Acetone	5/25/94	50	660	5000	BJ
75150	Carbon Disulfide	5/23/94	5	BQL	25	
75354	1,1-Dichloroethene	5/23/94	5	BQL	25	
75343	1,1-Dichloroethane	5/23/94	5	BQL	25	
540590	1,2-Dichloroethene (total)	5/23/94	5	BQL	25	
67663	Chloroform	5/23/94	5	BQL	25	
107062	1,2-Dichloroethane	5/23/94	5	BQL	25	
78933	2-Butanone	5/23/94	5	840	500	J
71556	1,1,1-Trichloroethane	5/23/94	5	BQL	25	
56235	Carbon Tetrachloride	5/23/94	5	61	25	J
108054	Vinyl Acetate	5/23/94	5	BQL	250	
75274	Bromodichloromethane	5/23/94	5	BQL	25	
78875	1,2-Dichloropropane	5/23/94	5	BQL	25	
10061015	cis-1,3-Dichloropropene	5/23/94	5	BQL	25	
79016	Trichloroethene	5/23/94	5	BQL	25	
124481	Dibromochloromethane	5/23/94	5	BQL	25	
79005	1,1,2-Trichloroethane	5/23/94	5	BQL	25	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: 3213612				Client Sample No.: 1661B-165		
CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
71432	Benzene	5/23/94	5	200	25	J
10061026	Trans-1,3-Dichloropropene	5/23/94	5	BQL	25	
75252	Bromoform	5/23/94	5	BQL	25	
108101	4-Methyl-2-pentanone	5/23/94	5	BQL	250	
591786	2-Hexanone	5/23/94	5	BQL	250	
127184	Tetrachloroethene	5/23/94	5	BQL	25	
79345	1,1,2,2-Tetrachloroethane	5/23/94	5	BQL	25	
108883	Toluene	5/23/94	5	570	25	J
108907	Chlorobenzene	5/23/94	5	18	25	J
100414	Ethylbenzene	5/23/94	5	21	25	J
100425	Styrene	5/23/94	5	BQL	25	
1330207	Xylene (total)	5/23/94	5	120	25	J
110758	2-Chloroethyl vinyl ether	5/23/94	5	BQL	50	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213612 *Client Sample No.:* 1661B-165

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/23/94	50	159	81-117	***
Bromofluorobenzene	5/23/94	50	53	74-121	***
1,2-Dichloroethane-d4	5/23/94	50	93	70-121	
Toluene-d8	5/25/94	50	97	81-117	
Bromofluorobenzene	5/25/94	50	95	74-121	
1,2-Dichloroethane-d4	5/25/94	50	96	70-121	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Organic Analytical Results
SW-846 Method 8240

Client:	Nuclear Fuel Services, Inc.	Client Sample No.:	1661B-170
Lab Sample ID:	3213613	Client Reference No.:	LEFPC
Matrix:	Soil	Date Received:	5/17/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
74873	Chloromethane	5/26/94	5	BQL	50	
74839	Bromomethane	5/26/94	5	BQL	50	
75014	Vinyl Chloride	5/26/94	5	BQL	50	
75003	Chloroethane	5/26/94	5	BQL	50	
75092	Methylene Chloride	5/26/94	5	100	25	BJ
67641	Acetone	5/26/94	125	690	13000	BJ
75150	Carbon Disulfide	5/26/94	5	BQL	25	
75354	1,1-Dichloroethene	5/26/94	5	BQL	25	
75343	1,1-Dichloroethane	5/26/94	5	BQL	25	
540590	1,2-Dichloroethene (total)	5/26/94	5	BQL	25	
67663	Chloroform	5/26/94	5	BQL	25	
107062	1,2-Dichloroethane	5/26/94	5	BQL	25	
78933	2-Butanone	5/26/94	5	200	500	J
71556	1,1,1-Trichloroethane	5/26/94	5	BQL	25	
56235	Carbon Tetrachloride	5/26/94	5	6	25	J
108054	Vinyl Acetate	5/26/94	5	BQL	250	
75274	Bromodichloromethane	5/26/94	5	BQL	25	
78875	1,2-Dichloropropane	5/26/94	5	BQL	25	
10061015	cis-1,3-Dichloropropene	5/26/94	5	BQL	25	
79016	Trichloroethene	5/26/94	5	BQL	25	
124481	Dibromochloromethane	5/26/94	5	BQL	25	
79005	1,1,2-Trichloroethane	5/26/94	5	BQL	25	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: 3213613				Client Sample No.: 1661B-170		
CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
71432	Benzene	5/26/94	5	45	25	J
10061026	Trans-1,3-Dichloropropene	5/26/94	5	BQL	25	
75252	Bromoform	5/26/94	5	BQL	25	
108101	4-Methyl-2-pentanone	5/26/94	5	BQL	250	
591786	2-Hexanone	5/26/94	5	BQL	250	
127184	Tetrachloroethene	5/26/94	5	BQL	25	
79345	1,1,2,2-Tetrachloroethane	5/26/94	5	BQL	25	
108883	Toluene	5/26/94	5	130	25	J
108907	Chlorobenzene	5/26/94	5	BQL	25	
100414	Ethylbenzene	5/26/94	5	10	25	J
100425	Styrene	5/26/94	5	BQL	25	
1330207	Xylene (total)	5/26/94	5	36	25	J
110758	2-Chloroethyl vinyl ether	5/26/94	5	BQL	50	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213613 *Client Sample No.:* 1661B-170

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/26/94	50	134	81-117	***
Bromofluorobenzene	5/26/94	50	70	74-121	***
1,2-Dichloroethane-d4	5/26/94	50	102	70-121	
Toluene-d8	5/26/94	50	98	81-117	
Bromofluorobenzene	5/26/94	50	99	74-121	
1,2-Dichloroethane-d4	5/26/94	50	109	70-121	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency. Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Organic Analytical Results
SW-846 Method 8240

Client:	Nuclear Fuel Services, Inc.	Client Sample No.:	1661B-181
Lab Sample ID:	3213614	Client Reference No.:	LEFPC
Matrix:	Soil	Date Received:	5/17/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
74873	Chloromethane	5/26/94	5	BQL	50	
74839	Bromomethane	5/26/94	5	BQL	50	
75014	Vinyl Chloride	5/26/94	5	BQL	50	
75003	Chloroethane	5/26/94	5	BQL	50	
75092	Methylene Chloride	5/26/94	5	150	25	BJ
67641	Acetone	5/26/94	125	2500	13000	J
75150	Carbon Disulfide	5/26/94	5	BQL	25	
75354	1,1-Dichloroethene	5/26/94	5	BQL	25	
75343	1,1-Dichloroethane	5/26/94	5	BQL	25	
540590	1,2-Dichloroethene (total)	5/26/94	5	BQL	25	
67663	Chloroform	5/26/94	5	BQL	25	
107062	1,2-Dichloroethane	5/26/94	5	BQL	25	
78933	2-Butanone	5/26/94	5	380	500	J
71556	1,1,1-Trichloroethane	5/26/94	5	BQL	25	
56235	Carbon Tetrachloride	5/26/94	5	BQL	25	
108054	Vinyl Acetate	5/26/94	5	BQL	250	
75274	Bromodichloromethane	5/26/94	5	BQL	25	
78875	1,2-Dichloropropane	5/26/94	5	BQL	25	
10061015	cis-1,3-Dichloropropene	5/26/94	5	BQL	25	
79016	Trichloroethene	5/26/94	5	BQL	25	
124481	Dibromochloromethane	5/26/94	5	BQL	25	
79005	1,1,2-Trichloroethane	5/26/94	5	BQL	25	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: 3213614				Client Sample No.: 1661B-181		
CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
71432	Benzene	5/26/94	5	85	25	J
10061026	Trans-1,3-Dichloropropene	5/26/94	5	BQL	25	
75252	Bromoform	5/26/94	5	BQL	25	
108101	4-Methyl-2-pentanone	5/26/94	5	BQL	250	
591786	2-Hexanone	5/26/94	5	BQL	250	
127184	Tetrachloroethene	5/26/94	5	BQL	25	
79345	1,1,2,2-Tetrachloroethane	5/26/94	5	BQL	25	
108883	Toluene	5/26/94	5	210	25	J
108907	Chlorobenzene	5/26/94	5	BQL	25	
100414	Ethylbenzene	5/26/94	5	13	25	J
100425	Styrene	5/26/94	5	BQL	25	
1330207	Xylene (total)	5/26/94	5	46	25	J
110758	2-Chloroethyl vinyl ether	5/26/94	5	BQL	50	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213614 *Client Sample No.:* 1661B-181

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/26/94	50	157	81-117	***
Bromofluorobenzene	5/26/94	50	61	74-121	***
1,2-Dichloroethane-d4	5/26/94	50	102	70-121	
Toluene-d8	5/26/94	50	100	81-117	
Bromofluorobenzene	5/26/94	50	99	74-121	
1,2-Dichloroethane-d4	5/26/94	50	108	70-121	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Organic Analytical Results
SW-846 Method 8240

Client:	Nuclear Fuel Services, Inc.	Client Sample No.:	1661B-187
Lab Sample ID:	3213615	Client Reference No.:	LEFPC
Matrix:	Soil	Date Received:	5/17/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
74873	Chloromethane	5/26/94	1	BQL	1300	
74839	Bromomethane	5/26/94	1	BQL	1300	
75014	Vinyl Chloride	5/26/94	1	BQL	1300	
75003	Chloroethane	5/26/94	1	BQL	1300	
75092	Methylene Chloride	5/26/94	1	1600	630	B
67641	Acetone	5/26/94	1	1600	13000	J
75150	Carbon Disulfide	5/26/94	1	BQL	630	
75354	1,1-Dichloroethene	5/26/94	1	BQL	630	
75343	1,1-Dichloroethane	5/26/94	1	BQL	630	
540590	1,2-Dichloroethene (total)	5/26/94	1	BQL	630	
67663	Chloroform	6/30/94	5	7	25	J
107062	1,2-Dichloroethane	5/26/94	1	BQL	630	
78933	2-Butanone	6/30/94	5	270	500	J
71556	1,1,1-Trichloroethane	6/30/94	5	6	25	J
56235	Carbon Tetrachloride	5/26/94	1	BQL	630	
108054	Vinyl Acetate	5/26/94	1	BQL	6300	
75274	Bromodichloromethane	5/26/94	1	BQL	630	
78875	1,2-Dichloropropane	5/26/94	1	BQL	630	
10061015	cis-1,3-Dichloropropene	5/26/94	1	BQL	630	
79016	Trichloroethene	6/30/94	5	10	25	J
124481	Dibromochloromethane	5/26/94	1	BQL	630	
79005	1,1,2-Trichloroethane	5/26/94	1	BQL	630	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: 3213615				Client Sample No.: 1661B-187		
CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
71432	Benzene	6/30/94	5	82	25	J,B
10061026	Trans-1,3-Dichloropropene	5/26/94	1	BQL	630	
75252	Bromoform	5/26/94	1	BQL	630	
108101	4-Methyl-2-pentanone	5/26/94	1	BQL	6300	
591786	2-Hexanone	5/26/94	1	BQL	6300	
127184	Tetrachloroethene	5/26/94	1	BQL	630	
79345	1,1,2,2-Tetrachloroethane	6/30/94	5	6	25	J
108883	Toluene	5/26/94	1	BQL	630	
108907	Chlorobenzene	5/26/94	1	BQL	630	
100414	Ethylbenzene	6/30/94	5	7	25	J
100425	Styrene	5/26/94	1	BQL	630	
1330207	Xylene (total)	6/30/94	5	26	25	J
110758	2-Chloroethyl vinyl ether	5/26/94	1	BQL	1300	

Practical Quantitation Limit

= Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213615 **Client Sample No.:** 1661B-187

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/26/94	50	96	81-117	
Bromofluorobenzene	5/26/94	50	98	74-121	
1,2-Dichloroethane-d4	5/26/94	50	105	70-121	
Toluene-d8	6/30/94	50	119	81-117	***
Bromofluorobenzene	6/30/94	50	76	74-121	
1,2-Dichloroethane-d4	6/30/94	50	100	70-121	

the sample prior to purging to monitor the purge efficiency.
dicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Organic Analytical Results
SW-846 Method 8240

Client:	Nuclear Fuel Services, Inc.	Client Sample No.:	1661B-187
Lab Sample ID:	3213615R	Client Reference No.:	LEFPC
Matrix:	Soil	Date Received:	5/17/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
74873	Chloromethane	6/30/94	1	BQL	50	
74839	Bromomethane	6/30/94	1	BQL	50	
75014	Vinyl Chloride	6/30/94	1	BQL	50	
75003	Chloroethane	6/30/94	1	BQL	50	
75092	Methylene Chloride	6/30/94	1	260	25	B
67641	Acetone	6/30/94	50	13000	25000	
75150	Carbon Disulfide	6/30/94	1	BQL	25	
75354	1,1-Dichloroethene	6/30/94	1	BQL	25	
75343	1,1-Dichloroethane	6/30/94	1	BQL	25	
540590	1,2-Dichloroethene (total)	6/30/94	1	BQL	25	
67663	Chloroform	6/30/94	1	7	25	J
107062	1,2-Dichloroethane	6/30/94	1	BQL	25	
78933	2-Butanone	6/30/94	1	270	500	J
71556	1,1,1-Trichloroethane	6/30/94	1	6	25	J
56235	Carbon Tetrachloride	6/30/94	1	BQL	25	
108054	Vinyl Acetate	6/30/94	1	BQL	250	
75274	Bromodichloromethane	6/30/94	1	BQL	25	
78875	1,2-Dichloropropane	6/30/94	1	BQL	25	
10061015	cis-1,3-Dichloropropene	6/30/94	1	BQL	25	
79016	Trichloroethene	6/30/94	1	10	25	J
124481	Dibromochloromethane	6/30/94	1	BQL	25	
79005	1,1,2-Trichloroethane	6/30/94	1	BQL	25	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: 3213615R				Client Sample No.: 1661B-187		
CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
71432	Benzene	6/30/94	1	82	25	B
10061026	Trans-1,3-Dichloropropene	6/30/94	1	BQL	25	
75252	Bromoform	6/30/94	1	BQL	25	
108101	4-Methyl-2-pentanone	6/30/94	1	BQL	250	
591786	2-Hexanone	6/30/94	1	BQL	250	
127184	Tetrachloroethene	6/30/94	1	BQL	25	
79345	1,1,2,2-Tetrachloroethane	6/30/94	1	6	25	J
108883	Toluene	6/30/94	1	75	25	
108907	Chlorobenzene	6/30/94	1	BQL	25	
100414	Ethylbenzene	6/30/94	1	7	25	J
100425	Styrene	6/30/94	1	BQL	25	
1330207	Xylene (total)	6/30/94	1	26	25	
110758	2-Chloroethyl vinyl ether	6/30/94	1	BQL	50	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213615R *Client Sample No.:* 1661B-187

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	6/30/94 12:58	50	119	81-117	***
Bromofluorobenzene	6/30/94 12:58	50	76	74-121	
1,2-Dichloroethane-d4	6/30/94 12:58	50	100	70-121	
Toluene-d8	6/30/94 14.39	50	96	88-110	
Bromofluorobenzene	6/30/94 14.39	50	103	86-115	
1,2-Dichloroethane-d4	6/30/94 14.39	50	102	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Organic Analytical Results
SW-846 Method 8240

Client:	Nuclear Fuel Services, Inc.	Client Sample No.:	1661B-196
Lab Sample ID:	3213616	Client Reference No.:	LEFPC
Matrix:	Soil	Date Received:	5/17/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
74873	Chloromethane	5/26/94	1	BQL	1300	
74839	Bromomethane	5/26/94	1	BQL	1300	
75014	Vinyl Chloride	5/26/94	1	BQL	1300	
75003	Chloroethane	5/26/94	1	BQL	1300	
75092	Methylene Chloride	5/26/94	1	1700	630	B
67641	Acetone	5/26/94	1	1200	13000	J
75150	Carbon Disulfide	5/26/94	1	BQL	630	
75354	1,1-Dichloroethene	5/26/94	1	BQL	630	
75343	1,1-Dichloroethane	5/26/94	1	BQL	630	
540590	1,2-Dichloroethene (total)	5/26/94	1	BQL	630	
67663	Chloroform	5/26/94	1	BQL	630	
107062	1,2-Dichloroethane	5/26/94	1	BQL	630	
78933	2-Butanone	5/26/94	1	BQL	13000	
71556	1,1,1-Trichloroethane	5/26/94	1	BQL	630	
56235	Carbon Tetrachloride	5/26/94	1	BQL	630	
108054	Vinyl Acetate	5/26/94	1	BQL	6300	
75274	Bromodichloromethane	5/26/94	1	BQL	630	
78875	1,2-Dichloropropane	5/26/94	1	BQL	630	
10061015	cis-1,3-Dichloropropene	5/26/94	1	BQL	630	
79016	Trichloroethene	5/26/94	1	BQL	630	
124481	Dibromochloromethane	5/26/94	1	BQL	630	
79005	1,1,2-Trichloroethane	5/26/94	1	BQL	630	

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Lab Sample ID: 3213616				Client Sample No.: 1661B-196		
CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
71432	Benzene	6/30/94	5	31	25	
10061026	Trans-1,3-Dichloropropene	5/26/94	1	BQL	630	
75252	Bromoform	5/26/94	1	BQL	630	
108101	4-Methyl-2-pentanone	5/26/94	1	BQL	6300	
591786	2-Hexanone	5/26/94	1	BQL	6300	
127184	Tetrachloroethene	5/26/94	1	BQL	630	
79345	1,1,2,2-Tetrachloroethane	5/26/94	1	BQL	630	
108883	Toluene	6/30/94	5	21	25	J
108907	Chlorobenzene	5/26/94	1	BQL	630	
100414	Ethylbenzene	5/26/94	1	BQL	630	
100425	Styrene	5/26/94	1	BQL	630	
1330207	Xylene (total)	5/26/94	1	BQL	630	
110758	2-Chloroethyl vinyl ether	5/26/94	1	BQL	1300	

Practical Quantitation Limit

= Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213616 *Client Sample No.:* 1661B-196

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/26/94	50	94	81-117	
Bromofluorobenzene	5/26/94	50	94	74-121	
1,2-Dichloroethane-d4	5/26/94	50	100	70-121	
Toluene-d8	6/30/94	50	96	88-110	
Bromofluorobenzene	6/30/94	50	103	86-115	
1,2-Dichloroethane-d4	6/30/94	50	105	76-114	

the sample prior to purging to monitor the purge efficiency.
dicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Organic Analytical Results
SW-846 Method 8240

Client:	Nuclear Fuel Services, Inc.	Client Sample No.:	1661B-196
Lab Sample ID:	3213616R	Client Reference No.:	LEFPC
Matrix:	Soil	Date Received:	5/17/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
74873	Chloromethane	6/30/94	1	BQL	50	
74839	Bromomethane	6/30/94	1	BQL	50	
75014	Vinyl Chloride	6/30/94	1	BQL	50	
75003	Chloroethane	6/30/94	1	BQL	50	
75092	Methylene Chloride	6/30/94	1	230	25	B
67641	Acetone	6/30/94	50	6800	25000	
75150	Carbon Disulfide	6/30/94	1	BQL	25	
75354	1,1-Dichloroethene	6/30/94	1	BQL	25	
75343	1,1-Dichloroethane	6/30/94	1	BQL	25	
540590	1,2-Dichloroethene (total)	6/30/94	1	BQL	25	
67663	Chloroform	6/30/94	1	BQL	25	
107062	1,2-Dichloroethane	6/30/94	1	BQL	25	
78933	2-Butanone	6/30/94	1	BQL	500	
71556	1,1,1-Trichloroethane	6/30/94	1	BQL	25	
56235	Carbon Tetrachloride	6/30/94	1	BQL	25	
108054	Vinyl Acetate	6/30/94	1	BQL	250	
75274	Bromodichloromethane	6/30/94	1	BQL	25	
78875	1,2-Dichloropropane	6/30/94	1	BQL	25	
10061015	cis-1,3-Dichloropropene	6/30/94	1	BQL	25	
79016	Trichloroethene	6/30/94	1	BQL	25	
124481	Dibromochloromethane	6/30/94	1	BQL	25	
79005	1,1,2-Trichloroethane	6/30/94	1	BQL	25	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: 3213616R				Client Sample No.: 1661B-196		
CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
71432	Benzene	6/30/94	1	31	25	B
10061026	Trans-1,3-Dichloropropene	6/30/94	1	BQL	25	
75252	Bromoform	6/30/94	1	BQL	25	
108101	4-Methyl-2-pentanone	6/30/94	1	BQL	250	
591786	2-Hexanone	6/30/94	1	BQL	250	
127184	Tetrachloroethene	6/30/94	1	BQL	25	
79345	1,1,2,2-Tetrachloroethane	6/30/94	1	BQL	25	
108883	Toluene	6/30/94	1	21	25	J
108907	Chlorobenzene	6/30/94	1	BQL	25	
100414	Ethylbenzene	6/30/94	1	BQL	25	
100425	Styrene	6/30/94	1	BQL	25	
1330207	Xylene (total)	6/30/94	1	BQL	25	
110758	2-Chloroethyl vinyl ether	6/30/94	1	BQL	50	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213616R *Client Sample No.:* 1661B-196

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	6/30/94 13:28	50	112	81-117	
Bromofluorobenzene	6/30/94 13:28	50	88	74-121	
1,2-Dichloroethane-d4	6/30/94 13:28	50	102	70-121	
Toluene-d8	6/30/94 15:28	50	96	88-110	
Bromofluorobenzene	6/30/94 15:28	50	103	86-115	
1,2-Dichloroethane-d4	6/30/94 15:28	50	105	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency. Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Organic Analytical Results
SW-846 Method 8240

Client:	Nuclear Fuel Services, Inc.	Client Sample No.:	1661B-204
Lab Sample ID:	3213617	Client Reference No.:	LEFPC
Matrix:	Soil	Date Received:	5/17/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
74873	Chloromethane	5/26/94	1	BQL	1300	
74839	Bromomethane	5/26/94	1	BQL	1300	
75014	Vinyl Chloride	5/26/94	1	BQL	1300	
75003	Chloroethane	5/26/94	1	BQL	1300	
75092	Methylene Chloride	5/26/94	1	1800	630	B
67641	Acetone	5/26/94	1	2800	13000	J
75150	Carbon Disulfide	5/26/94	1	BQL	630	
75354	1,1-Dichloroethene	5/26/94	1	BQL	630	
75343	1,1-Dichloroethane	5/26/94	1	BQL	630	
540590	1,2-Dichloroethene (total)	5/26/94	1	BQL	630	
67663	Chloroform	5/26/94	1	BQL	630	
107062	1,2-Dichloroethane	5/26/94	1	BQL	630	
78933	2-Butanone	5/26/94	1	BQL	13000	
71556	1,1,1-Trichloroethane	5/26/94	1	BQL	630	
56235	Carbon Tetrachloride	5/26/94	1	BQL	630	
108054	Vinyl Acetate	5/26/94	1	BQL	6300	
75274	Bromodichloromethane	5/26/94	1	BQL	630	
78875	1,2-Dichloropropane	5/26/94	1	BQL	630	
10061015	cis-1,3-Dichloropropene	5/26/94	1	BQL	630	
79016	Trichloroethene	5/26/94	1	BQL	630	
124481	Dibromochloromethane	5/26/94	1	BQL	630	
79005	1,1,2-Trichloroethane	5/26/94	1	BQL	630	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID:	3213617			Client Sample No.:	1661B-204	
CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
71432	Benzene	5/26/94	1	BQL	630	
10061026	Trans-1,3-Dichloropropene	5/26/94	1	BQL	630	
75252	Bromoform	5/26/94	1	BQL	630	
108101	4-Methyl-2-pentanone	5/26/94	1	BQL	6300	
591786	2-Hexanone	5/26/94	1	BQL	6300	
127184	Tetrachloroethene	5/26/94	1	BQL	630	
79345	1,1,2,2-Tetrachloroethane	5/26/94	1	BQL	630	
108883	Toluene	5/26/94	1	BQL	630	
108907	Chlorobenzene	5/26/94	1	BQL	630	
100414	Ethylbenzene	5/26/94	1	BQL	630	
100425	Styrene	5/26/94	1	BQL	630	
1330207	Xylene (total)	5/26/94	1	BQL	630	
110758	2-Chloroethyl vinyl ether	5/26/94	1	BQL	1300	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213617 Client Sample No.: 1661B-204

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/26/94	50	101	81-117	
Bromofluorobenzene	5/26/94	50	104	74-121	
1,2-Dichloroethane-d4	5/26/94	50	101	70-121	
Toluene-d8	5/26/94	50	101	81-117	
Bromofluorobenzene	5/26/94	50	104	74-121	
1,2-Dichloroethane-d4	5/26/94	50	101	70-121	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Organic Analytical Results
SW-846 Method 8240

Client:	Nuclear Fuel Services, Inc.	Client Sample No.:	1661B-204
Lab Sample ID:	3213617R	Client Reference No.:	LEFPC
Matrix:	Soil	Date Received:	5/17/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
74873	Chloromethane	6/30/94	1	BQL	50	
74839	Bromomethane	6/30/94	1	BQL	50	
75014	Vinyl Chloride	6/30/94	1	BQL	50	
75003	Chloroethane	6/30/94	1	BQL	50	
75092	Methylene Chloride	6/30/94	1	240	25	B
67641	Acetone	6/30/94	50	8400	25000	
75150	Carbon Disulfide	6/30/94	1	BQL	25	
75354	1,1-Dichloroethene	6/30/94	1	BQL	25	
75343	1,1-Dichloroethane	6/30/94	1	BQL	25	
540590	1,2-Dichloroethene (total)	6/30/94	1	BQL	25	
67663	Chloroform	6/30/94	1	BQL	25	
107062	1,2-Dichloroethane	6/30/94	1	BQL	25	
78933	2-Butanone	6/30/94	1	290	500	J
71556	1,1,1-Trichloroethane	6/30/94	1	BQL	25	
56235	Carbon Tetrachloride	6/30/94	1	BQL	25	
108054	Vinyl Acetate	6/30/94	1	BQL	250	
75274	Bromodichloromethane	6/30/94	1	BQL	25	
78875	1,2-Dichloropropane	6/30/94	1	BQL	25	
10061015	cis-1,3-Dichloropropene	6/30/94	1	BQL	25	
79016	Trichloroethene	6/30/94	1	BQL	25	
124481	Dibromochloromethane	6/30/94	1	BQL	25	
79005	1,1,2-Trichloroethane	6/30/94	1	BQL	25	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: 3213617R				Client Sample No.: 1661B-204		
CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
71432	Benzene	6/30/94	1	77	25	B
10061026	Trans-1,3-Dichloropropene	6/30/94	1	BQL	25	
75252	Bromoform	6/30/94	1	BQL	25	
108101	4-Methyl-2-pentanone	6/30/94	1	BQL	250	
591786	2-Hexanone	6/30/94	1	BQL	250	
127184	Tetrachloroethene	6/30/94	1	BQL	25	
79345	1,1,2,2-Tetrachloroethane	6/30/94	1	BQL	25	
108883	Toluene	6/30/94	1	34	25	
108907	Chlorobenzene	6/30/94	1	BQL	25	
100414	Ethylbenzene	6/30/94	1	BQL	25	
100425	Styrene	6/30/94	1	BQL	25	
1330207	Xylene (total)	6/30/94	1	11	25	J
110758	2-Chloroethyl vinyl ether	6/30/94	1	BQL	50	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213617R *Client Sample No.:* 1661B-204

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	6/30/94 13:59	50	83	81-117	
Bromofluorobenzene	6/30/94 13:59	50	72	74-121	***
1,2-Dichloroethane-d4	6/30/94 13:59	50	103	70-121	
Toluene-d8	6/30/94 16:01	50	104	88-110	
Bromofluorobenzene	6/30/94 16:01	50	105	86-115	
1,2-Dichloroethane-d4	6/30/94 16:01	50	114	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Organic Analytical Results
SW-846 Method 8240

Client:	Nuclear Fuel Services, Inc.	Client Sample No.:	1661B-212
Lab Sample ID:	3213618	Client Reference No.:	LEFPC
Matrix:	Water	Date Received:	5/17/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/L	PQL ug/L	Note
74873	Chloromethane	5/20/94	1	BQL	10	
74839	Bromomethane	5/20/94	1	BQL	10	
75014	Vinyl Chloride	5/20/94	1	BQL	10	
75003	Chloroethane	5/20/94	1	BQL	10	
75092	Methylene Chloride	5/20/94	1	15	5	B
67641	Acetone	5/20/94	1	47	100	BJ
75150	Carbon Disulfide	5/20/94	1	BQL	5	
75354	1,1-Dichloroethene	5/20/94	1	BQL	5	
75343	1,1-Dichloroethane	5/20/94	1	BQL	5	
540590	1,2-Dichloroethene (total)	5/20/94	1	BQL	5	
67663	Chloroform	5/20/94	1	BQL	5	
107062	1,2-Dichloroethane	5/20/94	1	BQL	5	
78933	2-Butanone	5/20/94	1	100	100	
71556	1,1,1-Trichloroethane	5/20/94	1	BQL	5	
56235	Carbon Tetrachloride	5/20/94	1	BQL	5	
108054	Vinyl Acetate	5/20/94	1	BQL	50	
75274	Bromodichloromethane	5/20/94	1	BQL	5	
78875	1,2-Dichloropropane	5/20/94	1	BQL	5	
10061015	cis-1,3-Dichloropropene	5/20/94	1	BQL	5	
79016	Trichloroethene	5/20/94	1	BQL	5	
124481	Dibromochloromethane	5/20/94	1	BQL	5	
79005	1,1,2-Trichloroethane	5/20/94	1	BQL	5	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: 3213618				Client Sample No.: 1661B-212		
CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/L	PQL ug/L	Note
71432	Benzene	5/20/94	1	BQL	5	
10061026	Trans-1,3-Dichloropropene	5/20/94	1	BQL	5	
75252	Bromoform	5/20/94	1	BQL	5	
108101	4-Methyl-2-pentanone	5/20/94	1	BQL	50	
591786	2-Hexanone	5/20/94	1	BQL	50	
127184	Tetrachloroethene	5/20/94	1	BQL	5	
79345	1,1,2,2-Tetrachloroethane	5/20/94	1	BQL	5	
108883	Toluene	5/20/94	1	BQL	5	
108907	Chlorobenzene	5/20/94	1	BQL	5	
100414	Ethylbenzene	5/20/94	1	BQL	5	
100425	Styrene	5/20/94	1	BQL	5	
1330207	Xylene (total)	5/20/94	1	BQL	5	
110758	2-Chloroethyl vinyl ether	5/20/94	1	BQL	10	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213618 *Client Sample No.:* 1661B-212

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/20/94	50	100	88-110	
Bromofluorobenzene	5/20/94	50	97	86-115	
1,2-Dichloroethane-d4	5/20/94	50	99	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency. Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Organic Analytical Results
SW-846 Method 8240

Client:	Nuclear Fuel Services, Inc.	Client Sample No.:	1661B-242
Lab Sample ID:	3213691	Client Reference No.:	LEFPC
Matrix:	Water	Date Received:	5/17/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/L	PQL ug/L	Note
74873	Chloromethane	5/20/94	1	BQL	10	
74839	Bromomethane	5/20/94	1	BQL	10	
75014	Vinyl Chloride	5/20/94	1	BQL	10	
75003	Chloroethane	5/20/94	1	BQL	10	
75092	Methylene Chloride	5/20/94	1	17	5	B
67641	Acetone	5/20/94	1	BQL	100	
75150	Carbon Disulfide	5/20/94	1	BQL	5	
75354	1,1-Dichloroethene	5/20/94	1	BQL	5	
75343	1,1-Dichloroethane	5/20/94	1	BQL	5	
540590	1,2-Dichloroethene (total)	5/20/94	1	BQL	5	
67663	Chloroform	5/20/94	1	BQL	5	
107062	1,2-Dichloroethane	5/20/94	1	BQL	5	
78933	2-Butanone	5/20/94	1	BQL	100	
71556	1,1,1-Trichloroethane	5/20/94	1	BQL	5	
56235	Carbon Tetrachloride	5/20/94	1	BQL	5	
108054	Vinyl Acetate	5/20/94	1	BQL	50	
75274	Bromodichloromethane	5/20/94	1	BQL	5	
78875	1,2-Dichloropropane	5/20/94	1	BQL	5	
10061015	cis-1,3-Dichloropropene	5/20/94	1	BQL	5	
79016	Trichloroethene	5/20/94	1	BQL	5	
124481	Dibromochloromethane	5/20/94	1	BQL	5	
79005	1,1,2-Trichloroethane	5/20/94	1	BQL	5	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: 3213691				Client Sample No.: 1661B-242		
CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/L	PQL ug/L	Note
71432	Benzene	5/20/94	1	BQL	5	
10061026	Trans-1,3-Dichloropropene	5/20/94	1	BQL	5	
75252	Bromoform	5/20/94	1	BQL	5	
108101	4-Methyl-2-pentanone	5/20/94	1	BQL	50	
591786	2-Hexanone	5/20/94	1	BQL	50	
127184	Tetrachloroethene	5/20/94	1	BQL	5	
79345	1,1,2,2-Tetrachloroethane	5/20/94	1	BQL	5	
108883	Toluene	5/20/94	1	BQL	5	
108907	Chlorobenzene	5/20/94	1	BQL	5	
100414	Ethylbenzene	5/20/94	1	BQL	5	
100425	Styrene	5/20/94	1	BQL	5	
1330207	Xylene (total)	5/20/94	1	BQL	5	
110758	2-Chloroethyl vinyl ether	5/20/94	1	BQL	10	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213691 *Client Sample No.:* 1661B-242

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/20/94	50	99	88-110	
Bromofluorobenzene	5/20/94	50	97	86-115	
1,2-Dichloroethane-d4	5/20/94	50	98	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency. Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Organic Analytical Results
SW-846 Method 8240

Client:	Nuclear Fuel Services, Inc.	Client Sample No.:	1661B-243
Lab Sample ID:	3213692	Client Reference No.:	LEFPC
Matrix:	Water	Date Received:	5/17/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/L	PQL ug/L	Note
74873	Chloromethane	5/20/94	1	BQL	10	
74839	Bromomethane	5/20/94	1	BQL	10	
75014	Vinyl Chloride	5/20/94	1	BQL	10	
75003	Chloroethane	5/20/94	1	BQL	10	
75092	Methylene Chloride	5/20/94	1	33	5	B
67641	Acetone	5/20/94	1	BQL	100	
75150	Carbon Disulfide	5/20/94	1	BQL	5	
75354	1,1-Dichloroethene	5/20/94	1	BQL	5	
75343	1,1-Dichloroethane	5/20/94	1	BQL	5	
540590	1,2-Dichloroethene (total)	5/20/94	1	BQL	5	
67663	Chloroform	5/20/94	1	BQL	5	
107062	1,2-Dichloroethane	5/20/94	1	BQL	5	
78933	2-Butanone	5/20/94	1	BQL	100	
71556	1,1,1-Trichloroethane	5/20/94	1	BQL	5	
56235	Carbon Tetrachloride	5/20/94	1	BQL	5	
108054	Vinyl Acetate	5/20/94	1	BQL	50	
75274	Bromodichloromethane	5/20/94	1	BQL	5	
78875	1,2-Dichloropropane	5/20/94	1	BQL	5	
10061015	cis-1,3-Dichloropropene	5/20/94	1	BQL	5	
79016	Trichloroethene	5/20/94	1	BQL	5	
124481	Dibromochloromethane	5/20/94	1	BQL	5	
79005	1,1,2-Trichloroethane	5/20/94	1	BQL	5	

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Lab Sample ID: 3213692				Client Sample No.: 1661B-243		
CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/L	PQL ug/L	Note
71432	Benzene	5/20/94	1	BQL	5	
10061026	Trans-1,3-Dichloropropene	5/20/94	1	BQL	5	
75252	Bromoform	5/20/94	1	BQL	5	
108101	4-Methyl-2-pentanone	5/20/94	1	BQL	50	
591786	2-Hexanone	5/20/94	1	BQL	50	
127184	Tetrachloroethene	5/20/94	1	BQL	5	
79345	1,1,2,2-Tetrachloroethane	5/20/94	1	BQL	5	
108883	Toluene	5/20/94	1	BQL	5	
108907	Chlorobenzene	5/20/94	1	BQL	5	
100414	Ethylbenzene	5/20/94	1	BQL	5	
100425	Styrene	5/20/94	1	BQL	5	
1330207	Xylene (total)	5/20/94	1	BQL	5	
110758	2-Chloroethyl vinyl ether	5/20/94	1	BQL	10	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213692 *Client Sample No.:* 1661B-243

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/20/94	50	100	88-110	
Bromofluorobenzene	5/20/94	50	96	86-115	
1,2-Dichloroethane-d4	5/20/94	50	99	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Organic Analytical Results
SW-846 Method 8240

Client:	Nuclear Fuel Services, Inc.	Client Sample No.:	1661B-220
Lab Sample ID:	3213693	Client Reference No.:	LEFPC
Matrix:	Soil	Date Received:	5/17/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
74873	Chloromethane	5/27/94	5	BQL	80	
74839	Bromomethane	5/27/94	5	BQL	80	
75014	Vinyl Chloride	5/27/94	5	BQL	80	
75003	Chloroethane	5/27/94	5	BQL	80	
75092	Methylene Chloride	5/27/94	5	71	40	J
67641	Acetone	5/27/94	5	320	800	J
75150	Carbon Disulfide	5/27/94	5	BQL	40	
75354	1,1-Dichloroethene	5/27/94	5	BQL	40	
75343	1,1-Dichloroethane	5/27/94	5	BQL	40	
540590	1,2-Dichloroethene (total)	5/27/94	5	BQL	40	
67663	Chloroform	5/27/94	5	BQL	40	
107062	1,2-Dichloroethane	5/27/94	5	BQL	40	
78933	2-Butanone	5/27/94	5	240	800	J
71556	1,1,1-Trichloroethane	5/27/94	5	BQL	40	
56235	Carbon Tetrachloride	5/27/94	5	BQL	40	
108054	Vinyl Acetate	5/27/94	5	BQL	400	
75274	Bromodichloromethane	5/27/94	5	BQL	40	
78875	1,2-Dichloropropane	5/27/94	5	BQL	40	
10061015	cis-1,3-Dichloropropene	5/27/94	5	BQL	40	
79016	Trichloroethene	5/27/94	5	BQL	40	
124481	Dibromochloromethane	5/27/94	5	BQL	40	
79005	1,1,2-Trichloroethane	5/27/94	5	BQL	40	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: 3213693				Client Sample No.: 1661B-220		
CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
71432	Benzene	5/27/94	5	42	40	J
10061026	Trans-1,3-Dichloropropene	5/27/94	5	BQL	40	
75252	Bromoform	5/27/94	5	BQL	40	
108101	4-Methyl-2-pentanone	5/27/94	5	BQL	400	
591786	2-Hexanone	5/27/94	5	BQL	400	
127184	Tetrachloroethene	5/27/94	5	BQL	40	
79345	1,1,2,2-Tetrachloroethane	5/27/94	5	BQL	40	
108883	Toluene	5/27/94	5	85	40	J
108907	Chlorobenzene	5/27/94	5	BQL	40	
100414	Ethylbenzene	5/27/94	5	19	40	J
100425	Styrene	5/27/94	5	BQL	40	
1330207	Xylene (total)	5/27/94	5	69	40	J
110758	2-Chloroethyl vinyl ether	5/27/94	5	BQL	80	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213693 *Client Sample No.:* 1661B-220

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/27/94	50	97	81-117	
Bromofluorobenzene	5/27/94	50	99	74-121	
1,2-Dichloroethane-d4	5/27/94	50	112	70-121	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency. Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Organic Analytical Results
SW-846 Method 8240

Client:	Nuclear Fuel Services, Inc.	Client Sample No.:	1661B-227/228
Lab Sample ID:	32136103	Client Reference No.:	LEFPC
Matrix:	Water	Date Received:	5/17/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/L	PQL ug/L	Note
74873	Chloromethane	5/20/94	1	BQL	10	
74839	Bromomethane	5/20/94	1	BQL	10	
75014	Vinyl Chloride	5/20/94	1	BQL	10	
75003	Chloroethane	5/20/94	1	BQL	10	
75092	Methylene Chloride	5/20/94	1	33	5	B
67641	Acetone	5/26/94	1000	72000	100000	J
75150	Carbon Disulfide	5/20/94	1	BQL	5	
75354	1,1-Dichloroethene	5/20/94	1	BQL	5	
75343	1,1-Dichloroethane	5/20/94	1	BQL	5	
540590	1,2-Dichloroethene (total)	5/20/94	1	BQL	5	
67663	Chloroform	5/20/94	1	BQL	5	
107062	1,2-Dichloroethane	5/20/94	1	BQL	5	
78933	2-Butanone	5/26/94	500	22000	50000	J
71556	1,1,1-Trichloroethane	5/20/94	1	BQL	5	
56235	Carbon Tetrachloride	5/20/94	1	BQL	5	
108054	Vinyl Acetate	5/20/94	1	BQL	50	
75274	Bromodichloromethane	5/20/94	1	BQL	5	
78875	1,2-Dichloropropane	5/20/94	1	BQL	5	
10061015	cis-1,3-Dichloropropene	5/20/94	1	BQL	5	
79016	Trichloroethene	5/20/94	1	BQL	5	
124481	Dibromochloromethane	5/20/94	1	BQL	5	
79005	1,1,2-Trichloroethane	5/20/94	1	BQL	5	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: 32136103				Client Sample No.: 1661B-227/228		
CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/L	PQL ug/L	Note
71432	Benzene	5/20/94	1	120	5	
10061026	Trans-1,3-Dichloropropene	5/20/94	1	BQL	5	
75252	Bromoform	5/20/94	1	BQL	5	
108101	4-Methyl-2-pentanone	5/20/94	1	260	50	J
591786	2-Hexanone	5/20/94	1	290	50	J
127184	Tetrachloroethene	5/20/94	1	BQL	5	
79345	1,1,2,2-Tetrachloroethane	5/20/94	1	BQL	5	
108883	Toluene	5/20/94	1	110	5	
108907	Chlorobenzene	5/20/94	1	BQL	5	
100414	Ethylbenzene	5/20/94	1	13	5	
100425	Styrene	5/20/94	1	32	5	
1330207	Xylene (total)	5/20/94	1	44	5	
110758	2-Chloroethyl vinyl ether	5/20/94	1	BQL	10	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 32136103 **Client Sample No.:** 1661B-227/228

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/20/94	50	98	88-110	
Bromofluorobenzene	5/20/94	50	97	86-115	
1,2-Dichloroethane-d4	5/20/94	50	99	76-114	
Toluene-d8	5/20/94	50	100	88-110	
Bromofluorobenzene	5/20/94	50	103	86-115	
1,2-Dichloroethane-d4	5/20/94	50	97	76-114	
Toluene-d8	5/26/94	50	100	88-110	
Bromofluorobenzene	5/26/94	50	97	86-115	
1,2-Dichloroethane-d4	5/26/94	50	103	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Organic Analytical Results
SW-846 Method 8240

Client:	Nuclear Fuel Services, Inc.	Client Sample No.:	1661B-230/231
Lab Sample ID:	32136105	Client Reference No.:	LEFPC
Matrix:	Water	Date Received:	5/17/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/L	PQL ug/L	Note
74873	Chloromethane	5/20/94	500	BQL	5000	
74839	Bromomethane	5/20/94	500	BQL	5000	
75014	Vinyl Chloride	5/20/94	500	BQL	5000	
75003	Chloroethane	5/20/94	500	BQL	5000	
75092	Methylene Chloride	5/20/94	500	18000	2500	B
67641	Acetone	5/20/94	1000	36000	100000	J
75150	Carbon Disulfide	5/20/94	500	BQL	2500	
75354	1,1-Dichloroethene	5/20/94	500	BQL	2500	
75343	1,1-Dichloroethane	5/20/94	500	BQL	2500	
540590	1,2-Dichloroethene (total)	5/20/94	500	BQL	2500	
67663	Chloroform	5/20/94	500	17000	2500	
107062	1,2-Dichloroethane	5/20/94	500	BQL	2500	
78933	2-Butanone	5/20/94	500	260000	50000	J
71556	1,1,1-Trichloroethane	5/20/94	500	BQL	2500	
56235	Carbon Tetrachloride	5/20/94	500	BQL	2500	
108054	Vinyl Acetate	5/20/94	500	BQL	25000	
75274	Bromodichloromethane	5/20/94	500	BQL	2500	
78875	1,2-Dichloropropane	5/20/94	500	BQL	2500	
10061015	cis-1,3-Dichloropropene	5/20/94	500	BQL	2500	
79016	Trichloroethene	5/20/94	500	BQL	2500	
124481	Dibromochloromethane	5/20/94	500	BQL	2500	
79005	1,1,2-Trichloroethane	5/20/94	500	BQL	2500	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: 32136105				Client Sample No.: 1661B-230/231		
CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/L	PQL ug/L	Note
71432	Benzene	5/20/94	500	BQL	2500	
10061026	Trans-1,3-Dichloropropene	5/20/94	500	BQL	2500	
75252	Bromoform	5/20/94	500	BQL	2500	
108101	4-Methyl-2-pentanone	5/20/94	500	BQL	25000	
591786	2-Hexanone	5/20/94	500	BQL	25000	
127184	Tetrachloroethene	5/20/94	500	BQL	2500	
79345	1,1,2,2-Tetrachloroethane	5/20/94	500	BQL	2500	
108883	Toluene	5/20/94	500	BQL	2500	
108907	Chlorobenzene	5/20/94	500	BQL	2500	
100414	Ethylbenzene	5/20/94	500	BQL	2500	
100425	Styrene	5/20/94	500	BQL	2500	
1330207	Xylene (total)	5/20/94	500	BQL	2500	
110758	2-Chloroethyl vinyl ether	5/20/94	500	BQL	5000	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 32136105 **Client Sample No.:** 1661B-230/231

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/20/94	50	102	88-110	
Bromofluorobenzene	5/20/94	50	102	86-115	
1,2-Dichloroethane-d4	5/20/94	50	96	76-114	
Toluene-d8	5/20/94	50	96	88-110	
Bromofluorobenzene	5/20/94	50	97	86-115	
1,2-Dichloroethane-d4	5/20/94	50	96	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Organic Analytical Results
SW-846 Method 8240

Client:	Nuclear Fuel Services, Inc.	Client Sample No.:	Method Blank
Lab Sample ID:	VBLKWE	Client Reference No.:	LEFPC
Matrix:	Water	Date Received:	NA

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/L	PQL ug/L	Note
74873	Chloromethane	5/20/94	1	BQL	10	
74839	Bromomethane	5/20/94	1	BQL	10	
75014	Vinyl Chloride	5/20/94	1	BQL	10	
75003	Chloroethane	5/20/94	1	BQL	10	
75092	Methylene Chloride	5/20/94	1	23	5	
67641	Acetone	5/20/94	1	13	100	J
75150	Carbon Disulfide	5/20/94	1	BQL	5	
75354	1,1-Dichloroethene	5/20/94	1	BQL	5	
75343	1,1-Dichloroethane	5/20/94	1	BQL	5	
540590	1,2-Dichloroethene (total)	5/20/94	1	BQL	5	
67663	Chloroform	5/20/94	1	BQL	5	
107062	1,2-Dichloroethane	5/20/94	1	BQL	5	
78933	2-Butanone	5/20/94	1	BQL	100	
71556	1,1,1-Trichloroethane	5/20/94	1	BQL	5	
56235	Carbon Tetrachloride	5/20/94	1	BQL	5	
108054	Vinyl Acetate	5/20/94	1	BQL	50	
75274	Bromodichloromethane	5/20/94	1	BQL	5	
78875	1,2-Dichloropropane	5/20/94	1	BQL	5	
10061015	cis-1,3-Dichloropropene	5/20/94	1	BQL	5	
79016	Trichloroethene	5/20/94	1	BQL	5	
124481	Dibromochloromethane	5/20/94	1	BQL	5	
79005	1,1,2-Trichloroethane	5/20/94	1	BQL	5	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: VBLKWE				Client Sample No.: Method Blank		
CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/L	PQL ug/L	Note
71432	Benzene	5/20/94	1	BQL	5	
10061026	Trans-1,3-Dichloropropene	5/20/94	1	BQL	5	
75252	Bromoform	5/20/94	1	BQL	5	
108101	4-Methyl-2-pentanone	5/20/94	1	BQL	50	
591786	2-Hexanone	5/20/94	1	BQL	50	
127184	Tetrachloroethene	5/20/94	1	BQL	5	
79345	1,1,2,2-Tetrachloroethane	5/20/94	1	BQL	5	
108883	Toluene	5/20/94	1	BQL	5	
108907	Chlorobenzene	5/20/94	1	BQL	5	
100414	Ethylbenzene	5/20/94	1	BQL	5	
100425	Styrene	5/20/94	1	BQL	5	
1330207	Xylene (total)	5/20/94	1	BQL	5	
110758	2-Chloroethyl vinyl ether	5/20/94	1	BQL	10	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: VBLKWE *Client Sample No.:* Method Blank

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/20/94	50	99	88-110	
Bromofluorobenzene	5/20/94	50	98	86-115	
1,2-Dichloroethane-d4	5/20/94	50	94	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Organic Analytical Results
SW-846 Method 8240

Client:	Nuclear Fuel Services, Inc.	Client Sample No.:	Method Blank
Lab Sample ID:	VBLK09	Client Reference No.:	LEFPC
Matrix:	Soil	Date Received:	NA

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
74873	Chloromethane	5/23/94	1	BQL	10	
74839	Bromomethane	5/23/94	1	BQL	10	
75014	Vinyl Chloride	5/23/94	1	BQL	10	
75003	Chloroethane	5/23/94	1	BQL	10	
75092	Methylene Chloride	5/23/94	1	5	5	
67641	Acetone	5/23/94	1	14	100	J
75150	Carbon Disulfide	5/23/94	1	BQL	5	
75354	1,1-Dichloroethene	5/23/94	1	BQL	5	
75343	1,1-Dichloroethane	5/23/94	1	BQL	5	
540590	1,2-Dichloroethene (total)	5/23/94	1	BQL	5	
67663	Chloroform	5/23/94	1	BQL	5	
107062	1,2-Dichloroethane	5/23/94	1	BQL	5	
78933	2-Butanone	5/23/94	1	BQL	100	
71556	1,1,1-Trichloroethane	5/23/94	1	BQL	5	
56235	Carbon Tetrachloride	5/23/94	1	BQL	5	
108054	Vinyl Acetate	5/23/94	1	BQL	50	
75274	Bromodichloromethane	5/23/94	1	BQL	5	
78875	1,2-Dichloropropane	5/23/94	1	BQL	5	
10061015	cis-1,3-Dichloropropene	5/23/94	1	BQL	5	
79016	Trichloroethene	5/23/94	1	BQL	5	
124481	Dibromochloromethane	5/23/94	1	BQL	5	
79005	1,1,2-Trichloroethane	5/23/94	1	BQL	5	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: VBLK09				Client Sample No.: Method Blank		
CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
71432	Benzene	5/23/94	1	BQL	5	
10061026	Trans-1,3-Dichloropropene	5/23/94	1	BQL	5	
75252	Bromoform	5/23/94	1	BQL	5	
108101	4-Methyl-2-pentanone	5/23/94	1	BQL	50	
591786	2-Hexanone	5/23/94	1	BQL	50	
127184	Tetrachloroethene	5/23/94	1	BQL	5	
79345	1,1,2,2-Tetrachloroethane	5/23/94	1	BQL	5	
108883	Toluene	5/23/94	1	BQL	5	
108907	Chlorobenzene	5/23/94	1	BQL	5	
100414	Ethylbenzene	5/23/94	1	BQL	5	
100425	Styrene	5/23/94	1	BQL	5	
1330207	Xylene (total)	5/23/94	1	BQL	5	
110758	2-Chloroethyl vinyl ether	5/23/94	1	BQL	10	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: VBLK09 **Client Sample No.:** Method Blank

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/23/94	50	98	81-117	
Bromofluorobenzene	5/23/94	50	98	74-121	
1,2-Dichloroethane-d4	5/23/94	50	98	70-121	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Organic Analytical Results
SW-846 Method 8240

Client:	Nuclear Fuel Services, Inc.	Client Sample No.:	Method Blank
Lab Sample ID:	VBLK11	Client Reference No.:	LEFPC
Matrix:	Water	Date Received:	NA

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/L	PQL ug/L	Note
74873	Chloromethane	5/25/94	1	BQL	500	
74839	Bromomethane	5/25/94	1	BQL	500	
75014	Vinyl Chloride	5/25/94	1	BQL	500	
75003	Chloroethane	5/25/94	1	BQL	500	
75092	Methylene Chloride	5/25/94	1	680	250	
67641	Acetone	5/25/94	1	1700	5000	J
75150	Carbon Disulfide	5/25/94	1	BQL	250	
75354	1,1-Dichloroethene	5/25/94	1	BQL	250	
75343	1,1-Dichloroethane	5/25/94	1	BQL	250	
540590	1,2-Dichloroethene (total)	5/25/94	1	BQL	250	
67663	Chloroform	5/25/94	1	BQL	250	
107062	1,2-Dichloroethane	5/25/94	1	BQL	250	
78933	2-Butanone	5/25/94	1	BQL	5000	
71556	1,1,1-Trichloroethane	5/25/94	1	BQL	250	
56235	Carbon Tetrachloride	5/25/94	1	BQL	250	
108054	Vinyl Acetate	5/25/94	1	BQL	2500	
75274	Bromodichloromethane	5/25/94	1	BQL	250	
78875	1,2-Dichloropropane	5/25/94	1	BQL	250	
10061015	cis-1,3-Dichloropropene	5/25/94	1	BQL	250	
79016	Trichloroethene	5/25/94	1	BQL	250	
124481	Dibromochloromethane	5/25/94	1	BQL	250	
79005	1,1,2-Trichloroethane	5/25/94	1	BQL	250	

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Lab Sample ID: VBLK11				Client Sample No.: Method Blank		
CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/L	PQL ug/L	Note
71432	Benzene	5/25/94	1	BQL	250	
10061026	Trans-1,3-Dichloropropene	5/25/94	1	BQL	250	
75252	Bromoform	5/25/94	1	BQL	250	
108101	4-Methyl-2-pentanone	5/25/94	1	BQL	2500	
591786	2-Hexanone	5/25/94	1	BQL	2500	
127184	Tetrachloroethene	5/25/94	1	BQL	250	
79345	1,1,2,2-Tetrachloroethane	5/25/94	1	BQL	250	
108883	Toluene	5/25/94	1	BQL	250	
108907	Chlorobenzene	5/25/94	1	BQL	250	
100414	Ethylbenzene	5/25/94	1	BQL	250	
100425	Styrene	5/25/94	1	BQL	250	
1330207	Xylene (total)	5/25/94	1	BQL	250	
110758	2-Chloroethyl vinyl ether	5/25/94	1	BQL	500	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: VBLK11 *Client Sample No.:* Method Blank

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/25/94	50	98	88-110	
Bromofluorobenzene	5/25/94	50	97	86-115	
1,2-Dichloroethane-d4	5/25/94	50	95	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency. Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Organic Analytical Results
SW-846 Method 8240

Client:	Nuclear Fuel Services, Inc.	Client Sample No.:	Method Blank
Lab Sample ID:	VBLKSA	Client Reference No.:	LEFPC
Matrix:	Soil	Date Received:	NA

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
74873	Chloromethane	5/26/94	1	BQL	10	
74839	Bromomethane	5/26/94	1	BQL	10	
75014	Vinyl Chloride	5/26/94	1	BQL	10	
75003	Chloroethane	5/26/94	1	BQL	10	
75092	Methylene Chloride	5/26/94	1	8	5	
67641	Acetone	5/26/94	1	BQL	100	
75150	Carbon Disulfide	5/26/94	1	BQL	5	
75354	1,1-Dichloroethene	5/26/94	1	BQL	5	
75343	1,1-Dichloroethane	5/26/94	1	BQL	5	
540590	1,2-Dichloroethene (total)	5/26/94	1	BQL	5	
67663	Chloroform	5/26/94	1	BQL	5	
107062	1,2-Dichloroethane	5/26/94	1	BQL	5	
78933	2-Butanone	5/26/94	1	BQL	100	
71556	1,1,1-Trichloroethane	5/26/94	1	BQL	5	
56235	Carbon Tetrachloride	5/26/94	1	BQL	5	
108054	Vinyl Acetate	5/26/94	1	BQL	50	
75274	Bromodichloromethane	5/26/94	1	BQL	5	
78875	1,2-Dichloropropane	5/26/94	1	BQL	5	
10061015	cis-1,3-Dichloropropene	5/26/94	1	BQL	5	
79016	Trichloroethene	5/26/94	1	BQL	5	
124481	Dibromochloromethane	5/26/94	1	BQL	5	
79005	1,1,2-Trichloroethane	5/26/94	1	BQL	5	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: VBLKSA				Client Sample No.: Method Blank		
CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
71432	Benzene	5/26/94	1	BQL	5	
10061026	Trans-1,3-Dichloropropene	5/26/94	1	BQL	5	
75252	Bromoform	5/26/94	1	BQL	5	
108101	4-Methyl-2-pentanone	5/26/94	1	BQL	50	
591786	2-Hexanone	5/26/94	1	BQL	50	
127184	Tetrachloroethene	5/26/94	1	BQL	5	
79345	1,1,2,2-Tetrachloroethane	5/26/94	1	BQL	5	
108883	Toluene	5/26/94	1	BQL	5	
108907	Chlorobenzene	5/26/94	1	BQL	5	
100414	Ethylbenzene	5/26/94	1	BQL	5	
100425	Styrene	5/26/94	1	BQL	5	
1330207	Xylene (total)	5/26/94	1	BQL	5	
110758	2-Chloroethyl vinyl ether	5/26/94	1	BQL	10	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: VBLKSA *Client Sample No.:* Method Blank

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/26/94	50	99	81-117	
Bromofluorobenzene	5/26/94	50	98	74-121	
1,2-Dichloroethane-d4	5/26/94	50	104	70-121	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Organic Analytical Results
SW-846 Method 8240

Client:	Nuclear Fuel Services, Inc.	Client Sample No.:	Method Blank
Lab Sample ID:	VBLKMA	Client Reference No.:	LEFPC
Matrix:	Soil	Date Received:	NA

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
74873	Chloromethane	5/26/94	1	BQL	500	
74839	Bromomethane	5/26/94	1	BQL	500	
75014	Vinyl Chloride	5/26/94	1	BQL	500	
75003	Chloroethane	5/26/94	1	BQL	500	
75092	Methylene Chloride	5/26/94	1	510	250	
67641	Acetone	5/26/94	1	BQL	5000	
75150	Carbon Disulfide	5/26/94	1	BQL	250	
75354	1,1-Dichloroethene	5/26/94	1	BQL	250	
75343	1,1-Dichloroethane	5/26/94	1	BQL	250	
540590	1,2-Dichloroethene (total)	5/26/94	1	BQL	250	
67663	Chloroform	5/26/94	1	BQL	250	
107062	1,2-Dichloroethane	5/26/94	1	BQL	250	
78933	2-Butanone	5/26/94	1	BQL	5000	
71556	1,1,1-Trichloroethane	5/26/94	1	BQL	250	
56235	Carbon Tetrachloride	5/26/94	1	BQL	250	
108054	Vinyl Acetate	5/26/94	1	BQL	2500	
75274	Bromodichloromethane	5/26/94	1	BQL	250	
78875	1,2-Dichloropropane	5/26/94	1	BQL	250	
10061015	cis-1,3-Dichloropropene	5/26/94	1	BQL	250	
79016	Trichloroethene	5/26/94	1	BQL	250	
124481	Dibromochloromethane	5/26/94	1	BQL	250	
79005	1,1,2-Trichloroethane	5/26/94	1	BQL	250	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: VBLKMA				Client Sample No.: Method Blank		
CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
71432	Benzene	5/26/94	1	BQL	250	
10061026	Trans-1,3-Dichloropropene	5/26/94	1	BQL	250	
75252	Bromoform	5/26/94	1	BQL	250	
108101	4-Methyl-2-pentanone	5/26/94	1	BQL	2500	
591786	2-Hexanone	5/26/94	1	BQL	2500	
127184	Tetrachloroethene	5/26/94	1	BQL	250	
79345	1,1,2,2-Tetrachloroethane	5/26/94	1	BQL	250	
108883	Toluene	5/26/94	1	BQL	250	
108907	Chlorobenzene	5/26/94	1	BQL	250	
100414	Ethylbenzene	5/26/94	1	BQL	250	
100425	Styrene	5/26/94	1	BQL	250	
1330207	Xylene (total)	5/26/94	1	BQL	250	
110758	2-Chloroethyl vinyl ether	5/26/94	1	BQL	500	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: VBLKMA **Client Sample No.:** Method Blank

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/26/94	50	100	81-117	
Bromofluorobenzene	5/26/94	50	99	74-121	
1,2-Dichloroethane-d4	5/26/94	50	101	70-121	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Organic Analytical Results
SW-846 Method 8240

Client:	Nuclear Fuel Services, Inc.	Client Sample No.:	Method Blank
Lab Sample ID:	VBLKSB	Client Reference No.:	LEFPC
Matrix:	Soil	Date Received:	NA

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
74873	Chloromethane	5/27/94	1	BQL	10	
74839	Bromomethane	5/27/94	1	BQL	10	
75014	Vinyl Chloride	5/27/94	1	BQL	10	
75003	Chloroethane	5/27/94	1	BQL	10	
75092	Methylene Chloride	5/27/94	1	BQL	5	
67641	Acetone	5/27/94	1	BQL	100	
75150	Carbon Disulfide	5/27/94	1	BQL	5	
75354	1,1-Dichloroethene	5/27/94	1	BQL	5	
75343	1,1-Dichloroethane	5/27/94	1	BQL	5	
540590	1,2-Dichloroethene (total)	5/27/94	1	BQL	5	
67663	Chloroform	5/27/94	1	BQL	5	
107062	1,2-Dichloroethane	5/27/94	1	BQL	5	
78933	2-Butanone	5/27/94	1	BQL	100	
71556	1,1,1-Trichloroethane	5/27/94	1	BQL	5	
56235	Carbon Tetrachloride	5/27/94	1	BQL	5	
108054	Vinyl Acetate	5/27/94	1	BQL	50	
75274	Bromodichloromethane	5/27/94	1	BQL	5	
78875	1,2-Dichloropropane	5/27/94	1	BQL	5	
10061015	cis-1,3-Dichloropropene	5/27/94	1	BQL	5	
79016	Trichloroethene	5/27/94	1	BQL	5	
124481	Dibromochloromethane	5/27/94	1	BQL	5	
79005	1,1,2-Trichloroethane	5/27/94	1	BQL	5	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: VBLKSB				Client Sample No.: Method Blank		
CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
71432	Benzene	5/27/94	1	BQL	5	
10061026	Trans-1,3-Dichloropropene	5/27/94	1	BQL	5	
75252	Bromoform	5/27/94	1	BQL	5	
108101	4-Methyl-2-pentanone	5/27/94	1	BQL	50	
591786	2-Hexanone	5/27/94	1	BQL	50	
127184	Tetrachloroethene	5/27/94	1	BQL	5	
79345	1,1,2,2-Tetrachloroethane	5/27/94	1	BQL	5	
108883	Toluene	5/27/94	1	BQL	5	
108907	Chlorobenzene	5/27/94	1	BQL	5	
100414	Ethylbenzene	5/27/94	1	BQL	5	
100425	Styrene	5/27/94	1	BQL	5	
1330207	Xylene (total)	5/27/94	1	BQL	5	
110758	2-Chloroethyl vinyl ether	5/27/94	1	BQL	10	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: VBLKSB *Client Sample No.:* Method Blank

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/27/94	50	90	81-117	
Bromofluorobenzene	5/27/94	50	101	74-121	
1,2-Dichloroethane-d4	5/27/94	50	106	70-121	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency. Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Organic Analytical Results
SW-846 Method 8240

Client:	Nuclear Fuel Services, Inc.	Client Sample No.:	Method Blank
Lab Sample ID:	VBLKSR	Client Reference No.:	LEFPC
Matrix:	Soil	Date Received:	NA

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
74873	Chloromethane	5/30/94	1	BQL	10	
74839	Bromomethane	6/30/94	1	BQL	10	
75014	Vinyl Chloride	6/30/94	1	BQL	10	
75003	Chloroethane	6/30/94	1	BQL	10	
75092	Methylene Chloride	6/30/94	1	7	5	
67641	Acetone	6/30/94	1	BQL	100	
75150	Carbon Disulfide	6/30/94	1	BQL	5	
75354	1,1-Dichloroethene	6/30/94	1	BQL	5	
75343	1,1-Dichloroethane	6/30/94	1	BQL	5	
540590	1,2-Dichloroethene (total)	6/30/94	1	BQL	5	
67663	Chloroform	6/30/94	1	BQL	5	
107062	1,2-Dichloroethane	6/30/94	1	BQL	5	
78933	2-Butanone	6/30/94	1	BQL	100	
71556	1,1,1-Trichloroethane	6/30/94	1	BQL	5	
56235	Carbon Tetrachloride	6/30/94	1	BQL	5	
108054	Vinyl Acetate	6/30/94	1	BQL	50	
75274	Bromodichloromethane	6/30/94	1	BQL	5	
78875	1,2-Dichloropropane	6/30/94	1	BQL	5	
10061015	cis-1,3-Dichloropropene	6/30/94	1	BQL	5	
79016	Trichloroethene	6/30/94	1	BQL	5	
124481	Dibromochloromethane	6/30/94	1	BQL	5	
79005	1,1,2-Trichloroethane	6/30/94	1	BQL	5	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: VBLKSR				Client Sample No.: Method Blank		
CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/Kg	PQL ug/Kg	Note
71432	Benzene	6/30/94	1	4	5	
10061026	Trans-1,3-Dichloropropene	6/30/94	1	BQL	5	
75252	Bromoform	6/30/94	1	BQL	5	
108101	4-Methyl-2-pentanone	6/30/94	1	BQL	50	
591786	2-Hexanone	6/30/94	1	BQL	50	
127184	Tetrachloroethene	6/30/94	1	BQL	5	
79345	1,1,2,2-Tetrachloroethane	6/30/94	1	BQL	5	
108883	Toluene	6/30/94	1	BQL	5	
108907	Chlorobenzene	6/30/94	1	BQL	5	
100414	Ethylbenzene	6/30/94	1	BQL	5	
100425	Styrene	6/30/94	1	BQL	5	
1330207	Xylene (total)	6/30/94	1	BQL	5	
110758	2-Chloroethyl vinyl ether	6/30/94	1	BQL	10	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: VBLKSR *Client Sample No.:* Method Blank

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	6/30/94	50	97	81-117	
Bromofluorobenzene	6/30/94	50	96	74-121	
1,2-Dichloroethane-d4	6/30/94	50	99	70-121	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency. Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Client: Nuclear Fuel Services, Inc.

LSDG: 32136

Method: SW-846 Method 8240

Client Reference No.: LEFPC

Sample Receipt Date: NA

Date of Collection: NA

Date of Analysis: 21-May-94

BATCH SAMPLE BS/BSD ANALYTICAL RESULTS
VOLATILE

Lab Sample ID: BS/BSD
Client Sample ID: NA

Spike Compound	% Recovery QC Limits	Spike Amount ug/Kg	Spiked Sample Result ug/Kg (BS)	% Spike Recovery (BS)	Duplicate Spike Sample Result ug/Kg (BSD)	% Spike Recovery (BSD)	%RPD
1,1-Dichloroethene	>0-234	50	30	60	29	57	4
Trichloroethene	71-157	50	44	88	44	89	1
Benzene	37-151	50	50	100	53	107	6
Toluene	47-150	50	44	88	43	86	3
Chlorobenzene	37-160	50	46	92	45	90	3

QC limits based on SW-846 Method 8240 Table 6

EcoTek LSI
EcoTek Laboratory Services Incorporated

Client: Nuclear Fuel Services, Inc.

LSDG: 32136

Method: SW-846 Method 8240

Client Reference No.: LEFPC

Sample Receipt Date: 17-May-94

Date of Collection: 12-May-94

Date of Analysis: 20-May-94

BATCH SAMPLE MS/MSD ANALYTICAL RESULTS
VOLATILE

Lab Sample ID: 3213609 MS/MSD
Client Sample ID: 1661B-102

Spike Compound	% Recovery QC Limits	Spike Amount ug/L	Unspiked Sample Result ug/L	Spiked Sample Result ug/L (MS)	% Spike Recovery (MS)	Duplicate Spike Sample Result ug/L (MSD)	% Spike Recovery (MSD)	%RPD
1,1-Dichloroethene	>0-234	50	0	22	45	22	44	2
Trichloroethene	71-157	50	0	42	83	43	85	2
Benzene	37-151	50	0	57	114	59	117	3
Toluene	47-150	50	0	57	114	57	114	0
Chlorobenzene	37-160	50	0	46	93	45	91	2

QC limits based on SW-846 Method 8240 Table 6

EcoTek LSI
EcoTek Laboratory Services Incorporated

CASE NARRATIVE FOR VOLATILE ORGANIC ANALYSIS USING SW-846 METHOD 8240

CLIENT: Nuclear Fuel Services, Inc.
LSDG: 32140
PROJECT: LEFPC

Analytical Summary

Two (2) soil samples were received on May 17, 1994 for volatile organics analysis per Method 8240 protocol. Analyses were performed per request on May 21 and 23, 1994.

Procedural Summary

- Analysis - Volatile organic analyses are performed by Gas Chromatographic/Mass Spectrometric analysis on Hewlett Packard 5890/5970 GC/MSD system and Hewlett Packard 5890/5971A GC/MSD system, all configured for electron impact ionization.

  A five (5) milliliter aliquot of a low level water/liquid sample is purged in a sparging vessel prior to analysis. A five (5) gram aliquot of a low level soil/solid sample is purged in five (5) milliliters of reagent water in a sparging vessel prior to analysis. The medium soil matrix analysis involves extracting five (5) grams of sample in five (5) milliliters of methanol and injecting one hundred (100) microliters of extract into five (5) milliliters of reagent water for purging, unless otherwise noted. If dilutions are required, smaller amounts of sample or extract are purged, as needed to bring analyte concentration within the instrument's calibration range or to prevent system damage from high concentrations of non-target volatiles.

  Samples are purged via a Tekmar LSC-2/ALS and/or OI 4460A/OIC MPM-16 on to traps composed of silica gel/charcoal/Tenax. Chromatography is performed on a seventy-five (75) meter, 0.53mm DB-624 megabore capillary column, temperature programmed to achieve chromatographic resolution of target analytes. As compounds elute, they are ionized, filtered through a quadrupole mass filter and quantified to determine analyte concentrations in the sample. Detection limits or practical quantitation limits (PQL's) are expressed in the final report as the minimum value that can be detected with confidence. PQLs are factored for initial sample volume, percent moistures, and final extract volumes along with any necessary dilution.

- Scope and Limitations - This method is limited to those volatile compounds that have boiling points below 200°C and that are insoluble or slightly insoluble in water. Oily samples or samples high in hydrocarbon content are not readily amenable to this analysis. Hydrocarbons have poor desorption efficiencies; therefore, sorbent traps may become contaminated, requiring extended bakeouts and/or maintenance.

EcoTek LSI
EcoTek Laboratory Services Incorporated

CASE NARRATIVE FOR VOLATILE ORGANIC ANALYSIS USING SW-846 METHOD 8240(cont'd)

CLIENT: Nuclear Fuel Services, Inc.
LSDG: 32140
PROJECT: LEFPC

Furthermore, oils, as well as other complex matrices, often generate elevated baselines, interfering with instrument identification and quantification of target analytes. Dilutions of such samples are often required to prevent instrument damage, resulting in higher detection limits.

QA/QC

Method blanks were analyzed with the sample group and found to be free of all target analytes with the exception of methylene chloride. Methylene chloride is a common laboratory contaminant that is frequently present in volatile method blanks. When this analyte is detected in a sample, it is "B" flagged to indicate that this analyte was found in the associated blank as well as in the sample. It indicates possible/probable blank/sample contamination and warns the data user to make appropriate considerations for these factors during data evaluation.

Method QC, consisting of matrix spike and matrix spike duplicate analyses, was performed with sample of this case. Low soil QC was performed on samples 1661B-65 and 1661B-140. Precision and accuracy results for all spiked analytes were acceptable in both sets of QC.

General

The reports of the TCL compounds identified and quantified in the samples are contained in the following sections of the data package. Also included are the appropriate calibration and quality control data where applicable. Data is obtained from a HP RTE-A series computer with Aquarius software and/or Mustang II Dos-based computer with EnviroQuant software.

Low soil sample 1661B-65, initially analyzed at a 1x dilution, required diluted reanalysis at a 1.25x dilution, to bring target analyte concentrations into the instrument's linear range of calibration. Low soil sample 1661B-140 was analyzed at a 2x dilution, bringing target analyte concentrations into the instrument's linear range of calibration.

All data reported herein is compliant.

GC/MS Section Supervisor (designee)

6/29/94
Date

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Organic Analytical Results
SW-846 Method 8240

Client: Nuclear Fuel services, Inc.
Lab Sample ID: 3214001
Matrix: Soil
Level: Low

Client Sample No.: 1661B-65
Client Reference No.: LEFPC
Date Received: 17-May-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/kg	PQL ug/kg	Note
74873	Chloromethane	5/21/94	1	BQL	12	
74839	Bromomethane	5/21/94	1	BQL	12	
75014	Vinyl Chloride	5/21/94	1	BQL	12	
75003	Chloroethane	5/21/94	1	BQL	12	
75092	Methylene Chloride	5/21/94	1	14	6	B
67641	Acetone	5/23/94	1.25	110	160	J
75150	Carbon Disulfide	5/21/94	1	BQL	6	
75354	1,1-Dichloroethene	5/21/94	1	BQL	6	
75343	1,1-Dichloroethane	5/21/94	1	BQL	6	
540590	1,2-Dichloroethene (total)	5/21/94	1	BQL	6	
67663	Chloroform	5/21/94	1	BQL	6	
107062	1,2-Dichloroethane	5/21/94	1	BQL	6	
78933	2-Butanone	5/21/94	1	33	120	J
71556	1,1,1-Trichloroethane	5/21/94	1	BQL	6	
56235	Carbon Tetrachloride	5/21/94	1	BQL	6	
108054	Vinyl Acetate	5/21/94	1	BQL	62	
75274	Bromodichloromethane	5/21/94	1	BQL	6	
78875	1,2-Dichloropropane	5/21/94	1	BQL	6	
10061015	cis-1,3-Dichloropropene	5/21/94	1	BQL	6	
79016	Trichloroethene	5/21/94	1	BQL	6	
124481	Dibromochloromethane	5/21/94	1	BQL	6	
79005	1,1,2-Trichloroethane	5/21/94	1	BQL	6	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: 3214001				Client Sample No.: 1661B-65		
CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/kg	PQL ug/kg	Note
71432	Benzene	5/21/94	1	BQL	6	
10061026	Trans-1,3-Dichloropropene	5/21/94	1	BQL	6	
75252	Bromoform	5/21/94	1	BQL	6	
108101	4-Methyl-2-pentanone	5/21/94	1	BQL	62	
591786	2-Hexanone	5/21/94	1	BQL	62	
127184	Tetrachloroethene	5/21/94	1	BQL	6	
79345	1,1,2,2-Tetrachloroethane	5/21/94	1	BQL	6	
108883	Toluene	5/21/94	1	BQL	6	
108907	Chlorobenzene	5/21/94	1	BQL	6	
100414	Ethylbenzene	5/21/94	1	BQL	6	
100425	Styrene	5/21/94	1	BQL	6	
1330207	Xylene (total)	5/21/94	1	BQL	6	
110758	2-Chloroethyl vinyl ether	5/21/94	1	BQL	12	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3214001 *Client Sample No.:* 1661B-65

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/21/94	50	99	81-117	
Bromofluorobenzene	5/21/94	50	92	74-121	
1,2-Dichloroethane-d4	5/21/94	50	109	70-121	
Toluene-d8	5/23/94	50	98	81-117	
Bromofluorobenzene	5/23/94	50	93	74-121	
1,2-Dichloroethane-d4	5/23/94	50	98	70-121	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Organic Analytical Results
SW-846 Method 8240

Client: Nuclear Fuel services, Inc.
Lab Sample ID: 3214006
Matrix: Soil
Level: Low

Client Sample No.: 1661B-140
Client Reference No.: LEFPC
Date Received: 17-May-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/kg	PQL ug/kg	Note
74873	Chloromethane	5/23/94	2	BQL	25	
74839	Bromomethane	5/23/94	2	BQL	25	
75014	Vinyl Chloride	5/23/94	2	BQL	25	
75003	Chloroethane	5/23/94	2	BQL	25	
75092	Methylene Chloride	5/23/94	2	33	13	B
67641	Acetone	5/23/94	2	420	250	
75150	Carbon Disulfide	5/23/94	2	BQL	13	
75354	1,1-Dichloroethene	5/23/94	2	BQL	13	
75343	1,1-Dichloroethane	5/23/94	2	BQL	13	
540590	1,2-Dichloroethene (total)	5/23/94	2	BQL	13	
67663	Chloroform	5/23/94	2	BQL	13	
107062	1,2-Dichloroethane	5/23/94	2	BQL	13	
78933	2-Butanone	5/23/94	2	110	250	J
71556	1,1,1-Trichloroethane	5/23/94	2	BQL	13	
56235	Carbon Tetrachloride	5/23/94	2	BQL	13	
108054	Vinyl Acetate	5/23/94	2	BQL	130	
75274	Bromodichloromethane	5/23/94	2	BQL	13	
78875	1,2-Dichloropropane	5/23/94	2	BQL	13	
10061015	cis-1,3-Dichloropropene	5/23/94	2	BQL	13	
79016	Trichloroethene	5/23/94	2	BQL	13	
124481	Dibromochloromethane	5/23/94	2	BQL	13	
79005	1,1,2-Trichloroethane	5/23/94	2	BQL	13	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: 3214006				Client Sample No.: 1661B-140		
CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/kg	PQL ug/kg	Note
71432	Benzene	5/23/94	2	BQL	13	
10061026	Trans-1,3-Dichloropropene	5/23/94	2	BQL	13	
75252	Bromoform	5/23/94	2	BQL	13	
108101	4-Methyl-2-pentanone	5/23/94	2	BQL	130	
591786	2-Hexanone	5/23/94	2	BQL	130	
127184	Tetrachloroethene	5/23/94	2	BQL	13	
79345	1,1,2,2-Tetrachloroethane	5/23/94	2	BQL	13	
108883	Toluene	5/23/94	2	13	13	
108907	Chlorobenzene	5/23/94	2	BQL	13	
100414	Ethylbenzene	5/23/94	2	BQL	13	
100425	Styrene	5/23/94	2	BQL	13	
1330207	Xylene (total)	5/23/94	2	BQL	13	
110758	2-Chloroethyl vinyl ether	5/23/94	2	BQL	25	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3214006 *Client Sample No.:* 1661B-140

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/23/94	50	104	81-117	
Bromofluorobenzene	5/23/94	50	89	74-121	
1,2-Dichloroethane-d4	5/23/94	50	103	70-121	

D = Surrogate diluted out
**** = Surrogate recovery outside QC Limits*

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency. Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Organic Analytical Results
SW-846 Method 8240

Client:	Nuclear Fuel services, Inc.	Client Sample No.:	Method Blank
Lab Sample ID:	VBLKSG	Client Reference No.:	LEFPC
Matrix:	Soil	Date Received:	NA
Level:	Low		

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/kg	PQL ug/kg	Note
74873	Chloromethane	5/21/94	1	BQL	10	
74839	Bromomethane	5/21/94	1	BQL	10	
75014	Vinyl Chloride	5/21/94	1	BQL	10	
75003	Chloroethane	5/21/94	1	BQL	10	
75092	Methylene Chloride	5/21/94	1	7	5	
67641	Acetone	5/21/94	1	BQL	100	
75150	Carbon Disulfide	5/21/94	1	BQL	5	
75354	1,1-Dichloroethene	5/21/94	1	BQL	5	
75343	1,1-Dichloroethane	5/21/94	1	BQL	5	
540590	1,2-Dichloroethene (total)	5/21/94	1	BQL	5	
67663	Chloroform	5/21/94	1	BQL	5	
107062	1,2-Dichloroethane	5/21/94	1	BQL	5	
78933	2-Butanone	5/21/94	1	BQL	100	
71556	1,1,1-Trichloroethane	5/21/94	1	BQL	5	
56235	Carbon Tetrachloride	5/21/94	1	BQL	5	
108054	Vinyl Acetate	5/21/94	1	BQL	50	
75274	Bromodichloromethane	5/21/94	1	BQL	5	
78875	1,2-Dichloropropane	5/21/94	1	BQL	5	
10061015	cis-1,3-Dichloropropene	5/21/94	1	BQL	5	
79016	Trichloroethene	5/21/94	1	BQL	5	
124481	Dibromochloromethane	5/21/94	1	BQL	5	
79005	1,1,2-Trichloroethane	5/21/94	1	BQL	5	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: VBLKSG				Client Sample No.: Method Blank		
CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/kg	PQL ug/kg	Note
71432	Benzene	5/21/94	1	BQL	5	
10061026	Trans-1,3-Dichloropropene	5/21/94	1	BQL	5	
75252	Bromoform	5/21/94	1	BQL	5	
108101	4-Methyl-2-pentanone	5/21/94	1	BQL	50	
591786	2-Hexanone	5/21/94	1	BQL	50	
127184	Tetrachloroethene	5/21/94	1	BQL	5	
79345	1,1,2,2-Tetrachloroethane	5/21/94	1	BQL	5	
108883	Toluene	5/21/94	1	BQL	5	
108907	Chlorobenzene	5/21/94	1	BQL	5	
100414	Ethylbenzene	5/21/94	1	BQL	5	
100425	Styrene	5/21/94	1	BQL	5	
1330207	Xylene (total)	5/21/94	1	BQL	5	
110758	2-Chloroethyl vinyl ether	5/21/94	1	BQL	10	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: VBLKSG *Client Sample No.:* Method Blank

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/21/94	50	99	81-117	
Bromofluorobenzene	5/21/94	50	102	74-121	
1,2-Dichloroethane-d4	5/21/94	50	103	70-121	

D = Surrogate diluted out
**** = Surrogate recovery outside QC Limits*

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency. Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Organic Analytical Results
SW-846 Method 8240

Client:	Nuclear Fuel services, Inc.	Client Sample No.:	Method Blank
Lab Sample ID:	VBLKSA	Client Reference No.:	LEFPC
Matrix:	Soil	Date Received:	NA
Level:	Low		

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/kg	PQL ug/kg	Note
74873	Chloromethane	5/23/94	1	BQL	10	
74839	Bromomethane	5/23/94	1	BQL	10	
75014	Vinyl Chloride	5/23/94	1	BQL	10	
75003	Chloroethane	5/23/94	1	BQL	10	
75092	Methylene Chloride	5/23/94	1	13	5	
67641	Acetone	5/23/94	1	BQL	100	
75150	Carbon Disulfide	5/23/94	1	BQL	5	
75354	1,1-Dichloroethene	5/23/94	1	BQL	5	
75343	1,1-Dichloroethane	5/23/94	1	BQL	5	
540590	1,2-Dichloroethene (total)	5/23/94	1	BQL	5	
67663	Chloroform	5/23/94	1	BQL	5	
107062	1,2-Dichloroethane	5/23/94	1	BQL	5	
78933	2-Butanone	5/23/94	1	BQL	100	
71556	1,1,1-Trichloroethane	5/23/94	1	BQL	5	
56235	Carbon Tetrachloride	5/23/94	1	BQL	5	
108054	Vinyl Acetate	5/23/94	1	BQL	50	
75274	Bromodichloromethane	5/23/94	1	BQL	5	
78875	1,2-Dichloropropane	5/23/94	1	BQL	5	
10061015	cis-1,3-Dichloropropene	5/23/94	1	BQL	5	
79016	Trichloroethene	5/23/94	1	BQL	5	
124481	Dibromochloromethane	5/23/94	1	BQL	5	
79005	1,1,2-Trichloroethane	5/23/94	1	BQL	5	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: VBLKSA				Client Sample No.: Method Blank		
CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/kg	PQL ug/kg	Note
71432	Benzene	5/23/94	1	BQL	5	
10061026	Trans-1,3-Dichloropropene	5/23/94	1	BQL	5	
75252	Bromoform	5/23/94	1	BQL	5	
108101	4-Methyl-2-pentanone	5/23/94	1	BQL	50	
591786	2-Hexanone	5/23/94	1	BQL	50	
127184	Tetrachloroethene	5/23/94	1	BQL	5	
79345	1,1,2,2-Tetrachloroethane	5/23/94	1	BQL	5	
108883	Toluene	5/23/94	1	BQL	5	
108907	Chlorobenzene	5/23/94	1	BQL	5	
100414	Ethylbenzene	5/23/94	1	BQL	5	
100425	Styrene	5/23/94	1	BQL	5	
1330207	Xylene (total)	5/23/94	1	BQL	5	
110758	2-Chloroethyl vinyl ether	5/23/94	1	BQL	10	

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: VBLKSA *Client Sample No.:* Method Blank

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/23/94	50	93	81-117	
Bromofluorobenzene	5/23/94	50	94	74-121	
1,2-Dichloroethane-d4	5/23/94	50	97	70-121	

D = Surrogate diluted out
**** = Surrogate recovery outside QC Limits*

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Client: Nuclear Fuel Services, Inc
LSDG: 32140
Method: SW-846 Method 8240
Client Reference No.: LEFPC

Sample Receipt Date: 17-May-94
Date of Collection: 12-May-94
Date of Analysis: 21-May-94

BATCH SAMPLE MS/MSD ANALYTICAL RESULTS
VOLATILE

Lab Sample ID: 3214001MS/MSD
Client Sample ID: 1661B-65

Spike Compound	% Recovery QC Limits	Spike Amount ug/L	Unspiked Sample Result ug/L	Spiked Sample Result ug/L (MS)	% Spike Recovery (MS)	Duplicate Spike Sample Result ug/L (MSD)	% Spike Recovery (MSD)	%RPD
1,1-Dichloroethene	>0-234	62	0	40	65	43	68	6
Trichloroethene	71-157	62	0	52	84	56	89	6
Benzene	37-151	62	0	63	102	67	108	6
Toluene	47-150	62	0	58	94	63	102	8
Chlorobenzene	37-160	62	0	56	89	60	96	7

QC limits based on SW-846 Method 8240 Table 6

FORM III - VOA

EcoTek LSI
EcoTek Laboratory Services Incorporated

Client: Nuclear Fuel Services, Inc
LSDG: 32140
Method: SW-846 Method 8240
Client Reference No.: LEFPC

Sample Receipt Date: 17-May-94
Date of Collection: 12-May-94
Date of Analysis: 23-May-94

BATCH SAMPLE MS/MSD ANALYTICAL RESULTS
VOLATILE

Lab Sample ID: 3214006MS/MSD
Client Sample ID: 1661B-140

Spike Compound	% Recovery QC Limits	Spike Amount ug/L	Unspiked Sample Result ug/L	Spiked Sample Result ug/L (MS)	% Spike Recovery (MS)	Duplicate Spike Sample Result ug/L (MSD)	% Spike Recovery (MSD)	%RPD
1,1-Dichloroethene	>0-234	63	0	32	50	41	65	27
Trichloroethene	71-157	63	0	53	83	52	83	0
Benzene	37-151	63	0	55	86	56	89	3
Toluene	47-150	63	0	60	95	70	110	14
Chlorobenzene	37-160	63	0	55	87	57	89	2

QC limits based on SW-846 Method 8240 Table 6

EcoTek LS

% SOLID / % MOISTURE DATA WORKSHEET

Sample ID	Dish Tare Weight (g)	Wet Weight Sample + Dish (g)	Dry Weight Sample + Dish (g)	% Moisture	% Solid
3214001	1.33	7.36	6.17	19.73	80.27
3214002	1.33	7.53	6.2	21.45	78.55
3214005	1.35	7.15	5.94	20.86	79.14
3214005D	1.34	7.19	5.9	22.05	77.95
3214006	1.34	7.31	6.05	21.11	78.89
3214007	1.31	7.62	7.61	0.16	99.84
3214010	1.32	8.28	8.24	0.57	99.43

Oven Temperature (°c)

Start: 104 End: 104

Sample: 79.14 (%)

Duplicate: 77.95 (%) % RPD: 1.5

Analyst: MH 6/6

Reviewed: _____

EcoTek

% SOLID / % MOISTURE DATA WORKSHEET

Sample ID	Dish Tare Weight (g)	Wet Weight Sample + Dish (g)	Dry Weight Sample + Dish (g)	% Moisture	% Solid
3214001	1.33	7.36	6.17	19.73	80.27
3214002	1.33	7.53	6.2	21.45	78.55
3214005	1.35	7.15	5.94	20.86	79.14
3214005D	1.34	7.19	5.9	22.05	77.95
3214006	1.34	7.31	6.05	21.11	78.89
3214007	1.31	7.62	7.61	0.16	99.84
3214010	1.32	8.28	8.24	0.57	99.43

Oven Temperature (°c)

Start: 104 End: 104

Sample: 79.14 (%)

Duplicate: 77.95 (%) % RPD: 1.5

Analyst: MH 6/6

Reviewed: _____

Initial Calibration Data
HSL Compounds

Case No:

Instrument ID: 7003V

M8240 5pts soil
DS0301 4/6/20/94

'ractor: ECOTEK

Calibration Date: 03/01/94

Contract No: 8240/624 Freon

Minimum $\overline{RF}$ for SPCC is 0.3 Maximum % RSD for CCC is 30%

Laboratory ID:	>D1647	>D1646	>D1643	>D1645	>D1644							
	RF	RF	RF	RF	RF							
Compound	10.00	20.00	50.00	100.00	200.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CORR1	CCC	SPCC	
Dichlorodifluoromethane	.77858	.74230	.77929	.72863	.67566	.248	.74089	5.767	.998900			(Conc=20.0,40.0,1
Chloromethane	.85027	1.07680	1.06600	1.06088	.98164	.268	1.00712	9.480	.998860		**	
Vinyl Chloride	1.44382	1.36470	1.43801	1.41636	1.30680	.284	1.39394	4.149	.998956	*		
Bromomethane	1.61995	1.55257	1.58924	1.65824	1.57426	.333	1.59885	2.581	.999558			
Chloroethane	.95083	.85992	.90451	.86220	.80889	.349	.87727	6.074	.999295			
Trichlorofluoromethane	.90879	.86806	.75489	.68381	.64958	.390	.77302	14.606	.999630			
1,1-Dichloroethene	1.74637	1.92628	1.67545	1.55411	1.56841	.480	1.69412	8.971	.999719	*		
Acetone	1.51276	.81834	.34405	.23714	.24916	.505	.63229	86.475	.968926			
Carbon Disulfide	3.05970	3.17619	2.89505	2.62700	2.72098	.520	2.89578	7.880	.999500			
1,1,2-Trichlorotrifluoroethane	7.37836	6.98928	6.52770	6.83511	6.47547	.489	6.84118	5.383	.999597			
Methylene Chloride	3.39227	2.59920	2.00167	1.73972	1.71489	.585	2.28955	31.094	.999690			
trans-1,2-Dichloroethene	1.71408	1.76596	1.75300	1.65128	1.66972	.651	1.71081	2.932	.999874			
cis-1,2-Dichloroethene	1.85214	1.85559	1.80753	1.81516	1.79361	.940	1.82481	1.516	.999984			
1,2-Dichloroethene (total)	1.78259	1.81296	1.76487	1.77431	1.73109	.882	1.77316	1.671	.999924			(Conc=20.0,40.0,1
' '-Dichloroethane	3.79709	3.84455	3.68762	3.71573	3.66725	.765	3.74245	2.017	.999978		**	
ıtanone	.79800	.97153	.69029	.55886	.52822	.961	.70938	25.649	.997443			
Chloroform	4.38069	4.42913	4.31351	4.33870	4.39062	1.029	4.37053	1.036	.999970	*		
1,2-Dichloroethane-d4	2.12117	2.35739	1.92767	2.00579	1.87258	1.141	2.05692	9.342	.999296			
1,2-Dichloroethane	2.80497	3.06416	2.51223	2.69387	2.50922	1.158	2.71689	8.511	.999156			
Vinyl Acetate	.86691	.98835	.85306	.87251	.82409	.640	.88099	7.137	.999513			
1,1,1-Trichloroethane	.80367	.84177	.78933	.75185	.81824	.856	.80097	4.196	.998947			
Carbon Tetrachloride	.73964	.80998	.74471	.69694	.75452	.887	.74916	5.408	.998971			
Benzene	1.38925	1.16161	1.08897	1.09403	1.10778	.924	1.16833	10.855	.999851			
Trichloroethene	.47628	.48457	.46888	.47719	.47798	1.040	.47698	1.171	.999982			
1,2-Dichloropropane	.47956	.47985	.47424	.45280	.45220	1.075	.46773	3.011	.999942	*		
Bromodichloromethane	.78719	.84530	.85537	.84486	.83339	1.124	.83322	3.226	.999941			
2-Chloroethyl vinyl ether	.18555	.23914	.17872	.17909	.12412	1.179	.18132	22.476	.989750			(Conc=20.0,40.0,1
cis-1,3-Dichloropropene	.60082	.72143	.67956	.72452	.70340	1.197	.68595	7.412	.999738			

RF - Response Factor (Subscript is amount in ug/Kg)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CORRn - Coefficient of Correlation (nth degree)

- Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Initial Calibration Data
HSL Compounds

Case No:

Instrument ID: 7003V

'ractor: ECOTEK

Calibration Date: 03/01/94

Contract No: 8240/624 Freon

M 8240 5pts soil
~~D30~~ D50301
6/20/94

Minimum $\overline{RF}$ for SPCC is 0.3 Maximum % RSD for CCC is 30%

Laboratory ID:	>D1647	>D1646	>D1643	>D1645	>D1644						
	RF	RF	RF	RF	RF						
Compound	10.00	20.00	50.00	100.00	200.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CORR1	CCC	SPCC
trans-1,3-Dichloropropene	.62483	.67091	.60066	.63898	.61177	1.285	.62943	4.331	.999629		
1,1,2-Trichloroethane	.39312	.42554	.36956	.37886	.35380	1.312	.38417	7.076	.999381		
Dibromochloromethane	.59433	.68822	.62180	.66627	.62920	1.370	.63996	5.820	.999388		
Bromoform	.40631	.51567	.43031	.46372	.42233	1.582	.44767	9.696	.998491		**
4-Methyl-2-Pentanone	.53619	.61585	.44691	.47755	.41540	.844	.49838	15.926	.997114		
Toluene-d8	1.19452	1.22179	1.19331	1.18247	1.19094	.849	1.19661	1.241	.999986		
Toluene	1.54099	1.51359	1.49427	1.52272	1.50158	.856	1.51463	1.211	.999966	*	
Tetrachloroethene	.49430	.51687	.51407	.49443	.50326	.914	.50459	2.105	.999912		
2-Hexanone	.37191	.45191	.32353	.32653	.28553	.932	.35188	18.117	.997346		
Chlorobenzene	1.15873	1.21572	1.13622	1.15879	1.14633	1.003	1.16316	2.653	.999958		**
Ethylbenzene	.52160	.54067	.50818	.50465	.50303	1.016	.51563	3.063	.999984	*	
m,p-Xylene	.64115	.68195	.63749	.63989	.62990	1.029	.64607	3.176	.999956		(Conc=20.0,40.0,1
o-Xylene	.60902	.65765	.61255	.61247	.60898	1.068	.62013	3.393	.999969		
Xylene (total)	.60902	.65765	.61255	.61247	.60898	1.068	.62013	3.393	.999969		
ᶜ'ᵘrene	1.13794	1.20170	1.09110	1.11739	1.11028	1.070	1.13168	3.762	.999934		
ıofluorobenzene	.91959	1.01747	.82566	.82048	.79236	1.120	.87511	10.616	.999744		
1,1,2,2-Tetrachloroethane	.82607	1.03693	.73340	.77400	.67446	1.137	.80897	17.182	.996978		**
1,3-Dichlorobenzene	1.09381	1.37204	.83410	.89999	.86292	1.230	1.01257	22.234	.998043		
1,4-Dichlorobenzene	.82742	1.03188	.61682	.66380	.63181	1.239	.75435	23.387	.997888		
1,2-Dichlorobenzene	1.06580	1.31989	.76678	.80301	.76288	1.276	.94367	25.969	.997704		

RF - Response Factor (Subscript is amount in ug/Kg)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CORRn - Coefficient of Correlation (nth degree)

- Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

GC/MS PERFORMANCE STANDARD

Bromofluorobenzene (BFB)

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
50	15-40% of mass 95	24.66	24.66	Ok
75	30-60% of mass 95	55.08	55.08	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	6.98	6.98	Ok
173	Less than 2% of mass 174	0.00	0.00	Ok
174	Greater than 50% of mass 95	72.93	72.93	Ok
175	5-9% of mass 174	5.40	7.40	Ok
176	95-101% of mass 174	71.52	98.07	Ok
177	5-9% of mass 176	4.89	6.83	Ok

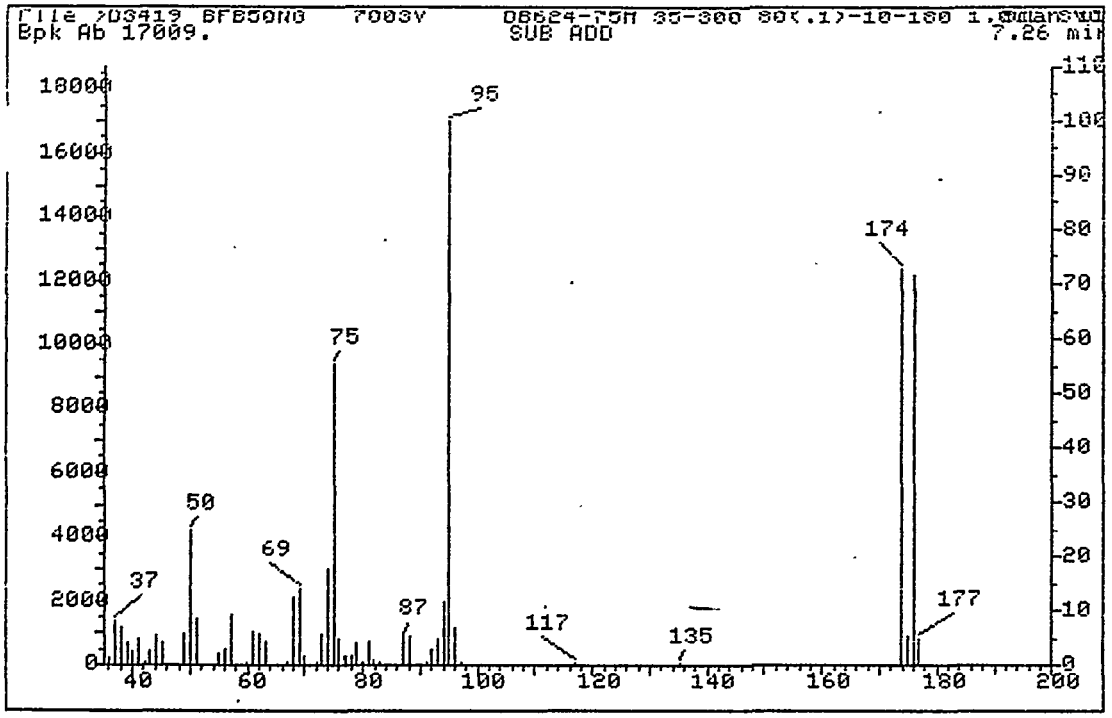
Injection Date: 05/21/94
Injection Time: 11:15
Data File: >D3419
Scan: 111

D3419 BFB50NG 7003V DB624-75M 35-300 80(.1)-10-180 1.0uL SVO

111. SUB ADD

File: >D3419 Scan #: 111 Retn. time: 7.26

m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.
35.95	193.0	50.05	4195.0	68.95	2359.0	80.00	45.0	96.00	1187.0
36.95	1348.0	51.05	1435.0	69.95	303.0	81.00	731.0	97.10	50.0
37.95	1129.0	55.05	356.0	71.05	3.0	81.90	160.0	116.90	48.0
39.05	681.0	56.05	483.0	71.95	52.0	83.00	61.0	135.10	55.0
39.95	426.0	57.05	1548.0	72.95	967.0	87.00	923.0	173.90	12405.0
41.05	835.0	59.85	75.0	73.95	3023.0	88.00	903.0	175.00	918.0
42.05	105.0	60.95	1000.0	74.95	9369.0	91.00	56.0	175.90	12165.0
43.05	444.0	61.95	934.0	75.95	811.0	92.00	454.0	176.90	831.0
43.95	904.0	62.95	720.0	76.95	281.0	93.00	819.0	207.00	170.0
45.05	685.0	67.05	74.0	77.95	258.0	94.00	1988.0	281.05	83.0
48.95	969.0	68.05	2098.0	79.00	692.0	95.00	17009.0		



>D3419 BFB50NG 7003V DB624-75M 35-300 80(.1)-10-180 1.0uL SVO

111 SUB ADD NRM

Injection Time: 5/21/94 11:15
n 6/20/94

File: >D3419 Scan #: 111 Retn. time: 7.26

m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.
35.95	1.135	50.05	24.663	68.95	13.869	80.00	.265	96.00	6.979
36.95	7.925	51.05	8.437	69.95	1.781	81.00	4.298	97.10	.294
37.95	6.638	55.05	2.093	71.05	.018	81.90	.941	116.90	.282
39.05	4.004	56.05	2.840	71.95	.306	83.00	.359	135.10	.323
39.95	2.505	57.05	9.101	72.95	5.685	87.00	5.427	173.90	72.932
41.05	4.909	59.85	.441	73.95	17.773	88.00	5.309	175.00	5.397
42.05	.617	60.95	5.879	74.95	55.083	91.00	.329	175.90	71.521
43.05	2.610	61.95	5.491	75.95	4.768	92.00	2.669	176.90	4.886
43.95	5.315	62.95	4.233	76.95	1.652	93.00	4.815	207.00	.999
45.05	4.027	67.05	.435	77.95	1.517	94.00	11.688	281.05	.488
48.95	5.697	68.05	12.335	79.00	4.068	95.00	100.000		

Continuing Calibration Check
HSL Compounds

Case No: Calibration Date: 05/21/94

Contractor: ECOTEK Time: 11:49

Contract No: 8240/624 Freon Laboratory ID: >D3420

Instrument ID: 7003V Initial Calibration Date: 03/01/94

DI0521
vs
DS0301
w 6/20/94

Minimum $\overline{RF}$ for SPCC is 0.3 Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
Dichlorodifluoromethane	.74089	-	-			(Conc=100.00)
Chloromethane	1.00712	1.13299	12.50		**	
Vinyl Chloride	1.39394	1.36925	1.77	*		
Bromomethane	1.59885	1.46636	8.29			
Chloroethane	.87727	.77271	11.92			
Trichlorofluoromethane	.77302	4.02374	420.52			
1,1-Dichloroethene	1.69412	1.49459	11.78	*		
Acetone	.63229	.23614	62.65			
Carbon Disulfide	2.89578	5.89248	103.48			
1,1,2-Trichlorotrifluoroethane	6.84118	-	-			
Methylene Chloride	2.28955	1.64121	28.32			
trans-1,2-Dichloroethene	1.71081	1.48974	12.92			
cis-1,2-Dichloroethene	1.82481	1.54526	15.32			
1,2-Dichloroethene (total)	1.77316	1.52220	14.15			(Conc=100.00)
1,1-Dichloroethane	3.74245	3.17312	15.21		**	
Butanone	.70938	.38435	45.82			
Chloroform	4.37053	3.68473	15.69	*		
1,2-Dichloroethane-d4	2.05692	1.74616	15.11			
1,2-Dichloroethane	2.71689	2.31417	14.82			
Vinyl Acetate	.88099	.62631	28.91			
1,1,1-Trichloroethane	.80097	.74471	7.02			
Carbon Tetrachloride	.74916	.70027	6.53			
Benzene	1.16833	.92626	20.72			
Trichloroethene	.47698	.44602	6.49			
1,2-Dichloropropane	.46773	.39010	16.60	*		
Bromodichloromethane	.83322	.71539	14.14			
2-Chloroethyl vinyl ether	.18132	.29957	65.21			
cis-1,3-Dichloropropene	.68595	.59438	13.35			
trans-1,3-Dichloropropene	.62943	.49900	20.72			
1,1,2-Trichloroethane	.38417	.29840	22.33			
Dibromochloromethane	.63996	.55439	13.37			
Bromoform	.44767	.37276	16.73		**	

RF - Response Factor from daily standard file at 50.00 ug/Kg

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

- Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

Case No:

Calibration Date: 05/21/94

Contractor: ECOTEK

Time: 11:49

Contract No: 8240/624 Freon

Laboratory ID: >D3420

Instrument ID: 7003V

Initial Calibration Date: 03/01/94

Minimum $\overline{RF}$ for SPCC is 0.3 Maximum % Diff for CCC is 25%

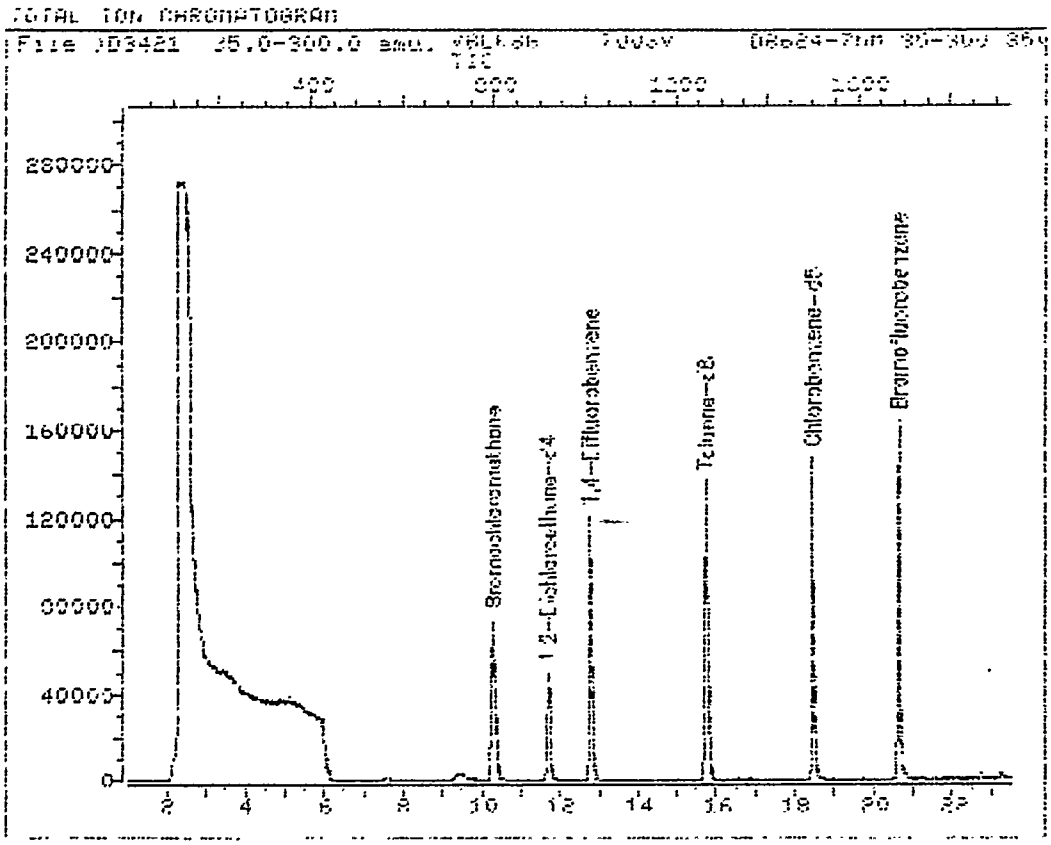
Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
4-Methyl-2-Pentanone	.49838	.29914	39.98			
Toluene-d8	1.19661	1.19912	.21			
Toluene	1.51463	1.39422	7.95	*		
Tetrachloroethene	.50459	.53298	5.63			
2-Hexanone	.35188	.20163	42.70			
Chlorobenzene	1.16316	1.05468	9.33		**	
Ethylbenzene	.51563	.49197	4.59	*		
m,p-Xylene	.64607	.60449	6.44			(Conc=100.00)
o-Xylene	.62013	.56351	9.13			
Xylene (total)	.62013	.56351	9.13			
Styrene	1.13168	.98795	12.70			
Bromofluorobenzene	.87511	.75947	13.21			
1,1,2,2-Tetrachloroethane	.80897	.58308	27.92		**	
1,3-Dichlorobenzene	1.01257	-	-			
1,4-Dichlorobenzene	.75435	-	-			
Dichlorobenzene	.94367	-	-			

RF - Response Factor from daily standard file at 50.00 ug/Kg

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

- Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)



Data File: >D3421::D5 Quant Output File: ^D3421::D1
Name: VBLKSB 70eV Instrument ID: 70eV
Misc: DB624-75M 35 300 35(8)-8 200 10:SSS 5.0C

Id File: D10521::D3
Title: WDA 3/90 8240/624 IDENTIFICATION LIST
Last Calibration: 901213 16:29 Last Qual Time: 940521 11:49

Operator ID: BM
Quant Time : 940521 13:15
Injected at: 940521 12:45

QUANT REPORT Page 1

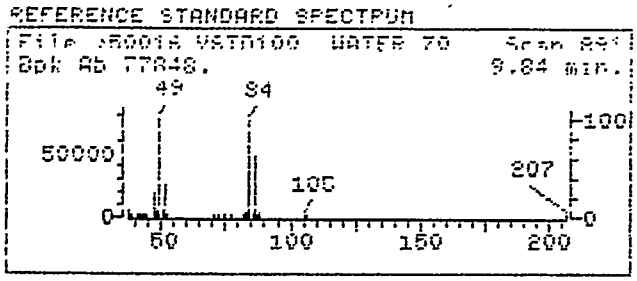
Operator ID: BX Quant Rev: 7 Quant Time: 940521 17:15
Output File: ^D3421::D1 Injected at: 940521 12:45
Data File: >D3421::D5 Dilution Factor: 1.00000
Name: VBLKSC 7003V Instrument ID: 7003V
Misc: DB624 75M 35 300 35(8) 8-200 101888 5.00

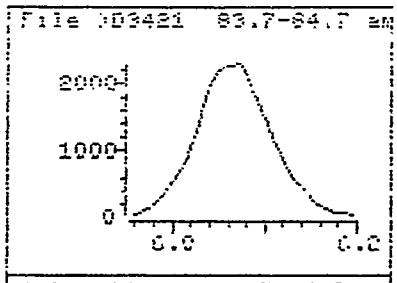
ID File: DI0521::D3
Title: VOA 3/90 8240/624 IDENTIFICATION LIST
Last Calibration: 901213 16:29 Last Qcal Time: 940521 11:49

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	10.29	128.0	60760	50.00	ug/Kg	9
12)	Methylene Chloride	6.07	84.0	17449	6.74	ug/Kg	10
20)	1,2 Dichloroethane d4	11.69	65.0	108885	51.31	ug/Kg	9
22)	*1,4 Difluorobenzene	12.76	114.0	249432	50.00	ug/Kg	9
37)	*Chlorobenzene d5	18.43	117.0	193095	50.00	ug/Kg	9
39)	Toluene-d8	15.73	98.0	229895	49.64	ug/Kg	9
50)	Bromofluorobenzene	20.61	95.0	149893	51.11	ug/Kg	10

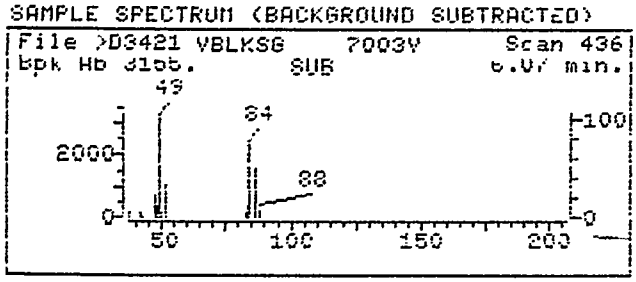
* Compound is ISTD

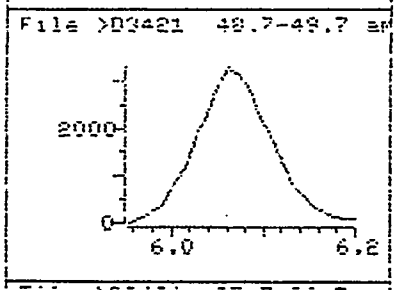
REFERENCE STANDARD SPECTRUM



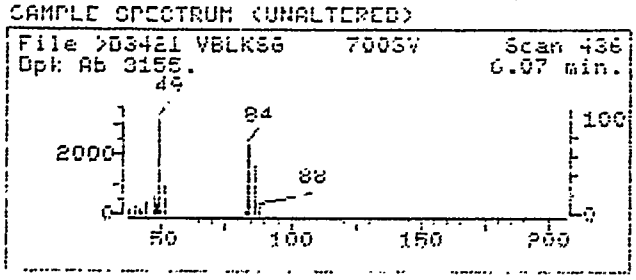


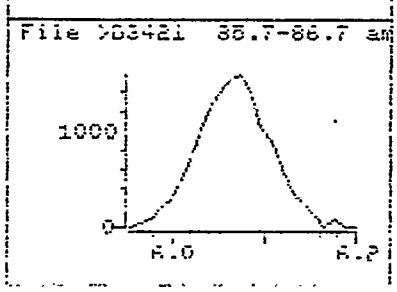
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)





SAMPLE SPECTRUM (UNALTERED)

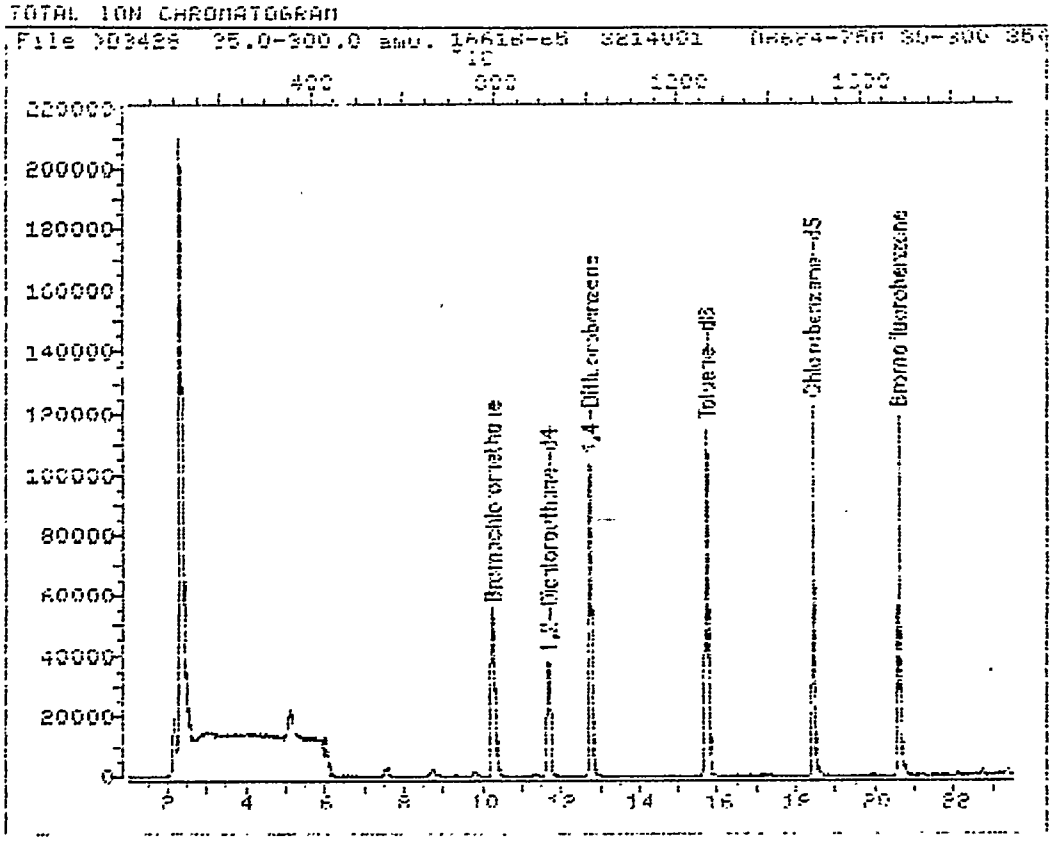




Data File: >D3421::D5 Quant Output File: ^D3421::D1
Name: VBLKSG 7003V Instrument ID: 7003V
Misc: DB624 75M 35-300 35(8)-8 200 101SES 5.0G
Quant Time: 940521 13:15 Quant ID File: DI0521::D3
Injected at: 940521 12:45 Last Calibration: 901213 16:29
Last Qual Time: 940521 11:49

Compound No : 12
Compound Name : Methylene Chloride
Scan Number : 436
Retention Time: 6.07 min.
Quant Ion : 84.0
Area : 13449
Concentration : 6.74 ug/Kg
q value : 100

TOTAL ION CHROMATOGRAM



Data File: >D3428::D9 Quant Output File: ^D3428::D1
Name: 16616 65 3214001 Instrument ID: 7003V
Misc: DB624 75M 35-300 35(8)-8 200 5.0C 101888

Id File: DI0521::D3
Title: VOA 3/90 8240/624 IDENTIFICATION LIST
Last Calibration: 901213 16:29 Last Qual Time: 940521 11:49

Operator ID: BM
Quant Time : 940521 16:58
Injected at: 940521 16:33

QUANT REPORT Page: 1

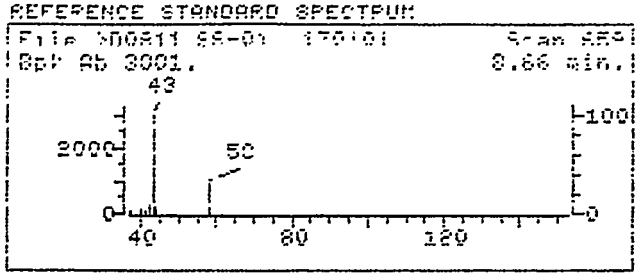
Operator ID: EX Quant Rev: 0 Quant Time: 940521 16:58
Output File: ^D3428::D1 Injected at: 940521 16:33
Data File: ^D3428::D5 Dilution Factor: 1.00000
Name: 16618 65 3214001 Instrument ID: 7003V
Misc: DB624 75M 35-300 35(8) 8-200 5.0C 101988

ID File: DI0521::D3
Title: VOA 3/90 8240/624 IDENTIFICATION LIST
Last Calibration: 901213 16:29 Last Qual Time: 940521 11:49

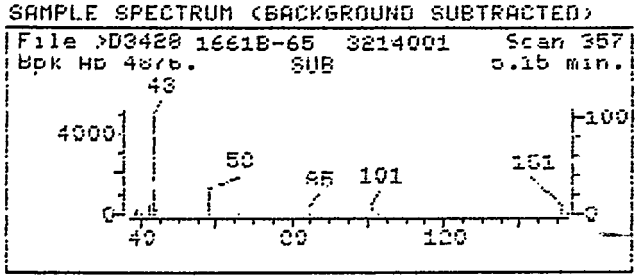
	Compound	R.T.	C ion	Area	Conc	Units	q
1)	*Bromochloromethane	10.24	128.0	45951	50.00	ug/Kg	9
9)	Acetone	5.15	43.0	45796M	211.49	ug/Kg	10
12)	Methylene Chloride	6.04	84.0	17398	11.56	ug/Kg	10
17)	2 Butanone	9.78	43.0	9196	26.09	ug/Kg	10
20)	1,2 Dichloroethane d4	11.66	65.0	87194	54.45	ug/Kg	9
22)	*1,4-Difluorobenzene	12.72	114.0	207874	50.00	ug/Kg	9
37)	*Chlorobenzene d5	18.40	117.0	154383	50.00	ug/Kg	9
39)	Toluene d8	15.70	98.0	182918	49.40	ug/Kg	9
50)	Bromofluorobenzene	20.58	95.0	107794	45.97	ug/Kg	10

* Compound is ISTD

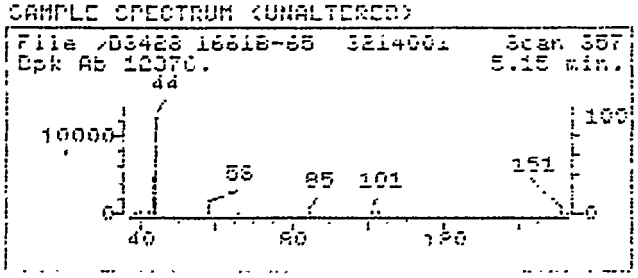
REFERENCE STANDARD SPECTRUM

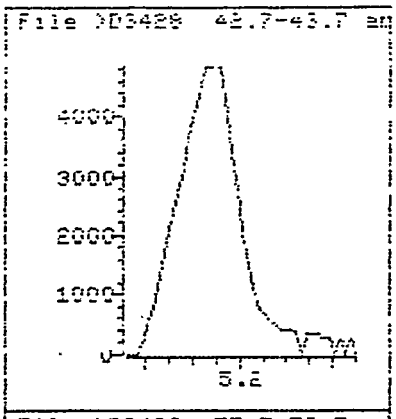


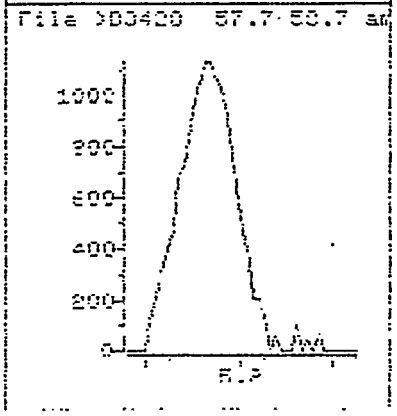
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



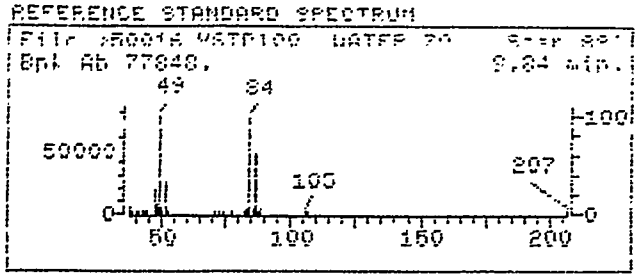


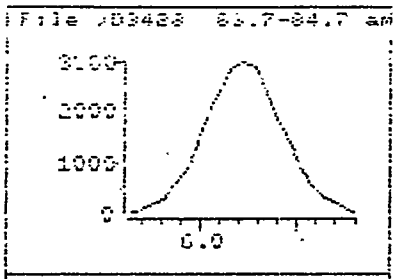


Data File: >D3428::09 Quant Output File: ^D3428::01
Name: 1661B 65 3214001 Instrument ID: 7803V
Misc: D5624 75M 35 300 35(9)-9 200 9.0C 101SSS
Quant Time: 940521 16:58 Quant ID File: D10521::03
Injected at: 940521 16:33 Last Calibration: 901213 16:29
Last Qual Time: 940521 11:49

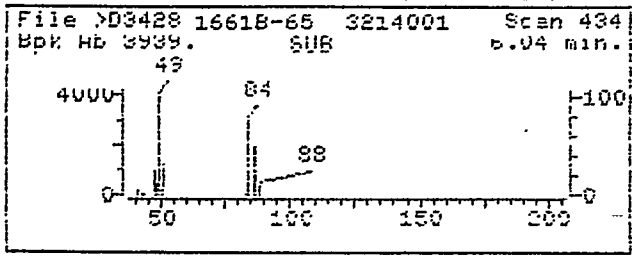
Compound No : 9
Compound Name : Acetone
Scan Number : 357
Retention Time: 5.15 min.
Quant Ion : 43.0
Area : 457986M
Concentration : 211.49 ug/Kg
q value : 100

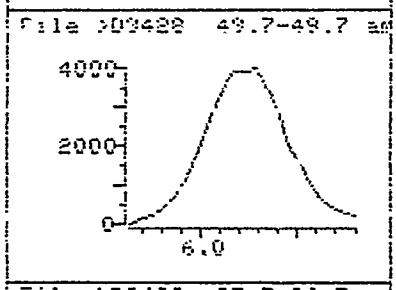
REFERENCE STANDARD SPECTRUM



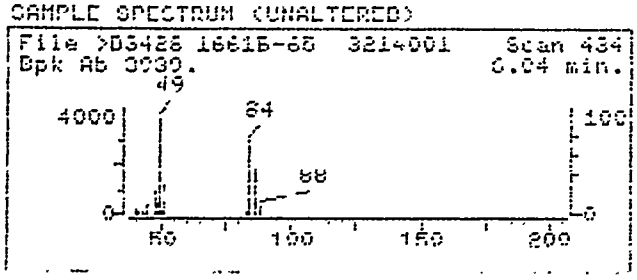


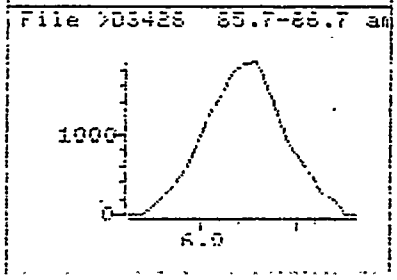
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)





SAMPLE SPECTRUM (UNALTERED)

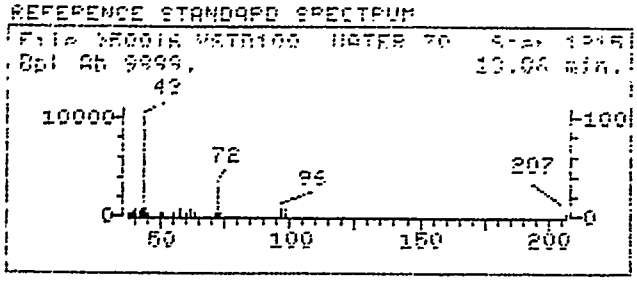


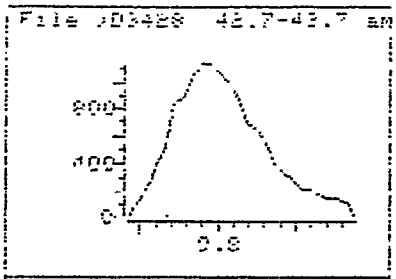


Data File: >D3428::D5 Quant Output File: ^D3428::D1
Name: 1661B 65 3214001 Instrument ID: 7003V
Misc: DB624 75M 35 300 35(8)-8 200 5.0C 10ISSS
Quant Time: 940521 16:58 Quant ID File: D10521::D3
Injected at: 940521 16:33 Last Calibration: 901213 16:29
Last Qual Time: 940521 11:49

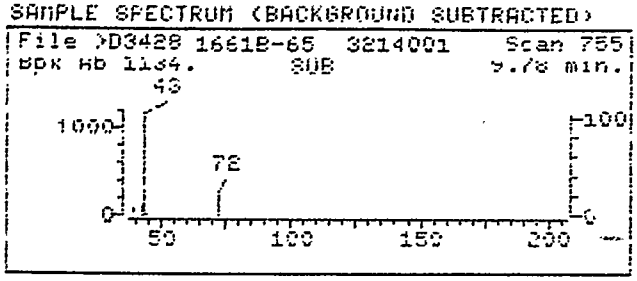
Compound No : 12
Compound Name : Methylene Chloride
Scan Number : 434
Retention Time: 6.04 min.
Quant Ion : 84.0
Area : 17398
Concentration : 11.56 ug/Kg
q value : 100

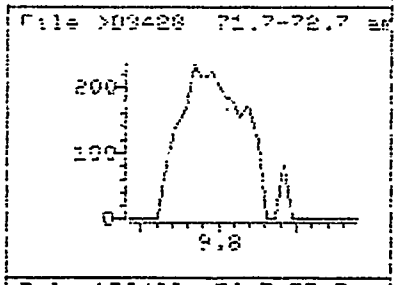
REFERENCE STANDARD SPECTRUM



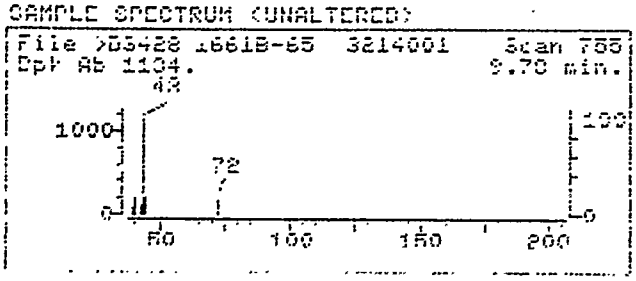


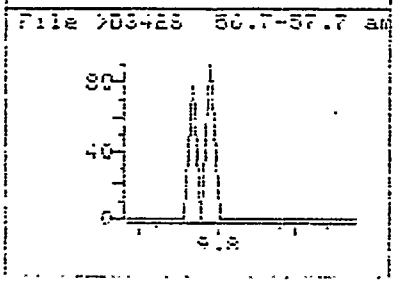
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)





SAMPLE SPECTRUM (UNALTERED)

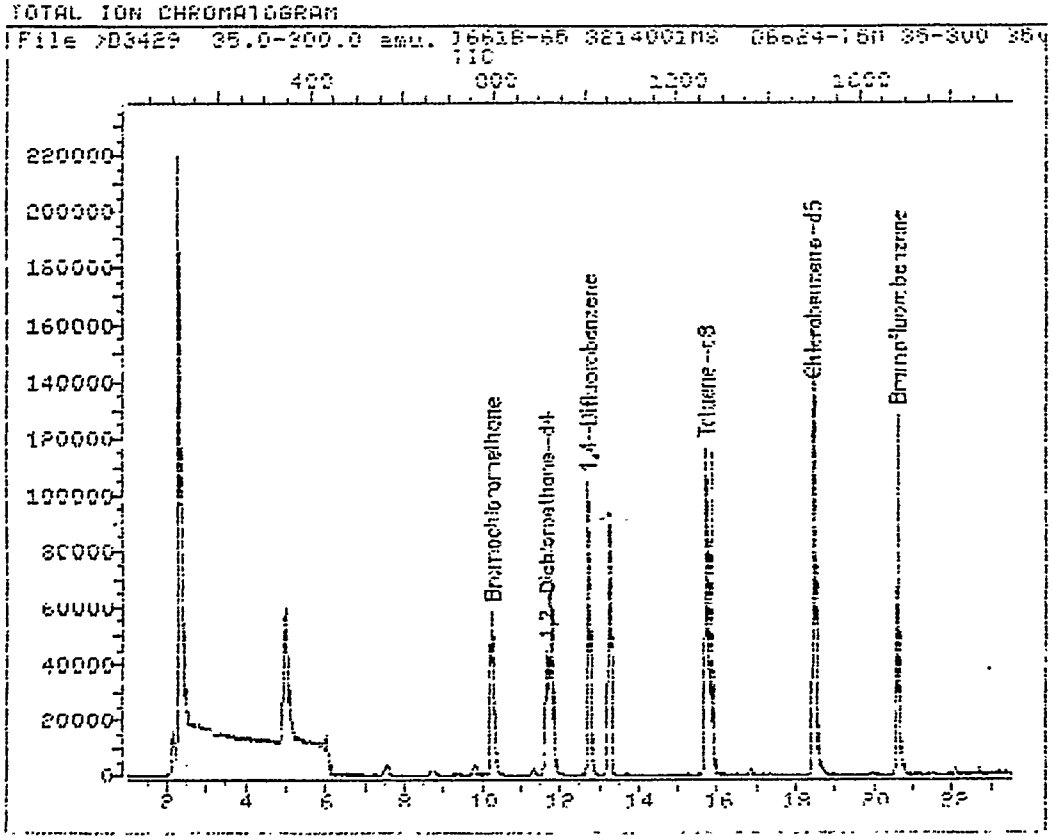




Data File: >D3428::D5 Quant Output File: ^D3428::D1
Name: 1661B 65 3214001 Instrument ID: 7083V
Mice: DB624-75M 35 300 35(8) 8 200 5.0C 101SSB
Quant Time: 940521 16:58 Quant ID File: DI0521::D3
Injected at: 940521 16:33 Last Calibration: 901213 16:29
Last Qual Time: 940521 11:49

Compound No : 17
Compound Name : 2 Butanone
Scan Number : 755
Retention Time: 9.78 min.
Quant Ion : 43.0
Area : 9196
Concentration : 26.09 ug/Kg
q value : 100

TOTAL ION CHROMATOGRAM



Data File: >D3429::D5 Quant Output File: ^D3429::D1
Name: 1661B 65 3214001MS Instrument ID: 7003V
Misc: DB624-75M 35 300 35(8) 8-200 5.0C 101SSS

Id File: DI0521::D3
Title: VOA 3/90 8240/624 IDENTIFICATION LIST
Last Calibration: 901213 16:29 Last Qual Time: 940521 11:49

Operator ID: BX
Quant Time : 940521 17:27
Injected at: 940521 17:03

QUANT REPORT

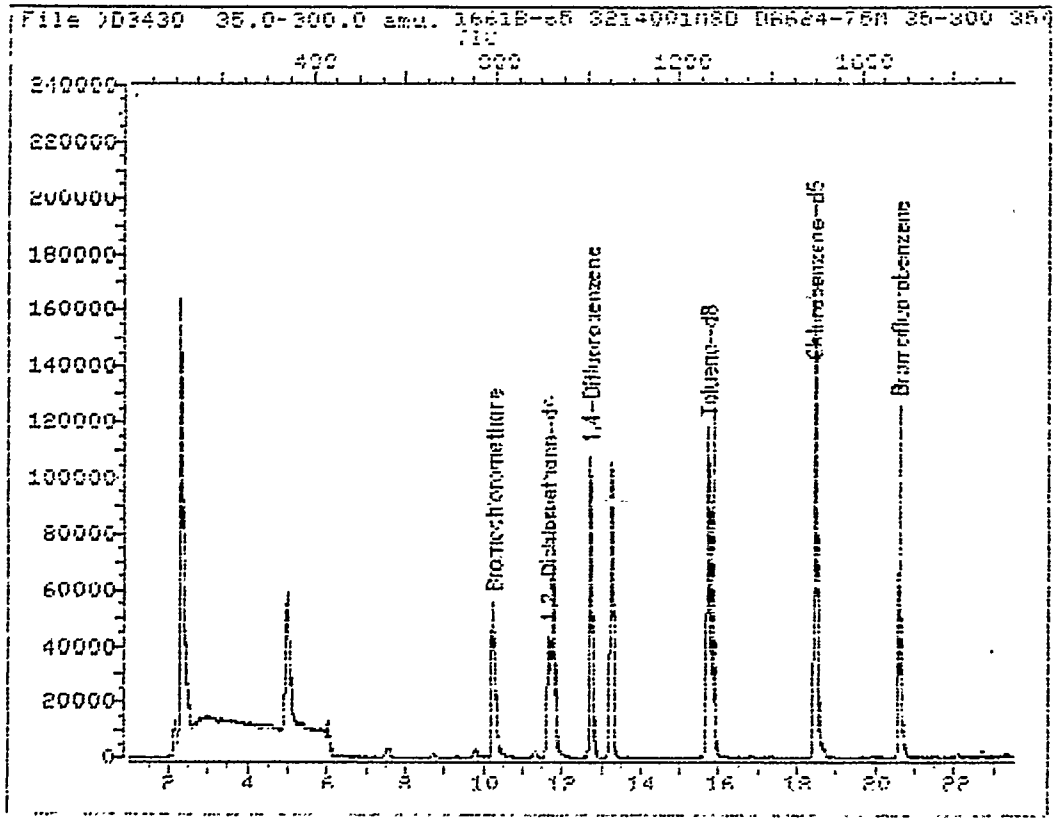
Operator ID: BK Quant Rev: 7 Quant Time: 940521 17:27
Output File: ^D3429::D1 Injected at: 940521 17:03
Data File: >D3429::D5 Dilution Factor: 1.00000
Name: 1661B-65 3214001MS Instrument ID: 7003V
Misc: D8624-75M 35-300 35(8) 8-200 5.0C 10ISSS

ID File: DI0521::D3
Title: VOA 3/90 8240/624 IDENTIFICATION LIST
Last Calibration: 901213 16:29 Last Qual Time: 940521 11:49

	Compound	R.T.	Q ion	Area	Conc	Units	c
1)	*Bromochloromethane	10.24	128.0	47357	50.00	ug/Kg	9
8)	1,1-Dichloroethene	4.96	96.0	45650	32.25	ug/Kg	8
9)	Acetone	5.12	43.0	56029	250.52	ug/Kg	10
12)	Methylene Chloride	6.03	84.0	19963	12.84	ug/Kg	10
17)	2 Butanone	9.78	43.0	19153	52.62	ug/Kg	10
20)	1,2-Dichloroethane-d4	11.65	65.0	99242M	60.01	ug/Kg	9
22)	*1,4 Difluorobenzene	12.72	114.0	206327	50.00	ug/Kg	9
26)	Benzene	11.77	78.0	194514	50.89	ug/Kg	10
27)	Trichloroethene	13.24	130.0	76943	41.80	ug/Kg	10
37)	*Chlorobenzene-d5	18.40	117.0	152862	50.00	ug/Kg	8
39)	Toluene d8	15.70	98.0	187496	51.14	ug/Kg	9
40)	Toluene	15.83	91.0	199767	46.87	ug/Kg	9
43)	Chlorobenzene	18.46	112.0	143865	44.62	ug/Kg	9
50)	Bromofluorobenzene	20.58	95.0	119310	51.39	ug/Kg	10

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >D3430::D5 Quant Output File: ^D3430::D1
Name: 1661B 65 3214001MSD Instrument ID: 7003V
Misc: DB624 75M 35 300 35(8)-8-200 5.0C 101SSS

Id File: DI0521::D3
Title: VOA 3/90 8240/624 DENTIFICATION LIST
Last Calibration: 901213 16:29 Last Qual Time: 940521 11:49

Operator ID: BX
Quant Time : 940521 17:57
Injected at: 940521 17:32

QUANT REPORT

Operator ID: BM Quant Row: 7 Quant Time: 940521 17:57
Output File: ^D3430::D1 Injected at: 940521 17:32
Data File: ^D3430::D5 Dilution Factor: 1.00000
Name: 1661B-65 3214001MSD Instrument ID: 7003V
Misc: DB624 75M 35-300 35(8) 8 200 5.0C 10ISSS

ID File: DI0521::D3
Title: VOA 3/90 8240/624 IDENTIFICATION LIST
Last Calibration: 901213 16:29 Last Qual Time: 940521 11:49

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	10.24	128.0	46502	50.00	ug/Kg	9
8)	1,1-Dichloroethene	4.96	96.0	47470	34.15	ug/Kg	9
9)	Acetone	5.87	43.0	66349M	702.11	ug/Kg	10
12)	Methylene Chloride	6.02	84.0	18220	11.94	ug/Kg	10
17)	2 Butanone	9.78	43.0	15432	43.18	ug/Kg	10
20)	1,2-Dichloroethane-d4	11.65	65.0	97936	60.31	ug/Kg	9
22)	*1,4 Difluorobenzene	12.72	114.0	215100	50.00	ug/Kg	9
26)	Benzene	11.77	78.0	215446	54.07	ug/Kg	10
27)	Trichloroethene	13.24	130.0	85480	44.55	ug/Kg	10
37)	*Chlorobenzene-d5	18.40	117.0	154931	50.00	ug/Kg	8
39)	Toluene-d8	15.70	98.0	192848	51.90	ug/Kg	9
40)	Toluene	15.83	91.0	219929	50.91	ug/Kg	9
43)	Chlorobenzene	18.45	112.0	156229	47.81	ug/Kg	9
50)	Bromofluorobenzene	20.52	95.0	117797	50.06	ug/Kg	10

* Compound is ISTD

GC/MS PERFORMANCE STANDARD

Bromofluorobenzene (BFB)

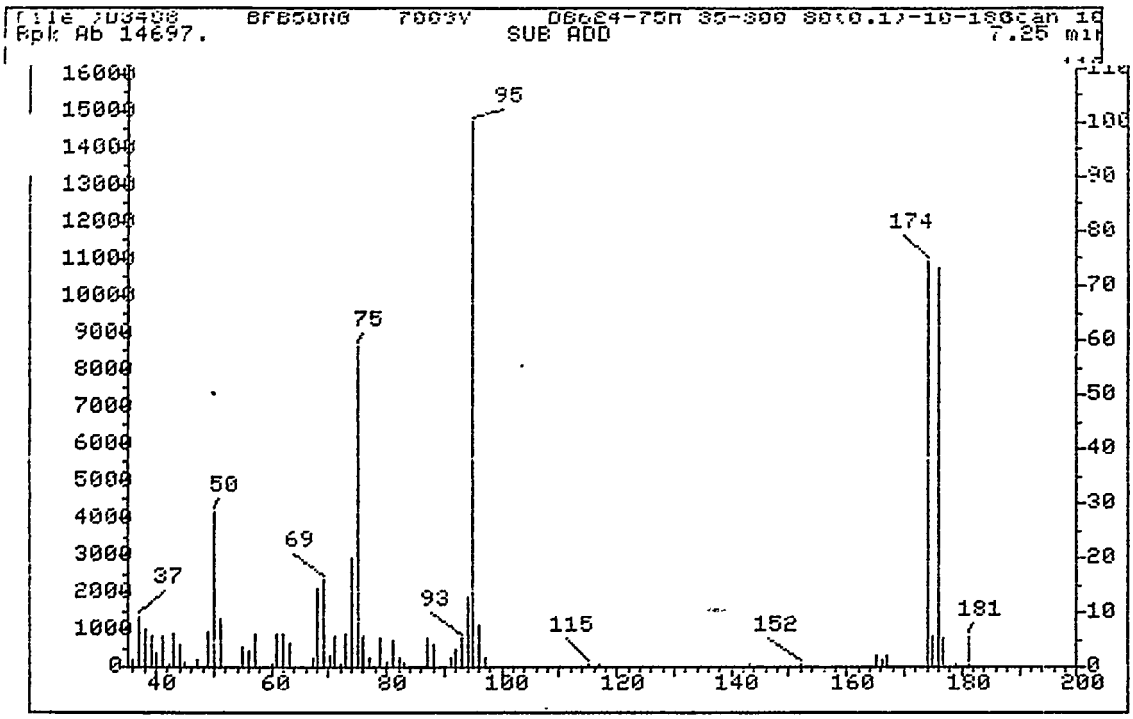
m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	Appropriate Peak	Status
50	15-40% of mass 95	28.24	28.24	Ok
75	30-60% of mass 95	58.93	58.93	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	7.69	7.69	Ok
173	Less than 2% of mass 174	0.00	0.00	Ok
174	Greater than 50% of mass 95	74.40	74.40	Ok
175	5-9% of mass 174	5.54	7.44	Ok
176	95-101% of mass 174	73.03	98.15	Ok
177	5-9% of mass 176	5.21	7.14	Ok

Injection Date: 05/23/94
Injection Time: 09:43
Data File: >D3438
Scan: 107

>D3438 BFB50NG 7003V DB624-75M 35-300 80(0.1)-10-180
107 SUB ADD

File: >D3438 Scan #: 107 Retn. time: 7.25

m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.
35.95	184.0	51.05	1280.0	71.05	849.0	87.00	747.0	143.00	62.0
36.95	1332.0	55.05	546.0	71.95	69.0	88.00	616.0	152.10	71.0
38.05	977.0	56.05	442.0	72.95	869.0	91.10	226.0	165.10	293.0
39.05	806.0	57.05	857.0	74.05	2927.0	92.00	485.0	166.10	187.0
39.95	338.0	59.95	75.0	74.95	8661.0	93.00	771.0	167.10	307.0
41.05	798.0	61.05	883.0	75.95	818.0	94.10	1883.0	174.00	10935.0
42.05	66.0	61.95	864.0	76.95	268.0	95.00	14697.0	175.00	814.0
43.05	859.0	63.05	645.0	79.00	757.0	96.00	1130.0	176.00	10733.0
43.95	596.0	67.15	257.0	80.00	135.0	97.00	225.0	176.90	766.0
44.95	98.0	67.95	2119.0	81.00	729.0	111.10	15.0	179.10	83.0
47.05	185.0	68.95	2348.0	82.10	261.0	115.10	61.0	181.10	850.0
49.05	973.0	70.05	325.0	83.10	121.0	116.90	61.0	210.10	142.0
49.95	4150.0								



FMGR : TAB

>D3438 BFB50NG 7003V DB624-75M 35-300 80(0.1)-10-180
107 SUB ADD NRM

Injection Time: 5/23/94 9:43
u 6/20/94

File: >D3438 Scan #: 107 Retn. time: 7.25

m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.
35.95	1.252	51.05	8.709	71.05	5.777	87.00	5.083	143.00	.422
36.95	9.063	55.05	3.715	71.95	.469	88.00	4.191	152.10	.483
38.05	6.648	56.05	3.007	72.95	5.913	91.10	1.538	165.10	1.994
39.05	5.484	57.05	5.831	74.05	19.916	92.00	3.300	166.10	1.272
39.95	2.300	59.95	.510	74.95	58.930	93.00	5.246	167.10	2.089
41.05	5.430	61.05	6.008	75.95	5.566	94.10	12.812	174.00	74.403
42.05	.449	61.95	5.879	76.95	1.824	95.00	100.000	175.00	5.539
43.05	5.845	63.05	4.389	79.00	5.151	96.00	7.689	176.00	73.029
43.95	4.055	67.15	1.749	80.00	.919	97.00	1.531	176.90	5.212
44.95	.667	67.95	14.418	81.00	4.960	111.10	.102	179.10	.565
47.05	1.259	68.95	15.976	82.10	1.776	115.10	.415	181.10	5.783
49.05	6.620	70.05	2.211	83.10	.823	116.90	.415	210.10	.966
49.95	28.237								

Continuing Calibration Check
HSL Compounds

Case No: Calibration Date: 05/23/94

'ractor: ECOTEK Time: 10:17

Contract No: 8240/624 Freon Laboratory ID: >03439

Instrument ID: 7003V Initial Calibration Date: 03/01/94

DI0523
vs
DS0301
u 6/20/94

Minimum $\overline{RF}$ for SPCC is 0.3 Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
Dichlorodifluoromethane	.74089	-	-			(Conc=100.00)
Chloromethane	1.00712	1.08598	7.83		**	
Vinyl Chloride	1.39394	1.32685	4.81	*		
Bromomethane	1.59885	1.48600	7.06			
Chloroethane	.87727	.74698	14.85			
Trichlorofluoromethane	.77302	4.28057	453.74			
1,1-Dichloroethene	1.69412	1.52083	10.23	*		
Acetone	.63229	.50578	20.01			
Carbon Disulfide	2.89578	5.79141	99.99			
1,1,2-Trichlorotrifluoroethane	6.84118	7.40934	8.30			
Methylene Chloride	2.28955	1.79802	21.47			
trans-1,2-Dichloroethene	1.71081	1.52569	10.82			
cis-1,2-Dichloroethene	1.82481	1.53939	15.64			
1,2-Dichloroethene (total)	1.77316	1.53749	13.29			(Conc=100.00)
' '-Dichloroethane	3.74245	3.29518	11.95		**	
tanone	.70938	.49158	30.70			
Chloroform	4.37053	3.97385	9.08	*		
1,2-Dichloroethane-d4	2.05692	1.98318	3.58			
1,2-Dichloroethane	2.71689	2.58061	5.02			
Vinyl Acetate	.88099	.75093	14.76			
1,1,1-Trichloroethane	.80097	.82937	3.55			
Carbon Tetrachloride	.74916	.79666	6.34			
Benzene	1.16833	1.03690	11.25			
Trichloroethene	.47698	.45904	3.76			
1,2-Dichloropropane	.46773	.40389	13.65	*		
Bromodichloromethane	.83322	.80435	3.47			
2-Chloroethyl vinyl ether	.18132	.00685	96.22			
cis-1,3-Dichloropropene	.68595	.63560	7.34			
trans-1,3-Dichloropropene	.62943	.56493	10.25			
1,1,2-Trichloroethane	.38417	.34269	10.80			
Dibromochloromethane	.63996	.63436	.87			
Bromoform	.44767	.44323	.99		**	

RF - Response Factor from daily standard file at 50.00 ug/Kg

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

- Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

Case No: Calibration Date: 05/23/94

'ractor: ECOTEK Time: 10:17

Contract No: 8240/624 Freon Laboratory ID: >D3439

Instrument ID: 7003V Initial Calibration Date: 03/01/94

Minimum $\overline{RF}$ for SPCC is 0.3 Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
4-Methyl-2-Pentanone	.49838	.40398	18.94			
Toluene-d8	1.19661	1.20843	.99			
Toluene	1.51463	1.44802	4.40	*		
Tetrachloroethene	.50459	.55095	9.19			
2-Hexanone	.35188	.27521	21.79			
Chlorobenzene	1.16316	1.07902	7.23		**	
Ethylbenzene	.51563	.49752	3.51	*		
m,p-Xylene	.64607	.61531	4.76			(Conc=100.00)
o-Xylene	.62013	.59426	4.17			
Xylene (total)	.62013	.59426	4.17			
Styrene	1.13168	1.02678	9.27			
Bromofluorobenzene	.87511	.79740	8.88			
1,1,2,2-Tetrachloroethane	.80897	.70288	13.11		**	
1,3-Dichlorobenzene	1.01257	1.17400	15.94			
' '-Dichlorobenzene	.75435	1.22894	62.92			
Dichlorobenzene	.94367	.90308	4.30			

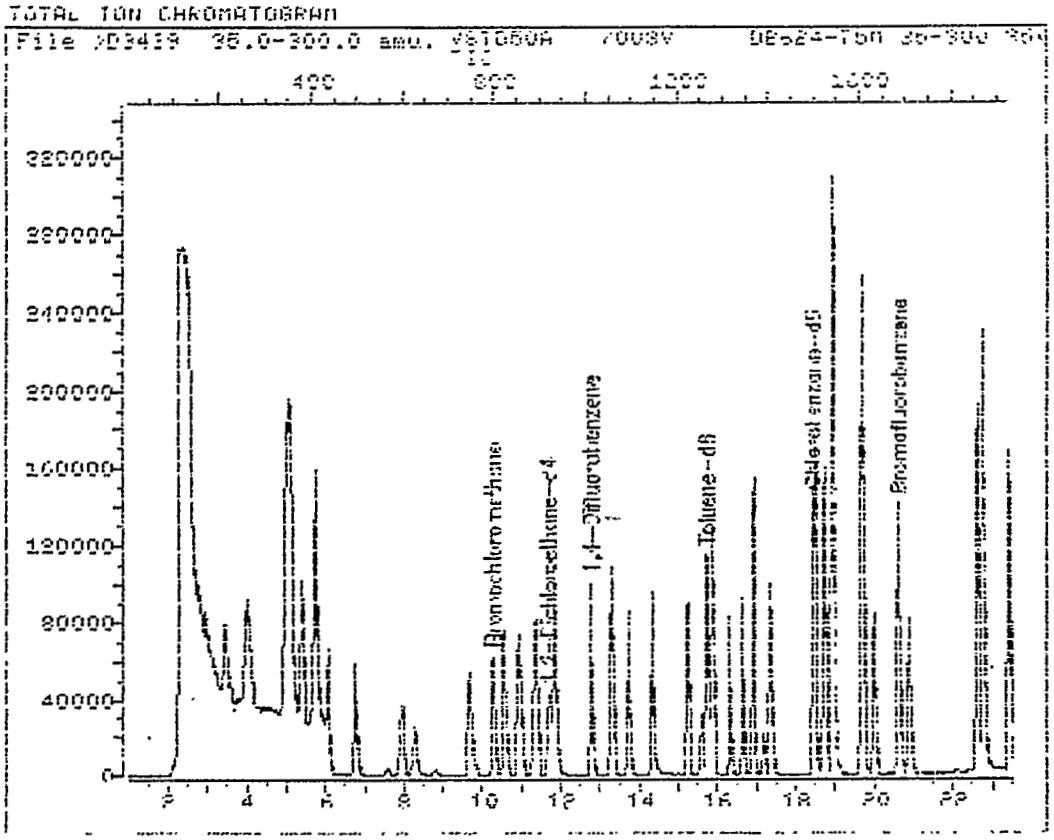
RF - Response Factor from daily standard file at 50.00 ug/Kg

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

- Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

TOTAL ION CHROMATOGRAM



Data File: >D3439::D5 Quant Output File: ^D3439::D1
Name: V8TD50A 7003V Instrument ID: 7003V
Misc: DB624-75M 35-300 35(5) 8 200 101988 SVOCS94046

Id File: DI0523::D1
Title: VOA 3/90 8240/624 DENTIFICATION LIST
Last Calibration: 901213 16:29 Last Qual Time: 940523 10:17

Operator ID: BX
Quant Time : 940523 11:15
Injected at: 940523 10:17

QUANT REPORT

Operator ID: BX Quant Rev: 7 Quant Time: 940523 11:15
Output File: ^D3439::D1 Injected at: 940523 10:17
Data File: >D3439::D5 Dilution Factor: 1.00000
Name: VSTD50A 7003V Instrument ID: 7003V
Misc: DB624-75M 35-300 35(8) 8-200 101SSS SVOCS94046

ID File: DI0523::D1
Title: VOA 3/90 8240/624 IDENTIFICATION LIST
Last Calibration: 901213 16:29 Last Qcal Time: 940523 10:17

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	10.28	128.0	45850	50.00	ug/Kg	9.
3)	Chloromethane	2.78	50.0	49792	50.00	ug/Kg	9.
4)	Vinyl Chloride	2.96	62.0	60836	50.00	ug/Kg	9-
5)	Bromomethane	3.43	94.0	68133	50.00	ug/Kg	9-
6)	Chloroethane	3.58	64.0	34249	50.00	ug/Kg	9-
7)	Trichlorofluoromethane	3.99	101.0	196264	50.00	ug/Kg	10
8)	1,1 Dichloroethene	4.97	96.0	69730	50.00	ug/Kg	9
9)	Acetone	5.15	43.0	23190	50.00	ug/Kg	10
10)	1,1,2 Trichlorotrifluoroethane	5.06	101.0	339718	50.00	ug/Kg	10
11)	Carbon Disulfide	5.37	76.0	265536	50.00	ug/Kg	9
12)	Methylene Chloride	6.05	84.0	82439	50.00	ug/Kg	10
13)	trans-1,2-Dichloroethene	6.75	96.0	69953	50.00	ug/Kg	10
14)	cis 1,2 Dichloroethene	9.67	96.0	70581	50.00	ug/Kg	10
15)	1,2-Dichloroethene (total)	6.75	96.0	140988M	100.00	ug/Kg	8
16)	1,1 Dichloroethane	7.94	63.0	151084	50.00	ug/Kg	10
17)	2-Butanone	9.83	43.0	22539	50.00	ug/Kg	10
19)	Chloroform	10.56	83.0	182201	50.00	ug/Kg	98
20)	1,2-Dichloroethane-d4	11.69	65.0	90929	50.00	ug/Kg	97
21)	1,2 Dichloroethane	11.86	62.0	118321	50.00	ug/Kg	9
22)	*1,4-Difluorobenzene	12.76	114.0	196712	50.00	ug/Kg	9
23)	Vinyl Acetate	8.27	43.0	147716	50.00	ug/Kg	8
24)	1,1,1-Trichloroethane	10.94	97.0	163147	50.00	ug/Kg	9-
25)	Carbon Tetrachloride	11.35	117.0	156712	50.00	ug/Kg	9
26)	Benzene	11.81	78.0	203970	50.00	ug/Kg	100
27)	Trichloroethene	13.27	130.0	90299	50.00	ug/Kg	10
29)	1,2-Dichloropropane	13.72	63.0	79450	50.00	ug/Kg	9
30)	Bromodichloromethane	14.31	83.0	158225	50.00	ug/Kg	97
31)	2 Chloroethyl vinyl ether	14.99	63.0	1348	100.00	ug/Kg	10
32)	cis 1,3-Dichloropropene	15.22	75.0	125030	50.00	ug/Kg	98
33)	trans-1,3 Dichloropropene	16.31	75.0	111129	50.00	ug/Kg	9
34)	1,1,2 Trichloroethane	16.63	97.0	67412	50.00	ug/Kg	9
35)	Dibromochloromethane	17.35	129.0	124787	50.00	ug/Kg	98
36)	Bromoform	19.98	173.0	87188	50.00	ug/Kg	98
37)	*Chlorobenzene d5	18.43	117.0	153777	50.00	ug/Kg	9
38)	4 Methyl 2 Pentanone	15.57	43.0	62123	50.00	ug/Kg	9
39)	Toluene-d8	15.72	98.0	185828	50.00	ug/Kg	99
40)	Toluene	15.85	91.0	222672	50.00	ug/Kg	98
41)	Tetrachloroethene	16.90	164.0	84724	50.00	ug/Kg	9
42)	2 Hexanone	17.16	43.0	42321	50.00	ug/Kg	100
43)	Chlorobenzene	18.48	112.0	165929	50.00	ug/Kg	97
44)	Ethylbenzene	18.72	106.0	76507	50.00	ug/Kg	87
46)	m,p-Xylene	18.94	106.0	189241	100.00	ug/Kg	100
47)	o-Xylene	19.45	106.0	[illegible]	[illegible]	[illegible]	[illegible]

QUANT REPORT

Page 2

Operator ID: SX
Output File: ^D3439::D1
Data File: >D3439::D5
Name: VSTD50A 7003V
Misc: DB624-75M 35 300 35(8) 8-200

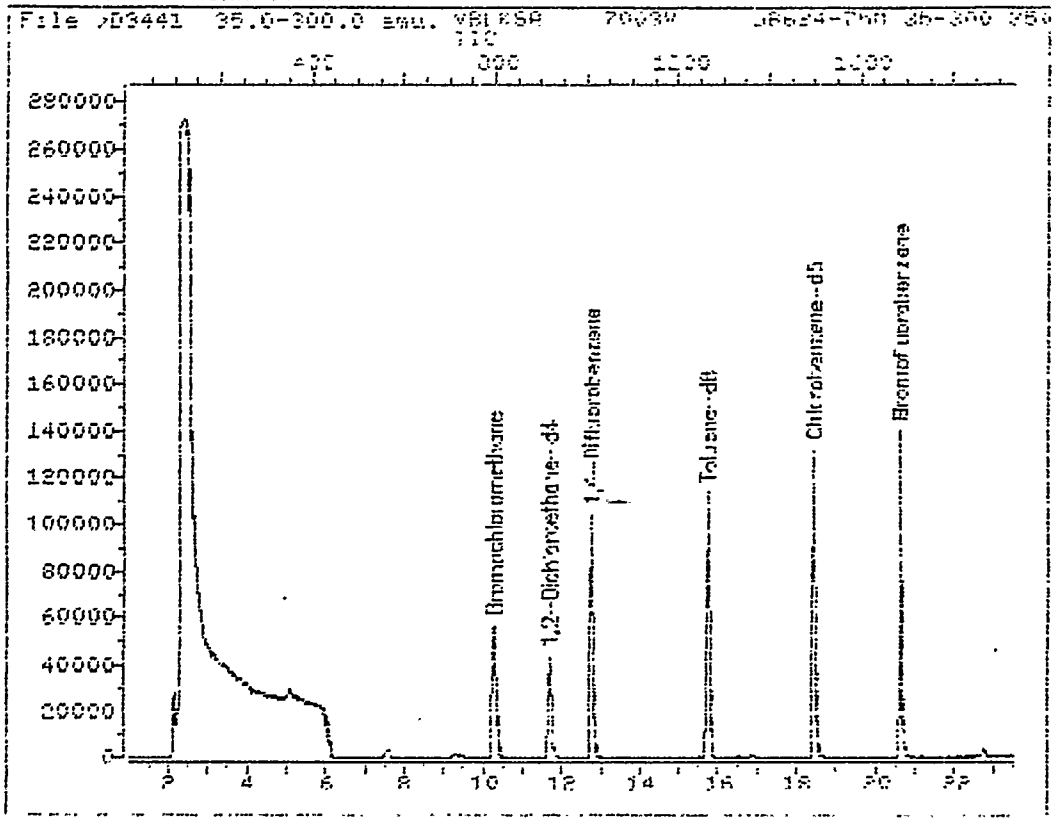
Quant Rev: 7
Quant Time: 940523 11:1[illegible]
Injected at: 940523 10:17
Dilution Factor: 1.00000
Instrument ID: 7003V
101888 SVOCS94046

ID File: D10523::D1
Title: VOA 3/90 8240/624 IDENTIFICATION LIST
Last Calibration: 901213 16:29
Last Qual Time: 940523 10:17

	Compound	R.T.	Q ion	Area	Conc	Units	S
48)	Xylene (total)	19.65	106.0	91384	50.00	ug/Kg	8.
49)	Styrene	19.69	104.0	157895	50.00	ug/Kg	10
50)	Bromofluorobenzene	20.61	95.0	122622	50.00	ug/Kg	19
51)	1,1,2,2-Tetrachloroethane	20.88	83.0	108087	50.00	ug/Kg	9
52)	1,3 Dichlorobenzene	22.59	146.0	180534	50.00	ug/Kg	10
53)	1,4-Dichlorobenzene	22.75	146.0	188983	50.00	ug/Kg	10
54)	1,2 Dichlorobenzene	23.42	146.0	138873	50.00	ug/Kg	10

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >D3441::D5 Quant Output File: ^D3441::D1
Name: VBLKSA 7003V Instrument ID: 7003V
Misc: D8624-75M 35-200 35(2)-8-200 101SSS 5.0C

Id File: DI0523::D1
Title: VGA 3/90 8240/624 IDENTIFICATION LIST
Last Calibration: 901213 16:29 Last Qual Time: 940523 10:17

Operator ID: BM
Quant Time : 940523 12:37
Injected at: 940523 12:12

QUANT REPORT

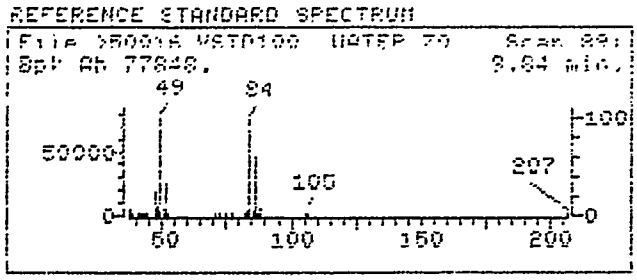
Operator ID: BM Quant Rev: 7 Quant Time: 940523 12:37
Output File: ^D3441::D1 Injected at: 940523 12:12
Data File: >D3441::D5 Dilution Factor: 1.00000
Name: VBLKSA 7003V Instrument ID: 7003V
Misc: DB624-75M 35-300 35(8) 8 200 10ISSS 5.0S

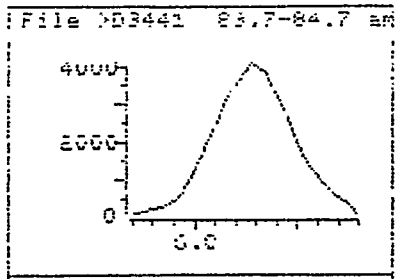
ID File: DI0523::D1
Title: VOA 3/90 8240/624 IDENTIFICATION LIST
Last Calibration: 901213 16:29 Last Qual Time: 940523 10:17

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	10.27	128.0	49590	50.00	ug/Kg	9
12)	Methylene Chloride	6.06	84.0	22512	12.62	ug/Kg	10
20)	1,2 Dichloroethane d4	11.68	65.0	95128	48.36	ug/Kg	[illegible]
22)	*1,4 Difluorobenzene	12.75	114.0	206884	50.00	ug/Kg	9
37)	*Chlorobenzene d5	18.42	117.0	163217	50.00	ug/Kg	9
39)	Toluene-d8	15.72	98.0	183792	46.59	ug/Kg	9
50)	Bromofluorobenzene	20.60	95.0	122824	47.19	ug/Kg	10

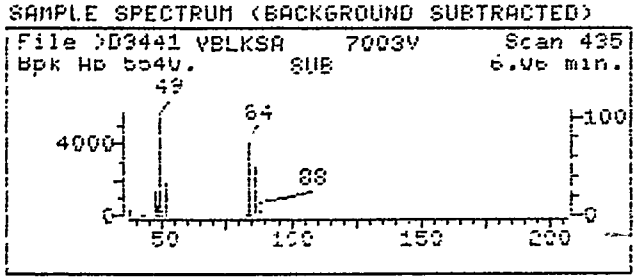
* Compound is ISTD

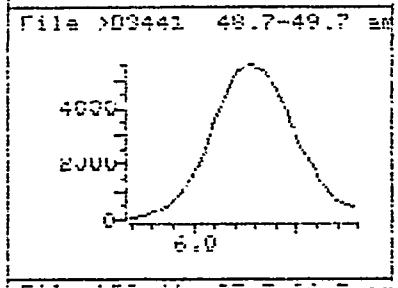
REFERENCE STANDARD SPECTRUM



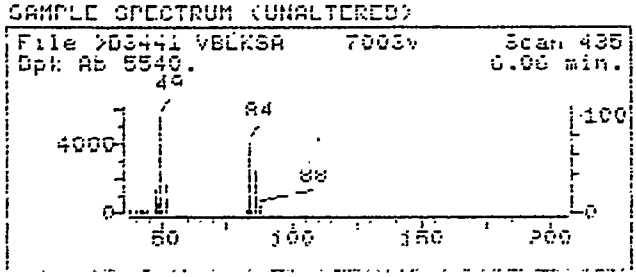


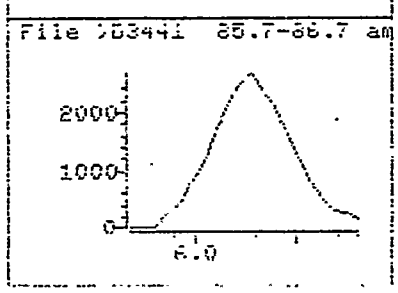
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)





SAMPLE SPECTRUM (UNALTERED)

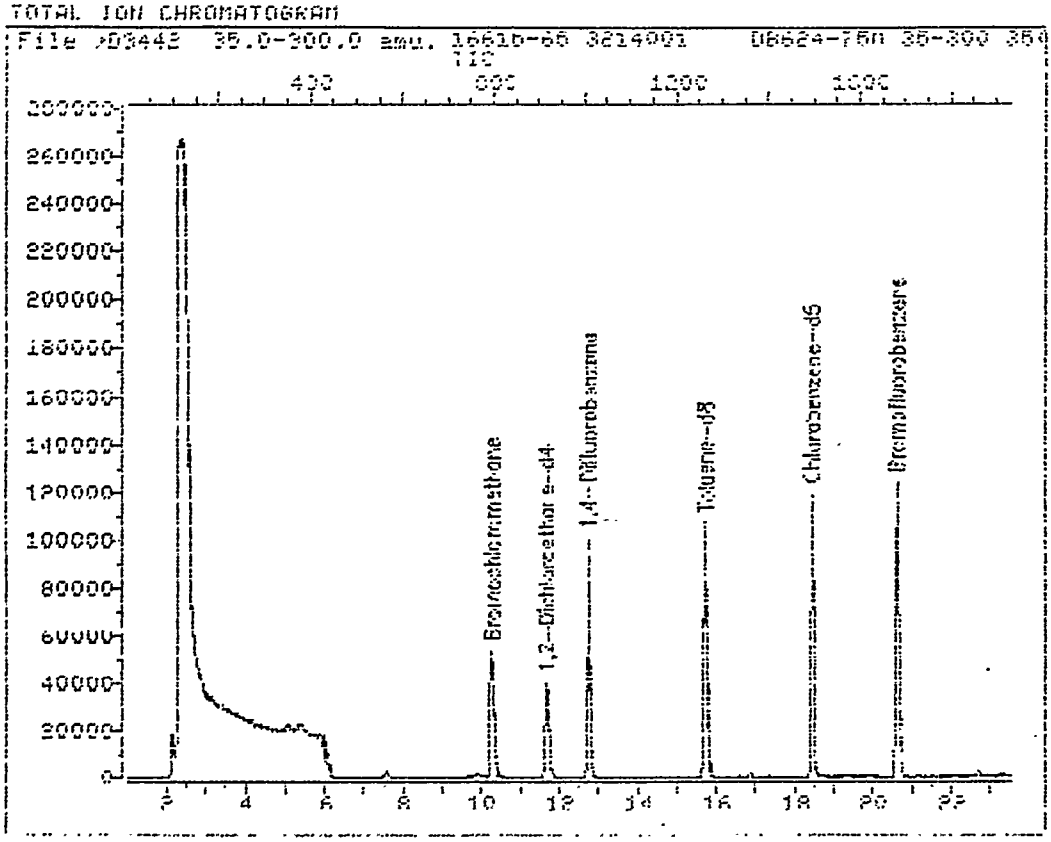




Data File: >D3441::D5 Quant Output File: ^D3441::D1
Name: VBLKSA 7003V Instrument ID: 7003V
Misc: DB624-75M 35-300 35(8)-8-200 10:SSS 5.0C
Quant Time: 940523 12:37 Quant ID File: DI0523::D1
Injected at: 940523 12:12 Last Calibration: 901213 16:29
Last Qual Time: 940523 10:17

Compound No : 12
Compound Name : Methylene Chloride
Scan Number : 435
Retention Time: 6.06 min.
Quant Ion : 84.0
Area : 22912
Concentration : 12.62 ug/Kg
q value : 100

TOTAL ION CHROMATOGRAM



Data File: >D3442::D9 Quant Output File: ^D3442::D1
Name: 16610 65 3214001 Instrument ID: 7003V
Misc: DB624 75M 35-300 35(8)-8-200 101SSS 4.0C

Id File: DI0523::D1
Title: VOA 3/90 8240/624 DENTIFICATION LIST
Last Calibration: 901213 16:29 Last Qual Time: 940523 10:17

Operator ID: SK
Quant Time : 940523 13:25
Injected at: 940523 13:01

QUANT REPORT

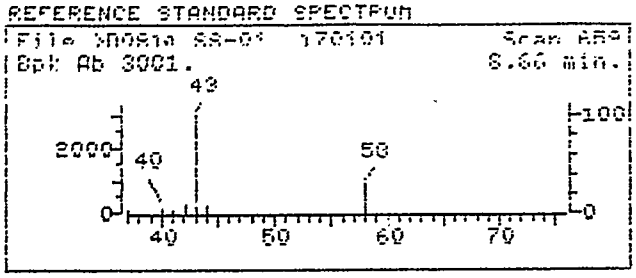
Operator ID: BM Quant Rev: 7 Quant Time: 940523 13:25
Output File: ^D3442::D1 Injected at: 940523 13:01
Data File: >D3442::D5 Dilution Factor: 1.00000
Name: 1661b-65 3214001 Instrument ID: 7003V
Misc: DB624-75M 35-300 35(8) 8-200 10ISSS 4.0C

ID File: DI0523::D1
Title: VOA 3/90 8240/624 DENTIFICATION LIST
Last Calibration: 901213 16:29 Last Qual Time: 940523 10:17

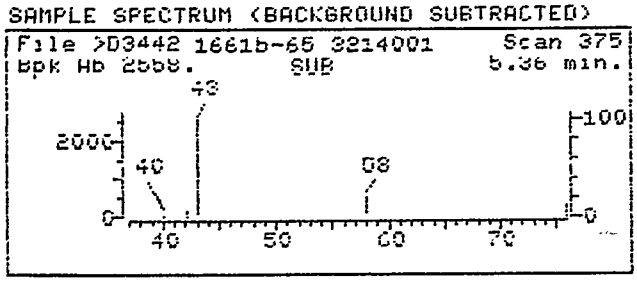
	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	10.27	128.0	46537	50.00	ug/Kg	9
9)	Acetone	5.36	43.0	33709M	71.61	ug/Kg	10
12)	Methylene Chloride	6.05	84.0	20077	12.00	ug/Kg	10
20)	1,2-Dichloroethane-d4	11.67	65.0	90408	48.98	ug/Kg	9
22)	*1,4 Difluorobenzene	12.74	114.0	197665	50.00	ug/Kg	9
37)	*Chlorobenzene-d5	18.42	117.0	147222	50.00	ug/Kg	8
39)	Toluene-d8	15.72	98.0	173601	48.79	ug/Kg	9
50)	Bromofluorobenzene	20.59	95.0	109276	46.54	ug/Kg	10

* Compound is ISTD

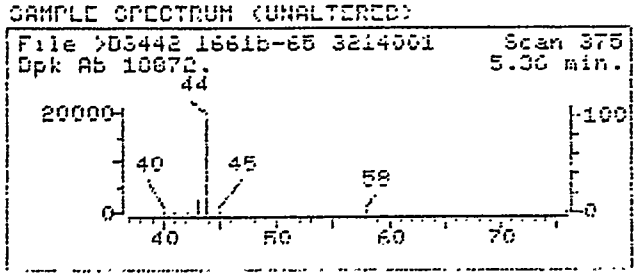
REFERENCE STANDARD SPECTRUM

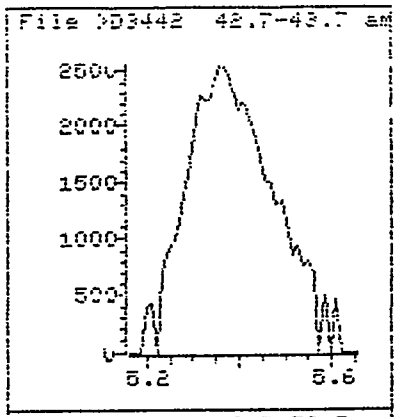


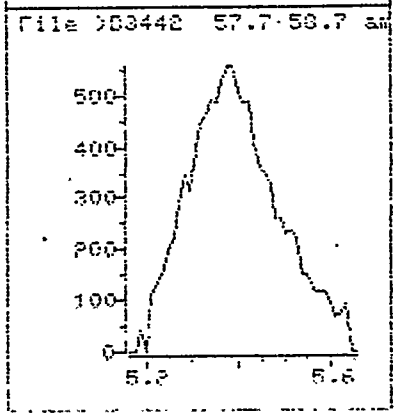
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



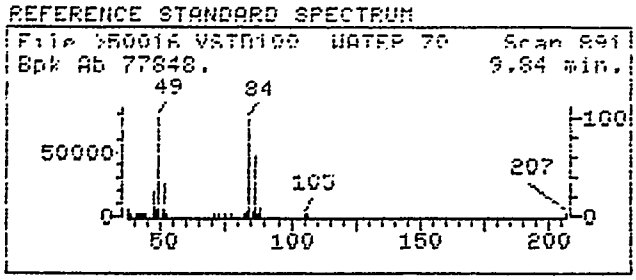


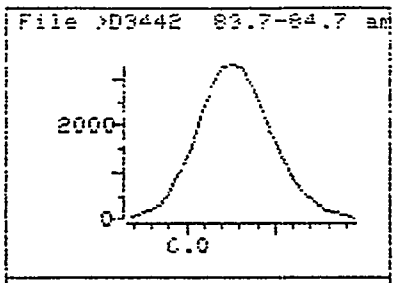


Data File: >D3442::D5 Quant Output File: ^D3442::D1
Name: 1661b 65 3214001 Instrument ID: 7003V
Misc: DB624 75M 35 300 35(8)-8-200 10ISSS 4.0C
Quant Time: 940523 13:25 Quant ID File: DI0523::D1
Injected at: 940523 13:01 Last Calibration: 901213 16:29
Last Qcal Time: 940523 10:17

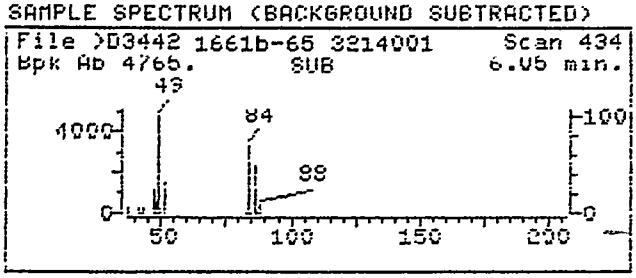
Compound No : 9
Compound Name : Acetone
Scan Number : 375
Retention Time: 5.36 min.
Quant Ion : 43.0
Area : 33709M
Concentration : 71.61 ug/Kg
q value : 100

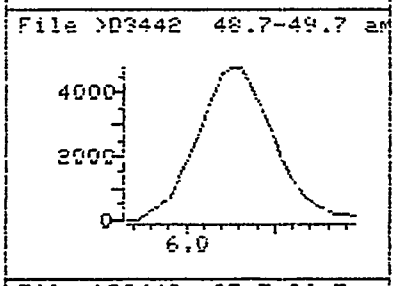
REFERENCE STANDARD SPECTRUM



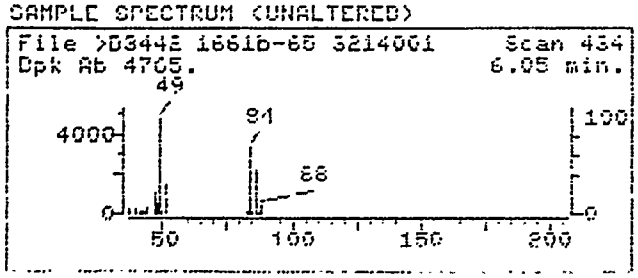


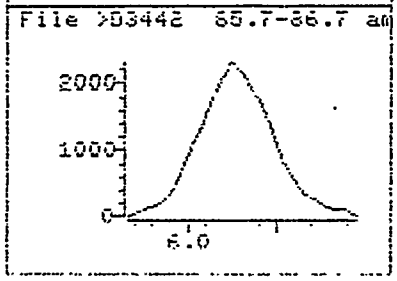
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)





SAMPLE SPECTRUM (UNALTERED)

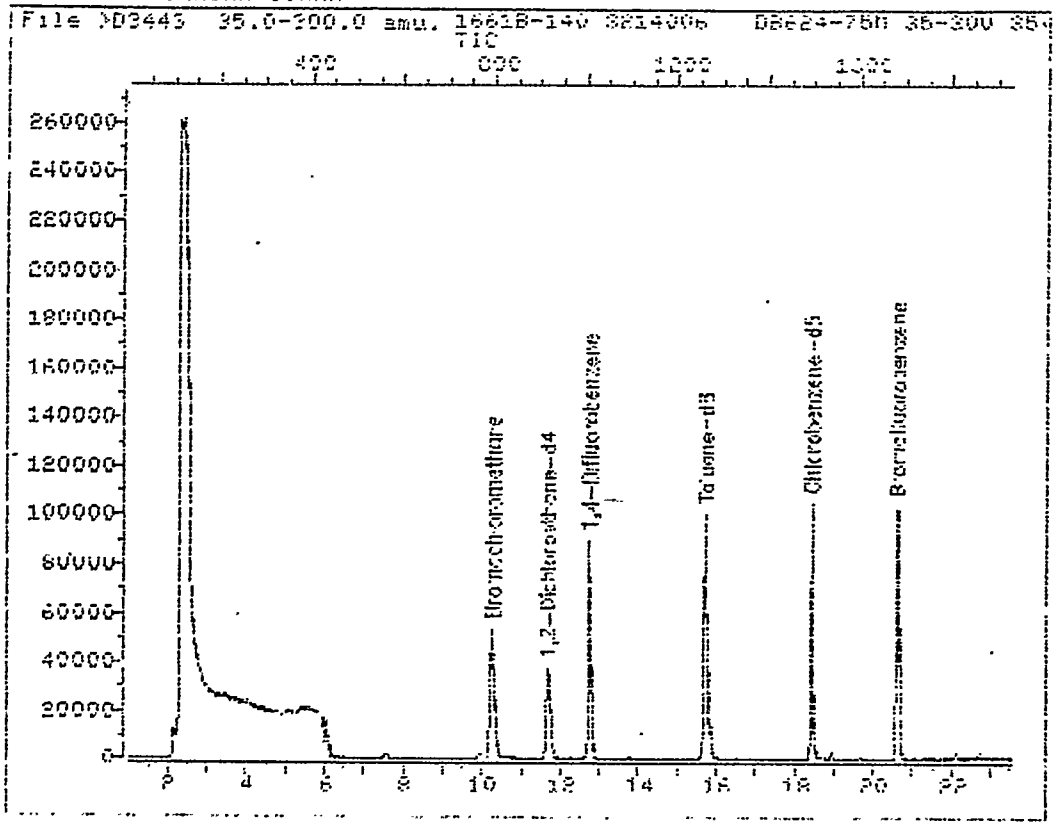




Data File: >D3442::D5 Quant Output File: ^D3442::D1
Name: 1661b 65 3214001 Instrument ID: 7003V
Misc: DB624-75M 35 300 35(9)-8 200 10ISSS 4.0C
Quant Time: 940523 13:25 Quant ID File: D10523::D1
Injected at: 940523 13:01 Last Calibration: 901213 16:29
Last Qcal Time: 940523 10:17

Compound No : 12
Compound Name : Methylene Chloride
Scan Number : 434
Retention Time: 6.05 min.
Quant Ion : 84.0
Area : 28077
Concentration : 12.00 ug/Kg
q value : 100

TOTAL ION CHROMATOGRAM



Data File: >D3443::D5 Quant Output File: ^D3443::D1
Name: 16618 140 3214006 Instrument ID: 7003V
Misc: DB624 75M 35 300 35(8) 2 200 101888 2.5C

Id File: DI0523::D1
Title: VOA 3/90 8240/624 IDENTIFICATION LIST
Last Calibration: 901213 16:29 Last Cool Time: 940523 10:17

Operator ID: BM
Quant Time : 940523 13:57
Injected at: 940523 13:33

QUANT REPORT

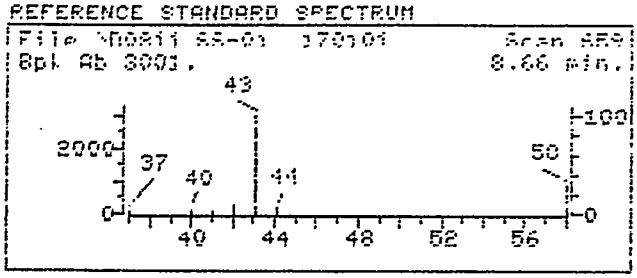
Operator ID: BM Quant Rev: 7 Quant Time: 940523 13:57
Output File: ^D3443::D1 Injected at: 940523 13:33
Data File: >D3443::D5 Dilution Factor: 1.00000
Name: 1661B-140 3214006 (2x DILUTION) 218 Instrument ID: 7003V
Misc: DB624-75M 35-300 35(8) 8-200 10ISSS 2.5C
6/30/94

ID File: DI0523::D1
Title: VOA 3/90 8240/624 IDENTIFICATION LIST
Last Calibration: 901213 16:29 Last Qual Time: 940523 10:17

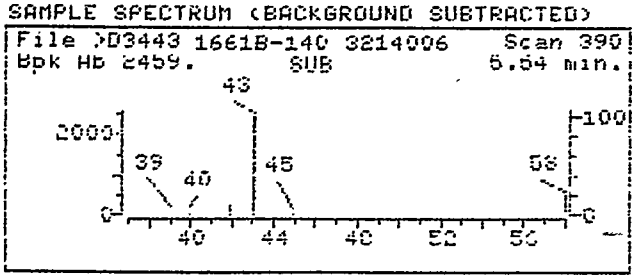
	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	10.26	128.0	44471	50.00	ug/Kg	9
9)	Acetone	5.54	43.0	74488M	165.58	ug/Kg	10
12)	Methylene Chloride	6.84	84.0	20634	12.90	ug/Kg	10
17)	2-Butanone	9.97	43.0	18239M	41.72	ug/Kg	10
20)	1,2 Dichloroethane d4	11.67	65.0	91168	51.69	ug/Kg	9
22)	*1,4-Difluorobenzene	12.73	114.0	183832	50.00	ug/Kg	9
37)	*Chlorobenzene d5	18.41	117.0	130938	50.00	ug/Kg	9
39)	Toluene d8	15.71	98.0	164178	51.88	ug/Kg	9
40)	Toluene	15.84	91.0	19553	5.16	ug/Kg	9
50)	Bromofluorobenzene	20.59	95.0	92962	44.52	ug/Kg	10

* Compound is ISTD

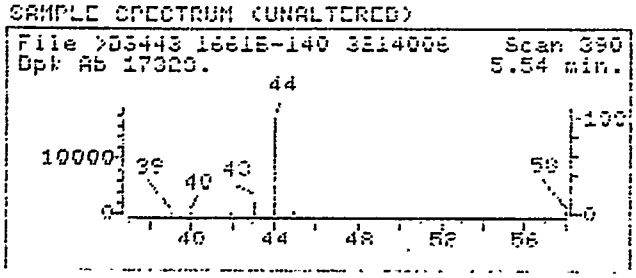
REFERENCE STANDARD SPECTRUM

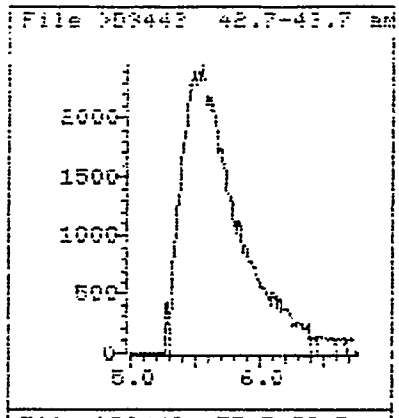


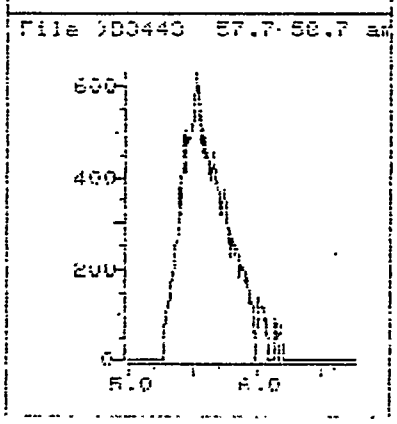
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



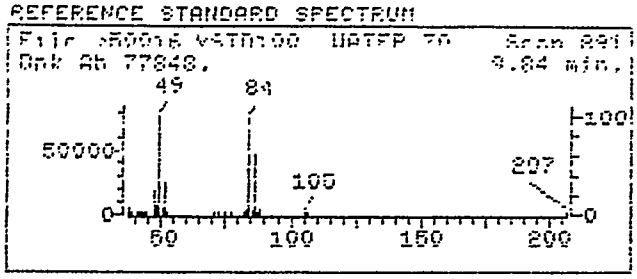




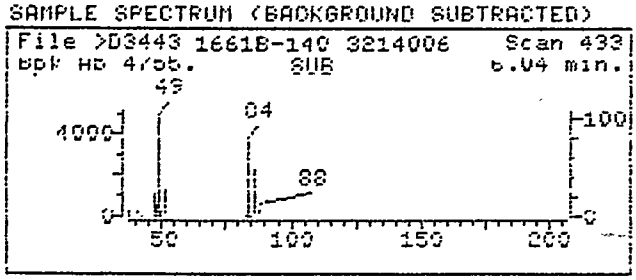
Data File: >D3443::D5 Quant Output File: ^D3443::D1
Name: 1661B 140 3214006 Instrument ID: 7083V
Misc: DB624 75M 35-300 35(8)-8 200 101888 2.5S
Quant Time: 940523 13:57 Quant ID File: D10523::D1
Injected at: 940523 13:33 Last Calibration: 901213 16:29
Last Qcal Time: 940523 10:17

Compound No : 9
Compound Name : Acetone
Scan Number : 390
Retention Time: 5.54 min.
Quant Ion : 43.0
Area : 74488M
Concentration : 165.58 ug/Kg
q value : 100

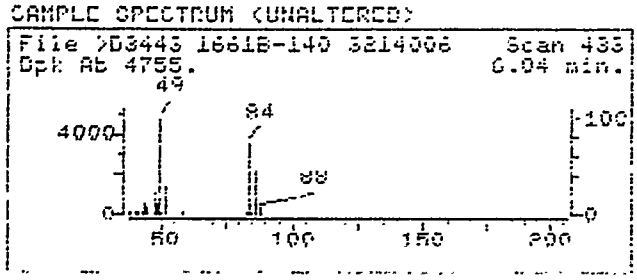
REFERENCE STANDARD SPECTRUM

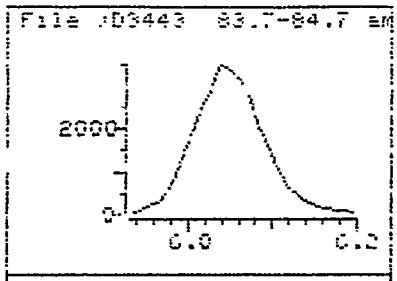


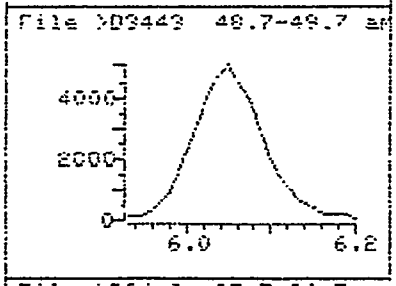
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

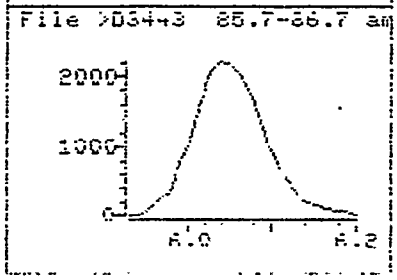


SAMPLE SPECTRUM (UNALTERED)





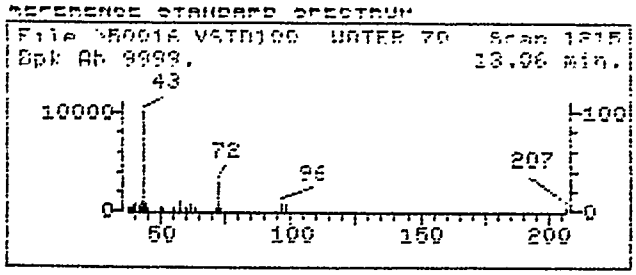




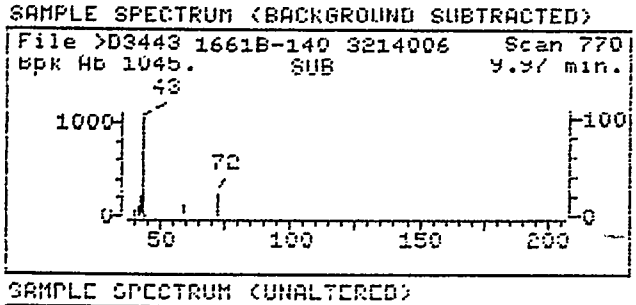
Data File: >D3443::D5 Quant Output File: ^D3442::D1
Name: 1661B 140 3214006 Instrument ID: 7883V
Misc: DB624 75M 35-300 35(8)-8 200 101888 2.5C
Quant Time: 940523 13:57 Quant ID File: D10523::D1
Injected at: 940523 13:33 Last Calibration: 901213 16:29
Last Qual Time: 940523 10:17

Compound No : 12
Compound Name : Methylene Chloride
Scan Number : 433
Retention Time: 6.84 min.
Quant Ion : 84.0
Area : 20634
Concentration : 12.90 ug/Kg
q value : 100

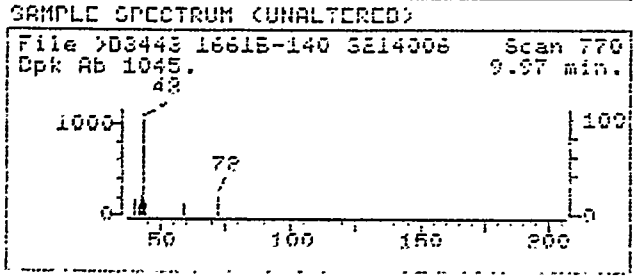
REFERENCE STANDARD SPECTRUM

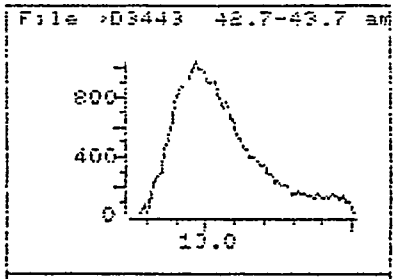


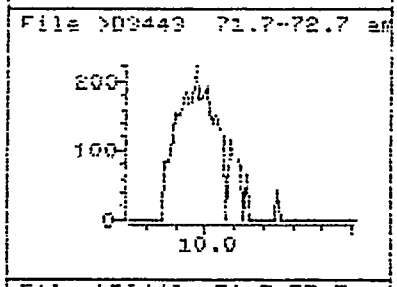
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

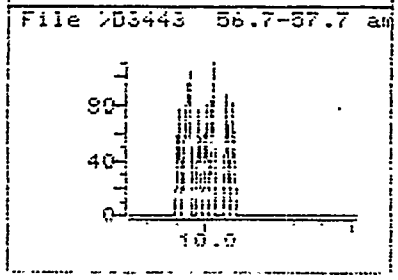


SAMPLE SPECTRUM (UNALTERED)



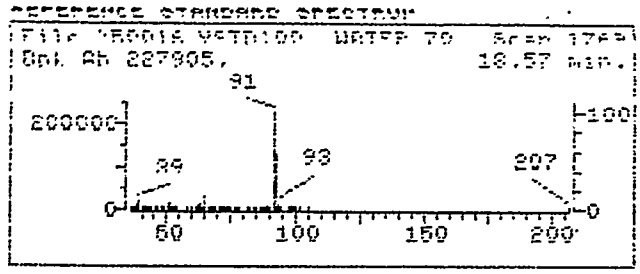


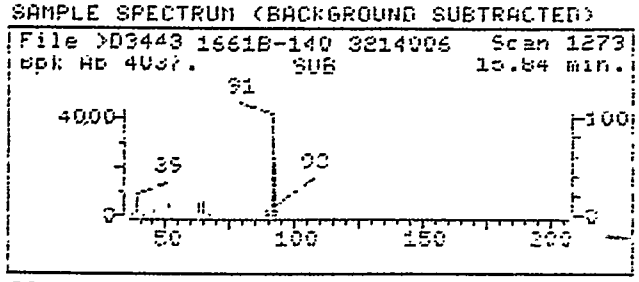


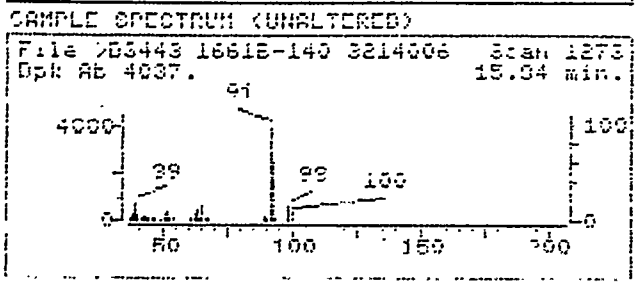


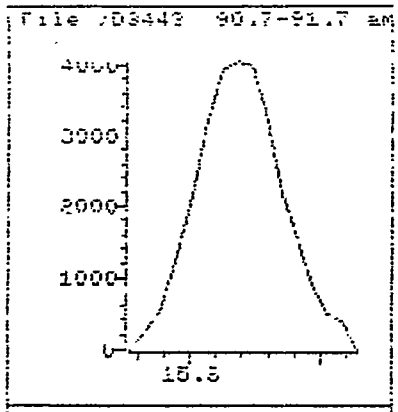
Data File: >D3443::D5 Quant Output File: ^D3443::D1
Name: 1661B 140 3214006 Instrument ID: 7903V
Misc: DB624 75M 35-300 35(8)-9-200 101SSS 2.5C
Quant Time: 940523 13:57 Quant ID File: DI0523::D1
Injected at: 940523 13:33 Last Calibration: 901213 16:29
Last Qual Time: 940523 10:17

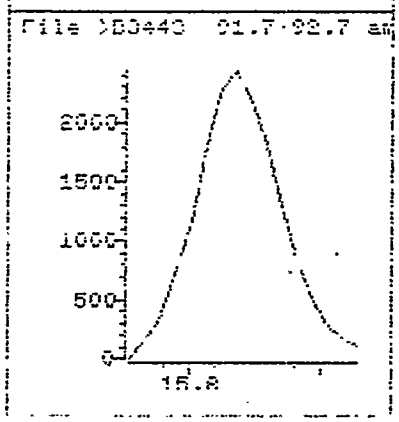
Compound No : 17
Compound Name : 2 Butanone
Scan Number : 770
Retention Time: 9.97 min.
Quant Ion : 43.0
Area : 18239M
Concentration : 41.72 ug/Kg
q value : 100









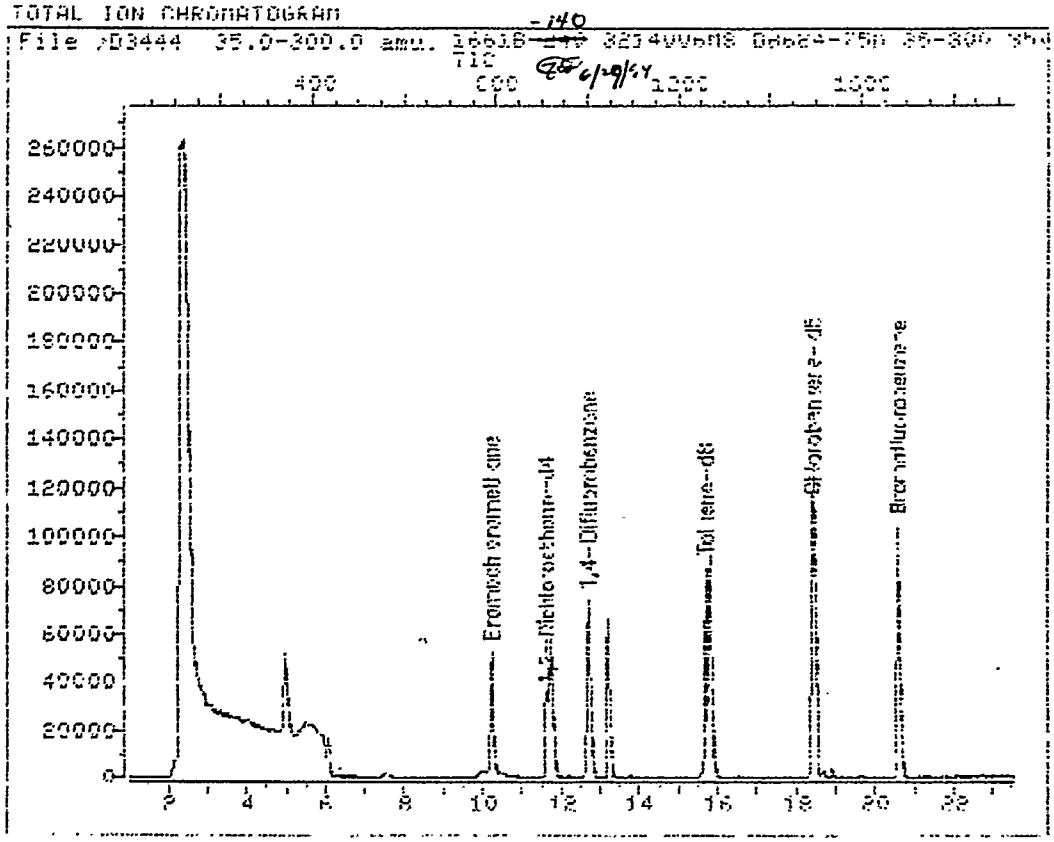


Data File: >D3443::D5
Name: 1661B 140 3214006
Misc: DB624 25M 35-300 35(8)-8 200 101888 2.5C
Quant Time: 940523 13:57
Injected at: 940523 13:33
Last Qual Time: 940523 10:17

Quant Output File: ^D3443::D1
Instrument ID: 7803V
Quant ID File: DI0523::D1
Last Calibration: 981213 16:29

Compound No : 40
Compound Name : Toluene
Scan Number : 1273
Retention Time: 15.84 min.
Quant Ion : 91.0
Area : 19553
Concentration : 5.16 ug/Kg
q value : 96

TOTAL ION CHROMATOGRAM



Data File: >D3444::D5 Quant Output File: ^D3444::D1
Name: 16618 3214006MS Instrument ID: 7003V
Misc: DB624 75M 35-300 35(8)-8-200 101SSS 2.5C

Id File: DI0523::D1
Title: VOA 3/90 8240/624 DENTIFICATION LIST
Last Calibration: 901213 16:29 Last Qual Time: 940523 10:17

Operator ID: BM
Quant Time : 940523 14:33
Injected at: 940523 14:09

QUANT REPORT

Operator ID: BK
Quant Rev: 7
Quant Time: 940523 14:33
Output File: ^D3444::D1
Injected at: 940523 14:09
Data File: >D3444::D9
Dilution Factor: 1.00000
Name: 1661B-~~240~~ 148 3214006MS
Instrument ID: 7003V
Misc: DB624-75M 35-300 35(8) 8-200 10ISSS 2.5C

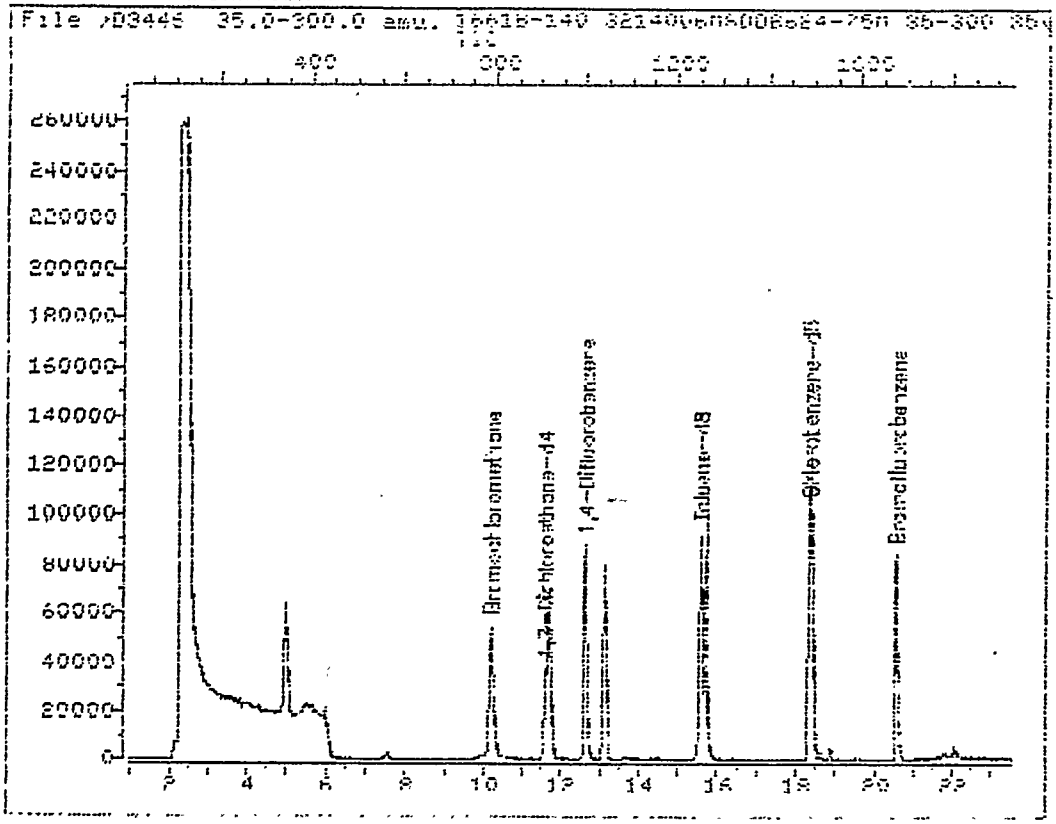
6/27/94

ID File: DI0523::D1
Title: VOA 3/90 8240/624 IDENTIFICATION LIST
Last Calibration: 901213 16:29
Last Qual Time: 940523 10:17

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	10.21	128.0	41104	50.00	ug/Kg	9[illegible]
8)	1,1-Dichloroethene	4.96	96.0	31098	24.87	ug/Kg	8[illegible]
9)	Acetone	5.49	43.0	99147M	238.45	ug/Kg	10[illegible]
12)	Methylene Chloride	6.04	84.0	21541	14.57	ug/Kg	10[illegible]
17)	2 Butanone	9.97	43.0	25657M	63.49	ug/Kg	10[illegible]
20)	1,2-Dichloroethane-d4	11.61	65.0	83461	51.19	ug/Kg	9[illegible]
22)	*1,4 Difluorobenzene	12.69	114.0	148132	50.00	ug/Kg	9[illegible]
26)	Benzene	11.73	78.0	132480	43.13	ug/Kg	10[illegible]
27)	Trichloroethene	13.20	130.0	56338	41.43	ug/Kg	10[illegible]
37)	*Chlorobenzene-d5	18.40	117.0	121518	50.00	ug/Kg	8[illegible]
39)	Toluene d8	15.48	98.0	143172	48.75	ug/Kg	9[illegible]
40)	Toluene	15.81	91.0	167307	47.54	ug/Kg	9[illegible]
43)	Chlorobenzene	18.45	112.0	114690	43.73	ug/Kg	9[illegible]
50)	Bromofluorobenzene	20.58	95.0	92578	47.7[illegible]	ug/Kg	10[illegible]

* Compound .c ISTD

TOTAL ION CHROMATOGRAM



Data File: >D3446::D5 Quant Output File: ^D3446::D1
Name: 16618 140 3214006MSD Instrument ID: 7003V
Misc: DB624 75M 35-300 35(8) 8-200 101SSS 2.5C

Id File: DI0523::D1
Title: VOA 3/90 8240/624 IDENTIFICATION LIST
Last Calibration: 901213 16:29 Last Qual Time: 940523 10:17

Operator ID: BX
Quant Time : 940523 15:41
Injected at: 940523 15:17

QUANT REPORT

Operator ID: BM Quant Rev: 7 Quant Time: 940523 15:41
Output File: ^D3446::D1 Injected at: 940523 15:17
Data File: >D3446::D5 Dilution Factor: 1.00000
Name: 1661B-140 3214006MSD Instrument ID: 7003V
Misc: DB624 75M 35-300 35(8) 8-200 101SSS 2.5C

ID File: DI0523::D1
Title: VOA 3/90 8240/624 IDENTIFICATION LIST
Last Calibration: 901213 16:29 Last Qual Time: 940523 10:17

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	10.21	128.0	43760	50.00	ug/Kg	9[illegible]
8)	1,1-Dichloroethane	4.96	96.0	43482	32.67	ug/Kg	8[illegible]
9)	Acetone	5.53	43.0	101933M	230.27	ug/Kg	10[illegible]
12)	Methylene Chloride	6.02	84.0	24176	15.36	ug/Kg	10[illegible]
17)	2 Butanone	9.93	43.0	17758M	41.28	ug/Kg	10[illegible]
20)	1,2 Dichloroethane-d4	11.58	65.0	88241	50.84	ug/Kg	9[illegible]
22)	*1,4 Difluorobenzene	12.62	114.0	172541	50.00	ug/Kg	9[illegible]
26)	Benzene	11.70	78.0	159369	44.54	ug/Kg	10[illegible]
27)	Trichloroethene	13.11	130.0	65494	41.35	ug/Kg	10[illegible]
32)	*Chlorobenzene-d5	18.32	117.0	119215	50.00	ug/Kg	8[illegible]
39)	Toluene d8	15.[illegible]8	98.0	153523	53.28	ug/Kg	9[illegible]
40)	Toluene	15.71	91.0	189718	54.95	ug/Kg	9[illegible]
43)	Chlorobenzene	18.39	112.0	115006	44.70	ug/Kg	9[illegible]
50)	Bromofluorobenzene	20.55	95.0	75825	39.88	ug/Kg	10[illegible]

* Compound is ISTD

EcoTek LSI Volatile GC/MS Instrument Logsheet HP7003

Date	5-23-94	Column ID	DB624 75M	Project(s)	
Analyst(s)	BX	Trap ID	OI# 6	Tune File	DTUNE
GCMethFile	DBFB	Surrogate	10ul VSS 94058	Mass Range	35-300
GCProgram	80(.1)-10-180(H)	Internal Std	10ul VIS 94057	E.M. & A/D	1559 V / 2E2
GCMethFile	DVOA			Threshold	40
GCProgram	35(8)-8-200(2)			Scan Delay	1.0 min
GCMethFile				Calib File	PSN301 / DS0301
GCProgram				Quant ID File	DI0523

Notes:

Cont Cal Std	Area	Range
Int Std #1	45850	
Int Std #2	196112	50-200%
Int Std #3	153177	

Sample IS area limit (-50% to + 100%)

Initial Five-Point Calibration			
Date: 3-94	3/90 sow	m8240	
Meets criteria	(Y) N	(Y) N	Y N
BFB Tune			
File: >D 3438	3/90 sow	m8240	
Meets criteria	(Y) N	(Y) N 9243	Y N
Continuing Calibration			
File: >D 3439	3/90 sow	m8240	
Meets criteria	(Y) N	(Y) N	Y N

Filename	Laboratory Sample ID	Client Sample ID	ASL #	ph	Df	Comments/Sample Prep	IS OK	SU OK	Note
D 3438	SV0594003	BFB 50ng	2	–	–	1ml #107, 106, 108-99, 9243	–	–	✓
D 3439	SV0C594044	VSTD50A	3	–	–	5ml 40°C	✓	✓	✓
D 3440	VBLKSA	Method blank	4	–	1	5.00g	✓	✓	X
D 3441	VBLKSA	Method blank	4	–	1	5.00g	✓	✓	✓
D 3442	3214001	1661B-65	5	–	1.25	4.0021g	✓	✓	✓
D 3443	06	1661B-100	6	–	2	2.5006g	✓	✓	✓
D 3444	06MS	MS	7	–	2	5.0031g	✓	✓	✓
D 3445	3214401	AHB01	8	–	1	2.5014g	✓	✓	✓
D 3446	3214006MSD	1661B-100MSD	9	–	2	2.5029g	✓	✓	✓
D 3447	3214402	AHB02	9	–	1	5.0261g	✓	✓	✓
D 3448	03	03	10	–	1	5.0034g	✓	✓	✓
D 3449	05	04	11	–	1	5.0014g	✓	✓	✓
D 3450	06	05	12	–	1	5.0109g	✓	✓	✓
D 3451	07	06	13	–	1	5.0224g	✓	✓	✓
D 3452	08	07	14	–	1	5.0081g	✓	✓	✓
D 3453	02MS	02MS	15	–	1	5.0097g +10ul SVCS94058	✓	✓	✓
D 3454	02MSD	02MSD	16	–	1	5.0182g	✓	✓	✓
D 3455	3213b5	3-SP-water-F	1	–	1	5.0046g	Auto Step, MD 2:1		
D 3456	MS	MS	2	–	1	5.0167 + 10ul SVCS94058			
D 3457	MSD	MSD	3	–	1	5.0167		Bi 5-24-94	
D 3458	BS		4	–	1	5.0265			
D 3459	BSD		5	–	1	✓			✓
D									

Sign/Date: BX 5-23-94 (with corrections) Approval/Date: 6/17/94

- = Needs Reextraction
- = Needs Reinjection
- = Needs Dilution
- LOK

RE = Reextraction Analysis
RIN = Reinjection Analysis
DL = Dilution Analysis
X = Noncompliant

Surrogate Notes:
W=Within limits L=Below lower limits M=Matrix effect
H=Above limit D=Dilution; not usable

Surrogate Limits:	TOL	BFB	DCE
Water: (3/90)	88-110	86-115	76-114
Soil: (3/90)	84-138	59-113	70-121
Water: (8240)	88-110	86-115	76-114
Soil: (8240)	81-117	74-121	70-121

Notes:

HP700302.XLS Rev2 (1/94)

EcoTek LSI Volatile GC/MS Instrument Logsheet HP7003

Date	5-21-94	Column ID	DB624 75M	Project(s)	
Analyst(s)	KX	Trap ID	OI# 6	Tune File	DTUNE
GCMethFile	DBFB	Surrogate	10ul VSS94058	Mass Range	35-300
GCProgram	80(.1)-10-180(H)	Internal Std	10ul VIS.94057	E.M. & A/D	1550V / 2E2
GCMethFile	DVOA			Threshold	40
GCProgram	35(8)-8-200(2)			Scan Delay	1.0 min
GCMethFile				Calib File	DSN30 / DS030
GCProgram				Quant ID File	DI052

Notes:

Cont Cal Std	Area	Range
Int Std #1	54335	
Int Std #2	255690	-50+100%
Int Std #3	198440	

Sample IS area limit (-50% to + 100%)

Initial Five-Point Calibration			
Date: 3-94	3/90 sow	m8240	
Meets criteria	(Y) N	(Y) N	Y N
BFB Tune			
File: >D3419	3/90 sow	m8240	
Meets criteria	(Y) N	(Y) N	Y N
Continuing Calibration			
File: >D3420	3/90 sow	m8240	
Meets criteria	(Y) N	(Y) N	Y N

Filename	Laboratory Sample ID	Client Sample ID	ASL #	ph	Df	Comments/Sample Prep	IS OK	SU OK	Note
>D 3419	3419 SVOCS94073	BFB50ng	2	–	–	1ul #111,110,112-103 1:15	–	–	✓
>D 3420	SVOCS94060E	VSC050 G	3	–	–	5ul +5ul SVOCS940090 40°C	✓	✓	✓
>D 3421	VBLKSC	Method Blank	4	–	1	5.00g.	✓	✓	✓
>D 3422	3212203MS	CB-S-02t MS	5	–	1	5.0062 g +10ul SVOCS94004 g	✓	✓	✓
>D 3423	3212203MS	↓ MSD	6	–	1	5.0107 g	✓	✓	✓
>D 3424	3210203MS	CB-S018 MS	7	–	1.25	4.02 g	3L	✓	MIN
>D 3425	MSD	↓ MS1	8	–	1.25	4.01 g	3L	✓	RIN
>D 3426	03	CB-S-019	9	–	1.25	4.03 g	✓	✓	✓
>D 3427	↓ 04	↓ -020	10	–	1.25	4.01 g	✓	✓	✓
>D 3428	3214001	16112-65	11	–	1	5.0016 Acetone high	✓	✓	NIL
>D 3429	01MS	MS	12	–	1	5.0102 +10ul SVOCS940	✓	✓	X
>D 3430	01MSD	↓ MSD	13	–	1	5.0165 ↓ ↓	✓	✓	X
>D 3431	3214006	16616-160	14	–	1	5.0114 Acetone high	3L	3L	NIL
>D 3432	MS	MS	15	–	1	5.0209 +10ul SVOCS940	3L	3L	X
>D 3433	↓ MSD	↓ MSD	16	–	1	5.0084 ↓ ↓	3L	3L	MIN
>D 3434	SYSTEM BLANK	–	1	–	1	5ml	✓	✓	✓
>D 3435	BS	–	2	–	1	5.00g +10ul SVOCS940	✓	✓	✓
>D 3436	BSD	–	3	–	1	5.00g ↓	✓	✓	✓
>D 3437			4						
>D			5						
>D			6						
>D									
>D						KX 5-22-94			

Sign/Date: KX 5-21-94 (with corrections) Approval/Date: KX 6/17/94

ASL = Needs Reextraction
RIN = Needs Reinjection
DIL = Needs Dilution
OK

RE = Reextraction Analysis
RIN = Reinjection Analysis
DL = Dilution Analysis
X = Noncompliant

Surrogate Notes:
W = Within limits
L = Below lower limits
M = Matrix effect
H = Above limit
D = Dilution; not usable

Surrogate Limits:	TOL	BFB	DCE	
Water: (3/90)		88-110	86-115	76-114
Soil: (3/90)		84-138	59-113	70-121
Water: (8240)		88-110	86-115	76-114
Soil: (8240)		[illegible]	[illegible]	[illegible]

Notes:

HP700302.XLS Rev2 (1/94)

Semivolatiles

LSDG: 32136

EcoTek LSI
EcoTek Laboratory Services Incorporated

3342 International Park Drive, S.E.
Atlanta, Georgia 30316
(404) 244-0827
Fax # (404) 243-5355

July 7, 1994

Mr. Doug Davis
Nuclear Fuel Services, Inc.
1205 Banner Hill Road
Erwin, TN 37650

Dear Mr. Davis:

Enclosed along with this letter are the Semivolatile results for sample #3213620 (1661B-95) received on May 17, 1994. These results were inadvertently left out of the original submittal.

Please contact Craig Johnson at (404)244-0827 if you have any questions. Also, please refer to Batch ID 32136 in future correspondence.

Sincerely,

ECOTEK LABORATORY SERVICES, INC.

Craig Johnson
Manager, Project Management

Enclosures.
CCJ/crb

EcoTek LSI
EcoTek Laboratory Services Incorporated

3342 International Park Drive, S.E.
Atlanta, Georgia 30316
(404) 244-0827
Fax # (404) 243-5355

June 30, 1994

Mr. Doug Davis
Nuclear Fuel Services, Inc.
1205 Banner Hill Road
Erwin, TN 37650

Dear Mr. Davis:

Enclosed along with this letter are the partial results for the sample(s) received May 17, 1994. The Radiochemical and Semivolatile results will follow July 5, 1994.

Please contact Craig Johnson at (404)244-0827 if you have any questions. Also, please refer to Batch ID 32136 in future correspondence.

Sincerely,

ECOTEK LABORATORY SERVICES, INC.

Craig Johnson
Senior Project Manager

Enclosures.
CCJ/crb

EcoTek LSI
EcoTek Laboratory Services Incorporated

3342 International Park Drive, S.E.
Atlanta, Georgia 30316
(404) 244-0827
Fax # (404) 243-5355

June 30, 1994

Mr. Doug Davis
Nuclear Fuel Services, Inc.
1205 Banner Hill Road
Erwin, TN 37650

Dear Mr. Davis:

Enclosed along with this letter are the Radiochemical and Semivolatile results for the sample(s) received May 17, 1994.

Please contact Craig Johnson at (404)244-0827 if you have any questions. Also, please refer to Batch ID 32136 in future correspondence.

Sincerely,

ECOTEK LABORATORY SERVICES, INC.

Craig Johnson
Senior Project Manager

Enclosures.
CCJ/crb

EcoTek LSI
EcoTek Laboratory Services Incorporated

ECOTEK LSI'S FLAG DEFINITION LIST

B	This flag is used when the analyte is found in the blank.
C	See case narrative for further explanation.
D	Surrogate diluted out.
E	Analyte exceeds the calibration range.
EICP	Determination of the presence of this analyte is based upon the presence of a peak, searched for utilizing extracted ion current profiles, with a spectrum matching the NBS library reference spectrum for this analyte.
J	Indicates an estimated value.
M	Target MDA not achieved
N	The sample matrix spike's percent recovery was outside of the 75 - 125% control limits.
NA	Not Applicable
ND	Not Detected
P	Preliminary Data
*	The sample matrix duplicate's relative percent difference, RPD, was above the 0 - 20% control limits.
***	Surrogate recovery outside QC limits.

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile Organic Analytical Results
SW-846 Method 8270

Client: Nuclear Fuel Services, Inc.
Lab Sample ID: 3213696
Matrix: Soil

Client Reference No.: LEFPC
Client Sample No.: 1661B-223
Date Received: 17-May-94
Date Extracted: 24-May-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/kg	PQL ug/kg	Note
108952	Phenol	7/3/94	10	13000	5300	
111444	bis(2-Chloroethyl)ether	7/2/94	1	BQL	530	
95578	2-Chlorophenol	7/2/94	1	BQL	530	
541731	1,3-Dichlorobenzene	7/2/94	1	BQL	530	
106467	1,4-Dichlorobenzene	7/2/94	1	BQL	530	
100516	Benzyl alcohol	7/2/94	1	BQL	1100	
95501	1,2-Dichlorobenzene	7/2/94	1	BQL	530	
95487	2-Methylphenol	7/2/94	1	1900	530	
108601	bis(2-Chloroisopropyl)ether	7/2/94	1	BQL	530	
106445	4-Methylphenol	7/2/94	1	4000	530	
621647	N-Nitroso-di-n-propylamine	7/2/94	1	BQL	530	
67721	Hexachloroethane	7/2/94	1	BQL	530	
98953	Nitrobenzene	7/2/94	1	BQL	530	
78591	Isophorone	7/2/94	1	BQL	530	
88755	2-Nitrophenol	7/2/94	1	BQL	530	
105679	2,4-Dimethylphenol	7/2/94	1	BQL	530	
65850	Benzoic acid	7/2/94	1	BQL	2700	
111911	bis(2-Chloroethoxy)methane	7/2/94	1	BQL	530	
120832	2,4-Dichlorophenol	7/2/94	1	BQL	530	
120821	1,2,4-Trichlorobenzene	7/2/94	1	BQL	530	
91203	Naphthalene	7/2/94	1	5500	530	
106478	4-Chloroaniline	7/2/94	1	BQL	1100	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: 3213696 Client Sample No.: 1661B-223

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/kg	PQL ug/kg	Note
87683	Hexachlorobutadiene	7/2/94	1	BQL	530	
59507	4-Chloro-3-methylphenol	7/2/94	1	BQL	1100	
91576	2-Methylnaphthalene	7/2/94	1	4700	530	
77474	Hexachlorocyclopentadiene	7/2/94	1	BQL	530	
88062	2,4,6-Trichlorophenol	7/2/94	1	BQL	530	
95954	2,4,5-Trichlorophenol	7/2/94	1	BQL	530	
91587	2-Chloronaphthalene	7/2/94	1	BQL	530	
88744	2-Nitroaniline	7/2/94	1	BQL	2700	
131113	Dimethylphthalate	7/2/94	1	BQL	530	
208968	Acenaphthylene	7/2/94	1	860	530	
606202	2,6-Dinitrotoluene	7/2/94	1	BQL	530	
99092	3-Nitroaniline	7/2/94	1	BQL	2700	
83329	Acenaphthene	7/2/94	1	560	530	
51285	2,4-Dinitrophenol	7/2/94	1	BQL	2700	
100027	4-Nitrophenol	7/2/94	1	BQL	2700	
132649	Dibenzofuran	7/2/94	1	1900	530	
121142	2,4-Dinitrotoluene	7/2/94	1	BQL	530	
84662	Diethylphthalate	7/2/94	1	BQL	530	
7005723	4-Chlorophenyl-phenylether	7/2/94	1	BQL	530	
86737	Fluorene	7/2/94	1	BQL	530	
100016	4-Nitroaniline	7/2/94	1	BQL	2700	
534521	4,6-Dinitro-2-methylphenol	7/2/94	1	1300	2700	J
86306	N-Nitrosodiphenylamine	7/2/94	1	1800	530	
101553	4-Bromophenyl-phenylether	7/2/94	1	BQL	530	
118741	Hexachlorobenzene	7/2/94	1	BQL	530	
87865	Pentachlorophenol	7/2/94	1	BQL	2700	
85018	Phenanthrene	7/2/94	1	6000	530	
120127	Anthracene	7/2/94	1	1400	530	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: 3213696 Client Sample No.: 1661B-223

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/kg	PQL ug/kg	Note
84742	Di-n-butylphthalate	7/2/94	1	BQL	530	
206440	Fluoranthene	7/2/94	1	5300	530	
129000	Pyrene	7/2/94	1	3900	530	
85687	Butylbenzylphthalate	7/2/94	1	650	530	
91941	3,3'-Dichlorobenzidine	7/2/94	1	BQL	1100	
56553	Benzo(a)anthracene	7/2/94	1	BQL	530	
218019	Chrysene	7/2/94	1	1200	530	
117817	bis(2-Ethylhexyl)phthalate	7/2/94	1	2900	530	
117840	Di-n-octylphthalate	7/2/94	1	BQL	530	
205992	Benzo(b)fluoranthene	7/2/94	1	BQL	530	
207089	Benzo(k)fluoranthene	7/2/94	1	BQL	530	
50328	Benzo(a)pyrene	7/2/94	1	BQL	530	
193395	Indeno(1,2,3-cd)pyrene	7/2/94	1	BQL	530	
53703	Dibenzo(a,h)anthracene	7/2/94	1	BQL	530	
191242	Benzo(g,h,i)perylene	7/2/94	1	BQL	530	

PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile Surrogate Recovery Data

Lab Sample ID: 3213696 Client Sample No.: 1661B-223

Surrogate Compound	Analysis Date	Spike Amount	% Recovery	QC Limits	Notes
Nitrobenzene-d5	7/2/94	50	91	23-120	
2-Fluorobiphenyl	7/2/94	50	75	30-115	
Terphenyl-d14	7/2/94	50	84	18-137	
Phenol-d6	7/2/94	75	55	24-113	
2-Fluorophenol	7/2/94	75	65	25-121	
2,4,6-Tribromophenol	7/2/94	75	57	19-122	
Nitrobenzene-d5	7/3/94	50	58	23-120	
2-Fluorobiphenyl	7/3/94	50	81	30-115	
Terphenyl-d14	7/3/94	50	80	18-137	
Phenol-d6	7/3/94	75	75	24-113	
2-Fluorophenol	7/3/94	75	69	25-121	
2,4,6-Tribromophenol	7/3/94	75	32	19-122	

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.
Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile Organic Analytical Results
SW-846 Method 8270

Client: Nuclear Fuel Services, Inc.
Lab Sample ID: 32136108
Matrix: Water

Client Reference No.: LEFPC
Client Sample No.: 1661B-234
Date Received: 17-May-94
Date Extracted: 19-May-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/l	PQL ug/l	Note
108952	Phenol	6/4/94	5	BQL	50	
111444	bis(2-Chloroethyl)ether	6/4/94	5	BQL	50	
95578	2-Chlorophenol	6/4/94	5	BQL	50	
541731	1,3-Dichlorobenzene	6/4/94	5	BQL	50	
106467	1,4-Dichlorobenzene	6/4/94	5	BQL	50	
100516	Benzyl alcohol	6/4/94	5	BQL	100	
95501	1,2-Dichlorobenzene	6/4/94	5	BQL	50	
95487	2-Methylphenol	6/4/94	5	BQL	50	
108601	bis(2-Chloroisopropyl)ether	6/4/94	5	BQL	50	
106445	4-Methylphenol	6/4/94	5	BQL	50	
621647	N-Nitroso-di-n-propylamine	6/4/94	5	BQL	50	
67721	Hexachloroethane	6/4/94	5	BQL	50	
98953	Nitrobenzene	6/4/94	5	BQL	50	
78591	Isophorone	6/4/94	5	BQL	50	
88755	2-Nitrophenol	6/4/94	5	BQL	50	
105679	2,4-Dimethylphenol	6/4/94	5	BQL	50	
65850	Benzoic acid	6/4/94	5	670	250	
111911	bis(2-Chloroethoxy)methane	6/4/94	5	BQL	50	
120832	2,4-Dichlorophenol	6/4/94	5	BQL	50	
120821	1,2,4-Trichlorobenzene	6/4/94	5	BQL	50	
91203	Naphthalene	6/4/94	5	BQL	50	
106478	4-Chloroaniline	6/4/94	5	BQL	100	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: 32136108 Client Sample No.: 1661B-234

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/l	PQL ug/l	Note
87683	Hexachlorobutadiene	6/4/94	5	BQL	50	
59507	4-Chloro-3-methylphenol	6/4/94	5	BQL	100	
91576	2-Methylnaphthalene	6/4/94	5	BQL	50	
77474	Hexachlorocyclopentadiene	6/4/94	5	BQL	50	
88062	2,4,6-Trichlorophenol	6/4/94	5	BQL	50	
95954	2,4,5-Trichlorophenol	6/4/94	5	BQL	50	
91587	2-Chloronaphthalene	6/4/94	5	BQL	50	
88744	2-Nitroaniline	6/4/94	5	BQL	250	
131113	Dimethylphthalate	6/4/94	5	BQL	50	
208968	Acenaphthylene	6/4/94	5	BQL	50	
606202	2,6-Dinitrotoluene	6/4/94	5	BQL	50	
99092	3-Nitroaniline	6/4/94	5	BQL	250	
83329	Acenaphthene	6/4/94	5	BQL	50	
51285	2,4-Dinitrophenol	6/4/94	5	BQL	250	
100027	4-Nitrophenol	6/4/94	5	BQL	250	
132649	Dibenzofuran	6/4/94	5	BQL	50	
121142	2,4-Dinitrotoluene	6/4/94	5	BQL	50	
84662	Diethylphthalate	6/4/94	5	BQL	50	
7005723	4-Chlorophenyl-phenylether	6/4/94	5	BQL	50	
86737	Fluorene	6/4/94	5	BQL	50	
100016	4-Nitroaniline	6/4/94	5	BQL	250	
534521	4,6-Dinitro-2-methylphenol	6/4/94	5	BQL	250	
86306	N-Nitrosodiphenylamine	6/4/94	5	BQL	50	
101553	4-Bromophenyl-phenylether	6/4/94	5	BQL	50	
118741	Hexachlorobenzene	6/4/94	5	BQL	50	
87865	Pentachlorophenol	6/4/94	5	BQL	250	
85018	Phenanthrene	6/4/94	5	BQL	50	
120127	Anthracene	6/4/94	5	BQL	50	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: 32136108 Client Sample No.: 1661B-234

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/l	PQL ug/l	Note
84742	Di-n-butylphthalate	6/4/94	5	BQL	50	
206440	Fluoranthene	6/4/94	5	BQL	50	
129000	Pyrene	6/4/94	5	BQL	50	
85687	Butylbenzylphthalate	6/4/94	5	BQL	50	
91941	3,3'-Dichlorobenzidine	6/4/94	5	BQL	100	
56553	Benzo(a)anthracene	6/4/94	5	BQL	50	
218019	Chrysene	6/4/94	5	BQL	50	
117817	bis(2-Ethylhexyl)phthalate	6/4/94	5	BQL	50	
117840	Di-n-octylphthalate	6/4/94	5	BQL	50	
205992	Benzo(b)fluoranthene	6/4/94	5	BQL	50	
207089	Benzo(k)fluoranthene	6/4/94	5	BQL	50	
50328	Benzo(a)pyrene	6/4/94	5	BQL	50	
193395	Indeno(1,2,3-cd)pyrene	6/4/94	5	BQL	50	
53703	Dibenzo(a,h)anthracene	6/4/94	5	BQL	50	
191242	Benzo(g,h,i)perylene	6/4/94	5	BQL	50	

PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile Surrogate Recovery Data

Lab Sample ID: 32136108 *Client Sample No.: 1661B-234*

Surrogate Compound	Analysis Date	Spike Amount	% Recovery	QC Limits	Notes
Nitrobenzene-d5	6/4/94	25	151	35-114	***
2-Fluorobiphenyl	6/4/94	25	108	43-116	
Terphenyl-d14	6/4/94	25	175	33-141	***
Phenol-d6	6/4/94	37.5	45	10- 94	
2-Fluorophenol	6/4/94	37.5	0	21-100	***
2,4,6-Tribromophenol	6/4/94	37.5	0	10-123	***

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.
Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile Organic Analytical Results
SW-846 Method 8270

Client: Nuclear Fuel Services, Inc.
Lab Sample ID: 32136108R
Matrix: Water

Client Reference No.: LEFPC
Client Sample No.: 1661B-234
Date Received: 17-May-94
Date Extracted: 6-Jun-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/l	PQL ug/l	Note
108952	Phenol	7/3/94	2	BQL	20	
111444	bis(2-Chloroethyl)ether	7/3/94	2	BQL	20	
95578	2-Chlorophenol	7/3/94	2	BQL	20	
541731	1,3-Dichlorobenzene	7/3/94	2	BQL	20	
106467	1,4-Dichlorobenzene	7/3/94	2	BQL	20	
100516	Benzyl alcohol	7/3/94	2	BQL	40	
95501	1,2-Dichlorobenzene	7/3/94	2	BQL	20	
95487	2-Methylphenol	7/3/94	2	BQL	20	
108601	bis(2-Chloroisopropyl)ether	7/3/94	2	BQL	20	
106445	4-Methylphenol	7/3/94	2	BQL	20	
621647	N-Nitroso-di-n-propylamine	7/3/94	2	BQL	20	
67721	Hexachloroethane	7/3/94	2	BQL	20	
98953	Nitrobenzene	7/3/94	2	BQL	20	
78591	Isophorone	7/3/94	2	BQL	20	
88755	2-Nitrophenol	7/3/94	2	BQL	20	
105679	2,4-Dimethylphenol	7/3/94	2	BQL	20	
65850	Benzoic acid	7/3/94	2	BQL	100	
111911	bis(2-Chloroethoxy)methane	7/3/94	2	BQL	20	
120832	2,4-Dichlorophenol	7/3/94	2	BQL	20	
120821	1,2,4-Trichlorobenzene	7/3/94	2	7.4	20	J
91203	Naphthalene	7/3/94	2	BQL	20	
106478	4-Chloroaniline	7/3/94	2	BQL	40	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: 32136108R Client Sample No.: 1661B-234

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/l	PQL ug/l	Note
87683	Hexachlorobutadiene	7/3/94	2	BQL	20	
59507	4-Chloro-3-methylphenol	7/3/94	2	BQL	40	
91576	2-Methylnaphthalene	7/3/94	2	BQL	20	
77474	Hexachlorocyclopentadiene	7/3/94	2	BQL	20	
88062	2,4,6-Trichlorophenol	7/3/94	2	BQL	20	
95954	2,4,5-Trichlorophenol	7/3/94	2	BQL	20	
91587	2-Chloronaphthalene	7/3/94	2	21	20	
88744	2-Nitroaniline	7/3/94	2	BQL	100	
131113	Dimethylphthalate	7/3/94	2	BQL	20	
208968	Acenaphthylene	7/3/94	2	BQL	20	
606202	2,6-Dinitrotoluene	7/3/94	2	BQL	20	
99092	3-Nitroaniline	7/3/94	2	BQL	100	
83329	Acenaphthene	7/3/94	2	BQL	20	
51285	2,4-Dinitrophenol	7/3/94	2	BQL	100	
100027	4-Nitrophenol	7/3/94	2	BQL	100	
132649	Dibenzofuran	7/3/94	2	BQL	20	
121142	2,4-Dinitrotoluene	7/3/94	2	BQL	20	
84662	Diethylphthalate	7/3/94	2	BQL	20	
7005723	4-Chlorophenyl-phenylether	7/3/94	2	BQL	20	
86737	Fluorene	7/3/94	2	BQL	20	
100016	4-Nitroaniline	7/3/94	2	BQL	100	
534521	4,6-Dinitro-2-methylphenol	7/3/94	2	BQL	100	
86306	N-Nitrosodiphenylamine	7/3/94	2	BQL	20	
101553	4-Bromophenyl-phenylether	7/3/94	2	BQL	20	
118741	Hexachlorobenzene	7/3/94	2	BQL	20	
87865	Pentachlorophenol	7/3/94	2	BQL	100	
85018	Phenanthrene	7/3/94	2	BQL	20	
120127	Anthracene	7/3/94	2	BQL	20	

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EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: 32136108R Client Sample No.: 1661B-234

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/l	PQL ug/l	Note
84742	Di-n-butylphthalate	7/3/94	2	BQL	20	
206440	Fluoranthene	7/3/94	2	BQL	20	
129000	Pyrene	7/3/94	2	BQL	20	
85687	Butylbenzylphthalate	7/3/94	2	BQL	20	
91941	3,3'-Dichlorobenzidine	7/3/94	2	BQL	40	
56553	Benzo(a)anthracene	7/3/94	2	BQL	20	
218019	Chrysene	7/3/94	2	BQL	20	
117817	bis(2-Ethylhexyl)phthalate	7/3/94	2	100	20	
117840	Di-n-octylphthalate	7/3/94	2	BQL	20	
205992	Benzo(b)fluoranthene	7/3/94	2	BQL	20	
207089	Benzo(k)fluoranthene	7/3/94	2	BQL	20	
50328	Benzo(a)pyrene	7/3/94	2	BQL	20	
193395	Indeno(1,2,3-cd)pyrene	7/3/94	2	BQL	20	
53703	Dibenzo(a,h)anthracene	7/3/94	2	BQL	20	
191242	Benzo(g,h,i)perylene	7/3/94	2	BQL	20	

PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

007

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile Surrogate Recovery Data

Lab Sample ID: 32136108R

Client Sample No.: 1661B-234

Surrogate Compound	Analysis Date	Spike Amount	% Recovery	QC Limits	Notes
Nitrobenzene-d5	7/3/94	25	52	35-114	
2-Fluorobiphenyl	7/3/94	25	44	43-116	
Terphenyl-d14	7/3/94	25	52	33-141	
Phenol-d6	7/3/94	37.5	27	10- 94	
2-Fluorophenol	7/3/94	37.5	25	21-100	
2,4,6-Tribromophenol	7/3/94	37.5	36	10-123	

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.
Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile Organic Analytical Results
SW-846 Method 8270

Client: Nuclear Fuel Services, Inc.
Lab Sample ID: 32136100
Matrix: Water

Client Reference No.: LEFPC
Client Sample No.: 1661B-238
Date Received: 17-May-94
Date Extracted: 19-May-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/l	PQL ug/l	Note
108952	Phenol	7/3/94	200	6400	2000	
111444	bis(2-Chloroethyl)ether	6/4/94	2	BQL	20	
95578	2-Chlorophenol	6/4/94	2	BQL	20	
541731	1,3-Dichlorobenzene	6/4/94	2	BQL	20	
106467	1,4-Dichlorobenzene	6/4/94	2	BQL	20	
100516	Benzyl alcohol	6/29/94	10	140	200	J
95501	1,2-Dichlorobenzene	6/4/94	2	BQL	20	
95487	2-Methylphenol	6/29/94	10	790	100	
108601	bis(2-Chloroisopropyl)ether	6/4/94	2	BQL	20	
106445	4-Methylphenol	6/29/94	10	1200	100	
621647	N-Nitroso-di-n-propylamine	6/4/94	2	BQL	20	
67721	Hexachloroethane	6/4/94	2	BQL	20	
98953	Nitrobenzene	6/4/94	2	BQL	20	
78591	Isophorone	6/4/94	2	BQL	20	
88755	2-Nitrophenol	6/4/94	2	BQL	20	
105679	2,4-Dimethylphenol	6/4/94	2	230	20	
65850	Benzoic acid	7/3/94	200	2000	10000	J
111911	bis(2-Chloroethoxy)methane	6/4/94	2	BQL	20	
120832	2,4-Dichlorophenol	6/4/94	2	BQL	20	
120821	1,2,4-Trichlorobenzene	6/4/94	2	BQL	20	
91203	Naphthalene	6/4/94	2	88	20	
106478	4-Chloroaniline	6/4/94	2	BQL	40	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: 32136100 Client Sample No.: 1661B-238

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/l	PQL ug/l	Note
87683	Hexachlorobutadiene	6/4/94	2	BQL	20	
59507	4-Chloro-3-methylphenol	6/4/94	2	BQL	40	
91576	2-Methylnaphthalene	6/4/94	2	26	20	
77474	Hexachlorocyclopentadiene	6/4/94	2	BQL	20	
88062	2,4,6-Trichlorophenol	6/4/94	2	BQL	20	
95954	2,4,5-Trichlorophenol	6/4/94	2	BQL	20	
91587	2-Chloronaphthalene	6/4/94	2	BQL	20	
88744	2-Nitroaniline	6/4/94	2	BQL	100	
131113	Dimethylphthalate	6/4/94	2	BQL	20	
208968	Acenaphthylene	6/4/94	2	4.7	20	J
606202	2,6-Dinitrotoluene	6/4/94	2	BQL	20	
99092	3-Nitroaniline	6/4/94	2	BQL	100	
83329	Acenaphthene	6/4/94	2	BQL	20	
51285	2,4-Dinitrophenol	6/4/94	2	BQL	100	
100027	4-Nitrophenol	6/4/94	2	BQL	100	
132649	Dibenzofuran	6/4/94	2	BQL	20	
121142	2,4-Dinitrotoluene	6/4/94	2	BQL	20	
84662	Diethylphthalate	6/4/94	2	5.0	20	J
7005723	4-Chlorophenyl-phenylether	6/4/94	2	BQL	20	
86737	Fluorene	6/4/94	2	BQL	20	
100016	4-Nitroaniline	6/4/94	2	BQL	100	
534521	4,6-Dinitro-2-methylphenol	6/4/94	2	BQL	100	
86306	N-Nitrosodiphenylamine	6/4/94	2	9.2	20	J
101553	4-Bromophenyl-phenylether	6/4/94	2	BQL	20	
118741	Hexachlorobenzene	6/4/94	2	BQL	20	
87865	Pentachlorophenol	6/4/94	2	BQL	100	
85018	Phenanthrene	6/4/94	2	4.8	20	J
120127	Anthracene	6/4/94	2	BQL	20	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: 32136100 Client Sample No.: 1661B-238

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/l	PQL ug/l	Note
84742	Di-n-butylphthalate	6/4/94	2	5.4	20	J
206440	Fluoranthene	6/4/94	2	BQL	20	
129000	Pyrene	6/4/94	2	BQL	20	
85687	Butylbenzylphthalate	6/4/94	2	BQL	20	
91941	3,3'-Dichlorobenzidine	6/4/94	2	BQL	40	
56553	Benzo(a)anthracene	6/4/94	2	BQL	20	
218019	Chrysene	6/4/94	2	BQL	20	
117817	bis(2-Ethylhexyl)phthalate	6/4/94	2	BQL	20	
117840	Di-n-octylphthalate	6/4/94	2	BQL	20	
205992	Benzo(b)fluoranthene	6/4/94	2	BQL	20	
207089	Benzo(k)fluoranthene	6/4/94	2	BQL	20	
50328	Benzo(a)pyrene	6/4/94	2	BQL	20	
193395	Indeno(1,2,3-cd)pyrene	6/4/94	2	BQL	20	
53703	Dibenzo(a,h)anthracene	6/4/94	2	BQL	20	
191242	Benzo(g,h,i)perylene	6/4/94	2	BQL	20	

PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile Surrogate Recovery Data

Lab Sample ID: 32136100 *Client Sample No.: 1661B-238*

Surrogate Compound	Analysis Date	Spike Amount	% Recovery	QC Limits	Notes
Nitrobenzene-d5	6/4/94	25	77	35-114	
2-Fluorobiphenyl	6/4/94	25	69	43-116	
Terphenyl-d14	6/4/94	25	101	33-141	
Phenol-d6	6/4/94	37.5	10	10- 94	
2-Fluorophenol	6/4/94	37.5	5	21-100	***
2,4,6-Tribromophenol	6/4/94	37.5	79	10-123	
Nitrobenzene-d5	6/29/94	25	79	35-114	
2-Fluorobiphenyl	6/29/94	25	78	43-116	
Terphenyl-d14	6/29/94	25	113	33-141	
Phenol-d6	6/29/94	37.5	0	10- 94	***
2-Fluorophenol	6/29/94	37.5	64	21-100	
2,4,6-Tribromophenol	6/29/94	37.5	30	10-123	

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.
Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile Organic Analytical Results
SW-846 Method 8270

Client: Nuclear Fuel Services, Inc.
Lab Sample ID: Q1451913
Matrix: Water

Client Reference No.: LEFPC
Client Sample No.: Method Blank
Date Received: NA
Date Extracted: 19-May-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/l	PQL ug/l	Note
108952	Phenol	6/1/94	1	BQL	10	
111444	bis(2-Chloroethyl)ether	6/1/94	1	BQL	10	
95578	2-Chlorophenol	6/1/94	1	BQL	10	
541731	1,3-Dichlorobenzene	6/1/94	1	BQL	10	
106467	1,4-Dichlorobenzene	6/1/94	1	BQL	10	
100516	Benzyl alcohol	6/1/94	1	BQL	20	
95501	1,2-Dichlorobenzene	6/1/94	1	BQL	10	
95487	2-Methylphenol	6/1/94	1	BQL	10	
108601	bis(2-Chloroisopropyl)ether	6/1/94	1	BQL	10	
106445	4-Methylphenol	6/1/94	1	BQL	10	
621647	N-Nitroso-di-n-propylamine	6/1/94	1	BQL	10	
67721	Hexachloroethane	6/1/94	1	BQL	10	
98953	Nitrobenzene	6/1/94	1	BQL	10	
78591	Isophorone	6/1/94	1	BQL	10	
88755	2-Nitrophenol	6/1/94	1	BQL	10	
105679	2,4-Dimethylphenol	6/1/94	1	BQL	10	
65850	Benzoic acid	6/1/94	1	BQL	50	
111911	bis(2-Chloroethoxy)methane	6/1/94	1	BQL	10	
120832	2,4-Dichlorophenol	6/1/94	1	BQL	10	
120821	1,2,4-Trichlorobenzene	6/1/94	1	BQL	10	
91203	Naphthalene	6/1/94	1	BQL	10	
106478	4-Chloroaniline	6/1/94	1	BQL	20	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: Q1451913 Client Sample No.: Method Blank

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/l	PQL ug/l	Note
87683	Hexachlorobutadiene	6/1/94	1	BQL	10	
59507	4-Chloro-3-methylphenol	6/1/94	1	BQL	20	
91576	2-Methylnaphthalene	6/1/94	1	BQL	10	
77474	Hexachlorocyclopentadiene	6/1/94	1	BQL	10	
88062	2,4,6-Trichlorophenol	6/1/94	1	BQL	10	
95954	2,4,5-Trichlorophenol	6/1/94	1	BQL	10	
91587	2-Chloronaphthalene	6/1/94	1	BQL	10	
88744	2-Nitroaniline	6/1/94	1	BQL	50	
131113	Dimethylphthalate	6/1/94	1	BQL	10	
208968	Acenaphthylene	6/1/94	1	BQL	10	
606202	2,6-Dinitrotoluene	6/1/94	1	BQL	10	
99092	3-Nitroaniline	6/1/94	1	BQL	50	
83329	Acenaphthene	6/1/94	1	BQL	10	
51285	2,4-Dinitrophenol	6/1/94	1	BQL	50	
100027	4-Nitrophenol	6/1/94	1	BQL	50	
132649	Dibenzofuran	6/1/94	1	BQL	10	
121142	2,4-Dinitrotoluene	6/1/94	1	BQL	10	
84662	Diethylphthalate	6/1/94	1	BQL	10	
7005723	4-Chlorophenyl-phenylether	6/1/94	1	BQL	10	
86737	Fluorene	6/1/94	1	BQL	10	
100016	4-Nitroaniline	6/1/94	1	BQL	50	
534521	4,6-Dinitro-2-methylphenol	6/1/94	1	BQL	50	
86306	N-Nitrosodiphenylamine	6/1/94	1	BQL	10	
101553	4-Bromophenyl-phenylether	6/1/94	1	BQL	10	
118741	Hexachlorobenzene	6/1/94	1	BQL	10	
87865	Pentachlorophenol	6/1/94	1	BQL	50	
85018	Phenanthrene	6/1/94	1	BQL	10	
120127	Anthracene	6/1/94	1	BQL	10	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: Q1451913 Client Sample No.: Method Blank

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/l	PQL ug/l	Note
84742	Di-n-butylphthalate	6/1/94	1	BQL	10	
206440	Fluoranthene	6/1/94	1	BQL	10	
129000	Pyrene	6/1/94	1	BQL	10	
85687	Butylbenzylphthalate	6/1/94	1	BQL	10	
91941	3,3'-Dichlorobenzidine	6/1/94	1	BQL	20	
56553	Benzo(a)anthracene	6/1/94	1	BQL	10	
218019	Chrysene	6/1/94	1	BQL	10	
117817	bis(2-Ethylhexyl)phthalate	6/1/94	1	BQL	10	
117840	Di-n-octylphthalate	6/1/94	1	BQL	10	
205992	Benzo(b)fluoranthene	6/1/94	1	BQL	10	
207089	Benzo(k)fluoranthene	6/1/94	1	BQL	10	
50328	Benzo(a)pyrene	6/1/94	1	BQL	10	
193395	Indeno(1,2,3-cd)pyrene	6/1/94	1	BQL	10	
53703	Dibenzo(a,h)anthracene	6/1/94	1	BQL	10	
191242	Benzo(g,h,i)perylene	6/1/94	1	BQL	10	

PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile Surrogate Recovery Data

Lab Sample ID: Q1451913 Client Sample No.: Method Blank

Surrogate Compound	Analysis Date	Spike Amount	% Recovery	QC Limits	Notes
Nitrobenzene-d5	6/1/94	50	81	35-114	
2-Fluorobiphenyl	6/1/94	50	78	43-116	
Terphenyl-d14	6/1/94	50	91	33-141	
Phenol-d6	6/1/94	75	36	10- 94	
2-Fluorophenol	6/1/94	75	60	21-100	
2,4,6-Tribromophenol	6/1/94	75	72	10-123	

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.
Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile Organic Analytical Results
SW-846 Method 8270

Client: Nuclear Fuel Services, Inc.
Lab Sample ID: Q1452415
Matrix: Soil

Client Reference No.: LEFPC
Client Sample No.: Method Blank
Date Received: NA
Date Extracted: 24-May-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/kg	PQL ug/kg	Note
108952	Phenol	6/3/94	1	BQL	330	
111444	bis(2-Chloroethyl)ether	6/3/94	1	BQL	330	
95578	2-Chlorophenol	6/3/94	1	BQL	330	
541731	1,3-Dichlorobenzene	6/3/94	1	BQL	330	
106467	1,4-Dichlorobenzene	6/3/94	1	BQL	330	
100516	Benzyl alcohol	6/3/94	1	BQL	670	
95501	1,2-Dichlorobenzene	6/3/94	1	BQL	330	
95487	2-Methylphenol	6/3/94	1	BQL	330	
108601	bis(2-Chloroisopropyl)ether	6/3/94	1	BQL	330	
106445	4-Methylphenol	6/3/94	1	BQL	330	
621647	N-Nitroso-di-n-propylamine	6/3/94	1	BQL	330	
67721	Hexachloroethane	6/3/94	1	BQL	330	
98953	Nitrobenzene	6/3/94	1	BQL	330	
78591	Isophorone	6/3/94	1	BQL	330	
88755	2-Nitrophenol	6/3/94	1	BQL	330	
105679	2,4-Dimethylphenol	6/3/94	1	BQL	330	
65850	Benzoic acid	6/3/94	1	BQL	1700	
111911	bis(2-Chloroethoxy)methane	6/3/94	1	BQL	330	
120832	2,4-Dichlorophenol	6/3/94	1	BQL	330	
120821	1,2,4-Trichlorobenzene	6/3/94	1	BQL	330	
91203	Naphthalene	6/3/94	1	BQL	330	
106478	4-Chloroaniline	6/3/94	1	BQL	670	

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EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: Q1452415 Client Sample No.: Method Blank

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/kg	PQL ug/kg	Note
87683	Hexachlorobutadiene	6/3/94	1	BQL	330	
59507	4-Chloro-3-methylphenol	6/3/94	1	BQL	670	
91576	2-Methylnaphthalene	6/3/94	1	BQL	330	
77474	Hexachlorocyclopentadiene	6/3/94	1	BQL	330	
88062	2,4,6-Trichlorophenol	6/3/94	1	BQL	330	
95954	2,4,5-Trichlorophenol	6/3/94	1	BQL	330	
91587	2-Chloronaphthalene	6/3/94	1	BQL	330	
88744	2-Nitroaniline	6/3/94	1	BQL	1700	
131113	Dimethylphthalate	6/3/94	1	BQL	330	
208968	Acenaphthylene	6/3/94	1	BQL	330	
606202	2,6-Dinitrotoluene	6/3/94	1	BQL	330	
99092	3-Nitroaniline	6/3/94	1	BQL	1700	
83329	Acenaphthene	6/3/94	1	BQL	330	
51285	2,4-Dinitrophenol	6/3/94	1	BQL	1700	
100027	4-Nitrophenol	6/3/94	1	BQL	1700	
132649	Dibenzofuran	6/3/94	1	BQL	330	
121142	2,4-Dinitrotoluene	6/3/94	1	BQL	330	
84662	Diethylphthalate	6/3/94	1	BQL	330	
7005723	4-Chlorophenyl-phenylether	6/3/94	1	BQL	330	
86737	Fluorene	6/3/94	1	BQL	330	
100016	4-Nitroaniline	6/3/94	1	BQL	1700	
534521	4,6-Dinitro-2-methylphenol	6/3/94	1	BQL	1700	
86306	N-Nitrosodiphenylamine	6/3/94	1	BQL	330	
101553	4-Bromophenyl-phenylether	6/3/94	1	BQL	330	
118741	Hexachlorobenzene	6/3/94	1	BQL	330	
87865	Pentachlorophenol	6/3/94	1	BQL	1700	
85018	Phenanthrene	6/3/94	1	BQL	330	
120127	Anthracene	6/3/94	1	BQL	330	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: Q1452415 Client Sample No.: Method Blank

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/kg	PQL ug/kg	Note
84742	Di-n-butylphthalate	6/3/94	1	BQL	330	
206440	Fluoranthene	6/3/94	1	BQL	330	
129000	Pyrene	6/3/94	1	BQL	330	
85687	Butylbenzylphthalate	6/3/94	1	BQL	330	
91941	3,3'-Dichlorobenzidine	6/3/94	1	BQL	670	
56553	Benzo(a)anthracene	6/3/94	1	BQL	330	
218019	Chrysene	6/3/94	1	BQL	330	
117817	bis(2-Ethylhexyl)phthalate	6/3/94	1	BQL	330	
117840	Di-n-octylphthalate	6/3/94	1	BQL	330	
205992	Benzo(b)fluoranthene	6/3/94	1	BQL	330	
207089	Benzo(k)fluoranthene	6/3/94	1	BQL	330	
50328	Benzo(a)pyrene	6/3/94	1	BQL	330	
193395	Indeno(1,2,3-cd)pyrene	6/3/94	1	BQL	330	
53703	Dibenzo(a,h)anthracene	6/3/94	1	BQL	330	
191242	Benzo(g,h,i)perylene	6/3/94	1	BQL	330	

PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile Surrogate Recovery Data

Lab Sample ID: Q1452415 Client Sample No.: Method Blank

Surrogate Compound	Analysis Date	Spike Amount	% Recovery	QC Limits	Notes
Nitrobenzene-d5	6/3/94	50	87	23-120	
2-Fluorobiphenyl	6/3/94	50	80	30-115	
Terphenyl-d14	6/3/94	50	79	18-137	
Phenol-d6	6/3/94	75	73	24-113	
2-Fluorophenol	6/3/94	75	79	25-121	
2,4,6-Tribromophenol	6/3/94	75	75	19-122	

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency. Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile Organic Analytical Results
SW-846 Method 8270

Client: Nuclear Fuel Services, Inc.
Lab Sample ID: Q1460620
Matrix: Water

Client Reference No.: LEFPC
Client Sample No.: Method Blank
Date Received: NA
Date Extracted: 6-Jun-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/l	PQL ug/l	Note
108952	Phenol	6/27/94	1	BQL	10	
111444	bis(2-Chloroethyl)ether	6/27/94	1	BQL	10	
95578	2-Chlorophenol	6/27/94	1	BQL	10	
541731	1,3-Dichlorobenzene	6/27/94	1	BQL	10	
106467	1,4-Dichlorobenzene	6/27/94	1	BQL	10	
100516	Benzyl alcohol	6/27/94	1	BQL	20	
95501	1,2-Dichlorobenzene	6/27/94	1	BQL	10	
95487	2-Methylphenol	6/27/94	1	BQL	10	
108601	bis(2-Chloroisopropyl)ether	6/27/94	1	BQL	10	
106445	4-Methylphenol	6/27/94	1	BQL	10	
621647	N-Nitroso-di-n-propylamine	6/27/94	1	BQL	10	
67721	Hexachloroethane	6/27/94	1	BQL	10	
98953	Nitrobenzene	6/27/94	1	BQL	10	
78591	Isophorone	6/27/94	1	BQL	10	
88755	2-Nitrophenol	6/27/94	1	BQL	10	
105679	2,4-Dimethylphenol	6/27/94	1	BQL	10	
65850	Benzoic acid	6/27/94	1	BQL	50	
111911	bis(2-Chloroethoxy)methane	6/27/94	1	BQL	10	
120832	2,4-Dichlorophenol	6/27/94	1	BQL	10	
120821	1,2,4-Trichlorobenzene	6/27/94	1	BQL	10	
91203	Naphthalene	6/27/94	1	BQL	10	
106478	4-Chloroaniline	6/27/94	1	BQL	20	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: Q1460620 Client Sample No.: Method Blank

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/l	PQL ug/l	Note
87683	Hexachlorobutadiene	6/27/94	1	BQL	10	
59507	4-Chloro-3-methylphenol	6/27/94	1	BQL	20	
91576	2-Methylnaphthalene	6/27/94	1	BQL	10	
77474	Hexachlorocyclopentadiene	6/27/94	1	BQL	10	
88062	2,4,6-Trichlorophenol	6/27/94	1	BQL	10	
95954	2,4,5-Trichlorophenol	6/27/94	1	BQL	10	
91587	2-Chloronaphthalene	6/27/94	1	BQL	10	
88744	2-Nitroaniline	6/27/94	1	BQL	50	
131113	Dimethylphthalate	6/27/94	1	BQL	10	
208968	Acenaphthylene	6/27/94	1	BQL	10	
606202	2,6-Dinitrotoluene	6/27/94	1	BQL	10	
99092	3-Nitroaniline	6/27/94	1	BQL	50	
83329	Acenaphthene	6/27/94	1	BQL	10	
51285	2,4-Dinitrophenol	6/27/94	1	BQL	50	
100027	4-Nitrophenol	6/27/94	1	BQL	50	
132649	Dibenzofuran	6/27/94	1	BQL	10	
121142	2,4-Dinitrotoluene	6/27/94	1	BQL	10	
84662	Diethylphthalate	6/27/94	1	BQL	10	
7005723	4-Chlorophenyl-phenylether	6/27/94	1	BQL	10	
86737	Fluorene	6/27/94	1	BQL	10	
100016	4-Nitroaniline	6/27/94	1	BQL	50	
534521	4,6-Dinitro-2-methylphenol	6/27/94	1	BQL	50	
86306	N-Nitrosodiphenylamine	6/27/94	1	BQL	10	
101553	4-Bromophenyl-phenylether	6/27/94	1	BQL	10	
118741	Hexachlorobenzene	6/27/94	1	BQL	10	
87865	Pentachlorophenol	6/27/94	1	BQL	50	
85018	Phenanthrene	6/27/94	1	BQL	10	
120127	Anthracene	6/27/94	1	BQL	10	

EcoTek LSI
EcoTek Laboratory Services Incorporated

Lab Sample ID: Q1460620 Client Sample No.: Method Blank

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result ug/l	PQL ug/l	Note
84742	Di-n-butylphthalate	6/27/94	1	BQL	10	
206440	Fluoranthene	6/27/94	1	BQL	10	
129000	Pyrene	6/27/94	1	BQL	10	
85687	Butylbenzylphthalate	6/27/94	1	BQL	10	
91941	3,3'-Dichlorobenzidine	6/27/94	1	BQL	20	
56553	Benzo(a)anthracene	6/27/94	1	BQL	10	
218019	Chrysene	6/27/94	1	BQL	10	
117817	bis(2-Ethylhexyl)phthalate	6/27/94	1	BQL	10	
117840	Di-n-octylphthalate	6/27/94	1	BQL	10	
205992	Benzo(b)fluoranthene	6/27/94	1	BQL	10	
207089	Benzo(k)fluoranthene	6/27/94	1	BQL	10	
50328	Benzo(a)pyrene	6/27/94	1	BQL	10	
193395	Indeno(1,2,3-cd)pyrene	6/27/94	1	BQL	10	
53703	Dibenzo(a,h)anthracene	6/27/94	1	BQL	10	
191242	Benzo(g,h,i)perylene	6/27/94	1	BQL	10	

PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile Surrogate Recovery Data

Lab Sample ID: Q1460620 Client Sample No.: Method Blank

Surrogate Compound	Analysis Date	Spike Amount	% Recovery	QC Limits	Notes
Nitrobenzene-d5	6/27/94	50	64	35-114	
2-Fluorobiphenyl	6/27/94	50	64	43-116	
Terphenyl-d14	6/27/94	50	61	33-141	
Phenol-d6	6/27/94	75	59	10- 94	
2-Fluorophenol	6/27/94	75	58	21-100	
2,4,6-Tribromophenol	6/27/94	75	61	10-123	

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency. Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile Surrogate Recovery Data

Lab Sample ID: Q1460620 *Client Sample No.: Method Blank*

Surrogate Compound	Analysis Date	Spike Amount	% Recovery	QC Limits	N
Nitrobenzene-d5	6/27/94	50	64	35-114	
2-Fluorobiphenyl	6/27/94	50	64	43-116	
Terphenyl-d14	6/27/94	50	61	33-141	
Phenol-d6	6/27/94	75	59	10- 94	
2-Fluorophenol	6/27/94	75	58	21-100	
2,4,6-Tribromophenol	6/27/94	75	61	10-123	

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency. Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.

TCLP Volatiles

LSDG: 32140

EcoTek LSI
EcoTek Laboratory Services Incorporated

CASE NARRATIVE FOR TCLP VOLATILE ANALYSIS USING MODIFIED METHOD 8240

Client: Nuclear Fuel Services, Inc.
LSDG No.: 32136
Project: LEFPC

Analytical Summary

Twenty-one (21) samples were received on May 17, 1994 for TCLP volatile analysis, a procedure designed to determine the mobility of organic analytes in liquid, solid and multiphasic wastes. Sample leaching was performed on May 25 and 26, 1994. All analyses were performed per request May 31 through June 2, 1994.

Procedural Summary

- Analysis - An aliquot of soil/non-soil solid sample undergoes leaching for eighteen (18) ± two (2) hours in a volume of acidic extraction fluid equivalent to twenty times the sample weight used. Water/liquid samples are merely filtered through a leaching apparatus. An aliquot of the ZHE extract is subsequently purged via a Tekmar LSC-2/ALS and/or OI 4460A/OIC MPM-16 on to traps composed of silica gel/charcoal/Tenax for introduction into a Hewlett Packard 5890/5970 GC/MSD system, configured for electron impact ionization, utilizing an appropriate volume of the leachate solution to yield a detection level that is below EPA's maximum allowable concentration limits for TCLP compounds, unless stated otherwise. Chromatography is performed on a seventy-five (75) meter x 0.53mm DB-624 megabore capillary column, temperature programmed to achieve chromatographic resolution of target analytes. As compounds elute, they are ionized, filtered through a quadrupole mass filter and quantified to determine analyte concentrations in the sample. Detection limits or practical quantitation limits (PQL's) are expressed in the final report as the minimum value that can be detected with confidence and are factored for any necessary dilutions.

- Scope and Limitations - Complex matrices often generate elevated baselines, interfering with instrument identification and quantification of target analytes. Dilutions of such samples are often required to prevent instrument damage, resulting in higher detection limits.

QA/QC

The ZHE and method blanks analyzed along with the samples of this case were found to be free of all target analytes. All other blank criteria were met.

Method QC, consisting of a matrix spike and matrix spike duplicate analysis, was batched with samples form a forthcoming laboratory sample delivery group LSDG

EcoTek LSI
EcoTek Laboratory Services Incorporated

CASE NARRATIVE FOR TCLP VOLATILE ANALYSIS USING MODIFIED METHOD 8240(cont'd)

Client: Nuclear Fuel Services, Inc.
LSDG No.: 32136
Project: LEFPC

32140. TCLP QC accuracy and precison results for analyses performed on samples 1661B-66 and 1661B-139 were within prescribed limits of acceptability for all spiked analytes.

General

The reports of the TCLP compounds identified and quantified in the samples are contained in the following sections of the data package. Data is obtained from a HP RTE-A series computer with Aquarius software and/or Mustang II Dos-based computer with EnviroQuant software.

All sample analyses were performed at a 10x dilution except for a 200x dilution reanalysis required for sample 1661B-229/229B to bring target analyte concentrations into the instrument's linear range of calibration. These dilutions did not affect the laboratory's ability to meet the required detection limits for TCLP regulatory concerns.

Due to analyst oversight, sample 1661B-225/226 was not reanalyzed within holding time at a greater dilution to bring a target analyte concentration into the instrument's linear range of calibration; therefore, methyl ethyl ketone is "J" flagged as estimated because its reported concentration exceeded the linear range of calibration. The reported amount is however far below the maximum concentration limit permissible for TCLP regulatory concerns. A diluted reanalysis performed outside of the leachate holding time confirmed that concentrations were far below the TCLP maximum concentration limit and supported the reported concentration estimate.

GC/MS Section Supervisor (designee)

7/1/94
Date

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile TCLP Analytical Results
SW-846 Method 8240

Client: Nuclear Fuel Services, Inc.
Lab Sample ID: 3213637
Matrix: Leachate

Client Sample No.: 1661B-70
Client Reference No.: LEFPC
Date Received: 5/17/94
Date Leached: 5/25/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/L	MCL mg/L	PQL mg/L	Note
71432	Benzene	5/31/94	10	BQL	0.5	0.050	
56235	Carbon Tetrachloride	5/31/94	10	BQL	0.5	0.050	
108907	Chlorobenzene	5/31/94	10	BQL	100.0	0.050	
67663	Chloroform	5/31/94	10	BQL	6.0	0.050	
107062	1,2-Dichloroethane	5/31/94	10	BQL	0.5	0.050	
75354	1,1-Dichloroethene	5/31/94	10	BQL	0.7	0.050	
78933	Methyl ethyl ketone	5/31/94	10	BQL	200.0	1.000	
127184	Tetrachloroethene	5/31/94	10	BQL	0.7	0.050	
79016	Trichloroethene	5/31/94	10	BQL	0.5	0.050	
75014	Vinyl Chloride	5/31/94	10	BQL	0.2	0.100	

MCL = Maximum Contaminant Level

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213637 *Client Sample No.:* 1661B-70

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/31/94	50	99	88-110	
Bromofluorobenzene	5/31/94	50	100	86-115	
1,2-Dichloroethane-d4	5/31/94	50	94	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile TCLP Analytical Results
SW-846 Method 8240

Client: Nuclear Fuel Services, Inc.
Client Sample No.: 1661B-96
Lab Sample ID: 3213638
Client Reference No.: LEFPC
Matrix: Leachate
Date Received: 5/17/94
Date Leached: 5/25/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/L	MCL mg/L	PQL mg/L	Note
71432	Benzene	5/31/94	10	BQL	0.5	0.050	
56235	Carbon Tetrachloride	5/31/94	10	BQL	0.5	0.050	
108907	Chlorobenzene	5/31/94	10	BQL	100.0	0.050	
67663	Chloroform	5/31/94	10	BQL	6.0	0.050	
107062	1,2-Dichloroethane	5/31/94	10	BQL	0.5	0.050	
75354	1,1-Dichloroethene	5/31/94	10	BQL	0.7	0.050	
78933	Methyl ethyl ketone	5/31/94	10	BQL	200.0	1.000	
127184	Tetrachloroethene	5/31/94	10	BQL	0.7	0.050	
79016	Trichloroethene	5/31/94	10	BQL	0.5	0.050	
75014	Vinyl Chloride	5/31/94	10	BQL	0.2	0.100	

MCL = Maximum Contaminant Level

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213638 *Client Sample No.:* 1661B-96

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/31/94	50	98	88-110	
Bromofluorobenzene	5/31/94	50	99	86-115	
1,2-Dichloroethane-d4	5/31/94	50	90	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile TCLP Analytical Results
SW-846 Method 8240

Client: Nuclear Fuel Services, Inc.
Client Sample No.: 1661B-108
Lab Sample ID: 3213639
Client Reference No.: LEFPC
Matrix: Leachate
Date Received: 5/17/94
Date Leached: 5/25/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/L	MCL mg/L	PQL mg/L	Note
71432	Benzene	5/31/94	10	BQL	0.5	0.050	
56235	Carbon Tetrachloride	5/31/94	10	BQL	0.5	0.050	
108907	Chlorobenzene	5/31/94	10	BQL	100.0	0.050	
67663	Chloroform	5/31/94	10	BQL	6.0	0.050	
107062	1,2-Dichloroethane	5/31/94	10	BQL	0.5	0.050	
75354	1,1-Dichloroethene	5/31/94	10	BQL	0.7	0.050	
78933	Methyl ethyl ketone	5/31/94	10	BQL	200.0	1.000	
127184	Tetrachloroethene	5/31/94	10	BQL	0.7	0.050	
79016	Trichloroethene	5/31/94	10	BQL	0.5	0.050	
75014	Vinyl Chloride	5/31/94	10	BQL	0.2	0.100	

MCL = Maximum Contaminant Level

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213639 *Client Sample No.:* 1661B-108

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/31/94	50	98	88-110	
Bromofluorobenzene	5/31/94	50	98	86-115	
1,2-Dichloroethane-d4	5/31/94	50	92	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile TCLP Analytical Results
SW-846 Method 8240

Client: Nuclear Fuel Services, Inc.
Lab Sample ID: 3213640
Matrix: Leachate

Client Sample No.: 1661B-111
Client Reference No.: LEFPC
Date Received: 5/17/94
Date Leached: 5/25/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/L	MCL mg/L	PQL mg/L	Note
71432	Benzene	5/31/94	10	BQL	0.5	0.050	
56235	Carbon Tetrachloride	5/31/94	10	BQL	0.5	0.050	
108907	Chlorobenzene	5/31/94	10	BQL	100.0	0.050	
67663	Chloroform	5/31/94	10	BQL	6.0	0.050	
107062	1,2-Dichloroethane	5/31/94	10	BQL	0.5	0.050	
75354	1,1-Dichloroethene	5/31/94	10	BQL	0.7	0.050	
78933	Methyl ethyl ketone	5/31/94	10	BQL	200.0	1.000	
127184	Tetrachloroethene	5/31/94	10	BQL	0.7	0.050	
79016	Trichloroethene	5/31/94	10	BQL	0.5	0.050	
75014	Vinyl Chloride	5/31/94	10	BQL	0.2	0.100	

MCL = Maximum Contaminant Level

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213640 *Client Sample No.:* 1661B-111

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/31/94	50	99	88-110	
Bromofluorobenzene	5/31/94	50	98	86-115	
1,2-Dichloroethane-d4	5/31/94	50	92	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile TCLP Analytical Results
SW-846 Method 8240

Client: Nuclear Fuel Services, Inc.
Lab Sample ID: 3213641
Matrix: Leachate

Client Sample No.: 1661B-118
Client Reference No.: LEFPC
Date Received: 5/17/94
Date Leached: 5/25/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/L	MCL mg/L	PQL mg/L	Note
71432	Benzene	5/31/94	10	BQL	0.5	0.050	
56235	Carbon Tetrachloride	5/31/94	10	BQL	0.5	0.050	
108907	Chlorobenzene	5/31/94	10	BQL	100.0	0.050	
67663	Chloroform	5/31/94	10	BQL	6.0	0.050	
107062	1,2-Dichloroethane	5/31/94	10	BQL	0.5	0.050	
75354	1,1-Dichloroethene	5/31/94	10	BQL	0.7	0.050	
78933	Methyl ethyl ketone	5/31/94	10	BQL	200.0	1.000	
127184	Tetrachloroethene	5/31/94	10	BQL	0.7	0.050	
79016	Trichloroethene	5/31/94	10	BQL	0.5	0.050	
75014	Vinyl Chloride	5/31/94	10	BQL	0.2	0.100	

MCL = Maximum Contaminant Level

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213641 *Client Sample No.:* 1661B-118

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/31/94	50	99	88-110	
Bromofluorobenzene	5/31/94	50	100	86-115	
1,2-Dichloroethane-d4	5/31/94	50	93	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile TCLP Analytical Results
SW-846 Method 8240

Client: Nuclear Fuel Services, Inc.
Client Sample No.: 1661B-121
Lab Sample ID: 3213642
Client Reference No.: LEFPC
Matrix: Leachate
Date Received: 5/17/94
Date Leached: 5/25/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/L	MCL mg/L	PQL mg/L	Note
71432	Benzene	5/31/94	10	BQL	0.5	0.050	
56235	Carbon Tetrachloride	5/31/94	10	BQL	0.5	0.050	
108907	Chlorobenzene	5/31/94	10	BQL	100.0	0.050	
67663	Chloroform	5/31/94	10	BQL	6.0	0.050	
107062	1,2-Dichloroethane	5/31/94	10	BQL	0.5	0.050	
75354	1,1-Dichloroethene	5/31/94	10	BQL	0.7	0.050	
78933	Methyl ethyl ketone	5/31/94	10	BQL	200.0	1.000	
127184	Tetrachloroethene	5/31/94	10	BQL	0.7	0.050	
79016	Trichloroethene	5/31/94	10	BQL	0.5	0.050	
75014	Vinyl Chloride	5/31/94	10	BQL	0.2	0.100	

MCL = Maximum Contaminant Level

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213642 *Client Sample No.:* 1661B-121

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/31/94	50	97	88-110	
Bromofluorobenzene	5/31/94	50	97	86-115	
1,2-Dichloroethane-d4	5/31/94	50	92	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile TCLP Analytical Results
SW-846 Method 8240

Client: Nuclear Fuel Services, Inc.
Lab Sample ID: 3213643
Matrix: Leachate

Client Sample No.: 1661B-128
Client Reference No.: LEFPC
Date Received: 5/17/94
Date Leached: 5/25/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/L	MCL mg/L	PQL mg/L	Note
71432	Benzene	5/31/94	10	BQL	0.5	0.050	
56235	Carbon Tetrachloride	5/31/94	10	BQL	0.5	0.050	
108907	Chlorobenzene	5/31/94	10	BQL	100.0	0.050	
67663	Chloroform	5/31/94	10	BQL	6.0	0.050	
107062	1,2-Dichloroethane	5/31/94	10	BQL	0.5	0.050	
75354	1,1-Dichloroethene	5/31/94	10	BQL	0.7	0.050	
78933	Methyl ethyl ketone	5/31/94	10	BQL	200.0	1.000	
127184	Tetrachloroethene	5/31/94	10	BQL	0.7	0.050	
79016	Trichloroethene	5/31/94	10	BQL	0.5	0.050	
75014	Vinyl Chloride	5/31/94	10	BQL	0.2	0.100	

MCL = Maximum Contaminant Level

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213643 *Client Sample No.:* 1661B-128

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/31/94	50	97	88-110	
Bromofluorobenzene	5/31/94	50	96	86-115	
1,2-Dichloroethane-d4	5/31/94	50	95	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile TCLP Analytical Results
SW-846 Method 8240

Client: Nuclear Fuel Services, Inc.
Lab Sample ID: 3213644
Matrix: Leachate

Client Sample No.: 1661B-131
Client Reference No.: LEFPC
Date Received: 5/17/94
Date Leached: 5/25/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/L	MCL mg/L	PQL mg/L	Note
71432	Benzene	5/31/94	10	BQL	0.5	0.050	
56235	Carbon Tetrachloride	5/31/94	10	BQL	0.5	0.050	
108907	Chlorobenzene	5/31/94	10	BQL	100.0	0.050	
67663	Chloroform	5/31/94	10	BQL	6.0	0.050	
107062	1,2-Dichloroethane	5/31/94	10	BQL	0.5	0.050	
75354	1,1-Dichloroethene	5/31/94	10	BQL	0.7	0.050	
78933	Methyl ethyl ketone	5/31/94	10	BQL	200.0	1.000	
127184	Tetrachloroethene	5/31/94	10	BQL	0.7	0.050	
79016	Trichloroethene	5/31/94	10	BQL	0.5	0.050	
75014	Vinyl Chloride	5/31/94	10	BQL	0.2	0.100	

MCL = Maximum Contaminant Level

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213644 *Client Sample No.:* 1661B-131

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/31/94	50	97	88-110	
Bromofluorobenzene	5/31/94	50	96	86-115	
1,2-Dichloroethane-d4	5/31/94	50	93	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile TCLP Analytical Results
SW-846 Method 8240

Client: Nuclear Fuel Services, Inc.
Lab Sample ID: 3213645
Matrix: Leachate

Client Sample No.: 1661B-103
Client Reference No.: LEFPC
Date Received: 5/17/94
Date Leached: 5/25/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/L	MCL mg/L	PQL mg/L	Note
71432	Benzene	5/31/94	10	BQL	0.5	0.050	
56235	Carbon Tetrachloride	5/31/94	10	BQL	0.5	0.050	
108907	Chlorobenzene	5/31/94	10	BQL	100.0	0.050	
67663	Chloroform	5/31/94	10	BQL	6.0	0.050	
107062	1,2-Dichloroethane	5/31/94	10	BQL	0.5	0.050	
75354	1,1-Dichloroethene	5/31/94	10	BQL	0.7	0.050	
78933	Methyl ethyl ketone	5/31/94	10	BQL	200.0	1.000	
127184	Tetrachloroethene	5/31/94	10	BQL	0.7	0.050	
79016	Trichloroethene	5/31/94	10	BQL	0.5	0.050	
75014	Vinyl Chloride	5/31/94	10	BQL	0.2	0.100	

MCL = Maximum Contaminant Level

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213645 *Client Sample No.:* 1661B-103

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/31/94	50	97	88-110	
Bromofluorobenzene	5/31/94	50	95	86-115	
1,2-Dichloroethane-d4	5/31/94	50	95	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile TCLP Analytical Results
SW-846 Method 8240

Client: Nuclear Fuel Services, Inc.
Client Sample No.: 1661B-148
Lab Sample ID: 3213646
Client Reference No.: LEFPC
Matrix: Leachate
Date Received: 5/17/94
Date Leached: 5/26/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/L	MCL mg/L	PQL mg/L	Note
71432	Benzene	6/1/94	10	0.066	0.5	0.050	
56235	Carbon Tetrachloride	6/1/94	10	BQL	0.5	0.050	
108907	Chlorobenzene	6/1/94	10	BQL	100.0	0.050	
67663	Chloroform	6/1/94	10	BQL	6.0	0.050	
107062	1,2-Dichloroethane	6/1/94	10	BQL	0.5	0.050	
75354	1,1-Dichloroethene	6/1/94	10	BQL	0.7	0.050	
78933	Methyl ethyl ketone	6/1/94	10	0.690	200.0	1.000	J
127184	Tetrachloroethene	6/1/94	10	BQL	0.7	0.050	
79016	Trichloroethene	6/1/94	10	BQL	0.5	0.050	
75014	Vinyl Chloride	6/1/94	10	BQL	0.2	0.100	

MCL = Maximum Contaminant Level

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213646 *Client Sample No.:* 1661B-148

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	6/1/94	50	95	88-110	
Bromofluorobenzene	6/1/94	50	95	86-115	
1,2-Dichloroethane-d4	6/1/94	50	91	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile TCLP Analytical Results
SW-846 Method 8240

Client: Nuclear Fuel Services, Inc.
Lab Sample ID: 3213647
Matrix: Leachate

Client Sample No.: 1661B-155
Client Reference No.: LEFPC
Date Received: 5/17/94
Date Leached: 5/26/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/L	MCL mg/L	PQL mg/L	Note
71432	Benzene	6/1/94	10	BQL	0.5	0.050	
56235	Carbon Tetrachloride	6/1/94	10	BQL	0.5	0.050	
108907	Chlorobenzene	6/1/94	10	BQL	100.0	0.050	
67663	Chloroform	6/1/94	10	BQL	6.0	0.050	
107062	1,2-Dichloroethane	6/1/94	10	BQL	0.5	0.050	
75354	1,1-Dichloroethene	6/1/94	10	BQL	0.7	0.050	
78933	Methyl ethyl ketone	6/1/94	10	BQL	200.0	1.000	
127184	Tetrachloroethene	6/1/94	10	BQL	0.7	0.050	
79016	Trichloroethene	6/1/94	10	BQL	0.5	0.050	
75014	Vinyl Chloride	6/1/94	10	BQL	0.2	0.100	

MCL = Maximum Contaminant Level

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213647 *Client Sample No.:* 1661B-155

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	6/1/94	50	95	88-110	
Bromofluorobenzene	6/1/94	50	95	86-115	
1,2-Dichloroethane-d4	6/1/94	50	90	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile TCLP Analytical Results
SW-846 Method 8240

Client: Nuclear Fuel Services, Inc.
Lab Sample ID: 3213648
Matrix: Leachate

Client Sample No.: 1661B-164
Client Reference No.: LEFPC
Date Received: 5/17/94
Date Leached: 5/26/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/L	MCL mg/L	PQL mg/L	Note
71432	Benzene	6/1/94	10	BQL	0.5	0.050	
56235	Carbon Tetrachloride	6/1/94	10	BQL	0.5	0.050	
108907	Chlorobenzene	6/1/94	10	BQL	100.0	0.050	
67663	Chloroform	6/1/94	10	BQL	6.0	0.050	
107062	1,2-Dichloroethane	6/1/94	10	BQL	0.5	0.050	
75354	1,1-Dichloroethene	6/1/94	10	BQL	0.7	0.050	
78933	Methyl ethyl ketone	6/1/94	10	BQL	200.0	1.000	
127184	Tetrachloroethene	6/1/94	10	BQL	0.7	0.050	
79016	Trichloroethene	6/1/94	10	BQL	0.5	0.050	
75014	Vinyl Chloride	6/1/94	10	BQL	0.2	0.100	

MCL = Maximum Contaminant Level

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213648 *Client Sample No.:* 1661B-164

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	6/1/94	50	97	88-110	
Bromofluorobenzene	6/1/94	50	98	86-115	
1,2-Dichloroethane-d4	6/1/94	50	92	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency. Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile TCLP Analytical Results
SW-846 Method 8240

Client: Nuclear Fuel Services, Inc.
Lab Sample ID: 3213649
Matrix: Leachate

Client Sample No.: 1661B-173
Client Reference No.: LEFPC
Date Received: 5/17/94
Date Leached: 5/26/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/L	MCL mg/L	PQL mg/L	Note
71432	Benzene	6/1/94	10	BQL	0.5	0.050	
56235	Carbon Tetrachloride	6/1/94	10	BQL	0.5	0.050	
108907	Chlorobenzene	6/1/94	10	BQL	100.0	0.050	
67663	Chloroform	6/1/94	10	BQL	6.0	0.050	
107062	1,2-Dichloroethane	6/1/94	10	BQL	0.5	0.050	
75354	1,1-Dichloroethene	6/1/94	10	BQL	0.7	0.050	
78933	Methyl ethyl ketone	6/1/94	10	BQL	200.0	1.000	
127184	Tetrachloroethene	6/1/94	10	BQL	0.7	0.050	
79016	Trichloroethene	6/1/94	10	BQL	0.5	0.050	
75014	Vinyl Chloride	6/1/94	10	BQL	0.2	0.100	

MCL = Maximum Contaminant Level

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213649 *Client Sample No.:* 1661B-173

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	6/1/94	50	96	88-110	
Bromofluorobenzene	6/1/94	50	96	86-115	
1,2-Dichloroethane-d4	6/1/94	50	91	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile TCLP Analytical Results
SW-846 Method 8240

Client: Nuclear Fuel Services, Inc.
Lab Sample ID: 3213650
Matrix: Leachate

Client Sample No.: 1661B-180
Client Reference No.: LEFPC
Date Received: 5/17/94
Date Leached: 5/26/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/L	MCL mg/L	PQL mg/L	Note
71432	Benzene	6/1/94	10	BQL	0.5	0.050	
56235	Carbon Tetrachloride	6/1/94	10	BQL	0.5	0.050	
108907	Chlorobenzene	6/1/94	10	BQL	100.0	0.050	
67663	Chloroform	6/1/94	10	BQL	6.0	0.050	
107062	1,2-Dichloroethane	6/1/94	10	BQL	0.5	0.050	
75354	1,1-Dichloroethene	6/1/94	10	BQL	0.7	0.050	
78933	Methyl ethyl ketone	6/1/94	10	BQL	200.0	1.000	
127184	Tetrachloroethene	6/1/94	10	BQL	0.7	0.050	
79016	Trichloroethene	6/1/94	10	BQL	0.5	0.050	
75014	Vinyl Chloride	6/1/94	10	BQL	0.2	0.100	

MCL = Maximum Contaminant Level

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213650 *Client Sample No.:* 1661B-180

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	6/1/94	50	98	88-110	
Bromofluorobenzene	6/1/94	50	96	86-115	
1,2-Dichloroethane-d4	6/1/94	50	90	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile TCLP Analytical Results
SW-846 Method 8240

Client: Nuclear Fuel Services, Inc.
Lab Sample ID: 3213651
Matrix: Leachate

Client Sample No.: 1661B-188
Client Reference No.: LEFPC
Date Received: 5/17/94
Date Leached: 5/26/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/L	MCL mg/L	PQL mg/L	Note
71432	Benzene	6/1/94	10	BQL	0.5	0.050	
56235	Carbon Tetrachloride	6/1/94	10	BQL	0.5	0.050	
108907	Chlorobenzene	6/1/94	10	BQL	100.0	0.050	
67663	Chloroform	6/1/94	10	BQL	6.0	0.050	
107062	1,2-Dichloroethane	6/1/94	10	BQL	0.5	0.050	
75354	1,1-Dichloroethene	6/1/94	10	BQL	0.7	0.050	
78933	Methyl ethyl ketone	6/1/94	10	BQL	200.0	1.000	
127184	Tetrachloroethene	6/1/94	10	BQL	0.7	0.050	
79016	Trichloroethene	6/1/94	10	BQL	0.5	0.050	
75014	Vinyl Chloride	6/1/94	10	BQL	0.2	0.100	

MCL = Maximum Contaminant Level

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213651 *Client Sample No.:* 1661B-188

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	6/1/94	50	97	88-110	
Bromofluorobenzene	6/1/94	50	97	86-115	
1,2-Dichloroethane-d4	6/1/94	50	90	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile TCLP Analytical Results
SW-846 Method 8240

Client: Nuclear Fuel Services, Inc.
Lab Sample ID: 3213652
Matrix: Leachate

Client Sample No.: 1661B-197
Client Reference No.: LEFPC
Date Received: 5/17/94
Date Leached: 5/26/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/L	MCL mg/L	PQL mg/L	Note
71432	Benzene	6/1/94	10	BQL	0.5	0.050	
56235	Carbon Tetrachloride	6/1/94	10	BQL	0.5	0.050	
108907	Chlorobenzene	6/1/94	10	BQL	100.0	0.050	
67663	Chloroform	6/1/94	10	BQL	6.0	0.050	
107062	1,2-Dichloroethane	6/1/94	10	BQL	0.5	0.050	
75354	1,1-Dichloroethene	6/1/94	10	BQL	0.7	0.050	
78933	Methyl ethyl ketone	6/1/94	10	BQL	200.0	1.000	
127184	Tetrachloroethene	6/1/94	10	BQL	0.7	0.050	
79016	Trichloroethene	6/1/94	10	BQL	0.5	0.050	
75014	Vinyl Chloride	6/1/94	10	BQL	0.2	0.100	

MCL = Maximum Contaminant Level

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213652 *Client Sample No.:* 1661B-197

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	6/1/94	50	96	88-110	
Bromofluorobenzene	6/1/94	50	97	86-115	
1,2-Dichloroethane-d4	6/1/94	50	92	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency. Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile TCLP Analytical Results
SW-846 Method 8240

Client: Nuclear Fuel Services, Inc.
Client Sample No.: 1661B-205
Lab Sample ID: 3213653
Client Reference No.: LEFPC
Matrix: Leachate
Date Received: 5/17/94
Date Leached: 5/26/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/L	MCL mg/L	PQL mg/L	Note
71432	Benzene	6/1/94	10	BQL	0.5	0.050	
56235	Carbon Tetrachloride	6/1/94	10	BQL	0.5	0.050	
108907	Chlorobenzene	6/1/94	10	BQL	100.0	0.050	
67663	Chloroform	6/1/94	10	BQL	6.0	0.050	
107062	1,2-Dichloroethane	6/1/94	10	BQL	0.5	0.050	
75354	1,1-Dichloroethene	6/1/94	10	BQL	0.7	0.050	
78933	Methyl ethyl ketone	6/1/94	10	BQL	200.0	1.000	
127184	Tetrachloroethene	6/1/94	10	BQL	0.7	0.050	
79016	Trichloroethene	6/1/94	10	BQL	0.5	0.050	
75014	Vinyl Chloride	6/1/94	10	BQL	0.2	0.100	

MCL = Maximum Contaminant Level

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213653 *Client Sample No.:* 1661B-205

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	6/1/94	50	96	88-110	
Bromofluorobenzene	6/1/94	50	97	86-115	
1,2-Dichloroethane-d4	6/1/94	50	91	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency. Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile TCLP Analytical Results
SW-846 Method 8240

Client: Nuclear Fuel Services, Inc.
Lab Sample ID: 3213654
Matrix: Leachate

Client Sample No.: 1661B-213
Client Reference No.: LEFPC
Date Received: 5/17/94
Date Leached: 5/26/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/L	MCL mg/L	PQL mg/L	Note
71432	Benzene	6/1/94	10	BQL	0.5	0.050	
56235	Carbon Tetrachloride	6/1/94	10	BQL	0.5	0.050	
108907	Chlorobenzene	6/1/94	10	BQL	100.0	0.050	
67663	Chloroform	6/1/94	10	BQL	6.0	0.050	
107062	1,2-Dichloroethane	6/1/94	10	BQL	0.5	0.050	
75354	1,1-Dichloroethene	6/1/94	10	BQL	0.7	0.050	
78933	Methyl ethyl ketone	6/1/94	10	BQL	200.0	1.000	
127184	Tetrachloroethene	6/1/94	10	BQL	0.7	0.050	
79016	Trichloroethene	6/1/94	10	BQL	0.5	0.050	
75014	Vinyl Chloride	6/1/94	10	BQL	0.2	0.100	

MCL = Maximum Contaminant Level

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213654 *Client Sample No.:* 1661B-213

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	6/1/94	50	96	88-110	
Bromofluorobenzene	6/1/94	50	99	86-115	
1,2-Dichloroethane-d4	6/1/94	50	90	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency. Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile TCLP Analytical Results
SW-846 Method 8240

Client: Nuclear Fuel Services, Inc.
Lab Sample ID: 3213694
Matrix: Leachate

Client Sample No.: 1661B-222
Client Reference No.: LEFPC
Date Received: 5/17/94
Date Leached: 5/26/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/L	MCL mg/L	PQL mg/L	Note
71432	Benzene	6/1/94	10	BQL	0.5	0.050	
56235	Carbon Tetrachloride	6/1/94	10	BQL	0.5	0.050	
108907	Chlorobenzene	6/1/94	10	BQL	100.0	0.050	
67663	Chloroform	6/1/94	10	0.025	6.0	0.050	J
107062	1,2-Dichloroethane	6/1/94	10	BQL	0.5	0.050	
75354	1,1-Dichloroethene	6/1/94	10	BQL	0.7	0.050	
78933	Methyl ethyl ketone	6/1/94	10	BQL	200.0	1.000	
127184	Tetrachloroethene	6/1/94	10	BQL	0.7	0.050	
79016	Trichloroethene	6/1/94	10	BQL	0.5	0.050	
75014	Vinyl Chloride	6/1/94	10	BQL	0.2	0.100	

MCL = Maximum Contaminant Level

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3213694 *Client Sample No.:* 1661B-222

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	6/1/94	50	101	88-110	
Bromofluorobenzene	6/1/94	50	103	86-115	
1,2-Dichloroethane-d4	6/1/94	50	95	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency. Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile TCLP Analytical Results
SW-846 Method 8240

Client: Nuclear Fuel Services, Inc.
Lab Sample ID: VBLK12
Matrix: Water

Client Sample No.: Method Blank
Client Reference No.: LEFPC
Date Received: NA
Date Leached: NA

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/L	MCL mg/L	PQL mg/L	Note
71432	Benzene	5/31/94	1	BQL	0.5	0.005	
56235	Carbon Tetrachloride	5/31/94	1	BQL	0.5	0.005	
108907	Chlorobenzene	5/31/94	1	BQL	100.0	0.005	
67663	Chloroform	5/31/94	1	BQL	6.0	0.005	
107062	1,2-Dichloroethane	5/31/94	1	BQL	0.5	0.005	
75354	1,1-Dichloroethene	5/31/94	1	BQL	0.7	0.005	
78933	Methyl ethyl ketone	5/31/94	1	BQL	200.0	0.100	
127184	Tetrachloroethene	5/31/94	1	BQL	0.7	0.005	
79016	Trichloroethene	5/31/94	1	BQL	0.5	0.005	
75014	Vinyl Chloride	5/31/94	1	BQL	0.2	0.010	

MCL = Maximum Contaminant Level

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: VBLK12 *Client Sample No.:* Method Blank

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/31/94	50	97	88-110	
Bromofluorobenzene	5/31/94	50	97	86-115	
1,2-Dichloroethane-d4	5/31/94	50	98	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency. Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile TCLP Analytical Results
SW-846 Method 8240

Client: Nuclear Fuel Services, Inc.
Lab Sample ID: VBLK13
Matrix: Water

Client Sample No.: Method Blank
Client Reference No.: LEFPC
Date Received: NA
Date Leached: NA

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/L	MCL mg/L	PQL mg/L	Note
71432	Benzene	6/1/94	1	BQL	0.5	0.005	
56235	Carbon Tetrachloride	6/1/94	1	BQL	0.5	0.005	
108907	Chlorobenzene	6/1/94	1	BQL	100.0	0.005	
67663	Chloroform	6/1/94	1	BQL	6.0	0.005	
107062	1,2-Dichloroethane	6/1/94	1	BQL	0.5	0.005	
75354	1,1-Dichloroethene	6/1/94	1	BQL	0.7	0.005	
78933	Methyl ethyl ketone	6/1/94	1	BQL	200.0	0.100	
127184	Tetrachloroethene	6/1/94	1	BQL	0.7	0.005	
79016	Trichloroethene	6/1/94	1	BQL	0.5	0.005	
75014	Vinyl Chloride	6/1/94	1	BQL	0.2	0.010	

MCL = Maximum Contaminant Level

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: VBLK13 *Client Sample No.:* Method Blank

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	6/1/94	50	98	88-110	
Bromofluorobenzene	6/1/94	50	97	86-115	
1,2-Dichloroethane-d4	6/1/94	50	92	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency. Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile TCLP Analytical Results
SW-846 Method 8240

Client: Nuclear Fuel Services, Inc.
Lab Sample ID: VBLK14
Matrix: Water

Client Sample No.: Method Blank
Client Reference No.: LEFPC
Date Received: NA
Date Leached: NA

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/L	MCL mg/L	PQL mg/L	Note
71432	Benzene	6/2/94	1	BQL	0.5	0.005	
56235	Carbon Tetrachloride	6/2/94	1	BQL	0.5	0.005	
108907	Chlorobenzene	6/2/94	1	BQL	100.0	0.005	
67663	Chloroform	6/2/94	1	BQL	6.0	0.005	
107062	1,2-Dichloroethane	6/2/94	1	BQL	0.5	0.005	
75354	1,1-Dichloroethene	6/2/94	1	BQL	0.7	0.005	
78933	Methyl ethyl ketone	6/2/94	1	BQL	200.0	0.100	
127184	Tetrachloroethene	6/2/94	1	BQL	0.7	0.005	
79016	Trichloroethene	6/2/94	1	BQL	0.5	0.005	
75014	Vinyl Chloride	6/2/94	1	BQL	0.2	0.010	

MCL = Maximum Contaminant Level

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: VBLK14 *Client Sample No.:* Method Blank

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	6/2/94	50	95	88-110	
Bromofluorobenzene	6/2/94	50	96	86-115	
1,2-Dichloroethane-d4	6/2/94	50	92	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile TCLP Analytical Results
SW-846 Method 8240

Client: Nuclear Fuel Services, Inc.
Lab Sample ID: 32136102
Matrix: Leachate

Client Sample No.: 1661B-225/226
Client Reference No.: LEFPC
Date Received: 5/17/94
Date Leached: 5/26/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/L	MCL mg/L	PQL mg/L	Note
71432	Benzene	6/1/94	10	0.110	0.5	0.050	
56235	Carbon Tetrachloride	6/1/94	10	BQL	0.5	0.050	
108907	Chlorobenzene	6/1/94	10	BQL	100.0	0.050	
67663	Chloroform	6/1/94	10	BQL	6.0	0.050	
107062	1,2-Dichloroethane	6/1/94	10	BQL	0.5	0.050	
75354	1,1-Dichloroethene	6/1/94	10	BQL	0.7	0.050	
78933	Methyl ethyl ketone	6/1/94	10	21.000	200.0	1.000	J
127184	Tetrachloroethene	6/1/94	10	BQL	0.7	0.050	
79016	Trichloroethene	6/1/94	10	BQL	0.5	0.050	
75014	Vinyl Chloride	6/1/94	10	BQL	0.2	0.100	

MCL = Maximum Contaminant Level

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 32136102 *Client Sample No.:* 1661B-225/226

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	6/1/94	50	96	88-110	
Bromofluorobenzene	6/1/94	50	98	86-115	
1,2-Dichloroethane-d4	6/1/94	50	95	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile TCLP Analytical Results
SW-846 Method 8240

Client: Nuclear Fuel Services, Inc.
Lab Sample ID: 32136104
Matrix: Leachate

Client Sample No.: 1661B-229/229B
Client Reference No.: LEFPC
Date Received: 5/17/94
Date Leached: 5/26/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/L	MCL mg/L	PQL mg/L	Note
71432	Benzene	6/1/94	10	0.046	0.5	0.050	J
56235	Carbon Tetrachloride	6/1/94	10	0.120	0.5	0.050	
108907	Chlorobenzene	6/1/94	10	BQL	100.0	0.050	
67663	Chloroform	6/2/94	200	17.000	6.0	1.000	
107062	1,2-Dichloroethane	6/1/94	10	BQL	0.5	0.050	
75354	1,1-Dichloroethene	6/1/94	10	BQL	0.7	0.050	
78933	Methyl ethyl ketone	6/2/94	200	19.000	200.0	20.000	J
127184	Tetrachloroethene	6/1/94	10	BQL	0.7	0.050	
79016	Trichloroethene	6/1/94	10	BQL	0.5	0.050	
75014	Vinyl Chloride	6/1/94	10	BQL	0.2	0.100	

MCL = Maximum Contaminant Level

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 32136104 *Client Sample No.:* 1661B-229/229B

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	6/1/94	50	96	88-110	
Bromofluorobenzene	6/1/94	50	96	86-115	
1,2-Dichloroethane-d4	6/1/94	50	95	76-114	
Toluene-d8	6/2/94	50	96	88-110	
Bromofluorobenzene	6/2/94	50	97	86-115	
1,2-Dichloroethane-d4	6/2/94	50	97	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile TCLP Analytical Results
SW-846 Method 8240

Client: Nuclear Fuel Services, Inc.
Lab Sample ID: Q1452532
Matrix: Leachate

Client Sample No.: Leaching Blank
Client Reference No.: LEFPC
Date Received: NA
Date Leached: 5/25/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/L	MCL mg/L	PQL mg/L	Note
71432	Benzene	5/31/94	1	BQL	0.5	0.005	
56235	Carbon Tetrachloride	5/31/94	1	BQL	0.5	0.005	
108907	Chlorobenzene	5/31/94	1	BQL	100.0	0.005	
67663	Chloroform	5/31/94	1	BQL	6.0	0.005	
107062	1,2-Dichloroethane	5/31/94	1	BQL	0.5	0.005	
75354	1,1-Dichloroethene	5/31/94	1	BQL	0.7	0.005	
78933	Methyl ethyl ketone	5/31/94	1	BQL	200.0	0.100	
127184	Tetrachloroethene	5/31/94	1	BQL	0.7	0.005	
79016	Trichloroethene	5/31/94	1	BQL	0.5	0.005	
75014	Vinyl Chloride	5/31/94	1	BQL	0.2	0.010	

MCL = Maximum Contaminant Level

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: Q1452532 *Client Sample No.:* Leaching Blank

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/31/94	50	97	88-110	
Bromofluorobenzene	5/31/94	50	96	86-115	
1,2-Dichloroethane-d4	5/31/94	50	93	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency. Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile TCLP Analytical Results
SW-846 Method 8240

Client: Nuclear Fuel Services, Inc.
Lab Sample ID: Q1452625
Matrix: Leachate

Client Sample No.: Leaching Blank
Client Reference No.: LEFPC
Date Received: NA
Date Leached: 5/26/94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/L	MCL mg/L	PQL mg/L	Note
71432	Benzene	6/1/94	1	BQL	0.5	0.005	
56235	Carbon Tetrachloride	6/1/94	1	BQL	0.5	0.005	
108907	Chlorobenzene	6/1/94	1	BQL	100.0	0.005	
67663	Chloroform	6/1/94	1	BQL	6.0	0.005	
107062	1,2-Dichloroethane	6/1/94	1	BQL	0.5	0.005	
75354	1,1-Dichloroethene	6/1/94	1	BQL	0.7	0.005	
78933	Methyl ethyl ketone	6/1/94	1	BQL	200.0	0.100	
127184	Tetrachloroethene	6/1/94	1	BQL	0.7	0.005	
79016	Trichloroethene	6/1/94	1	BQL	0.5	0.005	
75014	Vinyl Chloride	6/1/94	1	BQL	0.2	0.010	

MCL = Maximum Contaminant Level

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: Q1452625 *Client Sample No.:* Leaching Blank

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	6/1/94	50	93	88-110	
Bromofluorobenzene	6/1/94	50	95	86-115	
1,2-Dichloroethane-d4	6/1/94	50	91	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

TCLP VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Client: Nuclear Fuel Services, Inc.

LSDG No.: 32136

Client Reference No.: LEFPC

Matrix spike - Client Sample ID: 1661B-66 MS/MSD

Lab Sample ID: 3214003MS/MSD

Sample Receipt Date: 17-May-94

Date of Collection: 12-May-94

Date of Leaching: 24-May-94

Date of Analysis: 1-Jun-94

Dilution: 10

Method: Modified SW-846 8240

Spike Compound	% Recovery QC Limits	Spike Amount (mg/L)	Unspiked Sample Result (mg/L)	Spiked Sample Result (mg/L) (MS)	% Spike Recovery (MS)	Duplicate Spike Sample Result (mg/L) (MSD)	% Spike Recovery (MSD)	%RPD
Benzene	37-151	0.500	0.000	0.691	138	0.698	140	1.1
Carbon Tetrachloride	70-140	0.500	0.000	0.572	114	0.577	115	0.9
Chlorobenzene	37-160	0.500	0.000	0.519	104	0.520	104	0.2
Chloroform	51-138	0.500	0.000	0.492	98	0.489	98	0.5
1,2-Dichloroethane	49-155	0.500	0.000	0.473	95	0.482	96	1.9
1,1-Dichloroethylene	D-234	0.500	0.000	0.479	96	0.473	95	1.1
Methyl ethyl ketone	NA	0.500	0.000	0.677	135	0.647	129	4.4
Tetrachloroethylene	64-148	0.500	0.000	0.519	104	0.509	102	2.0
Trichloroethylene	71-157	0.500	0.000	0.492	98	0.494	99	0.4
Vinyl Chloride	D-251	0.500	0.000	0.631	126	0.593	119	6.2

QC limits based on SW-846 Method 8240 Table 6

FORM III - VOA

EcoTek LSI
EcoTek Laboratory Services Incorporated

TCLP VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Client: Nuclear Fuel Services, Inc.

LSDG No.: 32136

Client Reference No.: LEFPC

Matrix spike - Client Sample ID: 1661B-139 MS/MSD

Lab Sample ID: 3214008MS/MSD

Sample Receipt Date: 17-May-94

Date of Collection: 12-May-94

Date of Leaching: 24-May-94

Date of Analysis: 1-Jun-94

Dilution: 10

Method: Modified SW-846 8240

Spike Compound	% Recovery QC Limits	Spike Amount (mg/L)	Unspiked Sample Result (mg/L)	Spiked Sample Result (mg/L) (MS)	% Spike Recovery (MS)	Duplicate Spike Sample Result (mg/L) (MSD)	% Spike Recovery (MSD)	%RPD
Benzene	37-151	0.500	0.000	0.704	141	0.753	151	6.8
Carbon Tetrachloride	70-140	0.500	0.000	0.575	115	0.599	120	4.0
Chlorobenzene	37-160	0.500	0.000	0.518	104	0.546	109	5.2
Chloroform	51-138	0.500	0.000	0.468	94	0.505	101	7.5
1,2-Dichloroethane	49-155	0.500	0.000	0.496	99	0.512	102	3.1
1,1-Dichloroethylene	D-234	0.500	0.000	0.464	93	0.496	99	6.8
Methyl ethyl ketone	NA	0.500	0.000	0.655	131	0.699	140	6.5
Tetrachloroethylene	64-148	0.500	0.000	0.508	102	0.533	107	4.8
Trichloroethylene	71-157	0.500	0.000	0.494	99	0.527	105	6.5
Vinyl Chloride	D-251	0.500	0.000	0.589	118	0.636	127	7.7

QC limits based on SW-846 Method 8240 Table 6

EcoTek LSI
EcoTek Laboratory Services Incorporated

CASE NARRATIVE FOR TCLP VOLATILE ANALYSIS USING MODIFIED METHOD 8240

Client: Nuclear Fuel Services, Inc.
LSDG No.: 32140
Project: LEFPC

Analytical Summary

Two (2) samples were received on May 17, 1994 for TCLP volatile analysis, a procedure designed to determine the mobility of organic analytes in liquid, solid and multiphasic wastes. Sample leaching was performed on May 24, 1994. All analyses were performed per request May 31 through June 1, 1994.

Procedural Summary

- Analysis - An aliquot of soil/non-soil solid sample undergoes leaching for eighteen (18) ± two (2) hours in a volume of acidic extraction fluid equivalent to twenty times the sample weight used. Water/liquid samples are merely filtered through a leaching apparatus. An aliquot of the ZHE extract is subsequently purged via a Tekmar LSC-2/ALS and/or OI 4460A/OIC MPM-16 on to traps composed of silica gel/charcoal/Tenax for introduction into a Hewlett Packard 5890/5970 GC/MSD system, configured for electron impact ionization, utilizing an appropriate volume of the leachate solution to yield a detection level that is below EPA's maximum allowable concentration limits for TCLP compounds, unless stated otherwise. Chromatography is performed on a seventy-five (75) meter x 0.53mm DB-624 megabore capillary column, temperature programmed to achieve chromatographic resolution of target analytes. As compounds elute, they are ionized, filtered through a quadrupole mass filter and quantified to determine analyte concentrations in the sample. Detection limits or practical quantitation limits (PQL's) are expressed in the final report as the minimum value that can be detected with confidence and are factored for any necessary dilutions.

- Scope and Limitations - Complex matrices often generate elevated baselines, interfering with instrument identification and quantification of target analytes. Dilutions of such samples are often required to prevent instrument damage, resulting in higher detection limits.

QA/QC

The ZHE and method blanks analyzed along with the samples of this case were found to be free of all target analytes. All other blank criteria were met.

Method QC, consisting of matrix spike and matrix spike duplicate analyses, was performed on samples 1661B-66 and 1661B-139. TCLP QC accuracy and precison results

EcoTek LSI
EcoTek Laboratory Services Incorporated

CASE NARRATIVE FOR TCLP VOLATILE ANALYSIS USING MODIFIED METHOD 8240(cont'd)

Client: Nuclear Fuel Services, Inc.
LSDG No.: 32140
Project: LEFPC

for all spiked analytes were within prescribed limits of acceptability.

General

The reports of the TCL compounds identified and quantified in the samples are contained in the following sections of the data package. Also included are the appropriate calibration and quality control data where applicable. Data is obtained from a HP RTE-A series computer with Aquarius software and/or Mustang II Dos-based computer with EnviroQuant software.

All sample analyses were performed at a 5x dilution. These dilutions did not affect the laboratory's ability to meet the required detection limits for TCLP regulatory concerns.

All results reported herein are compliant.

GC/MS Section Supervisor (designee)

6/29/94
Date

EcoTek LSI

EcoTek Laboratory Services Incorporated

Volatile TCLP Analytical Results

SW-846 Method 8240

Client: Nuclear Fuel Services, Inc.

Lab Sample ID: 3214003

Matrix: Leachate

Client Sample No.: 1661B-66

Client Reference No.: LEFPC

Date Received: 17-May-94

Date Leached: 24-May-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/L	MCL mg/L	PQL mg/L	Note
71432	Benzene	5/31/94	5	BQL	0.5	0.025	
56235	Carbon Tetrachloride	5/31/94	5	BQL	0.5	0.025	
108907	Chlorobenzene	5/31/94	5	BQL	100.0	0.025	
67663	Chloroform	5/31/94	5	BQL	6.0	0.025	
107062	1,2-Dichloroethane	5/31/94	5	BQL	0.5	0.025	
75354	1,1-Dichloroethene	5/31/94	5	BQL	0.7	0.025	
78933	Methyl ethyl ketone	5/31/94	5	BQL	200.0	0.500	
127184	Tetrachloroethene	5/31/94	5	BQL	0.7	0.025	
79016	Trichloroethene	5/31/94	5	BQL	0.5	0.025	
75014	Vinyl Chloride	5/31/94	5	BQL	0.2	0.050	

MCL = Maximum Contaminant Level

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3214003 *Client Sample No.:* 1661B-66

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/31/94	50	97	88-110	
Bromofluorobenzene	5/31/94	50	99	86-115	
1,2-Dichloroethane-d4	5/31/94	50	95	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency. Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile TCLP Analytical Results
SW-846 Method 8240

Client: Nuclear Fuel Services, Inc.
Lab Sample ID: 3214008
Matrix: Leachate

Client Sample No.: 1661B-139
Client Reference No.: LEFPC
Date Received: 17-May-94
Date Leached: 24-May-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/L	MCL mg/L	PQL mg/L	Note
71432	Benzene	5/31/94	5	BQL	0.5	0.025	
56235	Carbon Tetrachloride	5/31/94	5	BQL	0.5	0.025	
108907	Chlorobenzene	5/31/94	5	BQL	100.0	0.025	
67663	Chloroform	5/31/94	5	BQL	6.0	0.025	
107062	1,2-Dichloroethane	5/31/94	5	BQL	0.5	0.025	
75354	1,1-Dichloroethene	5/31/94	5	BQL	0.7	0.025	
78933	Methyl ethyl ketone	5/31/94	5	BQL	200.0	0.500	
127184	Tetrachloroethene	5/31/94	5	BQL	0.7	0.025	
79016	Trichloroethene	5/31/94	5	BQL	0.5	0.025	
75014	Vinyl Chloride	5/31/94	5	BQL	0.2	0.050	

MCL = Maximum Contaminant Level

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: 3214008 *Client Sample No.:* 1661B-139

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/31/94	50	98	88-110	
Bromofluorobenzene	5/31/94	50	99	86-115	
1,2-Dichloroethane-d4	5/31/94	50	95	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile TCLP Analytical Results
SW-846 Method 8240

Client: Nuclear Fuel Services, Inc.
Lab Sample ID: Q1452427
Matrix: Leachate

Client Sample No.: Leaching Blank
Client Reference No.: LEFPC
Date Received: NA
Date Leached: 24-May-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/L	MCL mg/L	PQL mg/L	Note
71432	Benzene	5/31/94	1	BQL	0.5	0.005	
56235	Carbon Tetrachloride	5/31/94	1	BQL	0.5	0.005	
108907	Chlorobenzene	5/31/94	1	BQL	100.0	0.005	
67663	Chloroform	5/31/94	1	BQL	6.0	0.005	
107062	1,2-Dichloroethane	5/31/94	1	BQL	0.5	0.005	
75354	1,1-Dichloroethene	5/31/94	1	BQL	0.7	0.005	
78933	Methyl ethyl ketone	5/31/94	1	BQL	200.0	0.100	
127184	Tetrachloroethene	5/31/94	1	BQL	0.7	0.005	
79016	Trichloroethene	5/31/94	1	BQL	0.5	0.005	
75014	Vinyl Chloride	5/31/94	1	BQL	0.2	0.010	

MCL = Maximum Contaminant Level

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: Q1452427 Client Sample No.: Leaching Blank

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/31/94	50	97	88-110	
Bromofluorobenzene	5/31/94	50	96	86-115	
1,2-Dichloroethane-d4	5/31/94	50	93	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency. Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile TCLP Analytical Results
SW-846 Method 8240

Client: Nuclear Fuel Services, Inc.
Lab Sample ID: VBLK12
Matrix: Water

Client Sample No.: Method Blank
Client Reference No.: LEFPC
Date Received: NA
Date Leached: NA

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/L	MCL mg/L	PQL mg/L	Note
71432	Benzene	5/31/94	1	BQL	0.5	0.005	
56235	Carbon Tetrachloride	5/31/94	1	BQL	0.5	0.005	
108907	Chlorobenzene	5/31/94	1	BQL	100.0	0.005	
67663	Chloroform	5/31/94	1	BQL	6.0	0.005	
107062	1,2-Dichloroethane	5/31/94	1	BQL	0.5	0.005	
75354	1,1-Dichloroethene	5/31/94	1	BQL	0.7	0.005	
78933	Methyl ethyl ketone	5/31/94	1	BQL	200.0	0.100	
127184	Tetrachloroethene	5/31/94	1	BQL	0.7	0.005	
79016	Trichloroethene	5/31/94	1	BQL	0.5	0.005	
75014	Vinyl Chloride	5/31/94	1	BQL	0.2	0.010	

MCL = Maximum Contaminant Level

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: VBLK12 *Client Sample No.:* Method Blank

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	5/31/94	50	97	88-110	
Bromofluorobenzene	5/31/94	50	97	86-115	
1,2-Dichloroethane-d4	5/31/94	50	98	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile TCLP Analytical Results
SW-846 Method 8240

Client: Nuclear Fuel Services, Inc.
Lab Sample ID: VBLK13
Matrix: Water

Client Sample No.: Method Blank
Client Reference No.: LEFPC
Date Received: NA
Date Leached: NA

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/L	MCL mg/L	PQL mg/L	Note
71432	Benzene	6/1/94	1	BQL	0.5	0.005	
56235	Carbon Tetrachloride	6/1/94	1	BQL	0.5	0.005	
108907	Chlorobenzene	6/1/94	1	BQL	100.0	0.005	
67663	Chloroform	6/1/94	1	BQL	6.0	0.005	
107062	1,2-Dichloroethane	6/1/94	1	BQL	0.5	0.005	
75354	1,1-Dichloroethene	6/1/94	1	BQL	0.7	0.005	
78933	Methyl ethyl ketone	6/1/94	1	BQL	200.0	0.100	
127184	Tetrachloroethene	6/1/94	1	BQL	0.7	0.005	
79016	Trichloroethene	6/1/94	1	BQL	0.5	0.005	
75014	Vinyl Chloride	6/1/94	1	BQL	0.2	0.010	

MCL = Maximum Contaminant Level

PQL = Practical Quantitation Limit

BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Volatile Surrogate Recovery Data

Lab Sample ID: VBLK13 *Client Sample No.:* Method Blank

Surrogate Compound	Date Analyzed	Spike Amount	% Recovery	QC Limits	Note
Toluene-d8	6/1/94	50	98	88-110	
Bromofluorobenzene	6/1/94	50	97	86-115	
1,2-Dichloroethane-d4	6/1/94	50	92	76-114	

Surrogates are compounds added to the sample prior to purging to monitor the purge efficiency.
Lower surrogate recoveries may indicate possible matrix effect and/or lower purge efficiency.

Attachment A

EcoTek LSI
EcoTek Laboratory Services Incorporated

TCLP VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Client: Nuclear Fuel Services, Inc.

LSDG No.: 32140

Client Reference No.: LEFPC

Matrix spike - Client Sample ID: 1661B-66

Lab Sample ID: 3214003MS/MSD

Sample Receipt Date: May 17, 1994

Date of Collection: May 12, 1994

Date of Leaching: May 24, 1994

Date of Analysis: June 1, 1994

Dilution: 10

Method: Modified SW-846 8240

Spike Compound	% Recovery QC Limits	Spike Amount (mg/L)	Unspiked Sample Result (mg/L)	Spiked Sample Result (mg/L) (MS)	% Spike Recovery (MS)	Duplicate Spike Sample Result (mg/L) (MSD)	% Spike Recovery (MSD)	%RPD
Benzene	37-151	0.500	0.000	0.691	138	0.698	140	1.1
Carbon Tetrachloride	70-140	0.500	0.000	0.572	114	0.577	115	0.9
Chlorobenzene	37-160	0.500	0.000	0.519	104	0.520	104	0.2
Chloroform	51-138	0.500	0.000	0.492	98	0.489	98	0.5
1,2-Dichloroethane	49-155	0.500	0.000	0.473	95	0.482	96	1.9
1,1-Dichloroethylene	D-234	0.500	0.000	0.479	96	0.473	95	1.1
Methyl ethyl ketone	NA	0.500	0.000	0.677	135	0.647	129	4.4
Tetrachloroethylene	64-148	0.500	0.000	0.519	104	0.509	102	2.0
Trichloroethylene	71-157	0.500	0.000	0.492	98	0.494	99	0.4
Vinyl Chloride	D-251	0.500	0.000	0.631	126	0.593	119	6.2

QC limits based on SW-846 Method 8240 Table 6

EcoTek LSI
EcoTek Laboratory Services Incorporated

TCLP VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Client: Nuclear Fuel Services, Inc.

LSDG No.: 32140

Client Reference No.: LEFPC

Matrix spike - Client Sample ID: 1661B-139

Lab Sample ID: 3214008MS/MSD

Sample Receipt Date: May 17, 1994

Date of Collection: May 12, 1994

Date of Leaching: May 24, 1994

Date of Analysis: June 1, 1994

Dilution: 10

Method: Modified SW-846 8240

Spike Compound	% Recovery QC Limits	Spike Amount (mg/L)	Unspiked Sample Result (mg/L)	Spiked Sample Result (mg/L) (MS)	% Spike Recovery (MS)	Duplicate Spike Sample Result (mg/L) (MSD)	% Spike Recovery (MSD)	%RPD
Benzene	37-151	0.500	0.000	0.704	141	0.753	151	6.8
Carbon Tetrachloride	70-140	0.500	0.000	0.575	115	0.599	120	4.0
Chlorobenzene	37-160	0.500	0.000	0.518	104	0.546	109	5.2
Chloroform	51-138	0.500	0.000	0.468	94	0.505	101	7.5
1,2-Dichloroethane	49-155	0.500	0.000	0.496	99	0.512	102	3.1
1,1-Dichloroethylene	D-234	0.500	0.000	0.464	93	0.496	99	6.8
Methyl ethyl ketone	NA	0.500	0.000	0.655	131	0.699	140	6.5
Tetrachloroethylene	64-148	0.500	0.000	0.508	102	0.533	107	4.8
Trichloroethylene	71-157	0.500	0.000	0.494	99	0.527	105	6.5
Vinyl Chloride	D-251	0.500	0.000	0.589	118	0.636	127	7.7

QC limits based on SW-846 Method 8240 Table 6

Volatile GC/MS Instrument Logsheet
HP7101

086

				Project(s)	–
		Column ID	DB624-75M	Tune File	053094
	5-31-94	Trap ID	Tekmar K	Mass Range	35-300
Date	~~53044~~	Surrogate	SVOSS94058	E.M. & A/D	170 / 8
Analyst(s)	PWR	Internal Std	SVOIS 94057	Threshold	300
GCMethFile	8240BFB			Scan Delay	1.0 min
GCProgram	80-10-180			Calib File	051094
GCMethFile	8240			Quant ID File	053094
GCProgram	35(8)-8-195				
GCMethFile	–				
GCProgram	–				
Notes:					

Initial Five-Point Calibration			
Date: 5-10-94	3/90 sow	m8240	
Meets criteria	Y N	Y N	Y N
BFB Tune			
File: F4500	3/90 sow	m8240	
Meets criteria	Y N	Y N	Y N
Continuing Calibration			
File: F4501	3/90 sow	m8240	
Meets criteria	Y N	Y N	Y N

Cont Cal Std	Area
Int Std #1	197602
Int Std #2	556141
Int Std #3	440425

Sample IS area limit (-50% to + 100%)

Filename	Laboratory Sample ID	Client Sample ID	ALS #	pH	Df	Comments/Sample Prep	IS OK	SU OK	Note
F4500	SVCTS94073	BFB50NG	–	–	–	1.0mL #103 11:16	–	–	✓
F4501	SVOCS94069	VSTD050	1	–	–	5.0mL. SVCCS94047	–	–	✓
F4502	VBLK12	MethodBlank	2	–	1	5.0mL 10ISSS	✓	✓	✓
F4503	Q1452427	ZHE BLANK	3	–	1	↓	✓	✓	✓
F4504	Q1452532	ZHE BLANK	4	–	1	↓	✓	✓	✓
05	3214003	1661B-66	6	–	10	500mL	✓	✓	✓
06	3214008	1661B-139	7	–	10	↓	✓	✓	✓
07	3212101	22340	8	–	10	↓	✓	✓	✓
08	3212102	22335	9	–	10	↓	✓	✓	✓
09	3212103	22339	10	–	10	↓	✓	✓	✓
10	3212104	22336	11	–	10	↓	✓	✓	✓
11	3213637	1661B-~~2H~~70	12	–	10	↓	✓	✓	✓
12	3213638	1661B-~~70~~96	13	–	10	↓	✓	✓	✓
13	3213639	1661B-~~46~~102	14	–	10	↓	✓	✓	✓
14	3213640	1661B-111	15	–	10	↓	✓	✓	✓
15	3213641	1661B-118	1	–	10	↓	✓	✓	✓
16	3213642	1661B-121	2	–	10	↓	✓	✓	✓
17	3213643	1661B-128	3	–	10	↓	✓	✓	✓
18	3213644	1661B-131	4	–	10	↓	✓	✓	✓
19	3213645	1661B-103	5	–	10	↓	✓	✓	✓
20	Q1452018	ZHEBLANK	6	–	1	5.0mL	✓	✓	✓
21	3212201	CB-S-025	7	–	1	↓	✓	✓	out
22	3212202	CB-S-026	8	–	1	↓	✓	✓	↓
23	3212203	CB-S-027	9	–	1	↓			↓

Sign/Date: PWR 5-31-94 (with corrections) Approval/Date: W 6/2/94

NRE = Needs Reextraction
NRIN = Needs Reinjection
NDL = Needs Dilution
✓ = OK
RE = Reextraction Analysis
RIN = Reinjection Analysis
DL = Dilution Analysis

Surrogate Notes:
W = Within limits
L = Below lower limits
M = Matrix eff
H = Above limit
D = Dilution; not usable
X = Run Invalid

Surrogate Limits:		TOL	BFB	DCE
Water:	(3/90)	88-110	86-115	76-114
Soil:	(3/90)	84-138	59-113	70-121
Water:	(8240)	88-110	86-115	76-114
Soil:	(8240)	81-117	74-121	70-121

Notes:

15 Billable

90

HP7101 Log (Rev

Volatile GC/MS Instrument Logsheet
HP7101

027

		Column ID	DB624-75M	Project(s)	
		Trap ID	Tekmar K	Tune File	060194
		Surrogate	SVOSS 94058	Mass Range	35-300
Date	6-1-94	Internal Std	SVOIS 94057	E.M. & A/D	1700 / 8
Analyst(s)	RR			Threshold	300
GCMethFile	8240BFB			Scan Delay	1.0 min
GCProgram	80-10-180	1 of 2		Calib File	051094
GCMethFile	8240			Quant ID File	
GCProgram	35(8)-8-195				
GCMethFile	–				
GCProgram	–				
Notes:					

Cont Cal Std	Area
Int Std #1	110969
Int Std #2	515115
Int Std #3	430130

Sample IS area limit (-50% to +100%)

Initial Five-Point Calibration			
Date: 5-10-94	3/90 sow	m8240	
Meets criteria	Y N	(Y) N	Y N
BFB Tune			
File: F4524	3/90 sow	m8240	
Meets criteria	Y N	(Y) N	Y N
Continuing Calibration			
File: F4525	3/90 sow	m8240	
Meets criteria	Y N	(Y) N	Y N

Filename	Laboratory Sample ID	Client Sample ID	ALS #	pH	Df	Comments/Sample Prep	IS OK	SU OK	Note
F4524	SVOTS94073	BFB50NG	–	–	–	1.0uL 09:59	–	–	✓
25	SVOCS94069	VSTD050	1	–	–	5.0uL	–	–	✓
26	VBLK13	Method Blank	2	–	1	5.0mL 1CJ555	✓	✓	✓
27	3212201	CB-S-025	3	–	1		✓	✓	✓
28	02	CB-S-026	4	–	1		✓	✓	✓
29	03MS	CB-S-026MS	5	–	1		✓	✓	✓
30	03MSD	CB-S-026MSD	6	–	1		✓	✓	✓
31	04	CB-S-027	7	–	1		✓	✓	✓
32	G1452625	ZHE BLANK	8	–	1		✓	✓	✓
33	3213646	16618-148	9	–	10	500uL	✓	✓	✓
34	47	-155	10	–	10		✓	✓	✓
35	48	-164	11	–	10		✓	✓	✓
36	49	-173	12	–	10		✓	✓	✓
37	50	-180	13	–	10		✓	✓	✓
38	51	-188	14	–	10		✓	✓	✓
39	52	-197	15	–	10		✓	✓	✓
40	53	-205	1	–	10		✓	✓	✓
41	54	-213	2	–	10		✓	✓	✓
42	102	-225/226	3	–	10		✓	✓	✓
43	104	-229/229B	4	–	10		✓	✓	NDL
44	94	-222	5	–	10		✓	✓	✓
45	3214003MS	16618-66MS	6	–	10		✓	✓	
46	MSD	-66MSD	7	–	10		✓	✓	✓
47	3214008MS	-139MS	8	–	10		✓	✓	✓

Sign/Date: RR 6-1-94 (with corrections) Approval/Date: W 6/2/94

NRE = Needs Reextraction
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NDL = Needs Dilution
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RE = Reextraction Analysis
RIN = Reinjection Analysis
DL = Dilution Analysis

Surrogate Notes:
W = Within limits
H = Above limit
X = Run Invalid
L = Below lower limits
D = Dilution; not usable
M = Matrix effe

Surrogate Limits:	TOL	BFB	DCE
Water: (3/90)		82-110	86-115	76-114
Soil: (3/90)		84-138	59-113	70-121
Water: (8240)		86-110	86-115	76-114
Soil: (8240)		81-117	74-121	70-121

Notes:

20 billable

HP7101 Log (Rev 0

Volatile GC/MS Instrument Logsheet
HP7101

				Project(s)	–
		Column ID	DB624-75M	Tune File	060194
		Trap ID	Tekmar K	Mass Range	35-300
Date	6-1-94	Surrogate	SVOSS94C5E	E.M. & A/D	1700 / 8
Analyst(s)	RAL	Internal Std	SVOIS 94057	Threshold	300
GCMethFile	8240BFB			Scan Delay	1.0min
GCProgram	80-10-180	2 of 2		Calib File	051094
GCMethFile	8240			Quant ID File	060194
GCProgram	35(8)-8-195				
GCMethFile	–				
GCProgram	–				
Notes:					

Cont Cal Std	Area
Int Std #1	110969
Int Std #2	545115
Int Std #3	430130

Sample IS area limit (-50% to + 100%)

Initial Five-Point Calibration			
Date: 5-10-94	3/90 sow	m8240	
Meets criteria	Y N	Y N	Y N
BFB Tune			
File: F4524	3/90 sow	m8240	
Meets criteria	Y N	Y N	Y N
Continuing Calibration			
File: F4525	3/90 sow	m8240	
Meets criteria	Y N	Y N	Y N

Filename	Laboratory Sample ID	Client Sample ID	ALS #	pH	Df	Comments/Sample Prep	IS OK	SU OK	Note
~~321466MSD~~									
F4548	321400SMSD	1661B139MSD	9	–	10	500mL 1CISSS	✓	✓	✓

6-1-94

Sign/Date: RAL 6-1-94 (with corrections) Approval/Date: 6/2/94

NRE = Needs Reextraction
NRIN = Needs Reinjection
NDL = Needs Dilution
✓ = OK

RE = Reextraction Analysis
RIN = Reinjection Analysis
DL = Dilution Analysis

Surrogate Notes:
W = Within limits
L = Below lower limits
M = Matrix effec
H = Above limit
D = Dilution; not usable
X = Run Invalid

Surrogate Limits:	TOL	BFB	DCE	
Water: (3/90)		88-110	86-115	76-114
Soil: (3/90)		84-138	69-113	70-121
Water: (8240)		88-110	86-115	76-114
Soil: (8240)		81-117	74-121	70-121

Notes:

EcoTek LSI

EcoTek Laboratory Services Incorporated

ZHE - Leaching Worksheet

Date: 5-24-94 Extracted By: JC Worksheet #: L0841

A: Lab Sample ID:	3212101	3212102	3212103	3212104	3214C03	3214C08	Q1452427
B: % Solids (see back or TCLP WS)	100	100	100	100	100	100	N
C: Reduce Size?	N	N	N	N	N	N	↓
D: Total Mass of Waste Filtered (g)	N	N	N	N	N	N	↓
E: Mass of Solid (g) (DxB=E)	1.10	6.90	10.65	25.12	25.16	25.78	↓
F: Mass of Filtrate (g)	N	N	N	N	N	N	↓
G: ZHE ID	01	11	20	02	12	05	07
H: Leaching Fluid Added (g) (20xE=H)	22.20	138.0	213.0	502.4	503.2	515.6	500.0
I: Final Pressure (psi)	10	10	10	10	10	10	10

Start Time (HHMM) 2100 Leaching Time (HHMM) ~~21:00~~ 18:00 hrs Lab Temp (°C) 25°

pH of LF1 = 4.91 LF1 ID: ~~25~~ 5-25-94 RM52401

Have all ZHE's been pressure checked for leaks before the extraction? (yes) no

Comments: Filtered 5/25/94

Approved: [illegible] Date: 5-27/94 QA: _____ Date: _____

Page ___ of ___

Response Factor Report 7101

Method : C:\HPCHEM\1\DATA\053194\053194.M
Title : VOA Standards for 5 point calibration
Last Update : Tue May 31 13:06:31 1994
Response via : Continuing Calibration

Calibration Files
200 =F4313.D 150 =F4314.D 100 =F4315.D
50 =F4312.D 20 =F4316.D

		Compound	200	150	100	50	20	Avg	%RSD
1)	I	Bromochloromethane	ISTD						
2)	T	Chloromethane	0.568	0.585	0.593	0.712	0.574	0.606	9.86
3)	T	Bromomethane	0.405	0.436	0.440	0.532	0.451	0.453	10.45
4)	T	Vinyl Chloride	0.689	0.704	0.700	0.832	0.651	0.715	9.55
5)	T	Chloroethane	0.390	0.413	0.416	0.505	0.407	0.426	10.61
6)	T	Trichlorofluoromethane	1.394	1.406	1.404	2.185	1.821	1.642	21.54
7)	T	Methylene Chloride	1.597	1.712	1.778	2.315	2.647	2.010	22.42
8)	T	Acetone	0.278	0.275	0.350	0.591	0.608	0.420	39.57
9)	T	Carbon Disulfide	1.495	1.554	1.573	1.965	1.594	1.636	11.46
10)	M	1,1-Dichloroethene	1.209	1.286	1.316	1.625	1.310	1.349	11.85
11)	T	1,1-Dichloroethane	3.121	3.292	3.362	3.916	3.248	3.388	9.09
12)	T	trans-1,2-Dichloroethene	1.488	1.541	1.577	1.855	1.520	1.596	9.29
13)	T	cis-1,2-Dichloroethene	1.753	1.855	1.895	2.244	1.825	1.915	9.99
14)	T	1,2-Dichloroethene (total	1.635	1.723	1.751	2.066	1.680	1.771	9.63
15)	T	Chloroform	3.100	3.251	3.258	3.869	3.125	3.321	9.48
16)	S	1,2-Dichloroethane-d4	1.480	1.622	1.510	1.522	1.735	1.574	6.65
17)	T	1,2-Dichloroethane	1.735	1.868	1.853	2.152	1.864	1.894	8.14
18)	I	1,4-Difluorobenzene	ISTD						
19)	T	2-Butanone	0.126	0.141	0.141	0.161	0.164	0.147	10.65
20)	T	1,1,1-Trichloroethane	0.520	0.543	0.535	0.644	0.531	0.555	9.16
21)	T	Carbon Tetrachloride	0.303	0.335	0.347	0.406	0.343	0.347	10.75
22)	T	Vinyl Acetate	0.286	0.318	0.345	0.498	0.400	0.369	22.54
23)	T	Bromodichloromethane	0.383	0.410	0.422	0.528	0.471	0.443	12.85
24)	T	1,2-Dichloropropane	0.462	0.493	0.482	0.575	0.494	0.501	8.58
25)	T	2-Chloroethylvinylether	0.209	0.234	0.004	0.237	0.054	0.148	74.60
26)	T	cis-1,3-Dichloropropene	0.515	0.559	0.553	0.667	0.552	0.569	10.04
27)	M	Trichloroethene	0.453	0.486	0.480	0.570	0.499	0.497	8.80
28)	M	Benzene	0.769	0.807	0.802	0.958	0.857	0.838	8.81
29)	T	Dibromochloromethane	0.429	0.471	0.467	0.544	0.452	0.473	9.13
30)	T	trans-1,3-Dichloropropene	0.401	0.428	0.410	0.494	0.408	0.428	8.92
31)	T	1,1,2-Trichloroethane	0.311	0.337	0.332	0.400	0.361	0.348	9.80
32)	T	Bromoform	0.283	0.313	0.306	0.360	0.279	0.308	10.58
33)	I	Chlorobenzene-d5	ISTD						
34)	T	4-Methyl-2-Pentanone	0.422	0.454	0.483	0.561	0.532	0.490	11.49
35)	T	2-Hexanone	0.281	0.302	0.320	0.375	0.344	0.324	11.22
36)	T	Tetrachloroethene	0.432	0.443	0.451	0.526	0.453	0.461	8.12
37)	T	1,1,2,2-Tetrachloroethane	0.427	0.445	0.479	0.608	0.538	0.499	14.79
38)	S	Toluene-d8	1.264	1.226	1.252	1.224	1.447	1.283	7.30
39)	M	Toluene	0.626	0.638	0.652	0.768	1.022	0.741	22.54
40)	M	Chlorobenzene	0.962	0.993	1.017	1.187	1.025	1.037	8.43
41)	T	Ethylbenzene	0.385	0.403	0.410	0.483	0.468	0.430	10.06

(#) = Out of Range

Response Factor Report 7101

Method : C:\HPCHEM\1\DATA\053194\053194.M
Title : VOA Standards for 5 point calibration
Last Update : Tue May 31 13:06:31 1994
Response via : Continuing Calibration

Calibration Files
200 =F4313.D 150 =F4314.D 100 =F4315.D
50 =F4312.D 20 =F4316.D

		Compound	200	150	100	50	20	Avg	%RSD
42)	S	Bromofluorobenzene	0.726	0.740	0.758	0.752	0.919	0.779	10.19
43)	T	Styrene	0.930	0.986	1.002	1.188	1.042	1.029	9.44
44)	T	Xylene(m,p)	0.517	0.543	0.552	0.644	0.691	0.589	12.63
45)	T	Xylene(o)	0.469	0.486	0.499	0.581	0.599	0.527	11.14
46)	T	Xylene (total)	0.469	0.486	0.499	0.581	0.599	0.527	11.14

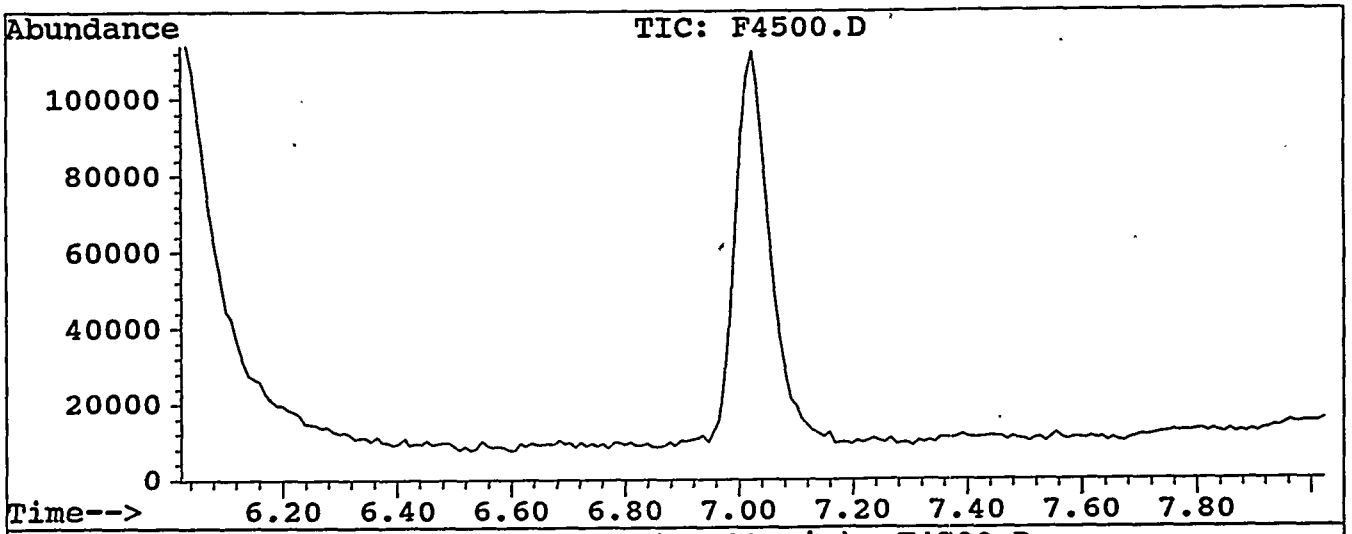
(#) = Out of Range

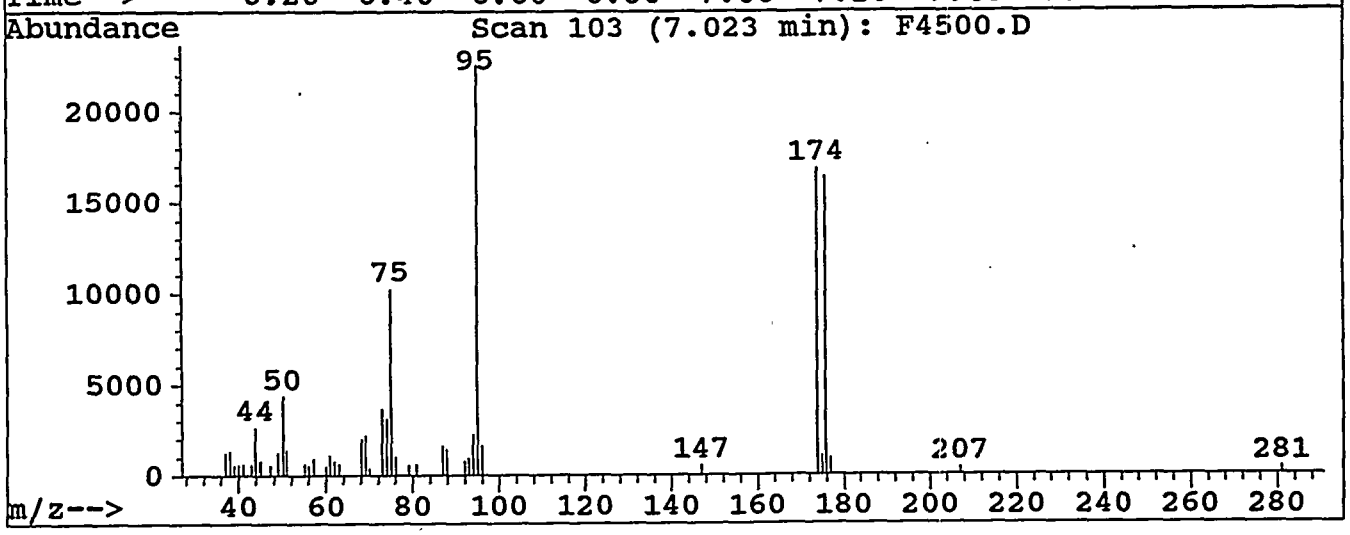
CLPBFB

Data File : C:\HPCHEM\1\DATA\053194\F4500.D
Acq Time : 31 May 94 11:06 am
Sample : BFB50NG 1.0uL SVOTS94073
Misc : DB624-75M 35-300 80-10-180

Operator: RIK ROBERT
Inst : 7101
Multiplr: 1.00

Method : C:\HPCHEM\1\DATA\053194\053194.M
Title : VOA Standards for 5 point calibration





Peak Apex is scan: 103

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.4	4370	PASS
75	95	30	60	45.4	10236	PASS
95	95	100	100	100.0	22568	PASS
96	95	5	9	7.3	1638	PASS
173	174	0	2	0.0	0	PASS
174	95	50	100	74.7	16848	PASS
175	174	5	9	6.3	1065	PASS
176	174	95	101	97.3	16400	PASS
177	176	5	9	5.6	920	PASS

F4500.D 053194.M Mon Jun 20 17:00:29 1994 7101

Scan 103 (7.023 min): F4500.D
BFB50NG 1.0uL SVOTS94073
Modified:scaled

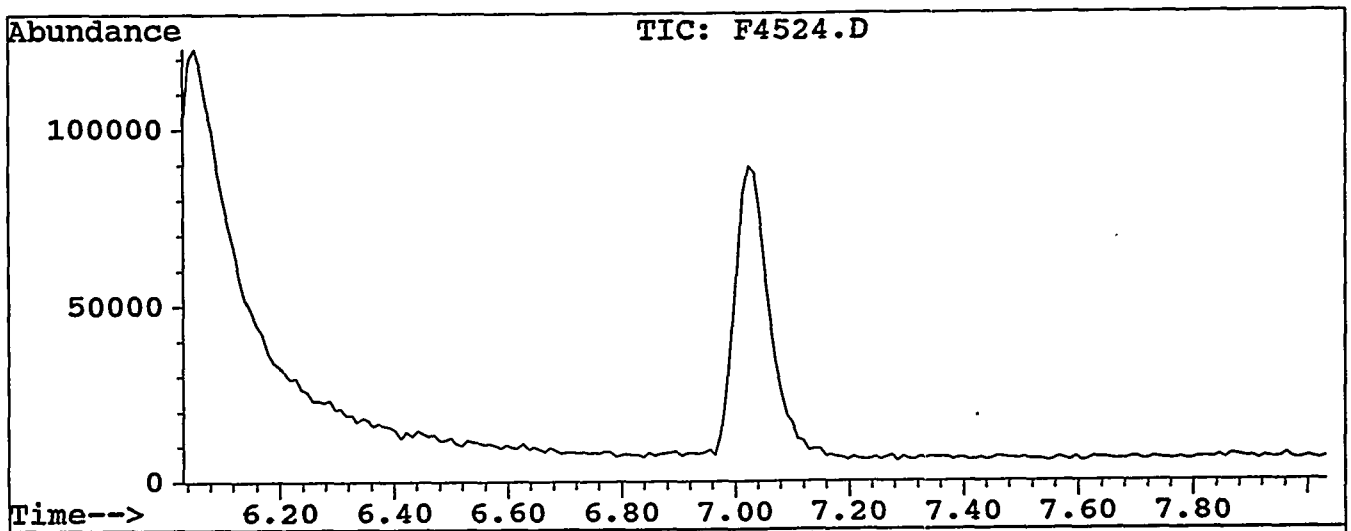
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.95	5	50.90	6	73.00	16	94.95	100
37.95	6	55.00	3	74.00	14	96.05	7
38.95	2	55.95	2	74.95	45	147.00	2
39.95	2	57.05	4	76.05	4	173.95	75
41.00	3	59.95	2	78.95	2	174.95	5
43.00	3	60.90	5	80.90	3	175.90	73
43.90	12	61.90	3	86.95	7	176.90	4
44.90	4	63.00	3	87.85	6	207.00	2
47.05	2	68.05	9	92.00	3	280.95	2
48.95	5	68.95	10	93.00	4		
50.05	19	69.90	2	93.95	10		

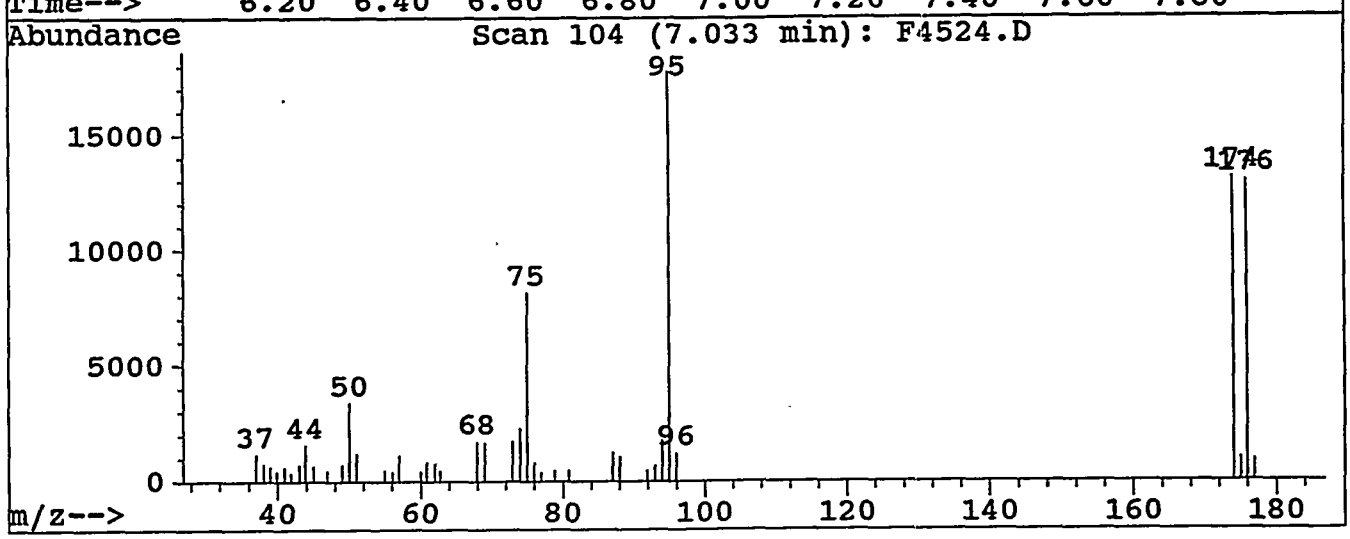
CLPBFB

Data File : C:\HPCHEM\1\DATA\060194\F4524.D
Acq Time : 1 Jun 94 9:49 am
Sample : BFB50NG 1.0uL SVOTS94073
Misc : DB624-75M 35-300 80-10-180

Operator: RIK ROBERT
Inst : 7101
Multiplr: 1.00

Method : C:\HPCHEM\1\DATA\060194\060194.M
Title : VOA Standards for 5 point calibration





Peak Apex is scan: 104

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.1	3391	PASS
75	95	30	60	45.8	8144	PASS
95	95	100	100	100.0	17792	PASS
96	95	5	9	6.8	1204	PASS
173	174	0	2	0.0	0	PASS
174	95	50	100	73.8	13139	PASS
175	174	5	9	7.5	988	PASS
176	174	95	101	98.9	12995	PASS
177	176	5	9	6.9	898	PASS

F4524.D 060194.M Mon Jun 20 17:04:03 1994 7101

Scan 104 (7.033 min): F4524.D
BFB50NG 1.0uL SVOTS94073
Modified:scaled

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.95	7	50.05	19	72.90	10	93.95	10
38.05	4	51.00	7	74.00	13	94.95	100
38.95	4	55.00	3	74.95	46	95.95	7
39.85	3	56.05	2	75.95	5	173.95	74
40.95	3	56.95	6	76.95	2	174.95	6
41.90	2	60.05	2	78.85	3	175.90	73
43.00	4	60.90	5	80.80	3	176.90	5
43.90	9	62.00	4	86.95	7		
45.00	4	62.80	3	87.95	6		
46.95	3	67.95	10	91.90	3		
49.05	4	68.95	9	93.00	4		

Continuing Calibration Report 7101

Method : C:\HPCHEM\1\DATA\053194\053194.M
Title : VOA Standards for 5 point calibration
Last Update : Tue May 31 13:06:31 1994
Response via : Continuing Calibration

Continuing Calibration File: F4501.D

Min. RRF : 0.000 Min. Rel. Area : 50%
Max. RRF Dev : 50% Max. Rel. Area : 150%

		Compound	AvgRRF	CCRRF	%Dev	Area%
1	I	Bromochloromethane	1.000	1.000	0.0	105
2	T	Chloromethane	0.606	0.737	-21.5	109
3	T	Bromomethane	0.453	0.387	14.5	76
4	T	Vinyl Chloride	0.715	0.758	-6.0	96
5	T	Chloroethane	0.426	0.418	1.8	87
6	T	Trichlorofluoromethane	1.642	1.756	-6.9	84
7	T	Methylene Chloride	2.010	1.671	16.9	76
8	T	Acetone	0.420	0.605	-44.0	108
9	T	Carbon Disulfide	1.636	1.608	1.8	86
10	M	1,1-Dichloroethene	1.349	1.284	4.8	83
11	T	1,1-Dichloroethane	3.388	2.978	12.1	80
12	T	trans-1,2-Dichloroethene	1.596	1.438	9.9	81
13	T	cis-1,2-Dichloroethene	1.915	1.678	12.3	79
14	T	1,2-Dichloroethene (total)	1.771	1.567	11.5	80
15	T	Chloroform	3.321	2.643	20.4	72
16	S	1,2-Dichloroethane-d4	1.574	1.557	1.0	108
17	T	1,2-Dichloroethane	1.894	1.593	15.9	78
18	I	1,4-Difluorobenzene	1.000	1.000	0.0	102
19	T	2-Butanone	0.147	0.137	6.8	87
20	T	1,1,1-Trichloroethane	0.555	0.490	11.6	78
21	T	Carbon Tetrachloride	0.347	0.245	29.3	62
22	T	Vinyl Acetate	0.369	0.344	7.0	71
23	T	Bromodichloromethane	0.443	0.470	-6.1	91
24	T	1,2-Dichloropropane	0.501	0.437	12.7	78
25	T	2-Chloroethylvinylether	0.148	0.168	-13.5	72
26	T	cis-1,3-Dichloropropene	0.569	0.504	11.4	77
27	M	Trichloroethene	0.497	0.406	18.5	73
28	M	Benzene	0.838	0.740	11.7	79
29	T	Dibromochloromethane	0.473	0.403	14.7	76
30	T	trans-1,3-Dichloropropene	0.428	0.363	15.2	75
31	T	1,1,2-Trichloroethane	0.348	0.310	10.9	79
32	T	Bromoform	0.308	0.261	15.3	74
33	I	Chlorobenzene-d5	1.000	1.000	0.0	98
34	T	4-Methyl-2-Pentanone	0.490	0.461	6.1	81
35	T	2-Hexanone	0.324	0.298	8.1	78
36	T	Tetrachloroethene	0.461	0.412	10.7	77
37	T	1,1,2,2-Tetrachloroethane	0.499	0.577	-15.6	93
38	S	Toluene-d8	1.283	1.290	-0.6	104
39	M	Toluene	0.741	0.617	16.7	79
40	M	Chlorobenzene	1.037	0.938	9.5	78
41	T	Ethylbenzene	0.430	0.394	8.3	80

(#) = Out of Range

Continuing Calibration Report 7101

Method : C:\HPCHEM\1\DATA\053194\053194.M
Title : VOA Standards for 5 point calibration
Last Update : Tue May 31 13:06:31 1994
Response via : Continuing Calibration

Continuing Calibration File: F4501.D

Min. RRF : 0.000 Min. Rel. Area : 50%
Max. RRF Dev : 50% Max. Rel. Area : 150%

		Compound	AvgRRF	CCRRF	%Dev	Area%
42	S	Bromofluorobenzene	0.779	0.777	0.2	102
43	T	Styrene	1.029	0.948	7.9	78
44	T	Xylene(m,p)	0.589	0.517	12.3	79
45	T	Xylene(o)	0.527	0.477	9.6	81
46	T	Xylene (total)	0.527	0.477	9.6	81

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report

Data File : C:\HPCHEM\1\DATA\053194\F4501.D
Acq Time : 31 May 94 11:23 am
Sample : VSTD050 50PPB 8240 STD
Misc : DB624-75M 35-300 35(8)-8-175
Quant Time: May 31 13:51 1994

Operator: RIK ROBERT
Inst : 7101
Multiplr: 1.00

Method : C:\HPCHEM\1\DATA\053194\053194.M
Title : VOA Standards for 5 point calibration
Last Update : Tue May 31 13:06:31 1994
Response via : Single Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	9.49	128	119602	50.00	ug/l	0.00
18) 1,4-Difluorobenzene	12.19	114	556141	50.00	ug/l	0.00
33) Chlorobenzene-d5	18.17	117	440425	50.00	ug/l	0.00
System Monitoring Compounds						**%Recovery**
16) 1,2-Dichloroethane-d4	11.04	65	186245	50.00	ug/l	100.00%
38) Toluene-d8	15.34	98	568209	50.00	ug/l	100.00%
42) Bromofluorobenzene	20.42	95	342308	50.00	ug/l	100.00%
Target Compounds						**Qvalue**
2) Chloromethane	2.45	50	88100	50.00	ug/l m	100
3) Bromomethane	3.03	94	46315	50.00	ug/l m	100
4) Vinyl Chloride	2.58	62	90683	50.00	ug/l m	100
5) Chloroethane	3.18	64	50029	50.00	ug/l m	100
6) Trichlorofluoromethane	3.55	101	210027	50.00	ug/l m	100
7) Methylene Chloride	5.38	84	199809	50.00	ug/l m	100
8) Acetone	4.61	43	72416	50.00	ug/l m	97
9) Carbon Disulfide	4.76	76	192280	50.00	ug/l m	100
10) 1,1-Dichloroethene	4.43	96	153540	50.00	ug/l m	100
11) 1,1-Dichloroethane	7.04	63	356220	50.00	ug/l m	100
12) trans-1,2-Dichloroethene	5.97	96	171958	50.00	ug/l m	100
13) cis-1,2-Dichloroethene	8.80	96	200717	50.00	ug/l m	100
14) 1,2-Dichloroethene (total)	8.80	96	374885	100.00	ug/l m	99
15) Chloroform	9.80	83	316081	50.00	ug/l m	100
17) 1,2-Dichloroethane	11.23	62	190502	50.00	ug/l m	100
19) 2-Butanone	8.98	43	76097	50.03	ug/l m	98
20) 1,1,1-Trichloroethane	10.17	97	272724	50.00	ug/l	100
21) Carbon Tetrachloride	10.60	117	136261	50.00	ug/l	100
22) Vinyl Acetate	7.32	43	191099	50.00	ug/l	100
23) Bromodichloromethane	13.87	83	261272	50.00	ug/l	100
24) 1,2-Dichloropropane	13.20	63	243250	50.00	ug/l	100
25) 2-Chloroethylvinylether	14.60	63	93229	50.00	ug/l	100
26) cis-1,3-Dichloropropene	14.83	75	280426	50.00	ug/l	100
27) Trichloroethene	12.72	130	225526	50.00	ug/l	100
28) Benzene	11.12	78	411535	50.00	ug/l	100
29) Dibromochloromethane	17.07	129	224108	50.00	ug/l	100
30) trans-1,3-Dichloropropene	15.98	75	201835	50.00	ug/l	100
31) 1,1,2-Trichloroethane	16.33	97	172484	50.00	ug/l	100
32) Bromoform	19.80	173	145274	50.00	ug/l	100
34) 4-Methyl-2-Pentanone	15.21	43	202881	50.00	ug/l	100
35) 2-Hexanone	16.88	43	131233	50.00	ug/l	100
36) Tetrachloroethene	16.54	164	181412	50.00	ug/l	100
37) 1,1,2,2-Tetrachloroethane	20.75	83	254186	50.00	ug/l	100
39) Toluene	15.46	92	271853	50.00	ug/l	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\053194\F4501.D
Acq Time : 31 May 94 11:23 am
Sample : VSTD050 50PPB 8240 STD
Misc : DB624-75M 35-300 35(8)-8-175
Quant Time: May 31 13:51 1994

Operator: RIK ROBERT
Inst : 7101
Multiplr: 1.00

Method : C:\HPCHEM\1\DATA\053194\053194.M
Title : VOA Standards for 5 point calibration
Last Update : Tue May 31 13:06:31 1994
Response via : Single Level Calibration

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
40) Chlorobenzene	18.22	112	413082	50.00 ug/l	100
41) Ethylbenzene	18.46	106	173509	50.00 ug/l	100
43) Styrene	19.47	104	417345	50.00 ug/l	100
44) Xylene(m,p)	18.70	106	455339	100.00 ug/l	100
45) Xylene(o)	19.44	106	209866	50.00 ug/l	100
46) Xylene (total)	19.44	106	209866	50.00 ug/l	100

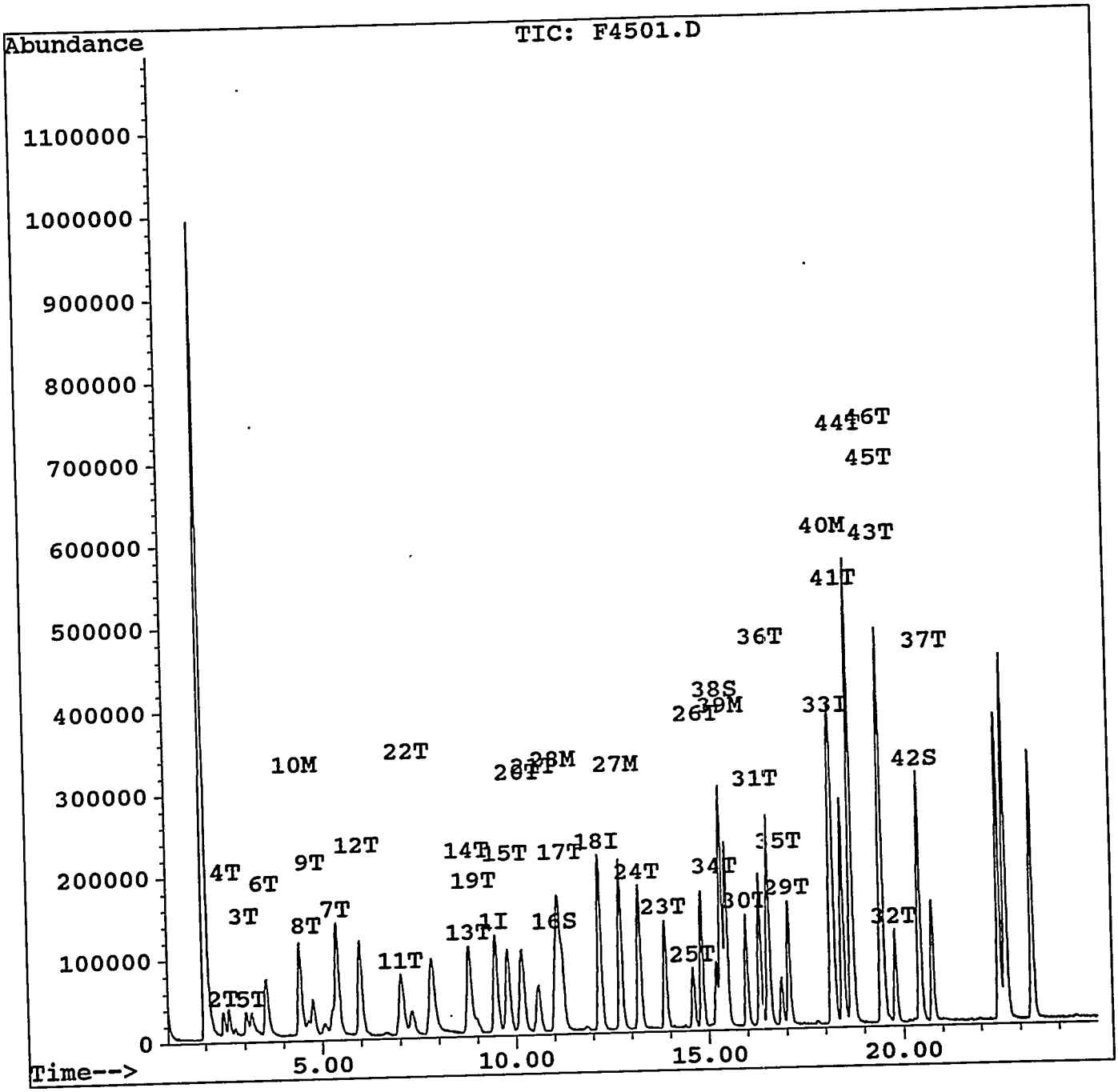
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\053194\F4501.D
Acq Time : 31 May 94 11:23 am
Sample : VSTD050 50PPB 8240 STD
Misc : DB624-75M 35-300 35(8)-8-175
Quant Time: May 31 13:51 1994

Operator: RIK ROBERT
Inst : 7101
Multiplr: 1.00

Method : C:\HPCHEM\1\DATA\053194\053194.M
Title : VOA Standards for 5 point calibration
Last Update : Tue May 31 13:06:31 1994
Response via : Single Level Calibration



Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\060194\F4525.D
Acq Time : 1 Jun 94 10:06 am
Sample : VSTD050 50PPB 8240 STD
Misc : DB624-75M 35-300 35(8)-8-147

Operator: RIK ROBERTS
Inst : 7101
Multiplr: 1.00

Method : C:\HPCHEM\1\DATA\060194\060194.M
Title : VOA Standards for 5 point calibration
Last Update : Wed Jun 01 11:11:28 1994
Response via : Single Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 50% Max. Rel. Area : 150%

		Compound	AvgRRF	CCRRF	%Dev	Area%	Dev(Min)
1	I	Bromochloromethane	1.000	1.000	0.0	97	0.00
2	T	Chloromethane	0.606	0.821	-35.4	112	0.00
3	T	Bromomethane	0.453	0.367	18.9	67	0.00
4	T	Vinyl Chloride	0.715	0.833	-16.4	98	0.00
5	T	Chloroethane	0.426	0.476	-11.7	92	0.00
6	T	Trichlorofluoromethane	1.642	1.959	-19.3	87	0.00
7	T	Methylene Chloride	2.010	3.824	-90.3#	161#	0.00
8	T	Acetone	0.420	0.421	-0.0	69	0.00
9	T	Carbon Disulfide	1.636	1.731	-5.8	86	0.00
10	M	1,1-Dichloroethene	1.349	1.385	-2.7	83	0.00
11	T	1,1-Dichloroethane	3.388	3.213	5.2	80	0.00
12	T	trans-1,2-Dichloroethene	1.596	1.675	-5.0	88	0.00
13	T	cis-1,2-Dichloroethene	1.915	1.830	4.4	80	0.00
14	T	1,2-Dichloroethene (total)	1.771	1.759	0.7	83	0.00
15	T	Chloroform	3.321	2.839	14.5	72	0.00
16	S	1,2-Dichloroethane-d4	1.574	1.594	-1.3	102	0.00
17	T	1,2-Dichloroethane	1.894	1.745	7.8	79	0.00
18	I	1,4-Difluorobenzene	1.000	1.000	0.0	100	0.00
19	T	2-Butanone	0.147	0.119	18.8	74	0.00
20	T	1,1,1-Trichloroethane	0.555	0.511	7.8	80	0.00
21	T	Carbon Tetrachloride	0.347	0.266	23.3	66	0.00
22	T	Vinyl Acetate	0.369	0.301	18.6	61	0.00
23	T	Bromodichloromethane	0.443	0.495	-11.8	94	0.00
24	T	1,2-Dichloropropane	0.501	0.440	12.2	77	0.00
25	T	2-Chloroethylvinylether	0.148	0.146	1.4	62	0.00
26	T	cis-1,3-Dichloropropene	0.569	0.500	12.2	75	0.00
27	M	Trichloroethene	0.497	0.412	17.1	73	0.00
28	M	Benzene	0.838	0.755	10.0	79	0.00
29	T	Dibromochloromethane	0.473	0.394	16.7	73	0.00
30	T	trans-1,3-Dichloropropene	0.428	0.351	18.0	71	0.00
31	T	1,1,2-Trichloroethane	0.348	0.295	15.2	74	0.00
32	T	Bromoform	0.308	0.240	22.3	67	0.00
33	I	Chlorobenzene-d5	1.000	1.000	0.0	96	0.00
34	T	4-Methyl-2-Pentanone	0.490	0.379	22.7	65	0.00
35	T	2-Hexanone	0.324	0.250	22.8	64	0.00
36	T	Tetrachloroethene	0.461	0.423	8.3	77	0.00
37	T	1,1,2,2-Tetrachloroethane	0.499	0.542	-8.6	86	0.00
38	S	Toluene-d8	1.283	1.310	-2.1	103	0.00
39	M	Toluene	0.741	0.626	15.5	78	0.00
40	M	Chlorobenzene	1.037	0.957	7.7	77	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\060194\F4525.D
Acq Time : 1 Jun 94 10:06 am
Sample : VSTD050 50PPB 8240 STD
Misc : DB624-75M 35-300 35(8)-8-147

Operator: RIK ROBERTS
Inst : 7101
Multiplr: 1.00

Method : C:\HPCHEM\1\DATA\060194\060194.M
Title : VOA Standards for 5 point calibration
Last Update : Wed Jun 01 11:11:28 1994
Response via : Single Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 50% Max. Rel. Area : 150%

		Compound	AvgRRF	CCRRF	%Dev	Area%	Dev(Min)
41	T	Ethylbenzene	0.430	0.399	7.1	79	0.00
42	S	Bromofluorobenzene	0.779	0.786	-0.9	100	0.00
43	T	Styrene	1.029	0.971	5.6	79	0.00
44	T	Xylene(m,p)	0.589	0.536	9.1	80	0.00
45	T	Xylene(o)	0.527	0.488	7.4	81	0.00
46	T	Xylene (total)	0.527	0.488	7.4	81	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report

Data File : C:\HPCHEM\1\DATA\060194\F4525.D
Acq Time : 1 Jun 94 10:06 am
Sample : VSTD050 50PPB 8240 STD
Misc : DB624-75M 35-300 35(8)-8-147
Quant Time: Jun 20 17:09 1994

Operator: RIK ROBERT
Inst : 7101
Multiplr: 1.00

Method : C:\HPCHEM\1\DATA\060194\060194.M
Title : VOA Standards for 5 point calibration
Last Update : Wed Jun 01 11:11:28 1994
Response via : Single Level Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane	9.51	128	110969	50.00 ug/l	0.00
18) 1,4-Difluorobenzene	12.20	114	545115	50.00 ug/l	0.00
33) Chlorobenzene-d5	18.17	117	430130	50.00 ug/l	0.00
System Monitoring Compounds					**%Recovery**
16) 1,2-Dichloroethane-d4	11.05	65	176849	50.00 ug/l	100.00%
38) Toluene-d8	15.35	98	563413	50.00 ug/l	100.00%
42) Bromofluorobenzene	20.44	95	338161	50.00 ug/l	100.00%
Target Compounds					**Qvalue**
2) Chloromethane	2.43	50	91122	50.00 ug/l	100
3) Bromomethane	3.02	94	40748	50.00 ug/l	100
4) Vinyl Chloride	2.57	62	92400	50.00 ug/l	100
5) Chloroethane	3.17	64	52831	50.00 ug/l	100
6) Trichlorofluoromethane	3.56	101	217427	50.00 ug/l	100
7) Methylene Chloride	5.38	84	424320	50.00 ug/l	100
8) Acetone	4.61	43	46682	50.00 ug/l m	95
9) Carbon Disulfide	4.77	76	192092	50.00 ug/l	100
10) 1,1-Dichloroethene	4.42	96	153702	50.00 ug/l	100
11) 1,1-Dichloroethane	7.05	63	356523	50.00 ug/l	100
12) trans-1,2-Dichloroethene	5.97	96	185924	50.00 ug/l	100
13) cis-1,2-Dichloroethene	8.82	96	203055	50.00 ug/l	100
14) 1,2-Dichloroethene (total)	5.97	96	390427	100.01 ug/l m	99
15) Chloroform	9.81	83	315000	50.00 ug/l	100
17) 1,2-Dichloroethane	11.23	62	193685	50.00 ug/l	100
19) 2-Butanone	8.99	43	64930	50.00 ug/l m	63
20) 1,1,1-Trichloroethane	10.18	97	278691	50.00 ug/l	100
21) Carbon Tetrachloride	10.61	117	144860	50.00 ug/l	100
22) Vinyl Acetate	7.32	43	163925	50.00 ug/l	100
23) Bromodichloromethane	13.89	83	269983	50.00 ug/l	100
24) 1,2-Dichloropropane	13.23	63	239980	50.00 ug/l	100
25) 2-Chloroethylvinylether	14.60	63	79372	50.00 ug/l	100
26) cis-1,3-Dichloropropene	14.84	75	272546	50.00 ug/l	100
27) Trichloroethene	12.73	130	224833	50.00 ug/l	100
28) Benzene	11.13	78	411544	50.00 ug/l	100
29) Dibromochloromethane	17.08	129	214503	50.00 ug/l	100
30) trans-1,3-Dichloropropene	15.98	75	191294	50.00 ug/l	100
31) 1,1,2-Trichloroethane	16.33	97	160985	50.00 ug/l	100
32) Bromoform	19.80	173	130570	50.01 ug/l	100
34) 4-Methyl-2-Pentanone	15.21	43	163123	50.00 ug/l	100
35) 2-Hexanone	16.88	43	107653	50.00 ug/l	100
36) Tetrachloroethene	16.56	164	181834	50.00 ug/l	100
37) 1,1,2,2-Tetrachloroethane	20.76	83	233279	50.00 ug/l	100
39) Toluene	15.48	92	269464	50.00 ug/l	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\060194\F4525.D
Acq Time : 1 Jun 94 10:06 am
Sample : VSTD050 50PPB 8240 STD
Misc : DB624-75M 35-300 35(8)-8-147
Quant Time: Jun 20 17:09 1994

Operator: RIK ROBERT
Inst : 7101
Multiplr: 1.00

Method : C:\HPCHEM\1\DATA\060194\060194.M
Title : VOA Standards for 5 point calibration
Last Update : Wed Jun 01 11:11:28 1994
Response via : Single Level Calibration

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
40) Chlorobenzene	18.23	112	411782	50.00 ug/l	100
41) Ethylbenzene	18.48	106	171741	50.00 ug/l	100
43) Styrene	19.48	104	417814	50.00 ug/l	100
44) Xylene(m,p)	18.71	106	460733	100.00 ug/l	100
45) Xylene(o)	19.45	106	209836	50.00 ug/l	100
46) Xylene (total)	19.45	106	209836	50.00 ug/l	100

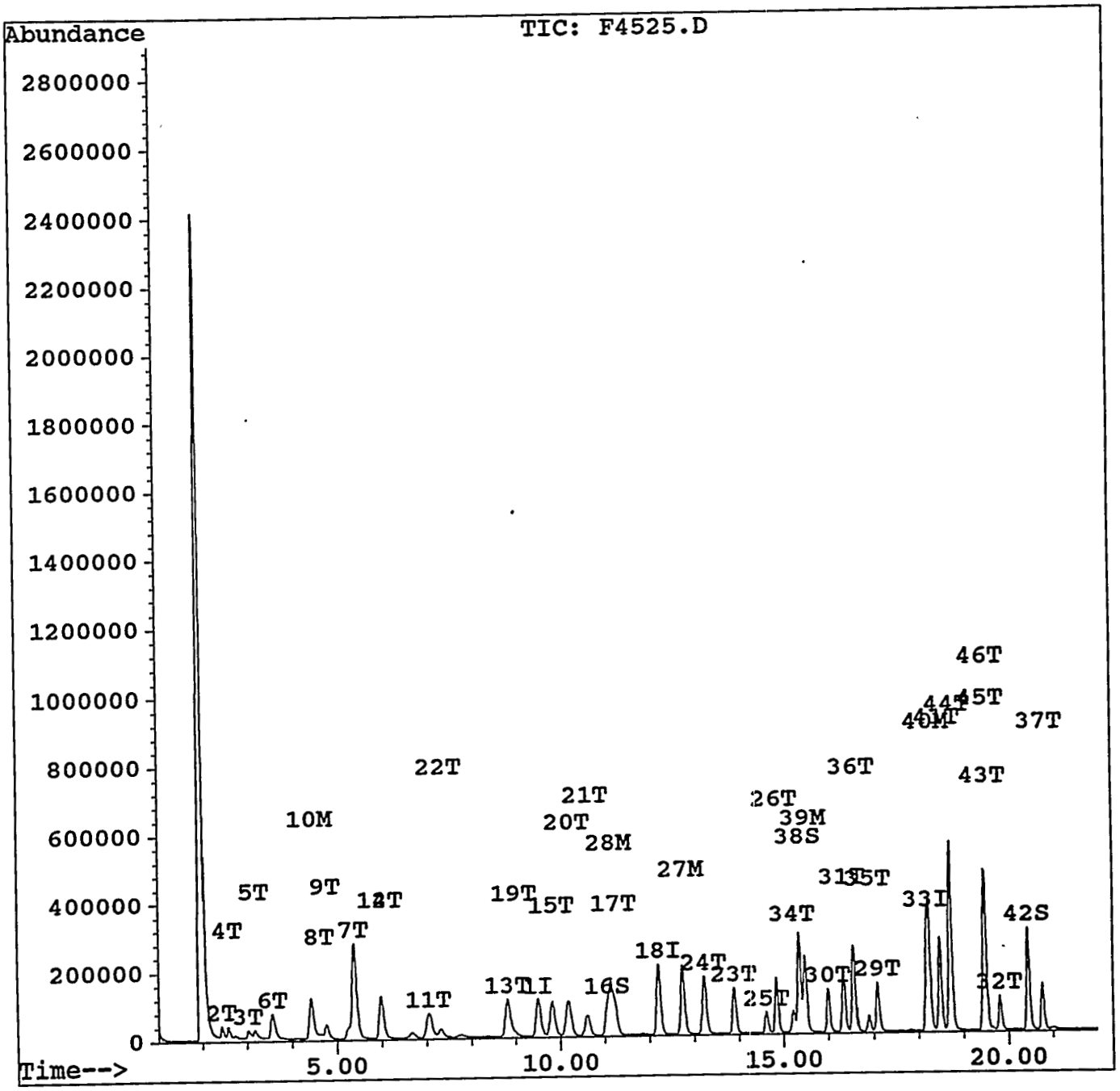
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\060194\F4525.D
Acq Time : 1 Jun 94 10:06 am
Sample : VSTD050 50PPB 8240 STD
Misc : DB624-75M 35-300 35(8)-8-147
Quant Time: Jun 20 17:09 1994

Operator: RIK ROBERT
Inst : 7101
Multiplr: 1.00

Method : C:\HPCHEM\1\DATA\060194\060194.M
Title : VOA Standards for 5 point calibration
Last Update : Wed Jun 01 11:11:28 1994
Response via : Single Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\053194\F4502.D
Acq Time : 31 May 94 11:55 am
Sample : VBLK12 METHOD BLANK 10ISSS 5.0ML
Misc : DB624-75M 35-300 35(8)-8-175
Quant Time: May 31 13:33 1994

Operator: RIK ROBERT
Inst : 7101
Multiplr: 1.00

Method : C:\HPCHEM\1\DATA\053194\053194.M
Title : VOA Standards for 5 point calibration
Last Update : Tue May 31 13:06:31 1994
Response via : Single Level Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane	9.48	128	121939	50.00 ug/l	-0.01
18) 1,4-Difluorobenzene	12.18	114	573977	50.00 ug/l	0.00
33) Chlorobenzene-d5	18.17	117	457223	50.00 ug/l	0.00
System Monitoring Compounds					**%Recovery**
16) 1,2-Dichloroethane-d4	11.03	65	185240	48.78 ug/l	97.56%
38) Toluene-d8	15.33	98	570502	48.36 ug/l	96.71%
42) Bromofluorobenzene	20.43	95	343507	48.33 ug/l	96.66%
Target Compounds					**Qvalue**
2) Chloromethane	0.00	50		Not Detected	
3) Bromomethane	0.00	94		Not Detected	
4) Vinyl Chloride	0.00	62		Not Detected	
5) Chloroethane	0.00	64		Not Detected	
6) Trichlorofluoromethane	0.00	101		Not Detected	
7) Methylene Chloride	5.37	84	52360	12.85 ug/l	97
8) Acetone	4.59	43	37124	25.14 ug/l	94
9) Carbon Disulfide	0.00	76		Not Detected	
10) 1,1-Dichloroethene	0.00	96		Not Detected	
11) 1,1-Dichloroethane	0.00	63		Not Detected	
12) trans-1,2-Dichloroethene	0.00	96		Not Detected	
13) cis-1,2-Dichloroethene	0.00	96		Not Detected	
14) 1,2-Dichloroethene (total)	0.00	96		Not Detected	
15) Chloroform	0.00	83		Not Detected	
17) 1,2-Dichloroethane	0.00	62		Not Detected	
19) 2-Butanone	0.00	43		Not Detected	
20) 1,1,1-Trichloroethane	0.00	97		Not Detected	
21) Carbon Tetrachloride	0.00	117		Not Detected	
22) Vinyl Acetate	0.00	43		Not Detected	
23) Bromodichloromethane	0.00	83		Not Detected	
24) 1,2-Dichloropropane	0.00	63		Not Detected	
25) 2-Chloroethylvinylether	0.00	63		Not Detected	
26) cis-1,3-Dichloropropene	0.00	75		Not Detected	
27) Trichloroethene	0.00	130		Not Detected	
28) Benzene	0.00	78		Not Detected	
29) Dibromochloromethane	0.00	129		Not Detected	
30) trans-1,3-Dichloropropene	0.00	75		Not Detected	
31) 1,1,2-Trichloroethane	0.00	97		Not Detected	
32) Bromoform	0.00	173		Not Detected	
34) 4-Methyl-2-Pentanone	15.21	43	9723	2.31 ug/l	100
35) 2-Hexanone	0.00	43		Not Detected	
36) Tetrachloroethene	0.00	164		Not Detected	
37) 1,1,2,2-Tetrachloroethane	0.00	83		Not Detected	
39) Toluene	0.00	92		Not Detected	

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\053194\F4502.D
Acq Time : 31 May 94 11:55 am
Sample : VBLK12 METHOD BLANK 10ISSS 5.0ML
Misc : DB624-75M 35-300 35(8)-8-175
Quant Time: May 31 13:33 1994

Operator: RIK ROBERT
Inst : 7101
Multiplr: 1.00

Method : C:\HPCHEM\1\DATA\053194\053194.M
Title : VOA Standards for 5 point calibration
Last Update : Tue May 31 13:06:31 1994
Response via : Single Level Calibration

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
40) Chlorobenzene	0.00	112		Not Detected	
41) Ethylbenzene	0.00	106		Not Detected	
43) Styrene	0.00	104		Not Detected	
44) Xylene(m,p)	0.00	106		Not Detected	
45) Xylene(o)	0.00	106		Not Detected	
46) Xylene (total)	0.00	106		Not Detected	

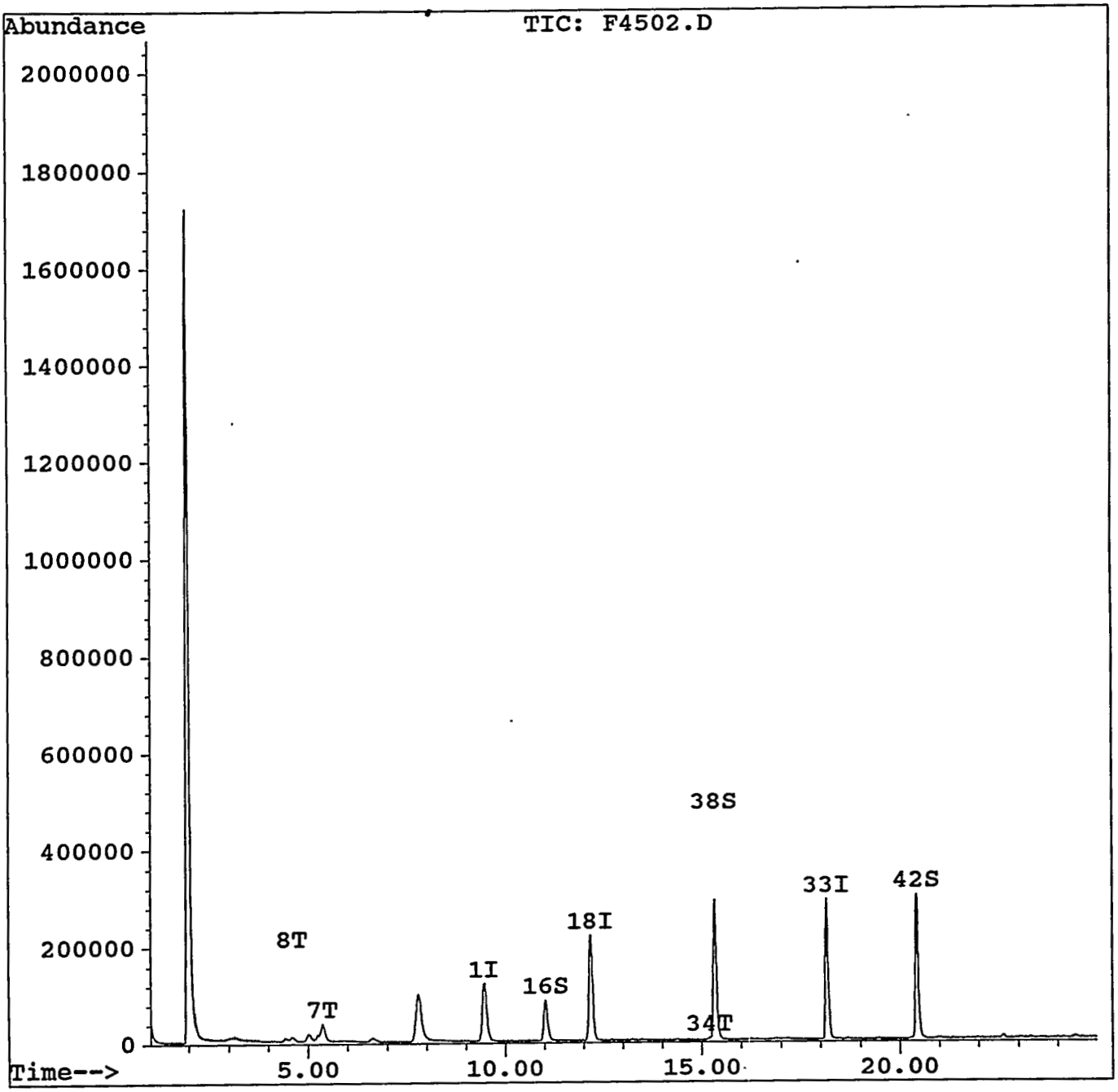
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\053194\F4502.D
Acq Time : 31 May 94 11:55 am
Sample : VBLK12 METHOD BLANK 10ISSS 5.0ML
Misc : DB624-75M 35-300 35(8)-8-175
Quant Time: May 31 13:33 1994

Operator: RIK ROBERT
Inst : 7101
Multiplr: 1.00

Method : C:\HPCHEM\1\DATA\053194\053194.M
Title : VOA Standards for 5 point calibration
Last Update : Tue May 31 13:06:31 1994
Response via : Single Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\060194\F4526.D
Acq Time : 1 Jun 94 10:34 am
Sample : VBLK13 METHOD BLANK 10ISSS 5.0ML
Misc : DB624-75M 35-300 35(8)-8-147
Quant Time: Jun 1 11:11 1994

Operator: RIK ROBERT
Inst : 7101
Multiplr: 1.00

Method : C:\HPCHEM\1\DATA\060194\060194.M
Title : VOA Standards for 5 point calibration
Last Update : Wed Jun 01 11:11:28 1994
Response via : Single Level Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane	9.51	128	123370	50.00 ug/l	0.00
18) 1,4-Difluorobenzene	12.21	114	572798	50.00 ug/l	0.01
33) Chlorobenzene-d5	18.18	117	455471	50.00 ug/l	0.00
System Monitoring Compounds					**%Recovery**
16) 1,2-Dichloroethane-d4	11.06	65	180916	46.01 ug/l	92.02%
38) Toluene-d8	15.35	98	584114	48.95 ug/l	97.91%
42) Bromofluorobenzene	20.44	95	346934	48.44 ug/l	96.89%
Target Compounds					**Qvalue**
2) Chloromethane	0.00	50		Not Detected	
3) Bromomethane	0.00	94		Not Detected	
4) Vinyl Chloride	0.00	62		Not Detected	
5) Chloroethane	0.00	64		Not Detected	
6) Trichlorofluoromethane	0.00	101		Not Detected	
7) Methylene Chloride	5.39	84	271142	28.74 ug/l	99
8) Acetone	4.57	43	3324	3.20 ug/l	83
9) Carbon Disulfide	0.00	76		Not Detected	
10) 1,1-Dichloroethene	0.00	96		Not Detected	
11) 1,1-Dichloroethane	0.00	63		Not Detected	
12) trans-1,2-Dichloroethene	0.00	96		Not Detected	
13) cis-1,2-Dichloroethene	0.00	96		Not Detected	
14) 1,2-Dichloroethene (total)	0.00	96		Not Detected	
15) Chloroform	0.00	83		Not Detected	
17) 1,2-Dichloroethane	0.00	62		Not Detected	
19) 2-Butanone	0.00	43		Not Detected	
20) 1,1,1-Trichloroethane	0.00	97		Not Detected	
21) Carbon Tetrachloride	0.00	117		Not Detected	
22) Vinyl Acetate	0.00	43		Not Detected	
23) Bromodichloromethane	0.00	83		Not Detected	
24) 1,2-Dichloropropane	0.00	63		Not Detected	
25) 2-Chloroethylvinylether	0.00	63		Not Detected	
26) cis-1,3-Dichloropropene	0.00	75		Not Detected	
27) Trichloroethene	0.00	130		Not Detected	
28) Benzene	0.00	78		Not Detected	
29) Dibromochloromethane	0.00	129		Not Detected	
30) trans-1,3-Dichloropropene	0.00	75		Not Detected	
31) 1,1,2-Trichloroethane	0.00	97		Not Detected	
32) Bromoform	0.00	173		Not Detected	
34) 4-Methyl-2-Pentanone	0.00	43		Not Detected	
35) 2-Hexanone	0.00	43		Not Detected	
36) Tetrachloroethene	0.00	164		Not Detected	
37) 1,1,2,2-Tetrachloroethane	0.00	83		Not Detected	
39) Toluene	0.00	92		Not Detected	

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\060194\F4526.D
Acq Time : 1 Jun 94 10:34 am
Sample : VBLK13 METHOD BLANK 10ISSS 5.0ML
Misc : DB624-75M 35-300 35(8)-8-147
Quant Time: Jun 1 11:11 1994

Operator: RIK ROBERT
Inst : 7101
Multiplr: 1.00

Method : C:\HPCHEM\1\DATA\060194\060194.M
Title : VOA Standards for 5 point calibration
Last Update : Wed Jun 01 11:11:28 1994
Response via : Single Level Calibration

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
40) Chlorobenzene	0.00	112		Not Detected	
41) Ethylbenzene	0.00	106		Not Detected	
43) Styrene	0.00	104		Not Detected	
44) Xylene(m,p)	0.00	106		Not Detected	
45) Xylene(o)	0.00	106		Not Detected	
46) Xylene (total)	0.00	106		Not Detected	

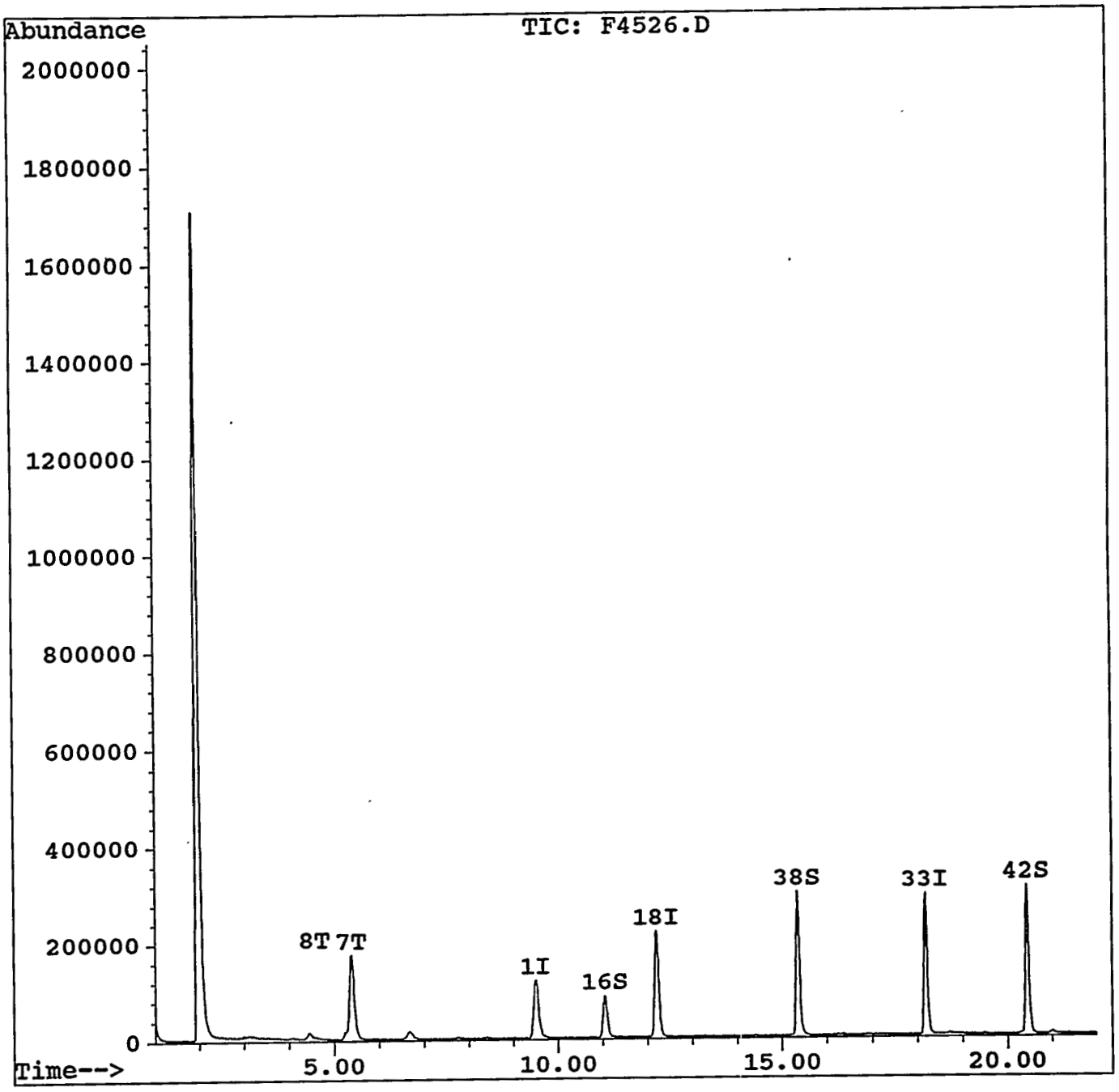
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\060194\F4526.D
Acq Time : 1 Jun 94 10:34 am
Sample : VBLK13 METHOD BLANK 10ISSS 5.0ML
Misc : DB624-75M 35-300 35(8)-8-147
Quant Time: Jun 1 11:11 1994

Operator: RIK ROBERT
Inst : 7101
Multiplr: 1.00

Method : C:\HPCHEM\1\DATA\060194\060194.M
Title : VOA Standards for 5 point calibration
Last Update : Wed Jun 01 11:11:28 1994
Response via : Single Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\053194\F4504.D
Acq Time : 31 May 94 2:06 pm
Sample : Q1452532 ZHE BLANK 10ISSS 5.0ML
Misc : DB624-75M 35-300 35(8)-8-175
Quant Time: Jun 17 10:49 1994

Operator: RIK ROBERT
Inst : 7101
Multiplr: 1.00

Method : C:\HPCHEM\1\DATA\053194\053194.M
Title : VOA Standards for 5 point calibration
Last Update : Tue May 31 13:06:31 1994
Response via : Single Level Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane	9.47	128	120303	50.00 ug/l	-0.02
18) 1,4-Difluorobenzene	12.18	114	570622	50.00 ug/l	0.00
33) Chlorobenzene-d5	18.17	117	453281	50.00 ug/l	0.00
System Monitoring Compounds					%Recovery
16) 1,2-Dichloroethane-d4	11.04	65	174525	46.58 ug/l	93.17%
38) Toluene-d8	15.34	98	564459	48.26 ug/l	96.52%
42) Bromofluorobenzene	20.43	95	336744	47.79 ug/l	95.58%
Target Compounds					Qvalue
2) Chloromethane	0.00	50		Not Detected	
3) Bromomethane	0.00	94		Not Detected	
4) Vinyl Chloride	0.00	62		Not Detected	
5) Chloroethane	0.00	64		Not Detected	
6) Trichlorofluoromethane	0.00	101		Not Detected	
7) Methylene Chloride	5.37	84	112483	27.98 ug/l	92
8) Acetone	4.60	43	32215	22.11 ug/l m	99
9) Carbon Disulfide	0.00	76		Not Detected	
10) 1,1-Dichloroethene	0.00	96		Not Detected	
11) 1,1-Dichloroethane	0.00	63		Not Detected	
12) trans-1,2-Dichloroethene	0.00	96		Not Detected	
13) cis-1,2-Dichloroethene	0.00	96		Not Detected	
14) 1,2-Dichloroethene (total)	0.00	96		Not Detected	
15) Chloroform	0.00	83		Not Detected	
17) 1,2-Dichloroethane	0.00	62		Not Detected	
19) 2-Butanone	0.00	43		Not Detected	
20) 1,1,1-Trichloroethane	0.00	97		Not Detected	
21) Carbon Tetrachloride	0.00	117		Not Detected	
22) Vinyl Acetate	0.00	43		Not Detected	
23) Bromodichloromethane	0.00	83		Not Detected	
24) 1,2-Dichloropropane	0.00	63		Not Detected	
25) 2-Chloroethylvinylether	0.00	63		Not Detected	
26) cis-1,3-Dichloropropene	0.00	75		Not Detected	
27) Trichloroethene	0.00	130		Not Detected	
28) Benzene	0.00	78		Not Detected	
29) Dibromochloromethane	0.00	129		Not Detected	
30) trans-1,3-Dichloropropene	0.00	75		Not Detected	
31) 1,1,2-Trichloroethane	0.00	97		Not Detected	
32) Bromoform	0.00	173		Not Detected	
34) 4-Methyl-2-Pentanone	15.18	43	14546	3.48 ug/l	65
35) 2-Hexanone	0.00	43		Not Detected	
36) Tetrachloroethene	0.00	164		Not Detected	
37) 1,1,2,2-Tetrachloroethane	0.00	83		Not Detected	
39) Toluene	0.00	92		Not Detected	

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\053194\F4504.D
Acq Time : 31 May 94 2:06 pm
Sample : Q1452532 ZHE BLANK 10ISSS 5.0ML
Misc : DB624-75M 35-300 35(8)-8-175
Quant Time: Jun 17 10:49 1994

Operator: RIK ROBERT
Inst : 7101
Multiplr: 1.00

Method : C:\HPCHEM\1\DATA\053194\053194.M
Title : VOA Standards for 5 point calibration
Last Update : Tue May 31 13:06:31 1994
Response via : Single Level Calibration

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
40) Chlorobenzene	0.00	112		Not Detected	
41) Ethylbenzene	0.00	106		Not Detected	
43) Styrene	0.00	104		Not Detected	
44) Xylene(m,p)	0.00	106		Not Detected	
45) Xylene(o)	0.00	106		Not Detected	
46) Xylene (total)	0.00	106		Not Detected	

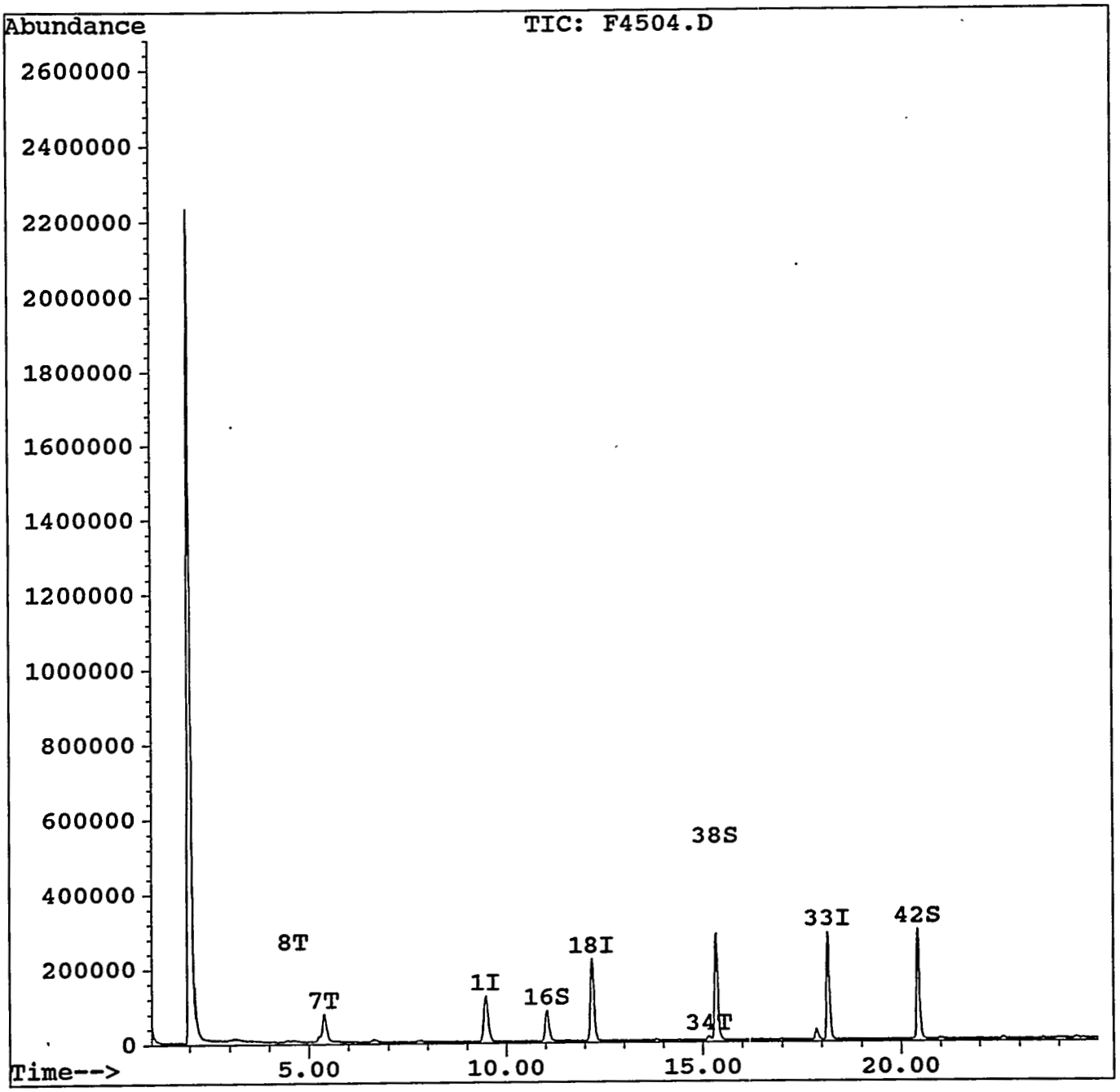
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\053194\F4504.D
Acq Time : 31 May 94 2:06 pm
Sample : Q1452532 ZHE BLANK 10ISSS 5.0ML
Misc : DB624-75M 35-300 35(8)-8-175
Quant Time: Jun 17 10:49 1994

Operator: RIK ROBERT
Inst : 7101
Multiplr: 1.00

Method : C:\HPCHEM\1\DATA\053194\053194.M
Title : VOA Standards for 5 point calibration
Last Update : Tue May 31 13:06:31 1994
Response via : Single Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\053194\F4505.D
Acq Time : 31 May 94 2:41 pm
Sample : 3214003 1661B-66 10ISSS 500uL
Misc : DB624-75M 35-300 35(8)-8-175
Quant Time: May 31 15:22 1994

Operator: RIK ROBERT
Inst : 7101
Multiplr: 1.00

Method : C:\HPCHEM\1\DATA\053194\053194.M
Title : VOA Standards for 5 point calibration
Last Update : Tue May 31 13:06:31 1994
Response via : Single Level Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane	9.46	128	125536	50.00 ug/l	-0.03
18) 1,4-Difluorobenzene	12.18	114	573368	50.00 ug/l	0.00
33) Chlorobenzene-d5	18.17	117	457834	50.00 ug/l	0.00
System Monitoring Compounds					**%Recovery**
16) 1,2-Dichloroethane-d4	11.03	65	185118	47.35 ug/l	94.70%
38) Toluene-d8	15.34	98	572844	48.49 ug/l	96.98%
42) Bromofluorobenzene	20.43	95	350744	49.28 ug/l	98.57%
Target Compounds					**Qvalue**
2) Chloromethane	0.00	50		Not Detected	
3) Bromomethane	0.00	94		Not Detected	
4) Vinyl Chloride	0.00	62		Not Detected	
5) Chloroethane	0.00	64		Not Detected	
6) Trichlorofluoromethane	0.00	101		Not Detected	
7) Methylene Chloride	5.37	84	255101	60.82 ug/l	98
8) Acetone	4.57	43	11719	7.71 ug/l	89
9) Carbon Disulfide	0.00	76		Not Detected	
10) 1,1-Dichloroethene	0.00	96		Not Detected	
11) 1,1-Dichloroethane	0.00	63		Not Detected	
12) trans-1,2-Dichloroethene	0.00	96		Not Detected	
13) cis-1,2-Dichloroethene	0.00	96		Not Detected	
14) 1,2-Dichloroethene (total)	0.00	96		Not Detected	
15) Chloroform	0.00	83		Not Detected	
17) 1,2-Dichloroethane	0.00	62		Not Detected	
19) 2-Butanone	8.91	43	1643	~~1.05 ug/l~~	64
20) 1,1,1-Trichloroethane	0.00	97		Not Detected	
21) Carbon Tetrachloride	0.00	117		Not Detected	
22) Vinyl Acetate	0.00	43		Not Detected	
23) Bromodichloromethane	0.00	83		Not Detected	
24) 1,2-Dichloropropane	0.00	63		Not Detected	
25) 2-Chloroethylvinylether	0.00	63		Not Detected	
26) cis-1,3-Dichloropropene	15.14	75	12088	2.09 ug/l #	43
27) Trichloroethene	0.00	130		Not Detected	
28) Benzene	0.00	78		Not Detected	
29) Dibromochloromethane	0.00	129		Not Detected	
30) trans-1,3-Dichloropropene	0.00	75		Not Detected	
31) 1,1,2-Trichloroethane	0.00	97		Not Detected	
32) Bromoform	0.00	173		Not Detected	
34) 4-Methyl-2-Pentanone	15.15	43	49983	11.85 ug/l #	54
35) 2-Hexanone	0.00	43		Not Detected	
36) Tetrachloroethene	0.00	164		Not Detected	
37) 1,1,2,2-Tetrachloroethane	0.00	83		Not Detected	
39) Toluene	0.00	92		Not Detected	

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\053194\F4505.D
Acq Time : 31 May 94 2:41 pm
Sample : 3214003 1661B-66 10ISSS 500uL
Misc : DB624-75M 35-300 35(8)-8-175
Quant Time: May 31 15:22 1994

Operator: RIK ROBERT
Inst : 7101
Multiplr: 1.00

Method : C:\HPCHEM\1\DATA\053194\053194.M
Title : VOA Standards for 5 point calibration
Last Update : Tue May 31 13:06:31 1994
Response via : Single Level Calibration

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
40) Chlorobenzene	0.00	112		Not Detected	
41) Ethylbenzene	0.00	106		Not Detected	
43) Styrene	0.00	104		Not Detected	
44) Xylene(m,p)	0.00	106		Not Detected	
45) Xylene(o)	0.00	106		Not Detected	
46) Xylene (total)	0.00	106		Not Detected	

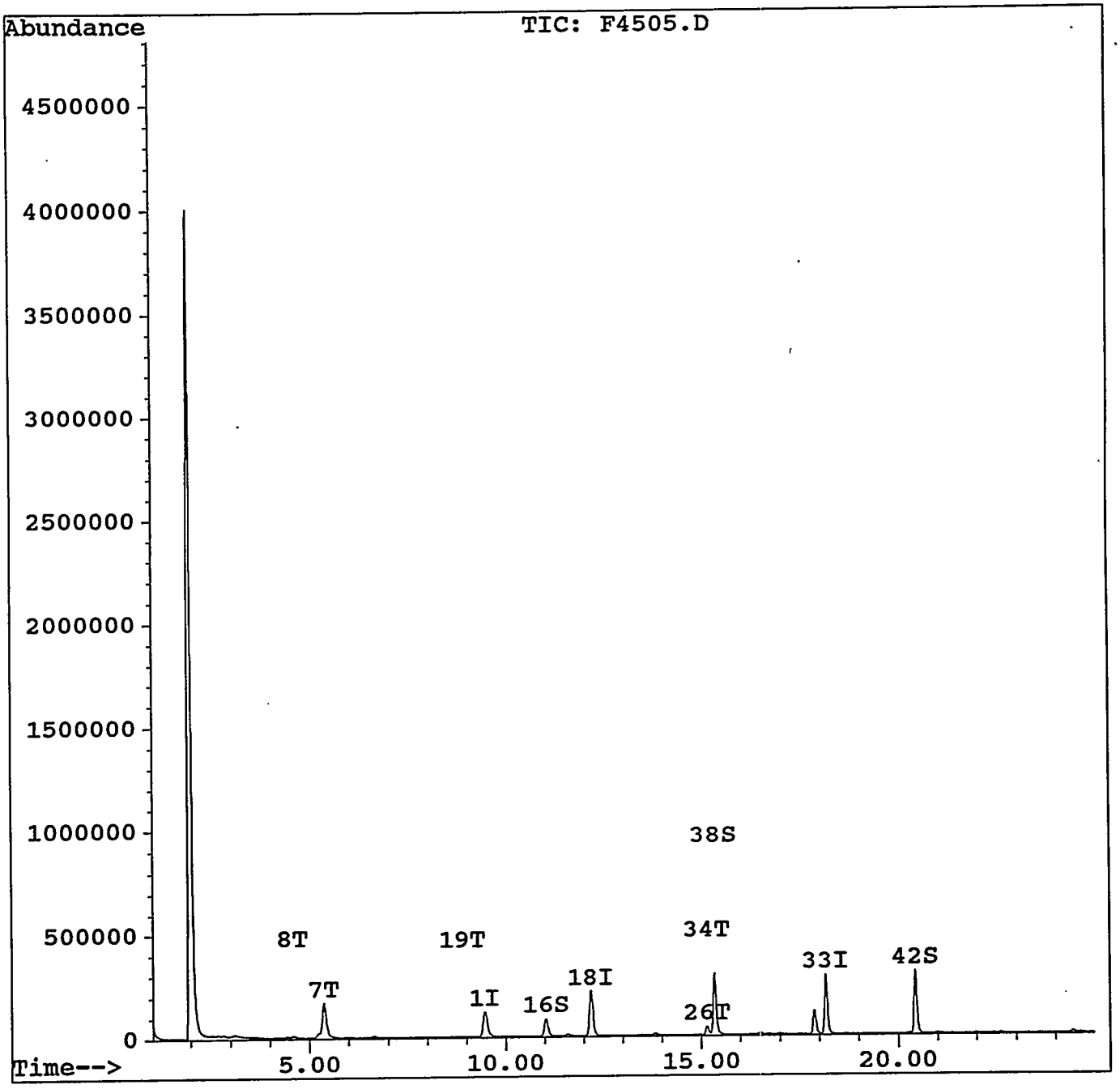
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\053194\F4505.D
Acq Time : 31 May 94 2:41 pm
Sample : 3214003 1661B-66 10ISSS 500uL
Misc : DB624-75M 35-300 35(8)-8-175
Quant Time: May 31 15:22 1994

Operator: RIK ROBERT
Inst : 7101
Multiplr: 1.00

Method : C:\HPCHEM\1\DATA\053194\053194.M
Title : VOA Standards for 5 point calibration
Last Update : Tue May 31 13:06:31 1994
Response via : Single Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\053194\F4506.D
Acq Time : 31 May 94 3:19 pm
Sample : 3214008 1661B-139 10ISSS 500uL
Misc : DB624-75M 35-300 35(8)-8-175
Quant Time: May 31 17:12 1994

Operator: RIK ROBERT
Inst : 7101
Multiplr: 1.00

Method : C:\HPCHEM\1\DATA\053194\053194.M
Title : VOA Standards for 5 point calibration
Last Update : Tue May 31 13:06:31 1994
Response via : Single Level Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane	9.49	128	121114	50.00 ug/l	0.00
18) 1,4-Difluorobenzene	12.19	114	563107	50.00 ug/l	0.00
33) Chlorobenzene-d5	18.18	117	445174	50.00 ug/l	0.00
System Monitoring Compounds					%Recovery
16) 1,2-Dichloroethane-d4	11.04	65	178787	47.40 ug/l	94.80%
38) Toluene-d8	15.35	98	560911	48.83 ug/l	97.66%
42) Bromofluorobenzene	20.43	95	342120	49.44 ug/l	98.88%
Target Compounds					Qvalue
2) Chloromethane	0.00	50		Not Detected	
3) Bromomethane	0.00	94		Not Detected	
4) Vinyl Chloride	0.00	62		Not Detected	
5) Chloroethane	0.00	64		Not Detected	
6) Trichlorofluoromethane	0.00	101		Not Detected	
7) Methylene Chloride	5.38	84	154140	38.09 ug/l	99
8) Acetone	4.60	43	99344	67.74 ug/l	97
9) Carbon Disulfide	0.00	76		Not Detected	
10) 1,1-Dichloroethene	0.00	96		Not Detected	
11) 1,1-Dichloroethane	0.00	63		Not Detected	
12) trans-1,2-Dichloroethene	0.00	96		Not Detected	
13) cis-1,2-Dichloroethene	0.00	96		Not Detected	
14) 1,2-Dichloroethene (total)	0.00	96		Not Detected	
15) Chloroform	0.00	83		Not Detected	
17) 1,2-Dichloroethane	0.00	62		Not Detected	
19) 2-Butanone	9.00	43	2470	~~1.60 ug/l~~	64
20) 1,1,1-Trichloroethane	0.00	97		Not Detected	
21) Carbon Tetrachloride	0.00	117		Not Detected	
22) Vinyl Acetate	0.00	43		Not Detected	
23) Bromodichloromethane	0.00	83		Not Detected	
24) 1,2-Dichloropropane	0.00	63		Not Detected	
25) 2-Chloroethylvinylether	0.00	63		Not Detected	
26) cis-1,3-Dichloropropene	15.17	75	20545	3.62 ug/l #	43
27) Trichloroethene	0.00	130		Not Detected	
28) Benzene	0.00	78		Not Detected	
29) Dibromochloromethane	0.00	129		Not Detected	
30) trans-1,3-Dichloropropene	0.00	75		Not Detected	
31) 1,1,2-Trichloroethane	0.00	97		Not Detected	
32) Bromoform	0.00	173		Not Detected	
34) 4-Methyl-2-Pentanone	15.14	43	46687	11.38 ug/l #	56
35) 2-Hexanone	0.00	43		Not Detected	
36) Tetrachloroethene	0.00	164		Not Detected	
37) 1,1,2,2-Tetrachloroethane	0.00	83		Not Detected	
39) Toluene	15.47	92	6759	1.23 ug/l #	43

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\053194\F4506.D
Acq Time : 31 May 94 3:19 pm
Sample : 3214008 1661B-139 10ISSS 500uL
Misc : DB624-75M 35-300 35(8)-8-175
Quant Time: May 31 17:12 1994

Operator: RIK ROBERT
Inst : 7101
Multiplr: 1.00

Method : C:\HPCHEM\1\DATA\053194\053194.M
Title : VOA Standards for 5 point calibration
Last Update : Tue May 31 13:06:31 1994
Response via : Single Level Calibration

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
40) Chlorobenzene	0.00	112		Not Detected	
41) Ethylbenzene	0.00	106		Not Detected	
43) Styrene	0.00	104		Not Detected	
44) Xylene(m,p)	0.00	106		Not Detected	
45) Xylene(o)	0.00	106		Not Detected	
46) Xylene (total)	0.00	106		Not Detected	

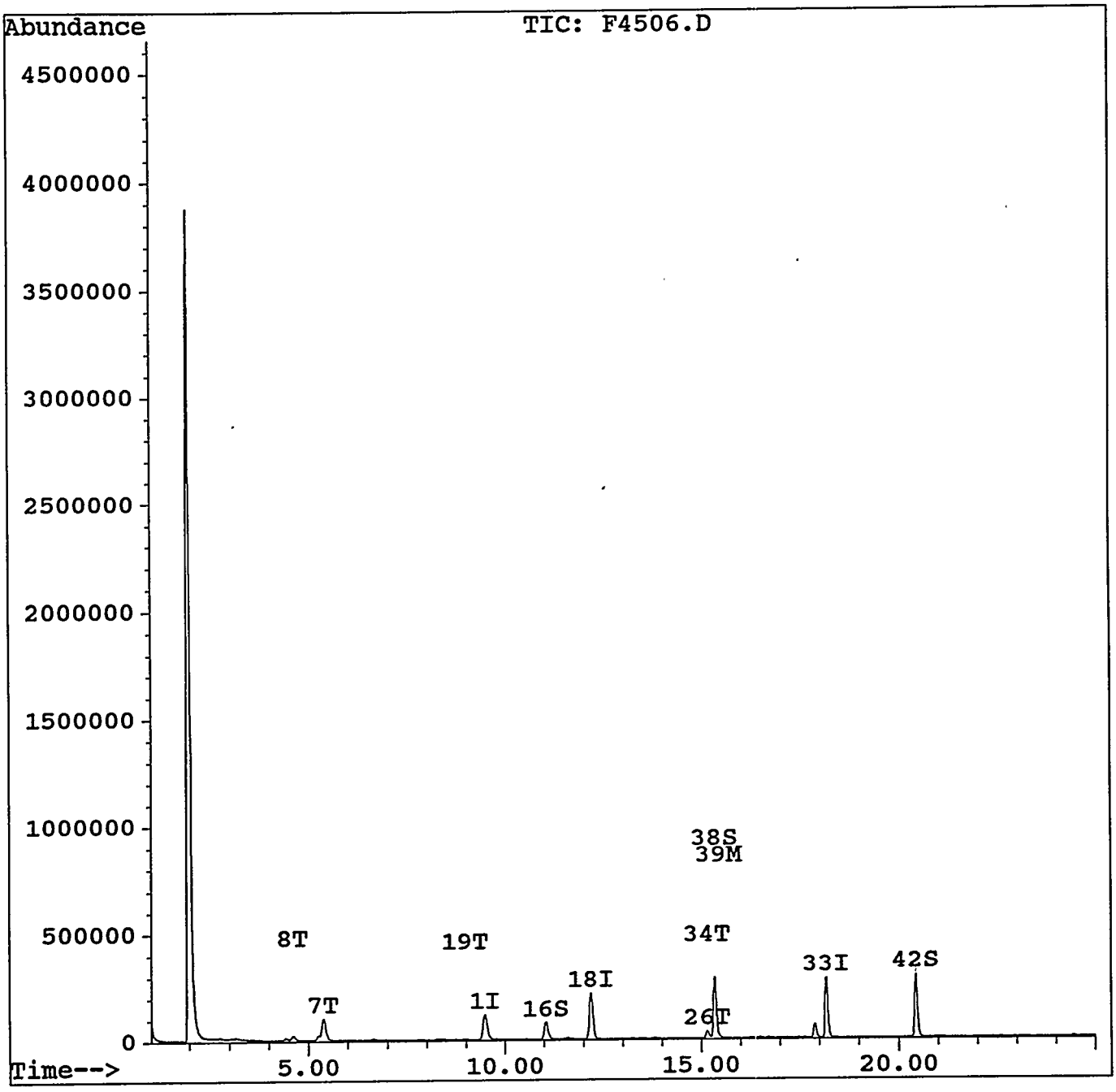
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\053194\F4506.D
Acq Time : 31 May 94 3:19 pm
Sample : 3214008 1661B-139 10ISSS 500uL
Misc : DB624-75M 35-300 35(8)-8-175
Quant Time: May 31 17:12 1994

Operator: RIK ROBERT
Inst : 7101
Multiplr: 1.00

Method : C:\HPCHEM\1\DATA\053194\053194.M
Title : VOA Standards for 5 point calibration
Last Update : Tue May 31 13:06:31 1994
Response via : Single Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\060194\F4545.D
Acq Time : 1 Jun 94 7:57 pm
Sample : 3214003MS 1661B-66MS 10ISSS 500uL
Misc : DB624-75M 35-300 35(8)-8-147
Quant Time: Jun 2 8:54 1994

Operator: RIK ROBERT
Inst : 7101
Multiplr: 1.00

Method : C:\HPCHEM\1\DATA\060194\060194.M
Title : VOA Standards for 5 point calibration
Last Update : Wed Jun 01 11:11:28 1994
Response via : Single Level Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane	9.51	128	121448	50.00 ug/l	0.00
18) 1,4-Difluorobenzene	12.21	114	560469	50.00 ug/l	0.00
33) Chlorobenzene-d5	18.18	117	443320	50.00 ug/l	0.00
System Monitoring Compounds					%Recovery
16) 1,2-Dichloroethane-d4	11.06	65	181740	46.95 ug/l	93.90%
38) Toluene-d8	15.36	98	575818	49.58 ug/l	99.16%
42) Bromofluorobenzene	20.44	95	342568	49.14 ug/l	98.29%
Target Compounds					Qvalue
2) Chloromethane	0.00	50		Not Detected	
3) Bromomethane	3.04	94	1149	1.29 ug/l #	4
4) Vinyl Chloride	2.59	62	127644	63.11 ug/l	99
5) Chloroethane	0.00	64		Not Detected	
6) Trichlorofluoromethane	0.00	101		Not Detected	
7) Methylene Chloride	5.40	84	344683	37.11 ug/l	96
8) Acetone	4.63	43	35668	34.91 ug/l	93
9) Carbon Disulfide	4.79	76	5037	1.20 ug/l	100
10) 1,1-Dichloroethene	4.44	96	161040	47.87 ug/l	97
11) 1,1-Dichloroethane	0.00	63		Not Detected	
12) trans-1,2-Dichloroethene	0.00	96		Not Detected	
13) cis-1,2-Dichloroethene	0.00	96		Not Detected	
14) 1,2-Dichloroethene (total)	0.00	96		Not Detected	
15) Chloroform	9.83	83	338933	49.16 ug/l	92
17) 1,2-Dichloroethane	11.25	62	200357	47.26 ug/l	98
19) 2-Butanone	9.00	43	90317	67.65 ug/l	99
20) 1,1,1-Trichloroethane	0.00	97		Not Detected	
21) Carbon Tetrachloride	10.61	117	170357	57.19 ug/l	99
22) Vinyl Acetate	0.00	43		Not Detected	
23) Bromodichloromethane	0.00	83		Not Detected	
24) 1,2-Dichloropropane	0.00	63		Not Detected	
25) 2-Chloroethylvinylether	0.00	63		Not Detected	
26) cis-1,3-Dichloropropene	15.15	75	26288	4.69 ug/l #	53
27) Trichloroethene	12.75	130	227531	49.21 ug/l	96
28) Benzene	11.15	78	584597	69.08 ug/l	100
29) Dibromochloromethane	0.00	129		Not Detected	
30) trans-1,3-Dichloropropene	0.00	75		Not Detected	
31) 1,1,2-Trichloroethane	0.00	97		Not Detected	
32) Bromoform	0.00	173		Not Detected	
34) 4-Methyl-2-Pentanone	0.00	43		Not Detected	
35) 2-Hexanone	0.00	43		Not Detected	
36) Tetrachloroethene	16.56	164	194408	51.87 ug/l	92
37) 1,1,2,2-Tetrachloroethane	0.00	83		Not Detected	
39) Toluene	0.00	92		Not Detected	

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\060194\F4545.D
Acq Time : 1 Jun 94 7:57 pm
Sample : 3214003MS 1661B-66MS 10ISSS 500uL
Misc : DB624-75M 35-300 35(8)-8-147
Quant Time: Jun 2 8:54 1994

Operator: RIK ROBERT
Inst : 7101
Multiplr: 1.00

Method : C:\HPCHEM\1\DATA\060194\060194.M
Title : VOA Standards for 5 point calibration
Last Update : Wed Jun 01 11:11:28 1994
Response via : Single Level Calibration

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
40) Chlorobenzene	18.24	112	440709	51.92 ug/l	97
41) Ethylbenzene	0.00	106		Not Detected	
43) Styrene	0.00	104		Not Detected	
44) Xylene(m,p)	0.00	106		Not Detected	
45) Xylene(o)	0.00	106		Not Detected	
46) Xylene (total)	0.00	106		Not Detected	

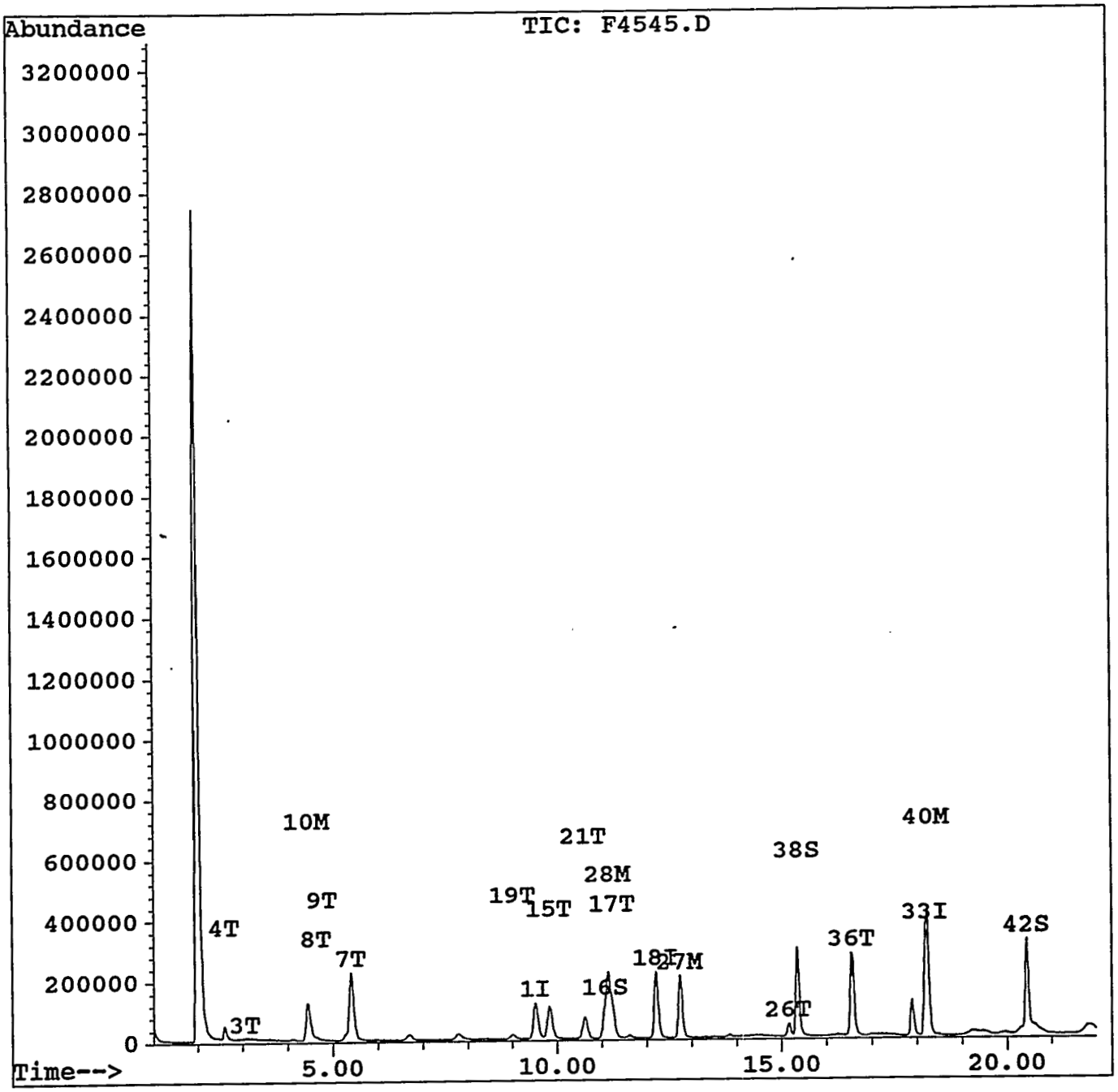
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\060194\F4545.D
Acq Time : 1 Jun 94 7:57 pm
Sample : 3214003MS 1661B-66MS 10ISSS 500uL
Misc : DB624-75M 35-300 35(8)-8-147
Quant Time: Jun 2 8:54 1994

Operator: RIK ROBERT
Inst : 7101
Multiplr: 1.00

Method : C:\HPCHEM\1\DATA\060194\060194.M
Title : VOA Standards for 5 point calibration
Last Update : Wed Jun 01 11:11:28 1994
Response via : Single Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\060194\F4546.D
Acq Time : 1 Jun 94 8:26 pm
Sample : 3214003MSD 1661B-66MSD 10ISSS 500uL
Misc : DB624-75M 35-300 35(8)-8-147
Quant Time: Jun 2 8:54 1994

Operator: RIK ROBERT
Inst : 7101
Multiplr: 1.00

Method : C:\HPCHEM\1\DATA\060194\060194.M
Title : VOA Standards for 5 point calibration
Last Update : Wed Jun 01 11:11:28 1994
Response via : Single Level Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane	9.50	128	129413	50.00 ug/l	-0.02
18) 1,4-Difluorobenzene	12.20	114	586653	50.00 ug/l	0.00
33) Chlorobenzene-d5	18.18	117	467231	50.00 ug/l	0.00
System Monitoring Compounds					**%Recovery**
16) 1,2-Dichloroethane-d4	11.05	65	190759	46.25 ug/l	92.49%
38) Toluene-d8	15.35	98	591658	48.34 ug/l	96.67%
42) Bromofluorobenzene	20.44	95	362684	49.37 ug/l	98.74%
Target Compounds					**Qvalue**
2) Chloromethane	0.00	50		Not Detected	
3) Bromomethane	3.05	94	1003	1.06 ug/l #	4
4) Vinyl Chloride	2.58	62	127786	59.29 ug/l	99
5) Chloroethane	0.00	64		Not Detected	
6) Trichlorofluoromethane	0.00	101		Not Detected	
7) Methylene Chloride	5.39	84	340884	34.44 ug/l	97
8) Acetone	4.61	43	36336	33.37 ug/l	95
9) Carbon Disulfide	4.77	76	8192	1.83 ug/l	100
10) 1,1-Dichloroethene	4.42	96	169681	47.33 ug/l	88
11) 1,1-Dichloroethane	0.00	63		Not Detected	
12) trans-1,2-Dichloroethene	0.00	96		Not Detected	
13) cis-1,2-Dichloroethene	0.00	96		Not Detected	
14) 1,2-Dichloroethene (total)	0.00	96		Not Detected	
15) Chloroform	9.82	83	359324	48.91 ug/l	97
17) 1,2-Dichloroethane	11.24	62	217626	48.17 ug/l	92
19) 2-Butanone	8.98	43	90428	64.71 ug/l	99
20) 1,1,1-Trichloroethane	0.00	97		Not Detected	
21) Carbon Tetrachloride	10.60	117	179933	57.71 ug/l	97
22) Vinyl Acetate	0.00	43		Not Detected	
23) Bromodichloromethane	0.00	83		Not Detected	
24) 1,2-Dichloropropane	0.00	63		Not Detected	
25) 2-Chloroethylvinylether	0.00	63		Not Detected	
26) cis-1,3-Dichloropropene	15.17	75	26235	4.47 ug/l #	52
27) Trichloroethene	12.74	130	238992	49.39 ug/l	98
28) Benzene	11.14	78	618674	69.84 ug/l	100
29) Dibromochloromethane	0.00	129		Not Detected	
30) trans-1,3-Dichloropropene	0.00	75		Not Detected	
31) 1,1,2-Trichloroethane	0.00	97		Not Detected	
32) Bromoform	0.00	173		Not Detected	
34) 4-Methyl-2-Pentanone	15.15	43	52910	14.93 ug/l #	57
35) 2-Hexanone	16.71	43	3296	1.41 ug/l #	38
36) Tetrachloroethene	16.56	164	200889	50.85 ug/l	95
37) 1,1,2,2-Tetrachloroethane	0.00	83		Not Detected	
39) Toluene	0.00	92		Not Detected	

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\060194\F4546.D
Acq Time : 1 Jun 94 8:26 pm
Sample : 3214003MSD 1661B-66MSD 10ISSS 500uL
Misc : DB624-75M 35-300 35(8)-8-147
Quant Time: Jun 2 8:54 1994

Operator: RIK ROBERT
Inst : 7101
Multiplr: 1.00

Method : C:\HPCHEM\1\DATA\060194\060194.M
Title : VOA Standards for 5 point calibration
Last Update : Wed Jun 01 11:11:28 1994
Response via : Single Level Calibration

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
40) Chlorobenzene	18.23	112	465514	52.04 ug/l	99
41) Ethylbenzene	0.00	106		Not Detected	
43) Styrene	0.00	104		Not Detected	
44) Xylene(m,p)	0.00	106		Not Detected	
45) Xylene(o)	0.00	106		Not Detected	
46) Xylene (total)	0.00	106		Not Detected	

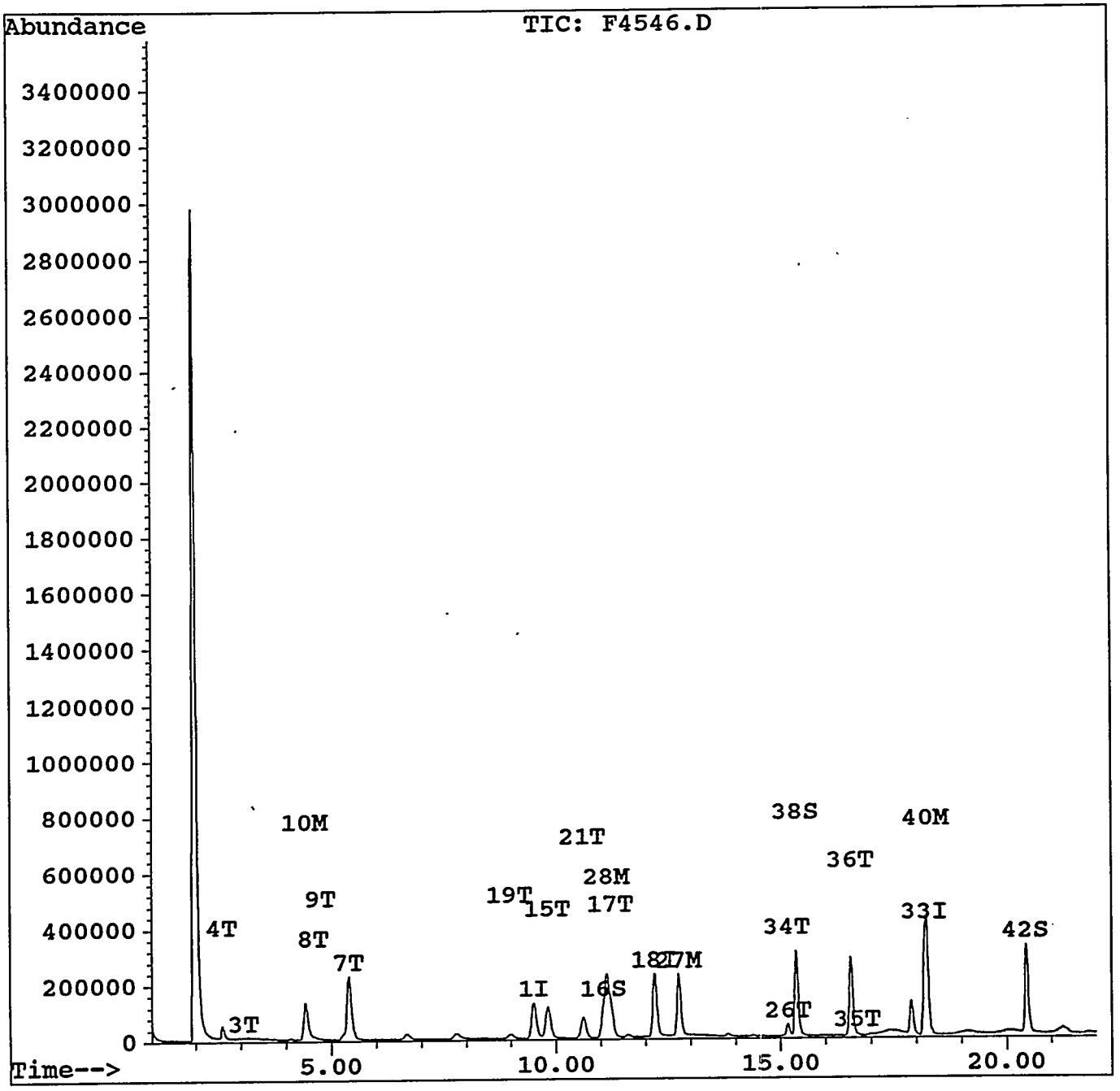
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\060194\F4546.D
Acq Time : 1 Jun 94 8:26 pm
Sample : 3214003MSD 1661B-66MSD 10ISSS 500uL
Misc : DB624-75M 35-300 35(8)-8-147
Quant Time: Jun 2 8:54 1994

Operator: RIK ROBERT
Inst : 7101
Multiplr: 1.00

Method : C:\HPCHEM\1\DATA\060194\060194.M
Title : VOA Standards for 5 point calibration
Last Update : Wed Jun 01 11:11:28 1994
Response via : Single Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\060194\F4547.D
Acq Time : 1 Jun 94 8:56 pm
Sample : 3214008MS 1661B-139MS 10ISSS 500uL
Misc : DB624-75M 35-300 35(8)-8-147
Quant Time: Jun 2 8:56 1994

Operator: RIK ROBERT
Inst : 7101
Multiplr: 1.00

Method : C:\HPCHEM\1\DATA\060194\060194.M
Title : VOA Standards for 5 point calibration
Last Update : Wed Jun 01 11:11:28 1994
Response via : Single Level Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane	9.53	128	127378	50.00 ug/l	0.01
18) 1,4-Difluorobenzene	12.21	114	570763	50.00 ug/l	0.02
33) Chlorobenzene-d5	18.19	117	457644	50.00 ug/l	0.01
System Monitoring Compounds					%Recovery
16) 1,2-Dichloroethane-d4	11.05	65	183624	45.23 ug/l	90.46%
38) Toluene-d8	15.36	98	574523	47.92 ug/l	95.84%
42) Bromofluorobenzene	20.44	95	350791	48.75 ug/l	97.50%
Target Compounds					Qvalue
2) Chloromethane	0.00	50		Not Detected	
3) Bromomethane	0.00	94		Not Detected	
4) Vinyl Chloride	2.59	62	124830	58.85 ug/l	96
5) Chloroethane	0.00	64		Not Detected	
6) Trichlorofluoromethane	0.00	101		Not Detected	
7) Methylene Chloride	5.41	84	235503	24.18 ug/l	95
8) Acetone	4.65	43	40634	37.92 ug/l	88
9) Carbon Disulfide	4.78	76	7981	1.81 ug/l	100
10) 1,1-Dichloroethene	4.43	96	163556	46.35 ug/l	93
11) 1,1-Dichloroethane	0.00	63		Not Detected	
12) trans-1,2-Dichloroethene	0.00	96		Not Detected	
13) cis-1,2-Dichloroethene	0.00	96		Not Detected	
14) 1,2-Dichloroethene (total)	0.00	96		Not Detected	
15) Chloroform	9.83	83	338753	46.84 ug/l	93
17) 1,2-Dichloroethane	11.24	62	220595	49.61 ug/l	96
19) 2-Butanone	8.99	43	89062	65.51 ug/l	99
20) 1,1,1-Trichloroethane	0.00	97		Not Detected	
21) Carbon Tetrachloride	10.63	117	174435	57.50 ug/l	97
22) Vinyl Acetate	0.00	43		Not Detected	
23) Bromodichloromethane	0.00	83		Not Detected	
24) 1,2-Dichloropropane	0.00	63		Not Detected	
25) 2-Chloroethylvinylether	0.00	63		Not Detected	
26) cis-1,3-Dichloropropene	15.16	75	20681	3.62 ug/l #	41
27) Trichloroethene	12.75	130	232531	49.39 ug/l	94
28) Benzene	11.15	78	606425	70.37 ug/l	100
29) Dibromochloromethane	0.00	129		Not Detected	
30) trans-1,3-Dichloropropene	0.00	75		Not Detected	
31) 1,1,2-Trichloroethane	0.00	97		Not Detected	
32) Bromoform	0.00	173		Not Detected	
34) 4-Methyl-2-Pentanone	0.00	43		Not Detected	
35) 2-Hexanone	0.00	43		Not Detected	
36) Tetrachloroethene	16.56	164	196441	50.77 ug/l	95
37) 1,1,2,2-Tetrachloroethane	0.00	83		Not Detected	
39) Toluene	15.46	92	6143	1.07 ug/l #	49

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\060194\F4547.D
Acq Time : 1 Jun 94 8:56 pm
Sample : 3214008MS 1661B-139MS 10ISSS 500uL
Misc : DB624-75M 35-300 35(8)-8-147
Quant Time: Jun 2 8:56 1994

Operator: RIK ROBERT
Inst : 7101
Multiplr: 1.00

Method : C:\HPCHEM\1\DATA\060194\060194.M
Title : VOA Standards for 5 point calibration
Last Update : Wed Jun 01 11:11:28 1994
Response via : Single Level Calibration

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
40) Chlorobenzene	18.24	112	453639	51.77 ug/l	99
41) Ethylbenzene	0.00	106		Not Detected	
43) Styrene	0.00	104		Not Detected	
44) Xylene(m,p)	0.00	106		Not Detected	
45) Xylene(o)	0.00	106		Not Detected	
46) Xylene (total)	0.00	106		Not Detected	

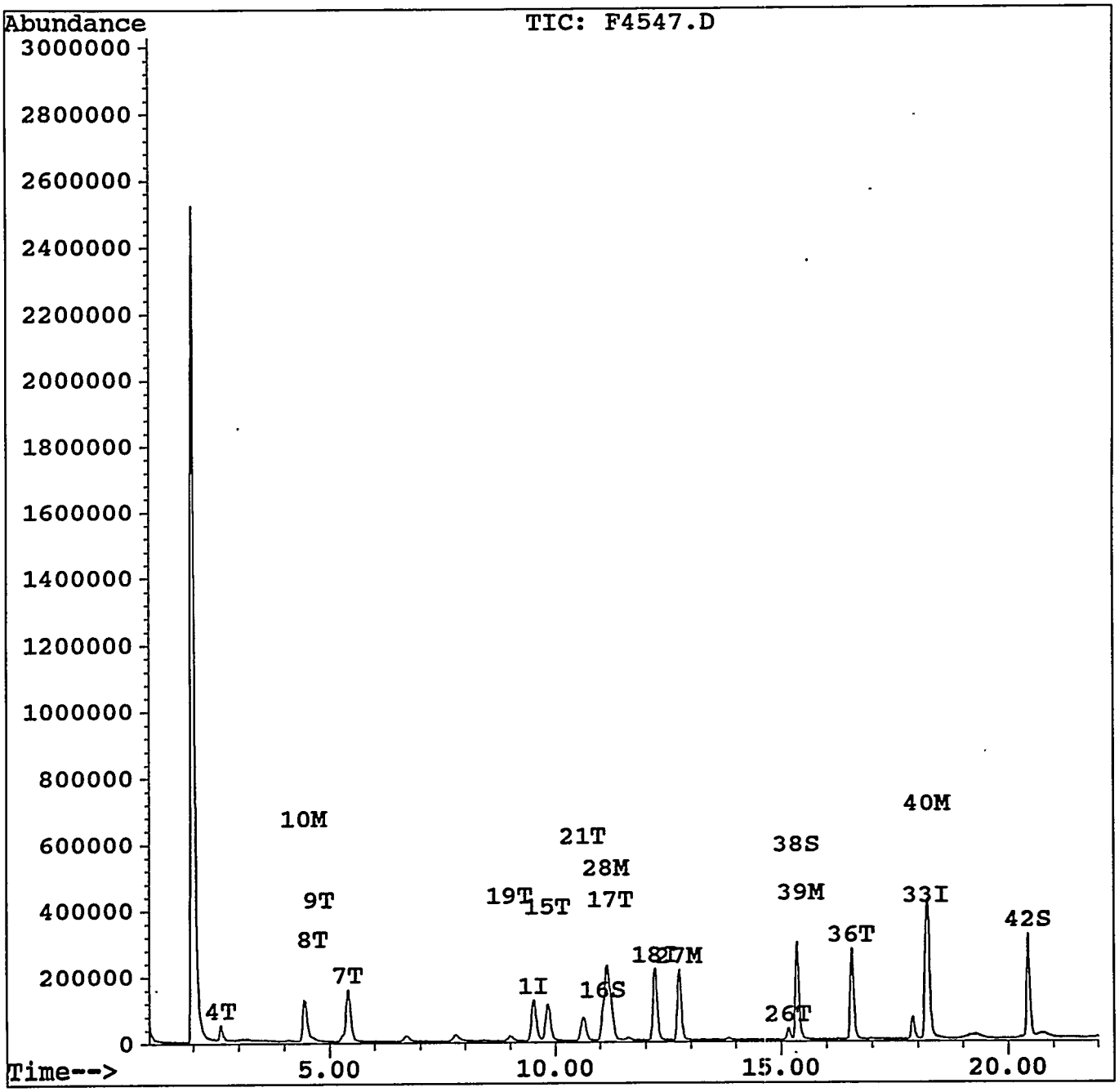
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\060194\F4547.D
Acq Time : 1 Jun 94 8:56 pm
Sample : 3214008MS 1661B-139MS 10ISSS 500uL
Misc : DB624-75M 35-300 35(8)-8-147
Quant Time: Jun 2 8:56 1994

Operator: RIK ROBERT
Inst : 7101
Multiplr: 1.00

Method : C:\HPCHEM\1\DATA\060194\060194.M
Title : VOA Standards for 5 point calibration
Last Update : Wed Jun 01 11:11:28 1994
Response via : Single Level Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\060194\F4548.D
Acq Time : 1 Jun 94 9:25 pm
Sample : 3214008MSD 1661B-139MSD 10ISSS 500uL
Misc : DB624-75M 35-300 35(8)-8-147
Quant Time: Jun 2 8:56 1994

Operator: RIK ROBERT
Inst : 7101
Multiplr: 1.00

Method : C:\HPCHEM\1\DATA\060194\060194.M
Title : VOA Standards for 5 point calibration
Last Update : Wed Jun 01 11:11:28 1994
Response via : Single Level Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane	9.51	128	122028	50.00 ug/l	0.00
18) 1,4-Difluorobenzene	12.20	114	552589	50.00 ug/l	0.00
33) Chlorobenzene-d5	18.18	117	447064	50.00 ug/l	0.00
System Monitoring Compounds					**%Recovery**
16) 1,2-Dichloroethane-d4	11.04	65	174929	44.98 ug/l	89.95%
38) Toluene-d8	15.36	98	568206	48.52 ug/l	97.03%
42) Bromofluorobenzene	20.44	95	342483	48.72 ug/l	97.44%
Target Compounds					**Qvalue**
2) Chloromethane	0.00	50		Not Detected	
3) Bromomethane	0.00	94		Not Detected	
4) Vinyl Chloride	2.58	62	129182	63.57 ug/l	98
5) Chloroethane	0.00	64		Not Detected	
6) Trichlorofluoromethane	0.00	101		Not Detected	
7) Methylene Chloride	5.39	84	220162	23.59 ug/l	98
8) Acetone	4.61	43	43691	42.56 ug/l	94
9) Carbon Disulfide	0.00	76		Not Detected	
10) 1,1-Dichloroethene	4.42	96	167778	49.63 ug/l	95
11) 1,1-Dichloroethane	0.00	63		Not Detected	
12) trans-1,2-Dichloroethene	0.00	96		Not Detected	
13) cis-1,2-Dichloroethene	0.00	96		Not Detected	
14) 1,2-Dichloroethene (total)	0.00	96		Not Detected	
15) Chloroform	9.82	83	349840	50.50 ug/l	96
17) 1,2-Dichloroethane	11.24	62	218062	51.19 ug/l	99
19) 2-Butanone	8.98	43	92035	69.92 ug/l	93
20) 1,1,1-Trichloroethane	0.00	97		Not Detected	
21) Carbon Tetrachloride	10.61	117	175793	59.86 ug/l	95
22) Vinyl Acetate	0.00	43		Not Detected	
23) Bromodichloromethane	0.00	83		Not Detected	
24) 1,2-Dichloropropane	0.00	63		Not Detected	
25) 2-Chloroethylvinylether	0.00	63		Not Detected	
26) cis-1,3-Dichloropropene	15.17	75	16969	3.07 ug/l #	41
27) Trichloroethene	12.74	130	240209	52.70 ug/l	96
28) Benzene	11.14	78	628442	75.32 ug/l	100
29) Dibromochloromethane	0.00	129		Not Detected	
30) trans-1,3-Dichloropropene	0.00	75		Not Detected	
31) 1,1,2-Trichloroethane	0.00	97		Not Detected	
32) Bromoform	0.00	173		Not Detected	
34) 4-Methyl-2-Pentanone	15.16	43	35532	10.48 ug/l #	59
35) 2-Hexanone	0.00	43		Not Detected	
36) Tetrachloroethene	16.57	164	201273	53.25 ug/l	93
37) 1,1,2,2-Tetrachloroethane	0.00	83		Not Detected	
39) Toluene	0.00	92		Not Detected	

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\060194\F4548.D
Acq Time : 1 Jun 94 9:25 pm
Sample : 3214008MSD 1661B-139MSD 10ISSS 500uL
Misc : DB624-75M 35-300 35(8)-8-147
Quant Time: Jun 2 8:56 1994

Operator: RIK ROBERT
Inst : 7101
Multiplr: 1.00

Method : C:\HPCHEM\1\DATA\060194\060194.M
Title : VOA Standards for 5 point calibration
Last Update : Wed Jun 01 11:11:28 1994
Response via : Single Level Calibration

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
40) Chlorobenzene	18.24	112	467048	54.56 ug/l	97
41) Ethylbenzene	0.00	106		Not Detected	
43) Styrene	0.00	104		Not Detected	
44) Xylene(m,p)	0.00	106		Not Detected	
45) Xylene(o)	0.00	106		Not Detected	
46) Xylene (total)	0.00	106		Not Detected	

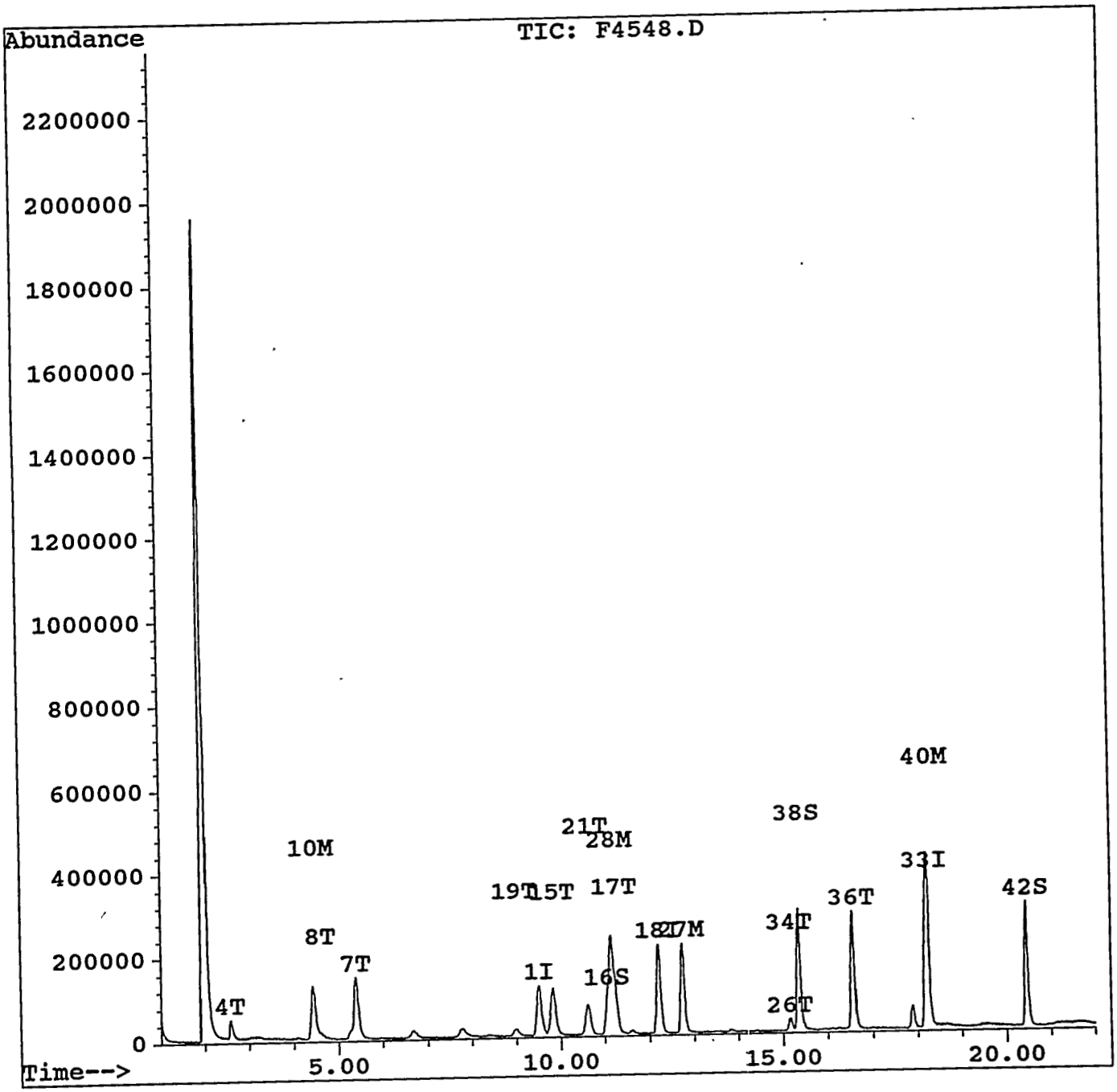
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\060194\F4548.D
Acq Time : 1 Jun 94 9:25 pm
Sample : 3214008MSD 1661B-139MSD 10ISSS 500uL
Misc : DB624-75M 35-300 35(8)-8-147
Quant Time: Jun 2 8:56 1994

Operator: RIK ROBERT
Inst : 7101
Multiplr: 1.00

Method : C:\HPCHEM\1\DATA\060194\060194.M
Title : VOA Standards for 5 point calibration
Last Update : Wed Jun 01 11:11:28 1994
Response via : Single Level Calibration



TCLP Semivolatiles

LSDG: 32140

EcoTek LSI
EcoTek Laboratory Services Incorporated

CASE NARRATIVE FOR SEMIVOLATILE TCLP ANALYSIS USING SW-846 METHOD 8270 PROTOCOLS

Client: Nuclear Fuel Services, Inc.
LSDG No.: 32136
Project: LEFPC

Analytical Summary

Sixteen (16) soil and one (1) water samples were received on May 17, 1994 for TCLP semivolatile analysis, a procedure designed to determine the mobility of organic analytes in liquid, solid and multiphasic wastes. Sample leaching was performed on May 25, 1994. Extraction was initiated on June 1 and 2, 1994, with a reextraction performed on July 5, 1994. GC/MS analyses were completed on June 29, 30, July 1, 2, 3 and 5, 1994.

Procedural Summary

- Analysis - An aliquot of waste sample undergoes leaching for eighteen (18) ± two (2) hours in a volume of acidic extraction fluid equivalent to twenty times the sample weight used. Water/liquid samples are filtered through a leaching apparatus and treated as the leachate. The leachate is subsequently extracted, utilizing an appropriate volume of the leachate solution to yield a detection level that is below EPA's maximum allowable concentration limits for TCLP compounds, unless stated otherwise. Final extract concentration is performed by the nitrogen blowdown technique to a final volume of one (1) milliliter, unless stated otherwise. Semivolatile organic Gas Chromatographic/Mass Spectrometric analysis is performed by injecting a one (1) microliter aliquot of extract into a Hewlett Packard 5890/5970 GC/MSD systems, configured for electron impact ionization. Chromatography is performed on a thirty (30) meter J&W fused silica DB-5 capillary column, temperature programmed to achieve chromatographic resolution of target analytes. As compounds elute, they are ionized, filtered through a quadrupole mass filter and quantified to determine analyte concentrations in the sample. Detection limits or practical quantitation limits (PQL's) are expressed in the final quantitation report as the minimum value that can be detected with confidence. PQLs are factored for initial sample volume, percent moistures, and final extract volumes, along with any necessary dilution.

- Scope and Limitations - Due to the complex nature of many wastes, emulsions may be encountered during the extraction process. Resultant extracts frequently yield noncompliant surrogate recoveries upon analysis, due to losses to emulsions. Furthermore, complex matrices often generate elevated baselines, interfering with instrument identification and quantification of target analytes. Dilutions of such samples may be required to prevent instrument damage, resulting in higher detection limits.

  Additionally, the target analytes 3-methylphenol and 4-methylphenol cannot be separated under these conditions. Consequently, when either or both of these isomers are present, the

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CASE NARRATIVE FOR SEMIVOLATILE TCLP ANALYSIS USING SW-846 METHOD 8270 PROTOCOLS(cont'd)

Client: Nuclear Fuel Services, Inc.
LSDG No.: 32136
Project: LEFPC

quantitation report will reflect a concentration for 4-methylphenol only.

QA/QC

Extraction and leachate blanks per matrix were processed with this sample case. All surrogate recoveries were within acceptable recovery limits and all were found to be free of target analytes.

Method QC, consisting of blank spike and blank spike duplicate analyses, was batched with samples of this case. Accuracy results were compliant for all spiked analytes in both the matrix spike and matrix spike duplicate analyses. Precision results were high but acceptable for all analytes; high relative percent differences (RPDs) are attributable to disparities in the compliant analyte recoveries between the matrix spike and matrix spike duplicate analyses. All results are herein reported.

General

The reports of the TCLP compounds identified and quantified in the samples are contained in the following sections of the data package. Data is obtained from HP RTE-A series computer with Aquarius software.

A one hundred (100) milliliter aliquot of sample leachate was used in preparing samples for analysis. This limited leachate volume did not interfere with the laboratory's ability to achieve the required detection limits for TCLP regulatory concerns.

Water sample 1661B-224 required reextraction due to noncomplaint surrogate recoveries. Matrix interferences were confirmed when similarly noncompliant surrogate recoveries resulted upon reanalysis.

GC/MS Supervisor (designee)

7/5/94
Date

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile TCLP Analytical Results
40 CFR 261, June 29,1990

Client:	Nuclear Fuel Services, Inc.	Client Reference No.:	LEFPC
Lab Sample ID:	3213655Y	Client Sample No.:	1661B-67
Matrix:	Leachate	Date Received:	17-May-94
Date Leached:	25-May-94	Date Extracted:	1-Jun-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/l	PQL mg/l	MCL mg/l	Note
106467	1,4-Dichlorobenzene	6/29/94	1	BQL	0.100	7.5	
95487	2-Methylphenol	6/29/94	1	BQL	0.100	200	
108394	3-Methylphenol	6/29/94	1	BQL	0.100	200	
106445	4-Methylphenol	6/29/94	1	BQL	0.100	200	
NA	Total-Methylphenol	6/29/94	1	BQL	0.100	200	
67721	Hexachloroethane	6/29/94	1	BQL	0.100	3.0	
98953	Nitrobenzene	6/29/94	1	BQL	0.100	2.0	
87683	Hexachlorobutadiene	6/29/94	1	BQL	0.100	0.5	
88062	2,4,6-Trichlorophenol	6/29/94	1	BQL	0.100	2.0	
95954	2,4,5-Trichlorophenol	6/29/94	1	BQL	0.100	400	
121142	2,4-Dinitrotoluene	6/29/94	1	BQL	0.100	0.13	
118741	Hexachlorobenzene	6/29/94	1	BQL	0.100	0.13	
87865	Pentachlorophenol	6/29/94	1	BQL	0.500	100	
110861	Pyridine	6/29/94	1	BQL	0.100	5.0	

MCL = Maximum Concentration Limit
PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile Surrogate Recovery Data

Lab Sample ID: 3213655Y

Client Sample No.: 1661B-67

Surrogate Compound	Analysis Date	Spike Amount	% Recovery	QC Limits	Notes
Nitrobenzene-d5	6/29/94	50	86	35-114	
2-Fluorobiphenyl	6/29/94	50	89	43-116	
Terphenyl-d14	6/29/94	50	87	33-141	
Phenol-d6	6/29/94	75	61	10- 94	
2-Fluorophenol	6/29/94	75	66	21-100	
2,4,6-Tribromophenol	6/29/94	75	64	10-123	

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.
Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile TCLP Analytical Results
40 CFR 261, June 29,1990

Client:	Nuclear Fuel Services, Inc.	Client Reference No.:	LEFPC
Lab Sample ID:	3213656Y	Client Sample No.:	1661B-94
Matrix:	Leachate	Date Received:	17-May-94
Date Leached:	25-May-94	Date Extracted:	1-Jun-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/l	PQL mg/l	MCL mg/l	Note
106467	1,4-Dichlorobenzene	6/29/94	1	BQL	0.100	7.5	
95487	2-Methylphenol	6/29/94	1	BQL	0.100	200	
108394	3-Methylphenol	6/29/94	1	BQL	0.100	200	
106445	4-Methylphenol	6/29/94	1	BQL	0.100	200	
NA	Total-Methylphenol	6/29/94	1	BQL	0.100	200	
67721	Hexachloroethane	6/29/94	1	BQL	0.100	3.0	
98953	Nitrobenzene	6/29/94	1	BQL	0.100	2.0	
87683	Hexachlorobutadiene	6/29/94	1	BQL	0.100	0.5	
88062	2,4,6-Trichlorophenol	6/29/94	1	BQL	0.100	2.0	
95954	2,4,5-Trichlorophenol	6/29/94	1	BQL	0.100	400	
121142	2,4-Dinitrotoluene	6/29/94	1	BQL	0.100	0.13	
118741	Hexachlorobenzene	6/29/94	1	BQL	0.100	0.13	
87865	Pentachlorophenol	6/29/94	1	BQL	0.500	100	
110861	Pyridine	6/29/94	1	BQL	0.100	5.0	

MCL = Maximum Concentration Limit
PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile Surrogate Recovery Data

Lab Sample ID: 3213656Y

Client Sample No.: 1661B-94

Surrogate Compound	Analysis Date	Spike Amount	% Recovery	QC Limits	Notes
Nitrobenzene-d5	6/29/94	50	80	35-114	
2-Fluorobiphenyl	6/29/94	50	93	43-116	
Terphenyl-d14	6/29/94	50	93	33-141	
Phenol-d6	6/29/94	75	64	10- 94	
2-Fluorophenol	6/29/94	75	70	21-100	
2,4,6-Tribromophenol	6/29/94	75	66	10-123	

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.
Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile TCLP Analytical Results
40 CFR 261, June 29,1990

Client:	Nuclear Fuel Services, Inc.	Client Reference No.:	LEFPC
Lab Sample ID:	3213657Y	Client Sample No.:	1661B-104
Matrix:	Leachate	Date Received:	17-May-94
Date Leached:	25-May-94	Date Extracted:	1-Jun-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/l	PQL mg/l	MCL mg/l	Note
106467	1,4-Dichlorobenzene	6/29/94	1	BQL	0.100	7.5	
95487	2-Methylphenol	6/29/94	1	BQL	0.100	200	
108394	3-Methylphenol	6/29/94	1	BQL	0.100	200	
106445	4-Methylphenol	6/29/94	1	BQL	0.100	200	
NA	Total-Methylphenol	6/29/94	1	BQL	0.100	200	
67721	Hexachloroethane	6/29/94	1	BQL	0.100	3.0	
98953	Nitrobenzene	6/29/94	1	BQL	0.100	2.0	
87683	Hexachlorobutadiene	6/29/94	1	BQL	0.100	0.5	
88062	2,4,6-Trichlorophenol	6/29/94	1	BQL	0.100	2.0	
95954	2,4,5-Trichlorophenol	6/29/94	1	BQL	0.100	400	
121142	2,4-Dinitrotoluene	6/29/94	1	BQL	0.100	0.13	
118741	Hexachlorobenzene	6/29/94	1	BQL	0.100	0.13	
87865	Pentachlorophenol	6/29/94	1	BQL	0.500	100	
110861	Pyridine	6/29/94	1	BQL	0.100	5.0	

MCL = Maximum Concentration Limit
PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile Surrogate Recovery Data

Lab Sample ID: 3213657Y

Client Sample No.: 1661B-104

Surrogate Compound	Analysis Date	Spike Amount	% Recovery	QC Limits	Notes
Nitrobenzene-d5	6/29/94	50	80	35-114	
2-Fluorobiphenyl	6/29/94	50	86	43-116	
Terphenyl-d14	6/29/94	50	93	33-141	
Phenol-d6	6/29/94	75	60	10- 94	
2-Fluorophenol	6/29/94	75	63	21-100	
2,4,6-Tribromophenol	6/29/94	75	83	10-123	

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.
Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.

EcoTek LSI
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Semivolatile TCLP Analytical Results
40 CFR 261, June 29,1990

Client:	Nuclear Fuel Services, Inc.	Client Reference No.:	LEFPC
Lab Sample ID:	3213658Y	Client Sample No.:	1661B-109
Matrix:	Leachate	Date Received:	17-May-94
Date Leached:	25-May-94	Date Extracted:	1-Jun-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/l	PQL mg/l	MCL mg/l	Note
106467	1,4-Dichlorobenzene	6/29/94	1	BQL	0.100	7.5	
95487	2-Methylphenol	6/29/94	1	BQL	0.100	200	
108394	3-Methylphenol	6/29/94	1	BQL	0.100	200	
106445	4-Methylphenol	6/29/94	1	BQL	0.100	200	
NA	Total-Methylphenol	6/29/94	1	BQL	0.100	200	
67721	Hexachloroethane	6/29/94	1	BQL	0.100	3.0	
98953	Nitrobenzene	6/29/94	1	BQL	0.100	2.0	
87683	Hexachlorobutadiene	6/29/94	1	BQL	0.100	0.5	
88062	2,4,6-Trichlorophenol	6/29/94	1	BQL	0.100	2.0	
95954	2,4,5-Trichlorophenol	6/29/94	1	BQL	0.100	400	
121142	2,4-Dinitrotoluene	6/29/94	1	BQL	0.100	0.13	
118741	Hexachlorobenzene	6/29/94	1	BQL	0.100	0.13	
87865	Pentachlorophenol	6/29/94	1	BQL	0.500	100	
110861	Pyridine	6/29/94	1	BQL	0.100	5.0	

MCL = Maximum Concentration Limit
PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile Surrogate Recovery Data

Lab Sample ID: 3213658Y

Client Sample No.: 1661B-109

Surrogate Compound	Analysis Date	Spike Amount	% Recovery	QC Limits	Notes
Nitrobenzene-d5	6/29/94	50	83	35-114	
2-Fluorobiphenyl	6/29/94	50	91	43-116	
Terphenyl-d14	6/29/94	50	104	33-141	
Phenol-d6	6/29/94	75	58	10- 94	
2-Fluorophenol	6/29/94	75	62	21-100	
2,4,6-Tribromophenol	6/29/94	75	57	10-123	

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.
Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile TCLP Analytical Results
40 CFR 261, June 29,1990

Client:	Nuclear Fuel Services, Inc.	Client Reference No.:	LEFPC
Lab Sample ID:	3213659Y	Client Sample No.:	1661B-114
Matrix:	Leachate	Date Received:	17-May-94
Date Leached:	25-May-94	Date Extracted:	1-Jun-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/l	PQL mg/l	MCL mg/l	Note
106467	1,4-Dichlorobenzene	6/29/94	1	BQL	0.100	7.5	
95487	2-Methylphenol	6/29/94	1	BQL	0.100	200	
108394	3-Methylphenol	6/29/94	1	BQL	0.100	200	
106445	4-Methylphenol	6/29/94	1	BQL	0.100	200	
NA	Total-Methylphenol	6/29/94	1	BQL	0.100	200	
67721	Hexachloroethane	6/29/94	1	BQL	0.100	3.0	
98953	Nitrobenzene	6/29/94	1	BQL	0.100	2.0	
87683	Hexachlorobutadiene	6/29/94	1	BQL	0.100	0.5	
88062	2,4,6-Trichlorophenol	6/29/94	1	BQL	0.100	2.0	
95954	2,4,5-Trichlorophenol	6/29/94	1	BQL	0.100	400	
121142	2,4-Dinitrotoluene	6/29/94	1	BQL	0.100	0.13	
118741	Hexachlorobenzene	6/29/94	1	BQL	0.100	0.13	
87865	Pentachlorophenol	6/29/94	1	BQL	0.500	100	
110861	Pyridine	6/29/94	1	BQL	0.100	5.0	

MCL = Maximum Concentration Limit
PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile Surrogate Recovery Data

Lab Sample ID: 3213659Y

Client Sample No.: 1661B-114

Surrogate Compound	Analysis Date	Spike Amount	% Recovery	QC Limits	Notes
Nitrobenzene-d5	6/29/94	50	83	35-114	
2-Fluorobiphenyl	6/29/94	50	97	43-116	
Terphenyl-d14	6/29/94	50	89	33-141	
Phenol-d6	6/29/94	75	63	10- 94	
2-Fluorophenol	6/29/94	75	70	21-100	
2,4,6-Tribromophenol	6/29/94	75	78	10-123	

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.
Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile TCLP Analytical Results
40 CFR 261, June 29,1990

Client:	Nuclear Fuel Services, Inc.	Client Reference No.:	LEFPC
Lab Sample ID:	3213660Y	Client Sample No.:	1661B-119
Matrix:	Leachate	Date Received:	17-May-94
Date Leached:	25-May-94	Date Extracted:	1-Jun-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/l	PQL mg/l	MCL mg/l	Note
106467	1,4-Dichlorobenzene	6/29/94	1	BQL	0.100	7.5	
95487	2-Methylphenol	6/29/94	1	BQL	0.100	200	
108394	3-Methylphenol	6/29/94	1	BQL	0.100	200	
106445	4-Methylphenol	6/29/94	1	BQL	0.100	200	
NA	Total-Methylphenol	6/29/94	1	BQL	0.100	200	
67721	Hexachloroethane	6/29/94	1	BQL	0.100	3.0	
98953	Nitrobenzene	6/29/94	1	BQL	0.100	2.0	
87683	Hexachlorobutadiene	6/29/94	1	BQL	0.100	0.5	
88062	2,4,6-Trichlorophenol	6/29/94	1	BQL	0.100	2.0	
95954	2,4,5-Trichlorophenol	6/29/94	1	BQL	0.100	400	
121142	2,4-Dinitrotoluene	6/29/94	1	BQL	0.100	0.13	
118741	Hexachlorobenzene	6/29/94	1	BQL	0.100	0.13	
87865	Pentachlorophenol	6/29/94	1	BQL	0.500	100	
110861	Pyridine	6/29/94	1	BQL	0.100	5.0	

MCL = Maximum Concentration Limit
PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile Surrogate Recovery Data

Lab Sample ID: 3213660Y

Client Sample No.: 1661B-119

Surrogate Compound	Analysis Date	Spike Amount	% Recovery	QC Limits	Notes
Nitrobenzene-d5	6/29/94	50	73	35-114	
2-Fluorobiphenyl	6/29/94	50	85	43-116	
Terphenyl-d14	6/29/94	50	101	33-141	
Phenol-d6	6/29/94	75	59	10- 94	
2-Fluorophenol	6/29/94	75	61	21-100	
2,4,6-Tribromophenol	6/29/94	75	64	10-123	

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency. Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile TCLP Analytical Results
40 CFR 261, June 29,1990

Client:	Nuclear Fuel Services, Inc.	Client Reference No.:	LEFPC
Lab Sample ID:	3213661Y	Client Sample No.:	1661B-124
Matrix:	Leachate	Date Received:	17-May-94
Date Leached:	25-May-94	Date Extracted:	1-Jun-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/l	PQL mg/l	MCL mg/l	Note
106467	1,4-Dichlorobenzene	6/29/94	1	BQL	0.100	7.5	
95487	2-Methylphenol	6/29/94	1	BQL	0.100	200	
108394	3-Methylphenol	6/29/94	1	BQL	0.100	200	
106445	4-Methylphenol	6/29/94	1	BQL	0.100	200	
NA	Total-Methylphenol	6/29/94	1	BQL	0.100	200	
67721	Hexachloroethane	6/29/94	1	BQL	0.100	3.0	
98953	Nitrobenzene	6/29/94	1	BQL	0.100	2.0	
87683	Hexachlorobutadiene	6/29/94	1	BQL	0.100	0.5	
88062	2,4,6-Trichlorophenol	6/29/94	1	BQL	0.100	2.0	
95954	2,4,5-Trichlorophenol	6/29/94	1	BQL	0.100	400	
121142	2,4-Dinitrotoluene	6/29/94	1	BQL	0.100	0.13	
118741	Hexachlorobenzene	6/29/94	1	BQL	0.100	0.13	
87865	Pentachlorophenol	6/29/94	1	BQL	0.500	100	
110861	Pyridine	6/29/94	1	BQL	0.100	5.0	

MCL = Maximum Concentration Limit
PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile Surrogate Recovery Data

Lab Sample ID: 3213661Y

Client Sample No.: 1661B-124

Surrogate Compound	Analysis Date	Spike Amount	% Recovery	QC Limits	Notes
Nitrobenzene-d5	6/29/94	50	81	35-114	
2-Fluorobiphenyl	6/29/94	50	95	43-116	
Terphenyl-d14	6/29/94	50	69	33-141	
Phenol-d6	6/29/94	75	62	10- 94	
2-Fluorophenol	6/29/94	75	70	21-100	
2,4,6-Tribromophenol	6/29/94	75	69	10-123	

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.
Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile TCLP Analytical Results
40 CFR 261, June 29,1990

Client:	Nuclear Fuel Services, Inc.	Client Reference No.:	LEFPC
Lab Sample ID:	3213662Y	Client Sample No.:	1661B-129
Matrix:	Leachate	Date Received:	17-May-94
Date Leached:	25-May-94	Date Extracted:	1-Jun-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/l	PQL mg/l	MCL mg/l	Note
106467	1,4-Dichlorobenzene	6/29/94	1	BQL	0.100	7.5	
95487	2-Methylphenol	6/29/94	1	BQL	0.100	200	
108394	3-Methylphenol	6/29/94	1	BQL	0.100	200	
106445	4-Methylphenol	6/29/94	1	BQL	0.100	200	
NA	Total-Methylphenol	6/29/94	1	BQL	0.100	200	
67721	Hexachloroethane	6/29/94	1	BQL	0.100	3.0	
98953	Nitrobenzene	6/29/94	1	BQL	0.100	2.0	
87683	Hexachlorobutadiene	6/29/94	1	BQL	0.100	0.5	
88062	2,4,6-Trichlorophenol	6/29/94	1	BQL	0.100	2.0	
95954	2,4,5-Trichlorophenol	6/29/94	1	BQL	0.100	400	
121142	2,4-Dinitrotoluene	6/29/94	1	BQL	0.100	0.13	
118741	Hexachlorobenzene	6/29/94	1	BQL	0.100	0.13	
87865	Pentachlorophenol	6/29/94	1	BQL	0.500	100	
110861	Pyridine	6/29/94	1	BQL	0.100	5.0	

MCL = Maximum Concentration Limit
PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

Semivolatile Surrogate Recovery Data

Lab Sample ID: 3213662Y *Client Sample No.: 1661B-129*

Surrogate Compound	*Analysis Date*	*Spike Amount*	*% Recovery*	*QC Limits*	*Notes*
Nitrobenzene-d5	*6/29/94*	*50*	*72*	*35-114*	
2-Fluorobiphenyl	*6/29/94*	*50*	*87*	*43-116*	
Terphenyl-d14	*6/29/94*	*50*	*98*	*33-141*	
Phenol-d6	*6/29/94*	*75*	*59*	*10- 94*	
2-Fluorophenol	*6/29/94*	*75*	*62*	*21-100*	
2,4,6-Tribromophenol	*6/29/94*	*75*	*73*	*10-123*	

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.
Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile TCLP Analytical Results
40 CFR 261, June 29,1990

Client:	Nuclear Fuel Services, Inc.	Client Reference No.:	LEFPC
Lab Sample ID:	3213664Y	Client Sample No.:	1661B-143
Matrix:	Leachate	Date Received:	17-May-94
Date Leached:	25-May-94	Date Extracted:	1-Jun-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/l	PQL mg/l	MCL mg/l	Note
106467	1,4-Dichlorobenzene	6/30/94	1	BQL	0.100	7.5	
95487	2-Methylphenol	6/30/94	1	BQL	0.100	200	
108394	3-Methylphenol	6/30/94	1	BQL	0.100	200	
106445	4-Methylphenol	6/30/94	1	BQL	0.100	200	
NA	Total-Methylphenol	6/30/94	1	BQL	0.100	200	
67721	Hexachloroethane	6/30/94	1	BQL	0.100	3.0	
98953	Nitrobenzene	6/30/94	1	BQL	0.100	2.0	
87683	Hexachlorobutadiene	6/30/94	1	BQL	0.100	0.5	
88062	2,4,6-Trichlorophenol	6/30/94	1	BQL	0.100	2.0	
95954	2,4,5-Trichlorophenol	6/30/94	1	BQL	0.100	400	
121142	2,4-Dinitrotoluene	6/30/94	1	BQL	0.100	0.13	
118741	Hexachlorobenzene	6/30/94	1	BQL	0.100	0.13	
87865	Pentachlorophenol	6/30/94	1	BQL	0.500	100	
110861	Pyridine	6/30/94	1	0.0370	0.100	5.0	J

MCL = Maximum Concentration Limit
PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile Surrogate Recovery Data

Lab Sample ID: 3213664Y

Client Sample No.: 1661B-143

Surrogate Compound	Analysis Date	Spike Amount	% Recovery	QC Limits	Notes
Nitrobenzene-d5	6/30/94	50	75	35-114	
2-Fluorobiphenyl	6/30/94	50	92	43-116	
Terphenyl-d14	6/30/94	50	84	33-141	
Phenol-d6	6/30/94	75	56	10- 94	
2-Fluorophenol	6/30/94	75	63	21-100	
2,4,6-Tribromophenol	6/30/94	75	65	10-123	

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency. Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile TCLP Analytical Results
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Client:	Nuclear Fuel Services, Inc.	Client Reference No.:	LEFPC
Lab Sample ID:	3213665Y	Client Sample No.:	1661B-151
Matrix:	Leachate	Date Received:	17-May-94
Date Leached:	25-May-94	Date Extracted:	1-Jun-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/l	PQL mg/l	MCL mg/l	Note
106467	1,4-Dichlorobenzene	6/30/94	1	BQL	0.100	7.5	
95487	2-Methylphenol	6/30/94	1	BQL	0.100	200	
108394	3-Methylphenol	6/30/94	1	BQL	0.100	200	
106445	4-Methylphenol	6/30/94	1	BQL	0.100	200	
NA	Total-Methylphenol	6/30/94	1	BQL	0.100	200	
67721	Hexachloroethane	6/30/94	1	BQL	0.100	3.0	
98953	Nitrobenzene	6/30/94	1	BQL	0.100	2.0	
87683	Hexachlorobutadiene	6/30/94	1	BQL	0.100	0.5	
88062	2,4,6-Trichlorophenol	6/30/94	1	BQL	0.100	2.0	
95954	2,4,5-Trichlorophenol	6/30/94	1	BQL	0.100	400	
121142	2,4-Dinitrotoluene	6/30/94	1	BQL	0.100	0.13	
118741	Hexachlorobenzene	6/30/94	1	BQL	0.100	0.13	
87865	Pentachlorophenol	6/30/94	1	BQL	0.500	100	
110861	Pyridine	6/30/94	1	BQL	0.100	5.0	

MCL = Maximum Concentration Limit
PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile Surrogate Recovery Data

Lab Sample ID: 3213665Y

Client Sample No.: 1661B-151

Surrogate Compound	Analysis Date	Spike Amount	% Recovery	QC Limits	Notes
Nitrobenzene-d5	6/30/94	50	69	35-114	
2-Fluorobiphenyl	6/30/94	50	85	43-116	
Terphenyl-d14	6/30/94	50	73	33-141	
Phenol-d6	6/30/94	75	52	10- 94	
2-Fluorophenol	6/30/94	75	57	21-100	
2,4,6-Tribromophenol	6/30/94	75	58	10-123	

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.
Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile TCLP Analytical Results
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Client:	Nuclear Fuel Services, Inc.	Client Reference No.:	LEFPC
Lab Sample ID:	3213666Y	Client Sample No.:	1661B-159
Matrix:	Leachate	Date Received:	17-May-94
Date Leached:	25-May-94	Date Extracted:	1-Jun-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/l	PQL mg/l	MCL mg/l	Note
106467	1,4-Dichlorobenzene	6/30/94	1	BQL	0.100	7.5	
95487	2-Methylphenol	6/30/94	1	BQL	0.100	200	
108394	3-Methylphenol	6/30/94	1	BQL	0.100	200	
106445	4-Methylphenol	6/30/94	1	BQL	0.100	200	
NA	Total-Methylphenol	6/30/94	1	BQL	0.100	200	
67721	Hexachloroethane	6/30/94	1	BQL	0.100	3.0	
98953	Nitrobenzene	6/30/94	1	BQL	0.100	2.0	
87683	Hexachlorobutadiene	6/30/94	1	BQL	0.100	0.5	
88062	2,4,6-Trichlorophenol	6/30/94	1	BQL	0.100	2.0	
95954	2,4,5-Trichlorophenol	6/30/94	1	BQL	0.100	400	
121142	2,4-Dinitrotoluene	6/30/94	1	BQL	0.100	0.13	
118741	Hexachlorobenzene	6/30/94	1	BQL	0.100	0.13	
87865	Pentachlorophenol	6/30/94	1	BQL	0.500	100	
110861	Pyridine	6/30/94	1	BQL	0.100	5.0	

MCL = Maximum Concentration Limit
PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile Surrogate Recovery Data

Lab Sample ID: 3213666Y

Client Sample No.: 1661B-159

Surrogate Compound	Analysis Date	Spike Amount	% Recovery	QC Limits	Notes
Nitrobenzene-d5	6/30/94	50	83	35-114	
2-Fluorobiphenyl	6/30/94	50	68	43-116	
Terphenyl-d14	6/30/94	50	77	33-141	
Phenol-d6	6/30/94	75	57	10- 94	
2-Fluorophenol	6/30/94	75	57	21-100	
2,4,6-Tribromophenol	6/30/94	75	65	10-123	

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.
Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile TCLP Analytical Results
40 CFR 261, June 29,1990

Client:	Nuclear Fuel Services, Inc.	Client Reference No.:	LEFPC
Lab Sample ID:	3213667Y	Client Sample No.:	1661B-168
Matrix:	Leachate	Date Received:	17-May-94
Date Leached:	25-May-94	Date Extracted:	1-Jun-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/l	PQL mg/l	MCL mg/l	Note
106467	1,4-Dichlorobenzene	7/1/94	1	BQL	0.100	7.5	
95487	2-Methylphenol	7/1/94	1	BQL	0.100	200	
108394	3-Methylphenol	7/1/94	1	BQL	0.100	200	
106445	4-Methylphenol	7/1/94	1	BQL	0.100	200	
NA	Total-Methylphenol	7/1/94	1	BQL	0.100	200	
67721	Hexachloroethane	7/1/94	1	BQL	0.100	3.0	
98953	Nitrobenzene	7/1/94	1	BQL	0.100	2.0	
87683	Hexachlorobutadiene	7/1/94	1	BQL	0.100	0.5	
88062	2,4,6-Trichlorophenol	7/1/94	1	BQL	0.100	2.0	
95954	2,4,5-Trichlorophenol	7/1/94	1	BQL	0.100	400	
121142	2,4-Dinitrotoluene	7/1/94	1	BQL	0.100	0.13	
118741	Hexachlorobenzene	7/1/94	1	BQL	0.100	0.13	
87865	Pentachlorophenol	7/1/94	1	BQL	0.500	100	
110861	Pyridine	7/1/94	1	0.0898	0.100	5.0	J

MCL = Maximum Concentration Limit
PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile Surrogate Recovery Data

Lab Sample ID: 3213667Y

Client Sample No.: 1661B-168

Surrogate Compound	Analysis Date	Spike Amount	% Recovery	QC Limits	Notes
Nitrobenzene-d5	7/1/94	50	82	35-114	
2-Fluorobiphenyl	7/1/94	50	68	43-116	
Terphenyl-d14	7/1/94	50	90	33-141	
Phenol-d6	7/1/94	75	50	10- 94	
2-Fluorophenol	7/1/94	75	62	21-100	
2,4,6-Tribromophenol	7/1/94	75	74	10-123	

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.
Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.

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EcoTek Laboratory Services Incorporated

Semivolatile TCLP Analytical Results
40 CFR 261, June 29,1990

Client:	Nuclear Fuel Services, Inc.	Client Reference No.:	LEFPC
Lab Sample ID:	3213668Y	Client Sample No.:	1661B-175
Matrix:	Leachate	Date Received:	17-May-94
Date Leached:	25-May-94	Date Extracted:	1-Jun-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/l	PQL mg/l	MCL mg/l	Note
106467	1,4-Dichlorobenzene	7/1/94	1	BQL	0.100	7.5	
95487	2-Methylphenol	7/1/94	1	BQL	0.100	200	
108394	3-Methylphenol	7/1/94	1	BQL	0.100	200	
106445	4-Methylphenol	7/1/94	1	BQL	0.100	200	
NA	Total-Methylphenol	7/1/94	1	BQL	0.100	200	
67721	Hexachloroethane	7/1/94	1	BQL	0.100	3.0	
98953	Nitrobenzene	7/1/94	1	BQL	0.100	2.0	
87683	Hexachlorobutadiene	7/1/94	1	BQL	0.100	0.5	
88062	2,4,6-Trichlorophenol	7/1/94	1	BQL	0.100	2.0	
95954	2,4,5-Trichlorophenol	7/1/94	1	BQL	0.100	400	
121142	2,4-Dinitrotoluene	7/1/94	1	BQL	0.100	0.13	
118741	Hexachlorobenzene	7/1/94	1	BQL	0.100	0.13	
87865	Pentachlorophenol	7/1/94	1	BQL	0.500	100	
110861	Pyridine	7/1/94	1	0.0545	0.100	5.0	J

MCL = Maximum Concentration Limit
PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile Surrogate Recovery Data

Lab Sample ID: 3213668Y

Client Sample No.: 1661B-175

Surrogate Compound	Analysis Date	Spike Amount	% Recovery	QC Limits	Notes
Nitrobenzene-d5	7/1/94	50	82	35-114	
2-Fluorobiphenyl	7/1/94	50	66	43-116	
Terphenyl-d14	7/1/94	50	85	33-141	
Phenol-d6	7/1/94	75	49	10- 94	
2-Fluorophenol	7/1/94	75	65	21-100	
2,4,6-Tribromophenol	7/1/94	75	74	10-123	

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.
Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile TCLP Analytical Results
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Client:	Nuclear Fuel Services, Inc.	Client Reference No.:	LEFPC
Lab Sample ID:	3213669Y	Client Sample No.:	1661B-184
Matrix:	Leachate	Date Received:	17-May-94
Date Leached:	25-May-94	Date Extracted:	1-Jun-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/l	PQL mg/l	MCL mg/l	Note
106467	1,4-Dichlorobenzene	7/1/94	1	BQL	0.100	7.5	
95487	2-Methylphenol	7/1/94	1	BQL	0.100	200	
108394	3-Methylphenol	7/1/94	1	BQL	0.100	200	
106445	4-Methylphenol	7/1/94	1	BQL	0.100	200	
NA	Total-Methylphenol	7/1/94	1	BQL	0.100	200	
67721	Hexachloroethane	7/1/94	1	BQL	0.100	3.0	
98953	Nitrobenzene	7/1/94	1	BQL	0.100	2.0	
87683	Hexachlorobutadiene	7/1/94	1	BQL	0.100	0.5	
88062	2,4,6-Trichlorophenol	7/1/94	1	BQL	0.100	2.0	
95954	2,4,5-Trichlorophenol	7/1/94	1	BQL	0.100	400	
121142	2,4-Dinitrotoluene	7/1/94	1	BQL	0.100	0.13	
118741	Hexachlorobenzene	7/1/94	1	BQL	0.100	0.13	
87865	Pentachlorophenol	7/1/94	1	BQL	0.500	100	
110861	Pyridine	7/1/94	1	0.0417	0.100	5.0	J

MCL = Maximum Concentration Limit
PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile Surrogate Recovery Data

Lab Sample ID: 3213669Y

Client Sample No.: 1661B-184

Surrogate Compound	Analysis Date	Spike Amount	% Recovery	QC Limits	Notes
Nitrobenzene-d5	7/1/94	50	78	35-114	
2-Fluorobiphenyl	7/1/94	50	66	43-116	
Terphenyl-d14	7/1/94	50	90	33-141	
Phenol-d6	7/1/94	75	45	10- 94	
2-Fluorophenol	7/1/94	75	57	21-100	
2,4,6-Tribromophenol	7/1/94	75	68	10-123	

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.
Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile TCLP Analytical Results
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Client:	Nuclear Fuel Services, Inc.	Client Reference No.:	LEFPC
Lab Sample ID:	3213670Y	Client Sample No.:	1661B-192
Matrix:	Leachate	Date Received:	17-May-94
Date Leached:	25-May-94	Date Extracted:	1-Jun-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/l	PQL mg/l	MCL mg/l	Note
106467	1,4-Dichlorobenzene	7/1/94	1	BQL	0.100	7.5	
95487	2-Methylphenol	7/1/94	1	BQL	0.100	200	
108394	3-Methylphenol	7/1/94	1	BQL	0.100	200	
106445	4-Methylphenol	7/1/94	1	BQL	0.100	200	
NA	Total-Methylphenol	7/1/94	1	BQL	0.100	200	
67721	Hexachloroethane	7/1/94	1	BQL	0.100	3.0	
98953	Nitrobenzene	7/1/94	1	BQL	0.100	2.0	
87683	Hexachlorobutadiene	7/1/94	1	BQL	0.100	0.5	
88062	2,4,6-Trichlorophenol	7/1/94	1	BQL	0.100	2.0	
95954	2,4,5-Trichlorophenol	7/1/94	1	BQL	0.100	400	
121142	2,4-Dinitrotoluene	7/1/94	1	BQL	0.100	0.13	
118741	Hexachlorobenzene	7/1/94	1	BQL	0.100	0.13	
87865	Pentachlorophenol	7/1/94	1	BQL	0.500	100	
110861	Pyridine	7/1/94	1	0.0635	0.100	5.0	J

MCL = Maximum Concentration Limit
PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile Surrogate Recovery Data

Lab Sample ID: 3213670Y

Client Sample No.: 1661B-192

Surrogate Compound	Analysis Date	Spike Amount	% Recovery	QC Limits	Notes
Nitrobenzene-d5	7/1/94	50	77	35-114	
2-Fluorobiphenyl	7/1/94	50	64	43-116	
Terphenyl-d14	7/1/94	50	79	33-141	
Phenol-d6	7/1/94	75	40	10- 94	
2-Fluorophenol	7/1/94	75	50	21-100	
2,4,6-Tribromophenol	7/1/94	75	59	10-123	

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.
Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile TCLP Analytical Results
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Client:	Nuclear Fuel Services, Inc.	Client Reference No.:	LEFPC
Lab Sample ID:	3213671Y	Client Sample No.:	1661B-200
Matrix:	Leachate	Date Received:	17-May-94
Date Leached:	25-May-94	Date Extracted:	1-Jun-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/l	PQL mg/l	MCL mg/l	Note
106467	1,4-Dichlorobenzene	7/1/94	1	BQL	0.100	7.5	
95487	2-Methylphenol	7/1/94	1	BQL	0.100	200	
108394	3-Methylphenol	7/1/94	1	BQL	0.100	200	
106445	4-Methylphenol	7/1/94	1	BQL	0.100	200	
NA	Total-Methylphenol	7/1/94	1	BQL	0.100	200	
67721	Hexachloroethane	7/1/94	1	BQL	0.100	3.0	
98953	Nitrobenzene	7/1/94	1	BQL	0.100	2.0	
87683	Hexachlorobutadiene	7/1/94	1	BQL	0.100	0.5	
88062	2,4,6-Trichlorophenol	7/1/94	1	BQL	0.100	2.0	
95954	2,4,5-Trichlorophenol	7/1/94	1	BQL	0.100	400	
121142	2,4-Dinitrotoluene	7/1/94	1	BQL	0.100	0.13	
118741	Hexachlorobenzene	7/1/94	1	BQL	0.100	0.13	
87865	Pentachlorophenol	7/1/94	1	BQL	0.500	100	
110861	Pyridine	7/1/94	1	0.0564	0.100	5.0	J

MCL = Maximum Concentration Limit
PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile Surrogate Recovery Data

Lab Sample ID: 3213671Y *Client Sample No.: 1661B-200*

Surrogate Compound	*Analysis Date*	*Spike Amount*	*% Recovery*	*QC Limits*	*Notes*
Nitrobenzene-d5	*7/1/94*	*50*	*77*	*35-114*	
2-Fluorobiphenyl	*7/1/94*	*50*	*66*	*43-116*	
Terphenyl-d14	*7/1/94*	*50*	*86*	*33-141*	
Phenol-d6	*7/1/94*	*75*	*40*	*10- 94*	
2-Fluorophenol	*7/1/94*	*75*	*51*	*21-100*	
2,4,6-Tribromophenol	*7/1/94*	*75*	*69*	*10-123*	

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.
Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile TCLP Analytical Results
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Client:	Nuclear Fuel Services, Inc.	Client Reference No.:	LEFPC
Lab Sample ID:	3213697Y	Client Sample No.:	1661B-224
Matrix:	Leachate	Date Received:	17-May-94
Date Leached:	25-May-94	Date Extracted:	2-Jun-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/l	PQL mg/l	MCL mg/l	Note
106467	1,4-Dichlorobenzene	7/2/94	1	BQL	0.100	7.5	
95487	2-Methylphenol	7/2/94	1	BQL	0.100	200	
108394	3-Methylphenol	7/2/94	1	BQL	0.100	200	
106445	4-Methylphenol	7/2/94	1	BQL	0.100	200	
NA	Total-Methylphenol	7/2/94	1	BQL	0.100	200	
67721	Hexachloroethane	7/2/94	1	BQL	0.100	3.0	
98953	Nitrobenzene	7/2/94	1	BQL	0.100	2.0	
87683	Hexachlorobutadiene	7/2/94	1	BQL	0.100	0.5	
88062	2,4,6-Trichlorophenol	7/2/94	1	BQL	0.100	2.0	
95954	2,4,5-Trichlorophenol	7/2/94	1	BQL	0.100	400	
121142	2,4-Dinitrotoluene	7/2/94	1	BQL	0.100	0.13	
118741	Hexachlorobenzene	7/2/94	1	BQL	0.100	0.13	
87865	Pentachlorophenol	7/2/94	1	BQL	0.500	100	
110861	Pyridine	7/2/94	1	0.492	0.100	5.0	

MCL = Maximum Concentration Limit
PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile Surrogate Recovery Data

Lab Sample ID: 3213697Y

Client Sample No.: 1661B-224

Surrogate Compound	Analysis Date	Spike Amount	% Recovery	QC Limits	Notes
Nitrobenzene-d5	7/2/94	50	61	35-114	
2-Fluorobiphenyl	7/2/94	50	52	43-116	
Terphenyl-d14	7/2/94	50	67	33-141	
Phenol-d6	7/2/94	75	1	10- 94	****
2-Fluorophenol	7/2/94	75	0	21-100	****
2,4,6-Tribromophenol	7/2/94	75	0	10-123	****

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.
Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile TCLP Analytical Results
40 CFR 261, June 29,1990

Client:	Nuclear Fuel Services, Inc.	Client Reference No.:	LEFPC
Lab Sample ID:	Q1460115	Client Sample No.:	Method Blank
Matrix:	Water	Date Received:	N/A
Date Leached:	N/A	Date Extracted:	1-Jun-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/l	PQL mg/l	MCL mg/l	Note
106467	1,4-Dichlorobenzene	6/29/94	1	BQL	0.010	7.5	
95487	2-Methylphenol	6/29/94	1	BQL	0.010	200	
108394	3-Methylphenol	6/29/94	1	BQL	0.010	200	
106445	4-Methylphenol	6/29/94	1	BQL	0.010	200	
NA	Total-Methylphenol	6/29/94	1	BQL	0.010	200	
67721	Hexachloroethane	6/29/94	1	BQL	0.010	3.0	
98953	Nitrobenzene	6/29/94	1	BQL	0.010	2.0	
87683	Hexachlorobutadiene	6/29/94	1	BQL	0.010	0.5	
88062	2,4,6-Trichlorophenol	6/29/94	1	BQL	0.010	2.0	
95954	2,4,5-Trichlorophenol	6/29/94	1	BQL	0.010	400	
121142	2,4-Dinitrotoluene	6/29/94	1	BQL	0.010	0.13	
118741	Hexachlorobenzene	6/29/94	1	BQL	0.010	0.13	
87865	Pentachlorophenol	6/29/94	1	BQL	0.050	100	
110861	Pyridine	6/29/94	1	BQL	0.010	5.0	

MCL = Maximum Concentration Limit
PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile Surrogate Recovery Data

Lab Sample ID: Q1460115 Client Sample No.: Method Blank

Surrogate Compound	Analysis Date	Spike Amount	% Recovery	QC Limits	Notes
Nitrobenzene-d5	6/29/94	50	73	35-114	
2-Fluorobiphenyl	6/29/94	50	78	43-116	
Terphenyl-d14	6/29/94	50	89	33-141	
Phenol-d6	6/29/94	75	31	10- 94	
2-Fluorophenol	6/29/94	75	53	21-100	
2,4,6-Tribromophenol	6/29/94	75	67	10-123	

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency. Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile TCLP Analytical Results
40 CFR 261, June 29,1990

Client:	Nuclear Fuel Services, Inc.	Client Reference No.:	LEFPC
Lab Sample ID:	Q1460216	Client Sample No.:	Method Blank
Matrix:	Water	Date Received:	N/A
Date Leached:	N/A	Date Extracted:	2-Jun-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/l	PQL mg/l	MCL mg/l	Note
106467	1,4-Dichlorobenzene	6/25/94	1	BQL	0.010	7.5	
95487	2-Methylphenol	6/25/94	1	BQL	0.010	200	
108394	3-Methylphenol	6/25/94	1	BQL	0.010	200	
106445	4-Methylphenol	6/25/94	1	BQL	0.010	200	
NA	Total-Methylphenol	6/25/94	1	BQL	0.010	200	
67721	Hexachloroethane	6/25/94	1	BQL	0.010	3.0	
98953	Nitrobenzene	6/25/94	1	BQL	0.010	2.0	
87683	Hexachlorobutadiene	6/25/94	1	BQL	0.010	0.5	
88062	2,4,6-Trichlorophenol	6/25/94	1	BQL	0.010	2.0	
95954	2,4,5-Trichlorophenol	6/25/94	1	BQL	0.010	400	
121142	2,4-Dinitrotoluene	6/25/94	1	BQL	0.010	0.13	
118741	Hexachlorobenzene	6/25/94	1	BQL	0.010	0.13	
87865	Pentachlorophenol	6/25/94	1	BQL	0.050	100	
110861	Pyridine	6/25/94	1	BQL	0.010	5.0	

MCL = Maximum Concentration Limit
PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile Surrogate Recovery Data

Lab Sample ID: Q1460216 Client Sample No.: Method Blank

Surrogate Compound	Analysis Date	Spike Amount	% Recovery	QC Limits	Notes
Nitrobenzene-d5	6/25/94	50	69	35-114	
2-Fluorobiphenyl	6/25/94	50	67	43-116	
Terphenyl-d14	6/25/94	50	83	33-141	
Phenol-d6	6/25/94	75	31	10- 94	
2-Fluorophenol	6/25/94	75	56	21-100	
2,4,6-Tribromophenol	6/25/94	75	54	10-123	

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency. Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.

EcoTek Laboratory Services Incorporated

Semivolatile TCLP QC Spike Data

Client: Nuclear Fuel Services, Inc.
Method: SW-846 8270
Lab Sample ID: Q1460117/Q1460118
Client Sample ID: Blank Spike/Blank Spike Duplicate

Date of Leachate: NA
Date of Extraction: 1-Jun-94
Date of Analysis: 30-Jun-94
Client Reference No.: LEFPC

TCLP BS/BSD ANALYTICAL RESULTS

40 CFR 261 June 29, 1990

Spike Compound	% Recovery QC Limits	Spike Concen ug/ml	Unspiked Sample Result mg/L	Spiked Sample Result mg/L (BS)	% Spike Recovery (BS)	uplicate Spik Sample Result mg/L (BSD)	%Dup. Spike Recovery (BSD)	RPD
Total Cresol	NA	300	0	0.23	77	0.30	99	25.6
1,4-Dichlorobenzene	20-124	100	0	0.08	77	0.10	95	21.2
2,4-Dinitrotoluene	39-139	100	0	0.08	76	0.09	91	17.9
Hexachlorobenzene	D-152	100	0	0.09	89	0.11	113	23.5
Hexachlorobutadiene	24-116	100	0	0.08	76	0.09	93	20.2
Hexachloroethane	40-113	100	0	0.08	83	0.10	99	18.0
Nitrobenzene	35-180	100	0	0.09	87	0.11	106	18.7
Pentachlorophenol	14-176	100	0	0.09	89	0.12	115	26.0
Pyridine	NA	100	0	0.05	52	0.06	63	19.2
2,4,5-Trichlorophenol	NA	100	0	0.08	83	0.10	97	15.3
2,4,6-Trichlorophenol	37-144	100	0	0.08	84	0.10	103	20.9

- QC limits based upon SW-846, Method 8270, Table 6
NA=Not Available/Not Applicable
(As two of the cresol isomers coelute, only the total of all three isomers is calculated and reported.)

EcoTek Laboratory Services Incorporated

Semivolatile QC Spike Data

Client: Nuclear Fuel Services, Inc.
Method: SW-846 8270
Lab Sample ID: Q1452413/Q1452414
Client Sample ID: Blank Spike/Blank Spike Duplicate
Matrix: Soil

Date of Leachate: NA
Date of Extraction: 24-May-94
Date of Analysis: 4-Jun-94
Client Reference No.: LEFPC
SDG: 32136

BS/BSD ANALYTICAL RESULTS

Spike Compound	% Recovery QC Limits	Spike amount added ug	Unspiked Sample Result ug/Kg	Spiked Sample Result ug/Kg (BS)	% Spike Recovery (BS)	Duplicate Spike Sample Result ug/Kg (BSD)	%Dup. Spike Recovery (BSD)	RPD
Phenol	26-90	75	0	1600	64	2000	80	22.2
2-Chlorophenol	25-102	75	0	1700	68	1900	76	11.1
1,4,-Dichlorobenzene	28-104	50	0	1100	66	1200	72	8.7
N-Nitroso-di-n-propylamine	41-126	50	0	1100	66	1300	78	16.7
1,2,4-Trichlorobenzene	38-107	50	0	950	57	1200	72	23.3
4-Chloro-3-methylphenol	26-103	75	0	1600	64	1700	68	6.1
Acenaphthene	31-137	50	0	990	59	1100	66	10.5
4-Nitrophenol	11-114	75	0	1600	64	1600	64	0.0
2,4-Dinitrotoluene	28-89	50	0	1000	60	1100	66	9.5
Pentachlorophenol	17-109	75	0	1700	68	1800	72	5.7
Pyrene	35-142	50	0	1300	78	1300	78	0.0

QC limits based upon SW-846, Method 8270

EcoTek LSI
EcoTek Laboratory Services Incorporated

CASE NARRATIVE FOR SEMIVOLATILE TCLP ANALYSIS USING SW-846 METHOD 8270 PROTOCOLS

Client: Nuclear Fuel Services, Inc.
LSDG No.: 32140
Project: LEFPC

Analytical Summary

Two (2) soil samples were received on May 17, 1994 for TCLP semivolatile analysis, a procedure designed to determine the mobility of organic analytes in liquid, solid and multiphasic wastes. Sample leaching was performed on May 24, 1994. Extraction was initiated on May 31, 1994, and GC/MS analyses were completed on June 20, 23 and 24, 1994.

Procedural Summary

- Analysis - An aliquot of waste sample undergoes leaching for eighteen (18) ± two (2) hours in a volume of acidic extraction fluid equivalent to twenty times the sample weight used. Water/liquid samples are filtered through a leaching apparatus and treated as the leachate. The leachate is subsequently extracted, utilizing an appropriate volume of the leachate solution to yield a detection level that is below EPA's maximum allowable concentration limits for TCLP compounds, unless stated otherwise. Final extract concentration is performed by the nitrogen blowdown technique to a final volume of one (1) milliliter, unless stated otherwise. Semivolatile organic Gas Chromatographic/Mass Spectrometric analysis is performed by injecting a one (1) microliter aliquot of extract into a Hewlett Packard 5890/5970 GC/MSD systems, configured for electron impact ionization. Chromatography is performed on a thirty (30) meter J&W fused silica DB-5 capillary column, temperature programmed to achieve chromatographic resolution of target analytes. As compounds elute, they are ionized, filtered through a quadrupole mass filter and quantified to determine analyte concentrations in the sample. Detection limits or practical quantitation limits (PQL's) are expressed in the final quantitation report as the minimum value that can be detected with confidence. PQLs are factored for initial sample volume, percent moistures, and final extract volumes, along with any necessary dilution.

- Scope and Limitations - Due to the complex nature of many wastes, emulsions may be encountered during the extraction process. Resultant extracts frequently yield noncompliant surrogate recoveries upon analysis, due to losses to emulsions. Furthermore, complex matrices often generate elevated baselines, interfering with instrument identification and quantification of target analytes. Dilutions of such samples may be required to prevent instrument damage, resulting in higher detection limits.

  Additionally, the target analytes 3-methylphenol and 4-methylphenol cannot be separated under these conditions. Consequently, when either or both of these isomers are present, the quantitation report will reflect a concentration for 4-methylphenol only.

EcoTek LSI
EcoTek Laboratory Services Incorporated

CASE NARRATIVE FOR SEMIVOLATILE TCLP ANALYSIS USING SW-846 METHOD 8270 PROTOCOLS(cont'd)

Client: Nuclear Fuel Services, Inc.
LSDG No.: 32140
Project: LEFPC

QA/QC

Extraction and leachate blanks per matrix were processed with this sample case. All surrogate recoveries were within acceptable recovery limits and all were found to be free of target analytes.

Method QC, consisting of matrix spike and matrix spike duplicate analyses, was performed on samples 1661B-61 and 1661B-135 of this case. Accuracy and precision results for all spiked analytes were within prescribed limits of acceptability, except for a high relative percent difference for pentachlorophenol due to disparities in compliant analyte recoveries between the matrix spike and matrix spike duplicate analyses. All results are herein reported.

General

The reports of the TCLP compounds identified and quantified in the samples are contained in the following sections of the data package. Also included are the appropriate calibration and quality control data where applicable. Data is obtained from HP RTE-A series computer with Aquarius software and is formatted to mimic CLP deliverable requirements, per client request.

A one hundred (100) milliliter aliquot of sample leachate was used in preparing the samples for analysis. This limited leachate volume did not interfere with the laboratory's ability to achieve the required detection limits for TCLP regulatory concerns.

The matrix spike analysis of sample 1661B-61 manifest a low internal standard area response for chrysene-d12. Although not required per the method, a reanalysis of this extract was performed, the results of which were the same. This depressed internal standard area did not adversely affect the analytical integrity of the data, since no TCLP matrix spike analytes were quantitated relative to this internal standard. The results of the initial analysis are herein reported.

GC/MS Supervisor (designee)

6/29/94
Date

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile TCLP Analytical Results
40 CFR 261, June 29,1990

Client:	Nuclear Fuel Services, Inc.	Client Reference No.:	LEFPC
Lab Sample ID:	Q1453107	Client Sample No.:	Method Blank
Matrix:	Water	Date Received:	N/A
Date Leached:	N/A	Date Extracted:	31-May-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/l	PQL mg/l	MCL mg/l	Note
106467	1,4-Dichlorobenzene	6/20/94	1	BQL	0.010	7.5	
95487	2-Methylphenol	6/20/94	1	BQL	0.010	200	
108394	3-Methylphenol	6/20/94	1	BQL	0.010	200	
106445	4-Methylphenol	6/20/94	1	BQL	0.010	200	
NA	Total-Methylphenol	6/20/94	1	BQL	0.010	200	
67721	Hexachloroethane	6/20/94	1	BQL	0.010	3.0	
98953	Nitrobenzene	6/20/94	1	BQL	0.010	2.0	
87683	Hexachlorobutadiene	6/20/94	1	BQL	0.010	0.5	
88062	2,4,6-Trichlorophenol	6/20/94	1	BQL	0.010	2.0	
95954	2,4,5-Trichlorophenol	6/20/94	1	BQL	0.010	400	
121142	2,4-Dinitrotoluene	6/20/94	1	BQL	0.010	0.13	
118741	Hexachlorobenzene	6/20/94	1	BQL	0.010	0.13	
87865	Pentachlorophenol	6/20/94	1	BQL	0.050	100	
110861	Pyridine	6/20/94	1	BQL	0.010	5.0	

MCL = Maximum Concentration Limit
PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile Surrogate Recovery Data

Lab Sample ID: Q1453107 Client Sample No.: Method Blank

Surrogate Compound	Analysis Date	Spike Amount	% Recovery	QC Limits	Notes
Nitrobenzene-d5	6/20/94	50	76	35-114	
2-Fluorobiphenyl	6/20/94	50	78	43-116	
Terphenyl-d14	6/20/94	50	82	33-141	
Phenol-d6	6/20/94	75	35	10- 94	
2-Fluorophenol	6/20/94	75	57	21-100	
2,4,6-Tribromophenol	6/20/94	75	61	10-123	

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.
Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile TCLP Analytical Results
40 CFR 261, June 29,1990

Client:	Nuclear Fuel Services, Inc.	Client Reference No.:	LEFPC
Lab Sample ID:	Q1452426	Client Sample No.:	Leachate Blank
Matrix:	Leachate	Date Received:	N/A
Date Leached:	24-May-94	Date Extracted:	31-May-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/l	PQL mg/l	MCL mg/l	Note
106467	1,4-Dichlorobenzene	6/20/94	1	BQL	0.100	7.5	
95487	2-Methylphenol	6/20/94	1	BQL	0.100	200	
108394	3-Methylphenol	6/20/94	1	BQL	0.100	200	
106445	4-Methylphenol	6/20/94	1	BQL	0.100	200	
NA	Total-Methylphenol	6/20/94	1	BQL	0.100	200	
67721	Hexachloroethane	6/20/94	1	BQL	0.100	3.0	
98953	Nitrobenzene	6/20/94	1	BQL	0.100	2.0	
87683	Hexachlorobutadiene	6/20/94	1	BQL	0.100	0.5	
88062	2,4,6-Trichlorophenol	6/20/94	1	BQL	0.100	2.0	
95954	2,4,5-Trichlorophenol	6/20/94	1	BQL	0.100	400	
121142	2,4-Dinitrotoluene	6/20/94	1	BQL	0.100	0.13	
118741	Hexachlorobenzene	6/20/94	1	BQL	0.100	0.13	
87865	Pentachlorophenol	6/20/94	1	BQL	0.500	100	
110861	Pyridine	6/20/94	1	BQL	0.100	5.0	

MCL = Maximum Concentration Limit
PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile Surrogate Recovery Data

Lab Sample ID: Q1452426 Client Sample No.: Leachate Blank

Surrogate Compound	Analysis Date	Spike Amount	% Recovery	QC Limits	Notes
Nitrobenzene-d5	6/20/94	50	82	35-114	
2-Fluorobiphenyl	6/20/94	50	88	43-116	
Terphenyl-d14	6/20/94	50	81	33-141	
Phenol-d6	6/20/94	75	73	10- 94	
2-Fluorophenol	6/20/94	75	84	21-100	
2,4,6-Tribromophenol	6/20/94	75	87	10-123	

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.
Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile TCLP Analytical Results
40 CFR 261, June 29,1990

Client:	Nuclear Fuel Services, Inc.	Client Reference No.:	LEFPC
Lab Sample ID:	3214004Y	Client Sample No.:	1661B-61
Matrix:	Leachate	Date Received:	17-May-94
Date Leached:	24-May-94	Date Extracted:	31-May-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/l	PQL mg/l	MCL mg/l	Note
106467	1,4-Dichlorobenzene	6/24/94	1	BQL	0.100	7.5	
95487	2-Methylphenol	6/24/94	1	BQL	0.100	200	
108394	3-Methylphenol	6/24/94	1	BQL	0.100	200	
106445	4-Methylphenol	6/24/94	1	BQL	0.100	200	
NA	Total-Methylphenol	6/24/94	1	BQL	0.100	200	
67721	Hexachloroethane	6/24/94	1	BQL	0.100	3.0	
98953	Nitrobenzene	6/24/94	1	BQL	0.100	2.0	
87683	Hexachlorobutadiene	6/24/94	1	BQL	0.100	0.5	
88062	2,4,6-Trichlorophenol	6/24/94	1	BQL	0.100	2.0	
95954	2,4,5-Trichlorophenol	6/24/94	1	BQL	0.100	400	
121142	2,4-Dinitrotoluene	6/24/94	1	BQL	0.100	0.13	
118741	Hexachlorobenzene	6/24/94	1	BQL	0.100	0.13	
87865	Pentachlorophenol	6/24/94	1	BQL	0.500	100	
110861	Pyridine	6/24/94	1	BQL	0.100	5.0	

MCL = Maximum Concentration Limit
PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile Surrogate Recovery Data

Lab Sample ID: 3214004Y

Client Sample No.: 1661B-61

Surrogate Compound	Analysis Date	Spike Amount	% Recovery	QC Limits	Notes
Nitrobenzene-d5	6/24/94	50	75	35-114	
2-Fluorobiphenyl	6/24/94	50	71	43-116	
Terphenyl-d14	6/24/94	50	100	33-141	
Phenol-d6	6/24/94	75	29	10- 94	
2-Fluorophenol	6/24/94	75	23	21-100	
2,4,6-Tribromophenol	6/24/94	75	17	10-123	

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.
Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile TCLP Analytical Results
40 CFR 261, June 29,1990

Client:	Nuclear Fuel Services, Inc.	Client Reference No.:	LEFPC
Lab Sample ID:	3214009Y	Client Sample No.:	1661B-135
Matrix:	Leachate	Date Received:	17-May-94
Date Leached:	24-May-94	Date Extracted:	31-May-94

CAS Number	Compound Name	Analysis Date	Dilution Factor	Result mg/l	PQL mg/l	MCL mg/l	Note
106467	1,4-Dichlorobenzene	6/23/94	1	BQL	0.100	7.5	
95487	2-Methylphenol	6/23/94	1	BQL	0.100	200	
108394	3-Methylphenol	6/23/94	1	BQL	0.100	200	
106445	4-Methylphenol	6/23/94	1	BQL	0.100	200	
NA	Total-Methylphenol	6/23/94	1	BQL	0.100	200	
67721	Hexachloroethane	6/23/94	1	BQL	0.100	3.0	
98953	Nitrobenzene	6/23/94	1	BQL	0.100	2.0	
87683	Hexachlorobutadiene	6/23/94	1	BQL	0.100	0.5	
88062	2,4,6-Trichlorophenol	6/23/94	1	BQL	0.100	2.0	
95954	2,4,5-Trichlorophenol	6/23/94	1	BQL	0.100	400	
121142	2,4-Dinitrotoluene	6/23/94	1	BQL	0.100	0.13	
118741	Hexachlorobenzene	6/23/94	1	BQL	0.100	0.13	
87865	Pentachlorophenol	6/23/94	1	BQL	0.500	100	
110861	Pyridine	6/23/94	1	0.0325	0.100	5.0	

MCL = Maximum Concentration Limit
PQL = Practical Quantitation Limit
BQL = Below Quantitation Limit

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile Surrogate Recovery Data

Lab Sample ID: 3214009Y

Client Sample No.: 1661B-135

Surrogate Compound	Analysis Date	Spike Amount	% Recovery	QC Limits	Notes
Nitrobenzene-d5	6/23/94	50	73	35-114	
2-Fluorobiphenyl	6/23/94	50	69	43-116	
Terphenyl-d14	6/23/94	50	96	33-141	
Phenol-d6	6/23/94	75	56	10- 94	
2-Fluorophenol	6/23/94	75	64	21-100	
2,4,6-Tribromophenol	6/23/94	75	78	10-123	

Surrogates are compounds added to the sample prior to extraction to monitor the extraction efficiency.
Lower surrogate recoveries may indicate possible matrix effect on the extraction procedure.

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile TCLP QC Spike Data

Client: Nuclear Fuel Services, Inc.
Method: SW-846 8270
Lab Sample ID: 3214004YMS/3214004YMSD
Client Sample ID: 1661B-61

Date of Leachate: 24-May-94
Date of Extraction: 31-May-94
Date of Analysis: 24-Jun-94
Client Reference No.: LEFPC

TCLP MS/MSD ANALYTICAL RESULTS

40 CFR 261 June 29, 1990

Spike Compound	% Recovery QC Limits	Spike Concen ug/ml	Unspiked Sample Result mg/L	Spiked Sample Result mg/L (MS)	% Spike Recovery (MS)	uplicate Spik Sample Result mg/L (MSD)	%Dup. Spike Recovery (MSD)	RPD
Total Cresol	NA	300	0	2.28	76	2.58	86	12.4
1,4-Dichlorobenzene	20-124	100	0	0.70	70	0.73	73	5.1
2,4-Dinitrotoluene	39-139	100	0	0.66	66	0.76	76	13.9
Hexachlorobenzene	D-152	100	0	0.81	81	0.76	76	6.6
Hexachlorobutadiene	24-116	100	0	0.79	79	0.89	89	11.7
Hexachloroethane	40-113	100	0	0.77	77	0.81	81	5.0
Nitrobenzene	35-180	100	0	0.84	84	0.91	91	8.3
Pentachlorophenol	14-176	100	0	0.42	42	0.78	78	59.8
Pyridine	NA	100	0	0.69	69	0.78	78	12.6
2,4,5-Trichlorophenol	NA	100	0	0.68	68	0.97	97	35.1
2,4,6-Trichlorophenol	37-144	100	0	0.69	69	0.93	93	30.1

QC limits based upon SW-846, Method 8270, Table 6
NA=Not Available/Not Applicable
(As two of the cresol isomers coelute, only the total of all three isomers is calculated and reported.)

EcoTek LSI
EcoTek Laboratory Services Incorporated

Semivolatile TCLP QC Spike Data

Client: Nuclear Fuel Services, Inc.
Method: SW-846 8270 TCLP
Lab Sample ID: 3214009MS/3214009MSD
Client Sample ID: 1661B-135

Date of Leachate: 24-May-94
Date of Extraction: 31-May-94
Date of Analysis: 23-Jun-94
Client Reference No.: LEFPC

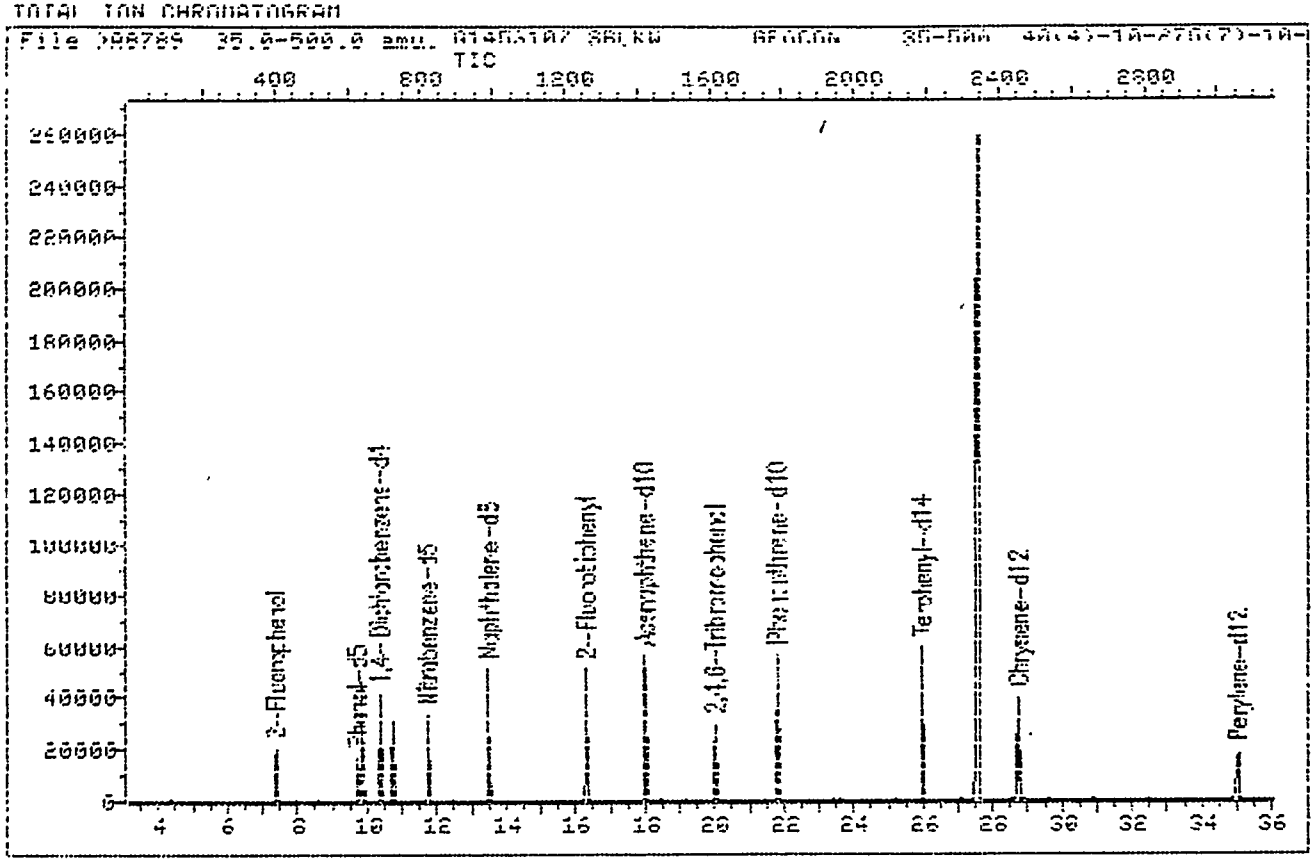
TCLP MS/MSD ANALYTICAL RESULTS

40 CFR 261 June 29, 1990

Spike Compound	% Recovery QC Limits	Spike Concen ug/ml	Unspiked Sample Result mg/L	Spiked Sample Result mg/L (MS)	% Spike Recovery (MS)	Duplicate Spike Sample Result mg/L (MSD)	%Dup. Spike Recovery (MSD)	RPD
Total Cresol	NA	300	0	1.61	54	1.71	57	5.8
1,4-Dichlorobenzene	20-124	100	0	0.66	66	0.77	77	15.5
2,4-Dinitrotoluene	39-139	100	0	0.74	74	0.79	79	7.3
Hexachlorobenzene	D-152	100	0	0.76	76	0.83	83	8.0
Hexachlorobutadiene	24-116	100	0	0.68	68	0.80	80	15.4
Hexachloroethane	40-113	100	0	0.65	65	0.79	79	18.9
Nitrobenzene	35-180	100	0	0.84	84	0.92	92	9.3
Pentachlorophenol	14-176	100	0	0.86	86	0.92	92	7.2
Pyridine	NA	100	0.0325	0.71	68	0.78	74	9.1
2,4,5-Trichlorophenol	NA	100	0	0.82	82	0.79	79	3.2
2,4,6-Trichlorophenol	37-144	100	0	0.75	75	0.82	82	9.1

QC limits based upon SW-846, Method 8270, Table 6
NA=Not Available/Not Applicable
(As two of the cresol isomers coelute, only the total of all three isomers is calculated and reported.)

TOTAL ION CHROMATOGRAM



Data File: >A8789::D7 Quant Output File: ^A8789::DA
Name: Q1453107 SBLKW Instrument ID: 7004
Misc: SEDCUM 35-500 40(4)-10-275(7)-10-295(20) BIL# 3

Id File: AIT620::DA
Title: SEMIVOLATILES ID FILE FOR TCLP COMPOUNDS
Last Calibration: 901207 19:50 Last Qcal Time: 940620 14:55

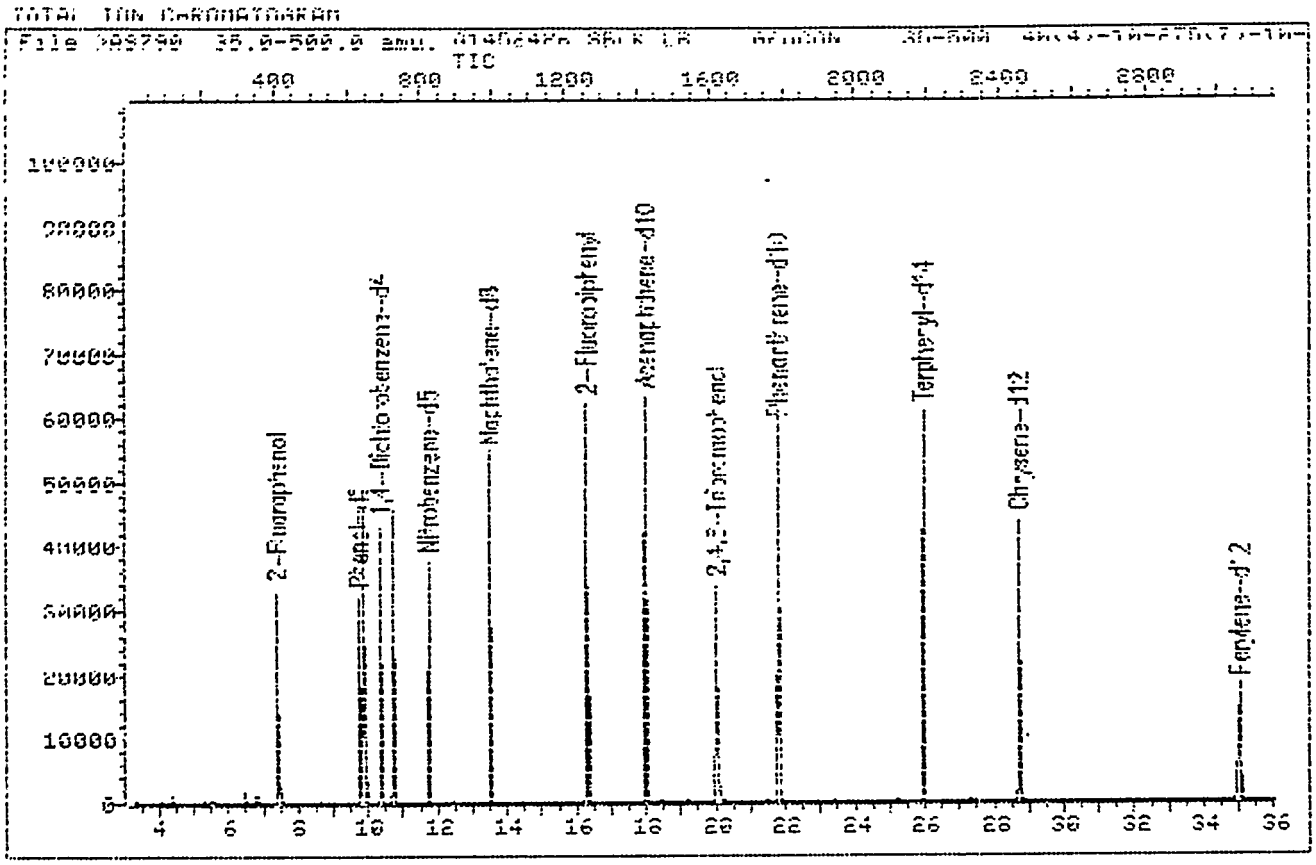
Operator ID: ZC
Quant Time : 940620 16:30
Injected at: 940620 15:51

Operator ID: ZC Quant Rev: 7 Quant Time: 940620 16:30
Input File: >A8789::UA Injected at: 940620 15:51
Data File: >A8789::D7 Dilution Factor: 1.00000
Name: W145310/ SBLKW Instrument ID: 7004
Misc: GEOCON 35-500 40(4)-10-275(7)-10-295(20) BTL# 3

ID File: A1620::DA
Title: SEMIVOLATILES ID FILE FOR TCLP COMPOUNDS
Last Calibration: 901207 19:50 Last Qcal Time: 940620 14:55

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*1,4-Dichlorobenzene-d4	10.33	152.0	13997	40.00	NG/UL	80
7)	2-Fluorophenol	7.36	112.0	15640	42.85	NG/UL	87
8)	Phenol-d5	9.69	99.0	13549	26.57	NG/UL	100
9)	*Naphthalene-d8	13.48	136.0	47453	40.00	NG/UL	100
12)	Nitrobenzene-d5	11.71	82.1	19181	38.03	NG/UL	100
13)	*Acenaphthene-d10	17.96	164.1	27906	40.00	NG/UL	99
17)	2-Fluorobiphenyl	16.27	172.1	34024	39.16	NG/UL	97
18)	2,4,6-Tribromophenol	20.00	329.9	8696	45.79	NG/UL	93
19)	*Phenanthrene-d10	21.78	188.2	49309	40.00	NG/UL	100
22)	*Chrysene-d12	28.70	240.0	46468	40.00	NG/UL	98
23)	Terphenyl-d14	25.93	244.3	52456	40.85	NG/UL	74
24)	*Perylene-d12	34.99	264.0	44982	40.00	NG/UL	95

* Compound is ISTD



Data File: >AB790::D7 Quant Output File: ^AB790::DA
Name: Q1452426 SBLK LB Instrument ID: 7004
Misc: GEOLTUN 35-500 40(4)-10-275(7)-10-295(20) VIL# 4

Id File: AIT620::DA
Title: SEMIVOLATILES ID FILE FOR TCLP COMPOUNDS
Last Calibration: 901207 19:50 Last Qcal Time: 940620 14:55

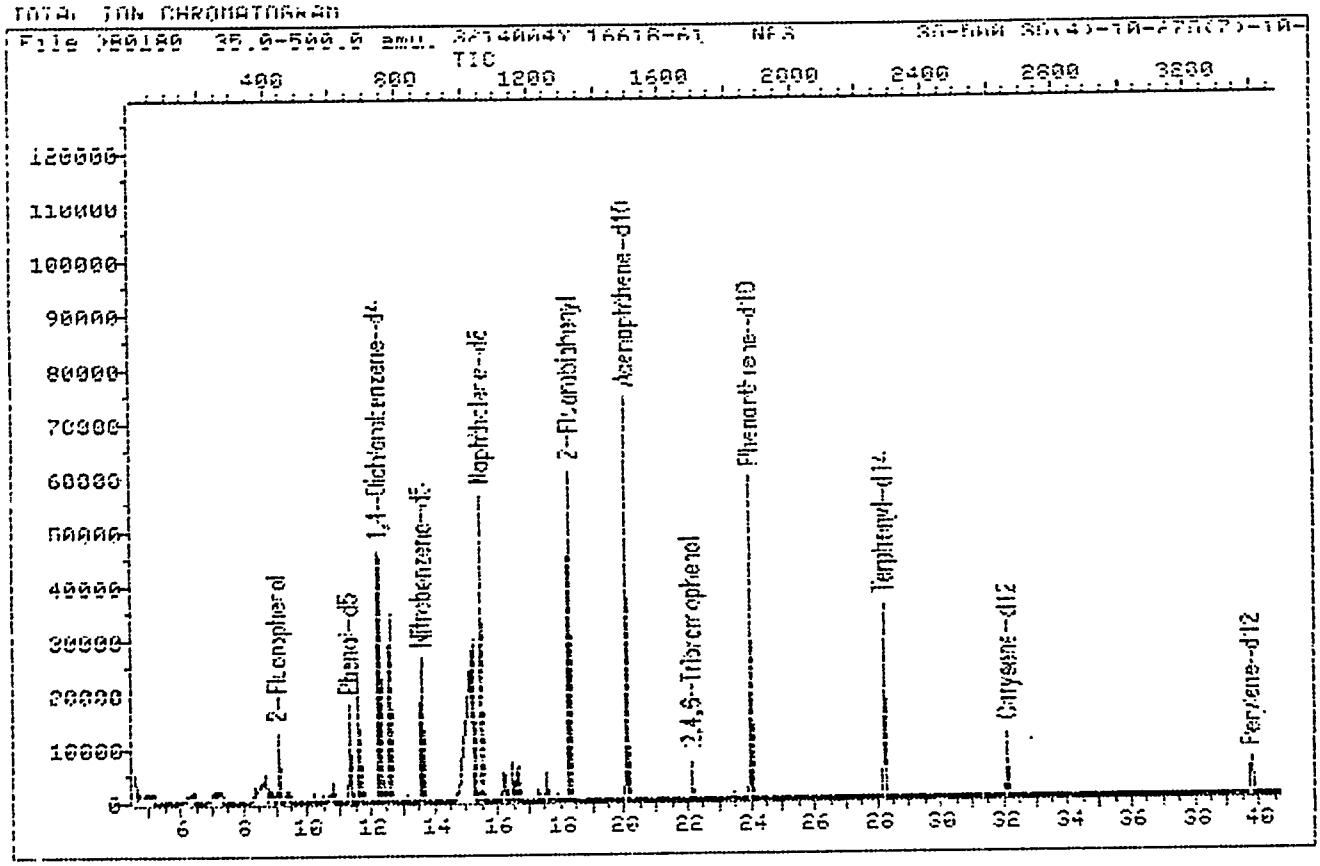
Operator ID: ZC
Quant Time : 940620 17:20
Injected at: 940620 16:36

Operator ID: ZC Quant Rev: 7 Quant Time: 940620 17:20
Input File: ^A8790::DA Injected at: 940620 16:58
Data File: >A8790::D7 Dilution Factor: 1.00000
Name: W1452426 SBLK LB Instrument ID: 7004
Misc: GEOCON 35-500 40(4)-10-275(7)-10-295(20) BTL# 4

ID File: A11620::DA
Title: SEMIVOLATILES ID FILE FOR TCLP COMPOUNDS
Last Calibration: 901207 19:50 Last Qcal Time: 940620 14:55

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*1,4-Dichlorobenzene-d4	10.33	152.0	14484	40.00	NG/UL	79
7)	2-Fluorophenol	7.38	112.0	23894	63.26	NG/UL	85
8)	Phenol-d5	9.71	99.0	29011	54.97	NG/UL	100
9)	*Naphthalene-d8	13.48	136.0	52337	40.00	NG/UL	100
12)	Nitrobenzene-d5	11.72	82.1	22913	41.20	NG/UL	100
13)	*Acenaphthene-d10	17.96	164.1	31391	40.00	NG/UL	99
17)	2-Fluorobiphenyl	16.29	172.1	42987	43.98	NG/UL	97
18)	2,4,6-Tribromophenol	20.00	329.9	13953	65.23	NG/UL	92
19)	*Phenanthrene-d10	21.72	188.2	55667	40.00	NG/UL	100
22)	*Chrysene-d12	28.70	240.0	49476	40.00	NG/UL	98
23)	Terphenyl-d14	25.94	244.3	55505	40.60	NG/UL	75
24)	*Perylene-d12	35.00	264.0	44642	40.00	NG/UL	96

* Compound is ISTD



Data File: >B0180::D4 Quant Output File: ^B0180::UR
Name: 3214004Y 1661B-61 Instrument ID: 7001
Misc: NFS 35-500 35(4)-10-275(7)-10-295(11) BTL# 9

Id File: BIT624::DA
Title: SEMIVOLATILES ID FILE FOR TCLP COMPOUNDS
Last Calibration: 901207 19:50 Last Qcal Time: 940624 07:51

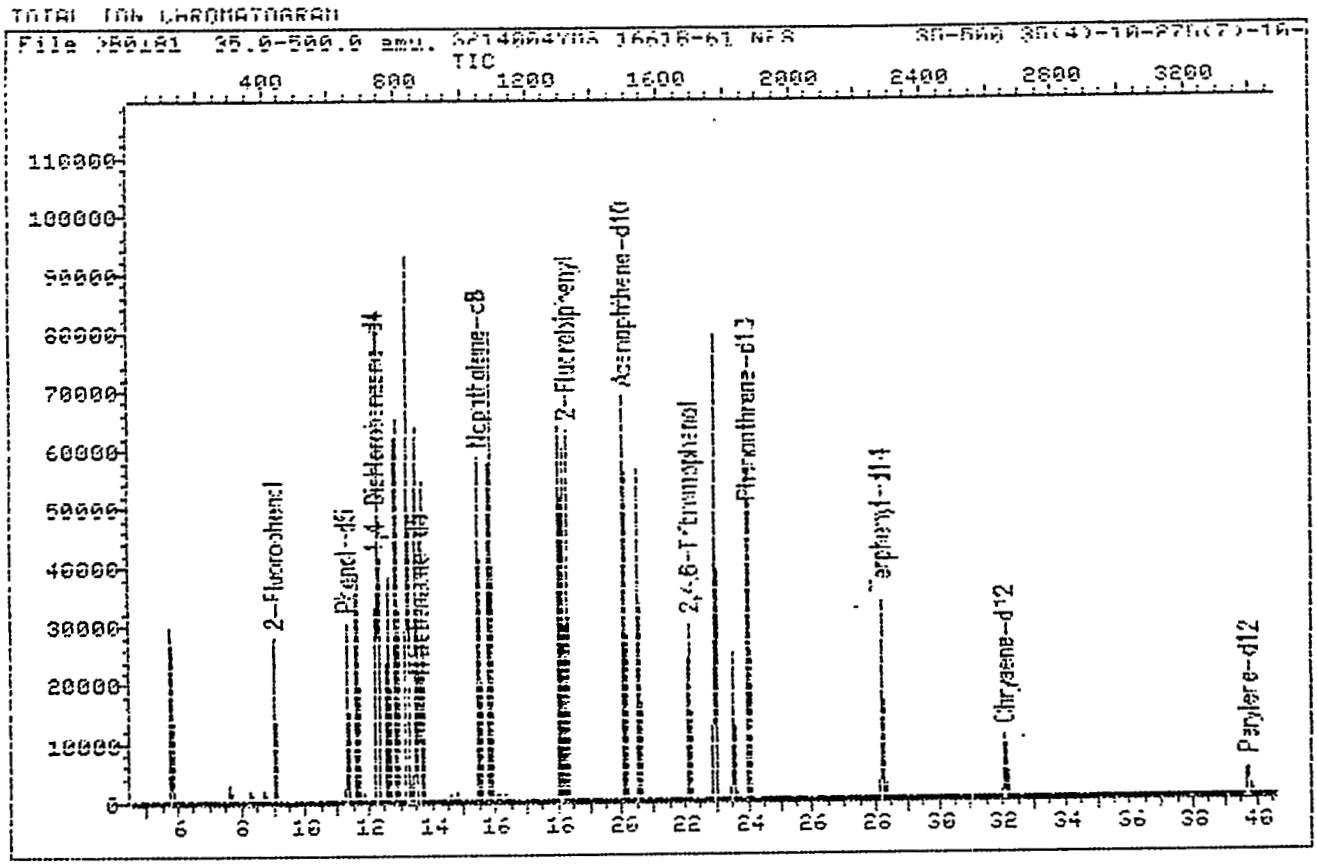
Operator ID: MEJ
Quant Time : 940624 14:42
Injected at: 940624 14:01

Operator ID: MEI Quant Rev: 7 Quant Time: 940624 14:42
Input File: ^B0180::DB Injected at: 940624 14:07
Data File: >B0180::D4 Dilution Factor: 1.00000
Name: 3214004Y 1661B-61 Instrument ID: 7001
Misc: NFS 35-500 35(4)-10-275(7)-10-295(11) BTL# 9

ID File: B11624::DA
Title: SEMIVOLATILES ID FILE FOR TCLP COMPOUNDS
Last Calibration: 901207 19:50 Last Qcal Time: 940624 07:51

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*1,4-Dichlorobenzene-d4	12.19	152.0	17963	40.00	NG/UL	81
7)	2-Fluorophenol	9.03	112.0	7948	17.61	NG/UL	81
8)	Phenol-d5	11.27	99.0	11546	21.52	NG/UL	100
9)	*Naphthalene-d8	15.43	136.0	63769	40.00	NG/UL	100
12)	Nitrobenzene-d5	13.57	82.1	16462	37.26	NG/UL	100
13)	*Acenaphthene-d10	20.04	164.1	38254	40.00	NG/UL	99
17)	2-Fluorobiphenyl	18.25	172.1	40515	35.41	NG/UL	84
18)	2,4,6-Tribromophenol	22.10	329.9	2259	12.78	NG/UL	73
19)	*Phenanthrene-d10	23.96	188.2	52734	40.00	NG/UL	100
22)	*Chrysene-d12	32.05	240.0	17709	40.00	NG/UL	94
23)	Terphenyl-d14	28.16	244.3	30605	49.93	NG/UL	78
24)	*Perylene-d12	39.70	264.0	14823	40.00	NG/UL	93

Compound is ISTD



Data File: >B0181::D4 Quant Output File: ^B0181::DB
Name: 3214004YMS 1661B-61 Instrument ID: 7001
Misc: NFS 35-500 35(4)-10-275(7)-10-295(11) BTL#10

Id File: BIT624::DA
Title: SEMIVOLATILES ID FILE FOR TCLP COMPOUNDS
Last Calibration: 901207 19:50 Last Qcal Time: 940624 07:51

Operator ID: MEI
Quant Time : 940624 15:32
Injected at: 940624 14:50

QUANT REPORT

Operator ID: MEI Quant Rev: 7 Quant Time: 940624 15:32
Input File: >B0181::UR Injected at: 940624 14:50
Data File: >B0181::D4 Dilution Factor: 1.00000
Name: 4214004YMS 16618-61 Instrument ID: 2001
Misc: NFS 35-500 35(4)-10-275(7)-10-295(11) BIL#10

ID File: BIT624::DA
Title: SEMIVOLATILES ID FILE FOR TCLP COMPOUNDS
Last Calibration: 901207 19:50 Last Qcal Time: 940624 07:51

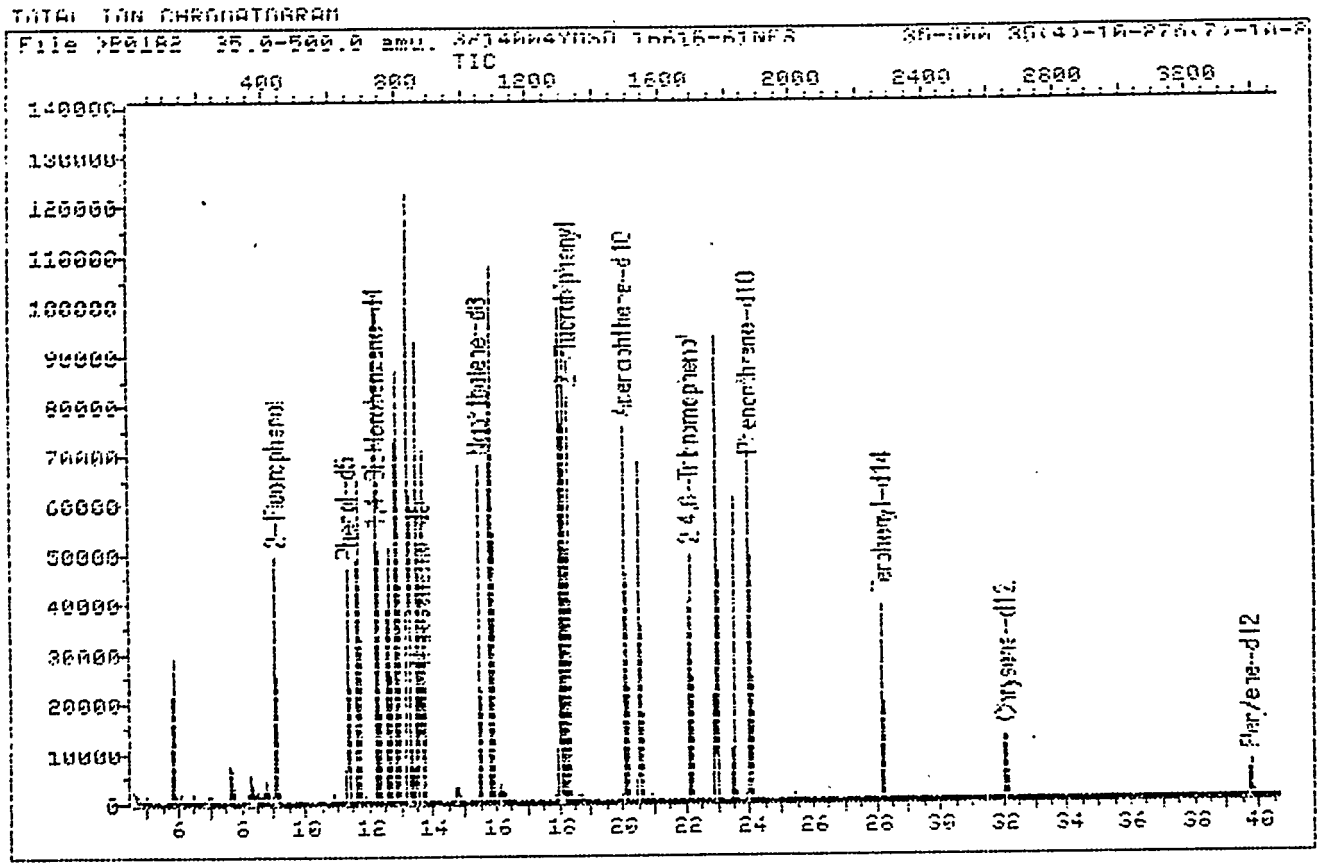
	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*1,4-Dichlorobenzene-d4	12.19	152.0	15744	40.00	NG/UL	69
2)	Pyridine	5.70	79.0	20802	68.63	NG/UL	88
3)	1,4-Dichlorobenzene	12.24	146.0	45082	69.67	NG/UL	90
4)	2-Methylphenol	12.81	108.0	27456	77.75	NG/UL	91
5)	4-Methylphenol	13.23	108.0	54423	150.51	NG/UL	81
6)	Hexachloroethane	13.47	117.0	18140	76.58	NG/UL	88
7)	2-Fluorophenol	9.03	112.0	16846	42.62	NG/UL	83
8)	Phenol-d5	11.28	99.0	20480	43.54	NG/UL	100
9)	*Naphthalene-d8	15.43	136.0	60188	40.00	NG/UL	100
10)	Nitrobenzene	13.65	77.0	34075	83.56	NG/UL	89
11)	Hexachlorobutadiene	15.81	225.0	19006	79.48	NG/UL	95
12)	Nitrobenzene-d5	13.58	82.1	15973	38.30	NG/UL	100
13)	*Acenaphthene-d10	20.04	164.1	36222	40.00	NG/UL	96
14)	2,4,6-Trichlorophenol	18.02	196.0	20973	68.93	NG/UL	91
15)	2,4,5-Trichlorophenol	18.12	196.0	21611	67.97	NG/UL	89
16)	2,4-Dinitrotoluene	20.53	165.0	27550	65.82	NG/UL	87
17)	2-Fluorobiphenyl	18.25	172.1	42665	39.38	NG/UL	80
18)	2,4,6-Tribromophenol	22.10	329.9	7280	43.50	NG/UL	84
19)	*Phenanthrene-d10	23.95	188.2	51033	40.00	NG/UL	100
20)	Hexachlorobenzene	22.43	284.0	25948	80.80	NG/UL	89
21)	Pentachlorophenol	23.43	266.0	7355	42.23	NG/UL	93
22)	*Chrysene-d12	32.04	240.0	15144	40.00	NG/UL	99
23)	Terphenyl-d14	28.16	244.3	28222	53.84	NG/UL	78
24)	*Perylene-d12	39.70	264.0	12070M	40.00	NG/UL	90

* Compound is ISTD

M=Manually Quantitated

By: ML

Date 6/28/94



Data File: >B0182::D4 Quant Output File: ^B0182::UB
Name: 3214004YMSD 1661B-61 Instrument ID: 7001
Misc: NPS 35-500 35(4)-10-275(7)-10-295(11) BTL#11

Id File: BIT624::DA
Title: SEMIVOLATILES ID FILE FOR TCLP COMPOUNDS
Last Calibration: 901207 19:50 Last Qcal Time: 940624 07:51

Operator ID: MEI
Quant Time : 940624 16:21
Injected at: 940624 15:39

QUANT REPORT

Operator ID: MFI Quant Rev: 2 Quant Time: 940624 16:21
Output File: ^B0182::08 Injected at: 940624 15:39
Data File: >B0182::04 Dilution Factor: 1.00000
Name: 3214004YMSD 1661B-61 Instrument ID: 7001
Misc: NFS 35-500 35(4)-10-275(7)-10-295(11) BIL#11

ID File: BIT624::DA
Title: SEMIVOLATILES ID FILE FOR TCLP COMPOUNDS
Last Calibration: 901207 19:50 Last Qcal Time: 940624 07:51

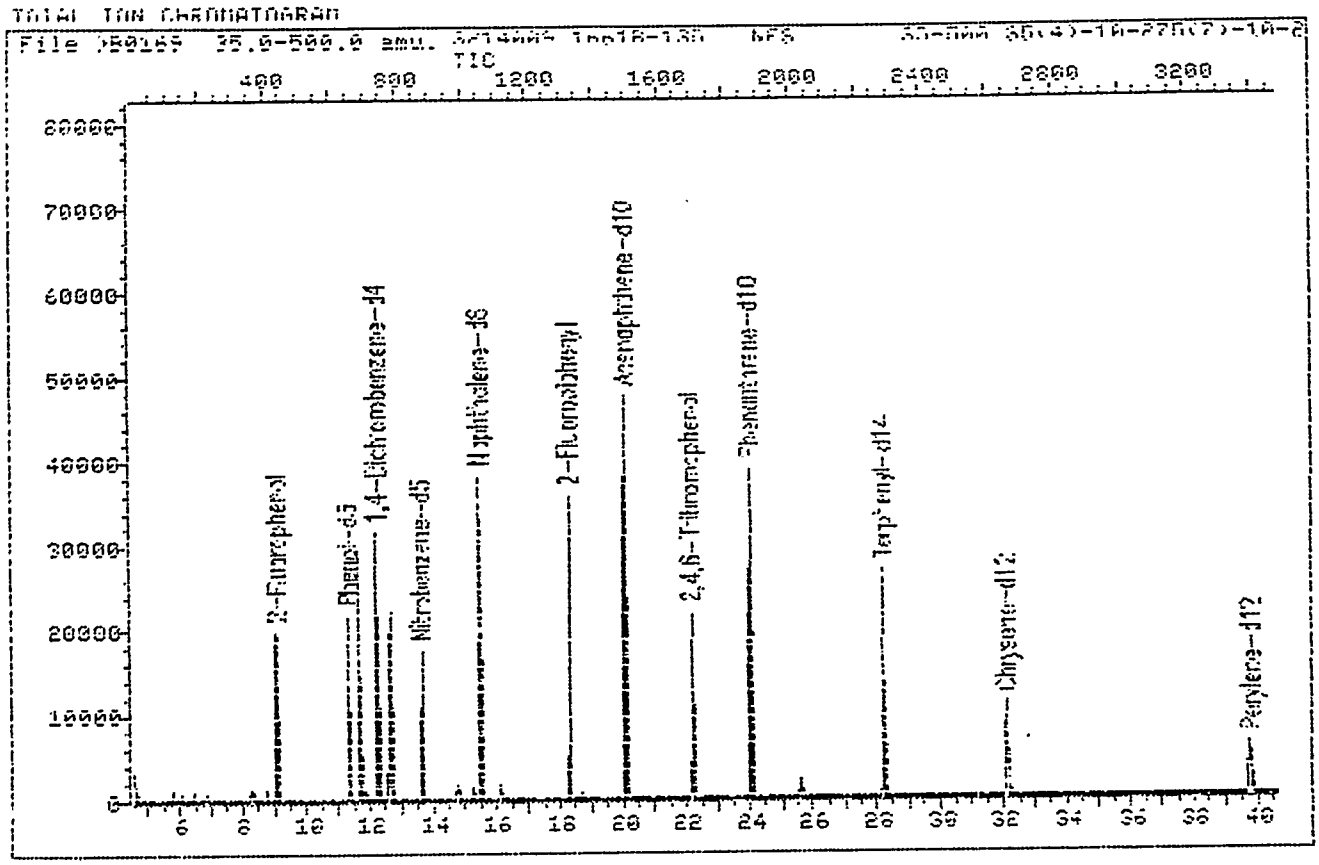
	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*1,4-Dichlorobenzene-d4	12.20	152.0	19728	40.00	NG/UL	77
2)	Pyridine	5.80	79.0	29565	77.85	NG/UL	90
3)	1,4-Dichlorobenzene	12.24	146.0	59420	73.28	NG/UL	89
4)	2-Methylphenol	12.83	108.0	38389	86.76	NG/UL	87
5)	4-Methylphenol	13.24	108.0	77792	171.69	NG/UL	83
6)	Hexachloroethane	13.47	117.0	23901	80.52	NG/UL	92
7)	2-Fluorophenol	9.06	112.0	29727	60.02	NG/UL	77
8)	Phenol-d5	11.30	99.0	32224	54.67	NG/UL	100
9)	*Naphthalene-d8	15.43	136.0	71902	40.00	NG/UL	100
10)	Nitrobenzene	13.66	77.0	44246	90.82	NG/UL	90
11)	Hexachlorobutadiene	15.82	225.0	25539	89.41	NG/UL	93
12)	Nitrobenzene-d5	13.59	82.1	21632	43.42	NG/UL	100
13)	*Acenaphthene-d10	20.03	164.1	44127	40.00	NG/UL	99
14)	2,4,6-Trichlorophenol	18.03	196.0	34591	93.32	NG/UL	93
15)	2,4,5-Trichlorophenol	18.12	196.0	37538	96.91	NG/UL	86
16)	2,4-Dinitrotoluene	20.54	165.0	38577	75.65	NG/UL	92
17)	2-Fluorobiphenyl	18.26	172.1	54326	41.16	NG/UL	92
18)	2,4,6-Tribromophenol	22.11	329.9	12338	60.51	NG/UL	67
19)	*Phenanthrene-d10	23.96	188.2	64600	40.00	NG/UL	100
20)	Hexachlorobenzene	22.94	284.0	30746	75.64	NG/UL	90
21)	Pentachlorophenol	23.45	266.0	17253	78.26	NG/UL	88
22)	*Chrysene-d12	32.03	240.0	20280M	40.00	NG/UL	94
23)	Terphenyl-d14	28.16	244.3	34432	49.05	NG/UL	78
24)	*Perylene-d12	39.70	264.0	16424	40.00	NG/UL	93

* Compound is ISTD

M=Manually Quantitated

By: ML

Date 6/28/94



Data File: >B0169::D4 Quant Output File: ^B0169::DB
Name: 3214009 16618-135 Instrument ID: 7001
Misc: NFS 35-500 35(4)-10-275(7)-10-295(11) BTL#14

Id File: BIT623::DA
Title: SEMIVOLATILES ID FILE FOR TCLP COMPOUNDS
Last Calibration: 901207 19:50 Last Qcal Time: 940623 08:22

Operator ID: MEI
Quant Time : 940623 19:10
Injected at: 940623 18:28

QUANT REPORT

Operator ID: MEI Quant Rev: 7 Quant Time: 940623 19:10
Input File: >B0169::D8 Injected at: 940623 18:28
Data File: >B0169::D4 Dilution Factor: 1.00000
Name: 3214009 16618-145 Instrument ID: 2001
Misc: NFS 35-500 35(4)-10-275(7)-10-295(11) BTL#14

ID File: BIT623::DA
Title: SEMIVOLATILES ID FILE FOR TCLP COMPOUNDS
Last Calibration: 901207 19:50 Last Qcal Time: 940623 08:27

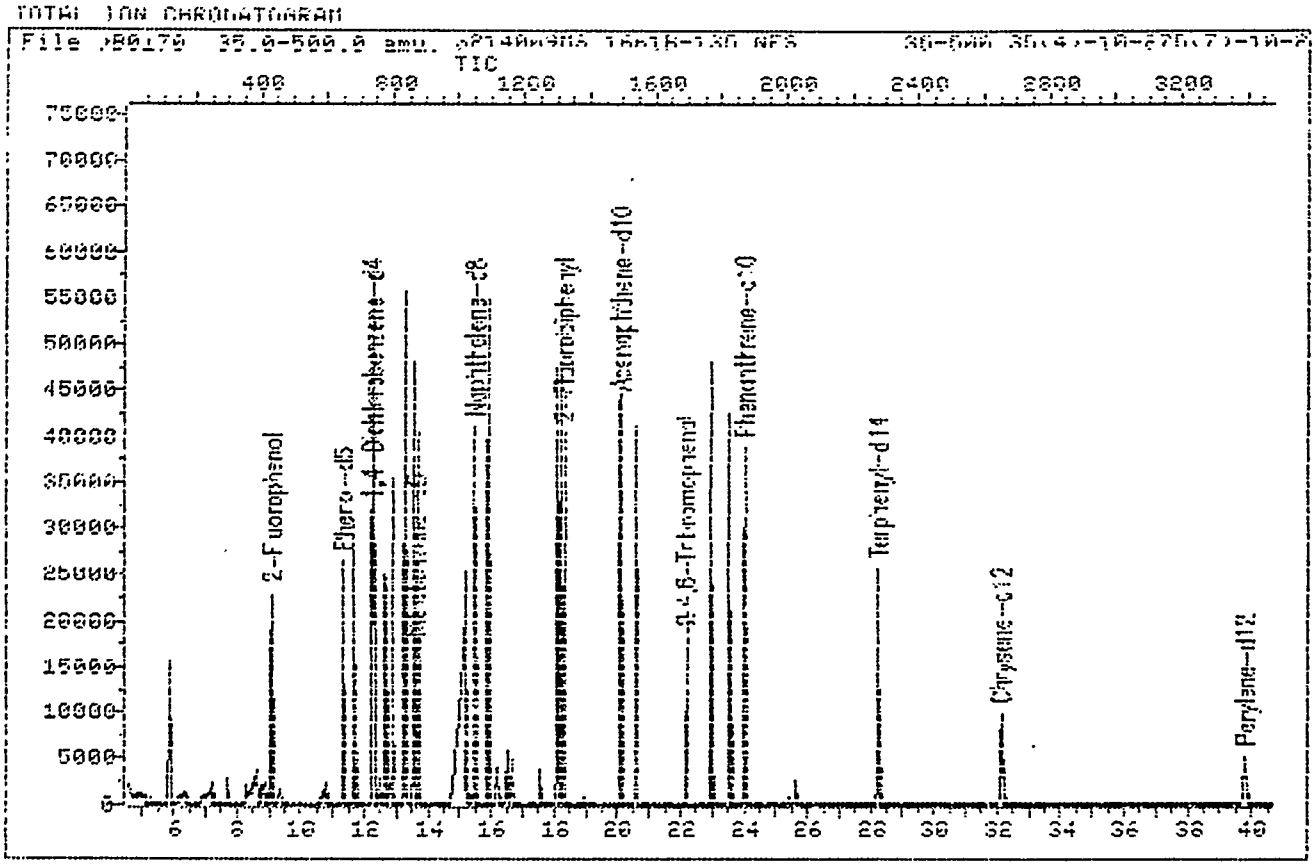
	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*1,4-Dichlorobenzene-d4	12.22	152.0	11326	40.00	NG/UL	88
2)	Pyridine	5.73	79.0	742	3.25	NG/UL	94
7)	2-Fluorophenol	9.05	112.0	14047	48.28	NG/UL	71
8)	Phenol-d5	11.30	99.0	14453	42.29	NG/UL	100
9)	*Naphthalene-d8	15.45	136.0	40890	40.00	NG/UL	100
12)	Nitrobenzene-d5	13.60	82.1	9934	36.56	NG/UL	100
13)	*Acenaphthene-d10	20.07	164.1	24652	40.00	NG/UL	98
17)	2-Fluorobiphenyl	18.28	172.1	25112	34.71	NG/UL	88
18)	2,4,6-Tribromophenol	22.13	329.9	5671	58.87	NG/UL	83
19)	*Phenanthrene-d10	23.98	188.2	32947	40.00	NG/UL	100
22)	*Chrysene-d12	32.07	240.0	17853	40.00	NG/UL	99
23)	Terphenyl-d14	28.19	244.3	27529	47.77	NG/UL	80
24)	*Perylene-d12	39.77	264.0	14948M	40.00	NG/UL	93

* Compound is ISTD

M=Manually Quantitated

By: ML

Date 6/27/94



Data File: >B0170::D4 Quant Output File: ^B0170::OB
Name: 3214009MS 1661B-135 Instrument ID: 7001
Misc: NFS 35-500 35(4)-10-225(7)-10-295(11) BIL#15

Id File: BIT623::DA
Title: SEMIVOLATILES ID FILE FOR TCLP COMPOUNDS
Last Calibration: 901207 19:50 Last Qcal Time: 940623 08:22

Operator ID: MEI
Quant Time : 940623 20:00
Injected at: 940623 19:18

QUANT REPORT

Operator ID: MEI Quant Rev: 7 Quant Time: 940623 20:00
Input File: ^B01/H::UB Injected at: 940623 19:18
Data File: >B0170::D4 Dilution Factor: 1.00000
Name: 3214009MS 16616-135 Instrument ID: 7001
Misc: NFS 35-500 35(4)-10-275(7)-10-295(11) BTL#15

ID File: B11623::DA
Title: SEMIVOLATILES ID FILE FOR TCLP COMPOUNDS
Last Calibration: 901207 19:50 Last Qcal Time: 940623 08:22

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*1,4-Dichlorobenzene-d4	12.23	152.0	11867	40.00	NG/UL	71
2)	Pyridine	5.80	79.0	17001	71.16	NG/UL	88
3)	1,4-Dichlorobenzene	12.27	146.0	31488	66.23	NG/UL	88
4)	2-Methylphenol	12.84	108.0	14897	57.47	NG/UL	89
5)	4-Methylphenol	13.25	108.0	32017	103.61	NG/UL	83
6)	Hexachloroethane	13.50	117.0	12237	65.27	NG/UL	95
7)	2-Fluorophenol	9.07	112.0	13183	43.24	NG/UL	82
8)	Phenol-d5	11.31	99.0	14899	41.61	NG/UL	100
9)	*Naphthalene-d8	15.46	136.0	41476	40.00	NG/UL	100
10)	Nitrobenzene	13.67	77.0	24355	84.06	NG/UL	91
11)	Hexachlorobutadiene	15.84	225.0	11659	68.48	NG/UL	93
12)	Nitrobenzene-d5	13.62	82.1	11683	42.39	NG/UL	100
13)	*Acenaphthene-d10	20.06	164.1	24581	40.00	NG/UL	97
14)	2,4,6-Trichlorophenol	18.05	196.0	15293	75.21	NG/UL	92
15)	2,4,5-Trichlorophenol	18.15	196.0	17625	81.87	NG/UL	94
16)	2,4-Dinitrotoluene	20.56	165.0	20302	73.69	NG/UL	91
17)	2-Fluorobiphenyl	18.28	172.1	27515	38.14	NG/UL	88
18)	2,4,6-Tribromophenol	22.12	329.9	5311M	55.29	NG/UL	
19)	*Phenanthrene-d10	23.99	188.2	34459	40.00	NG/UL	100
20)	Hexachlorobenzene	22.96	284.0	15142	76.43	NG/UL	94
21)	Pentachlorophenol	23.47	266.0	10727	86.04	NG/UL	77
22)	*Chrysene-d12	32.09	240.0	13982	40.00	NG/UL	89
23)	Terphenyl-d14	28.20	244.3	22381	60.59	NG/UL	80
24)	*Perylene-d12	39.76	264.0	11697	40.00	NG/UL	95

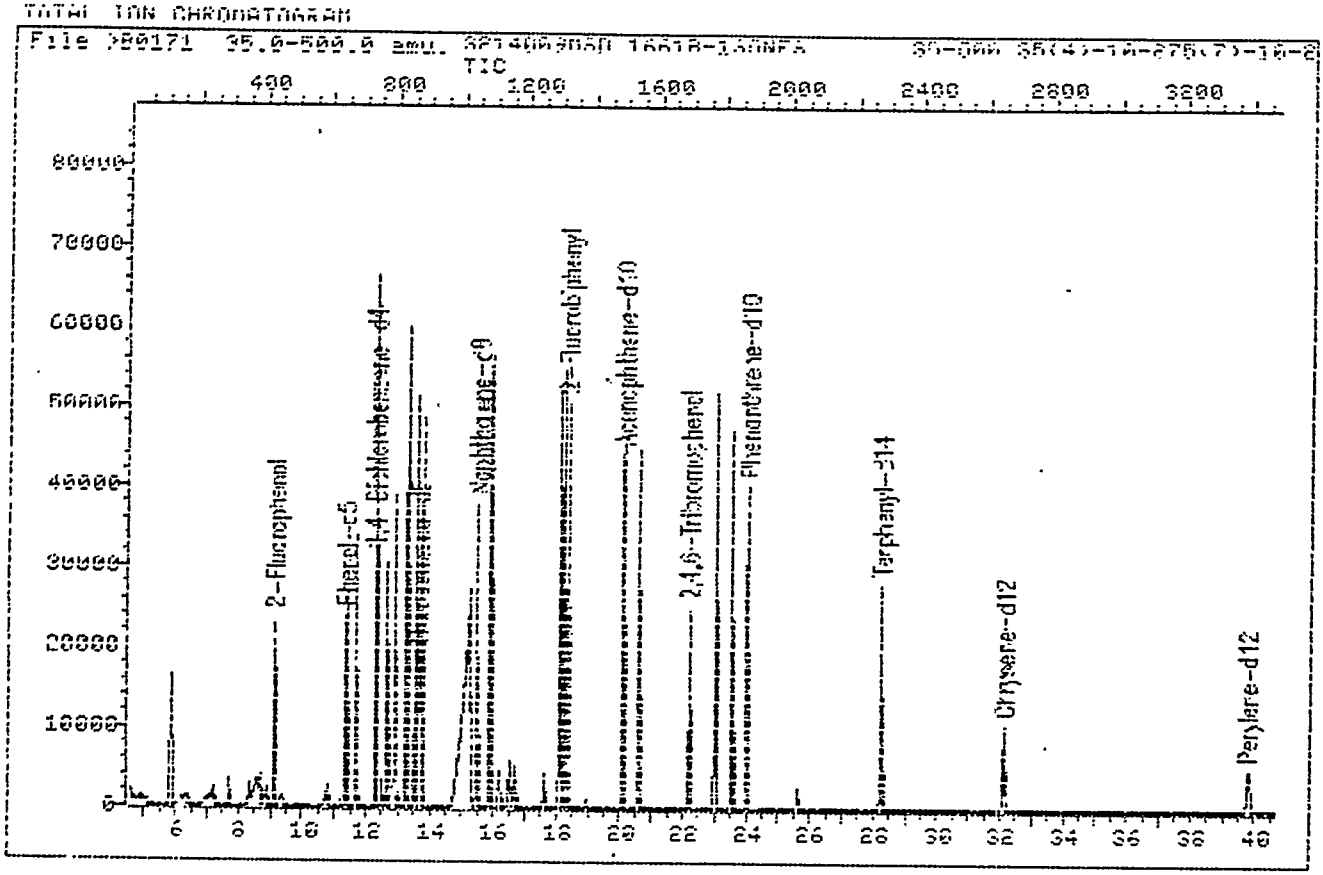
* Compound is ISTD

M=Manually Quantitated

By: ML

Date 6/26/94

TOTAL ION CHROMATOGRAM



Data File: >B0171::D4 Quant Output File: ^B0171::DB
Name: 3214009MSD 1661B-135 Instrument ID: 7001
Misc: NFS 35-500 35(4)-10-275(7)-10-295(13) BIL#16

Id File: BIT623::DA
Title: SEMIVOLATILES ID FILE FOR TCLP COMPOUNDS
Last Calibration: 901207 19:50 Last Qcal Time: 940623 08:22

Operator ID: MEI
Quant Time : 940623 20:50
Injected at: 940623 20:08

QUANT REPORT

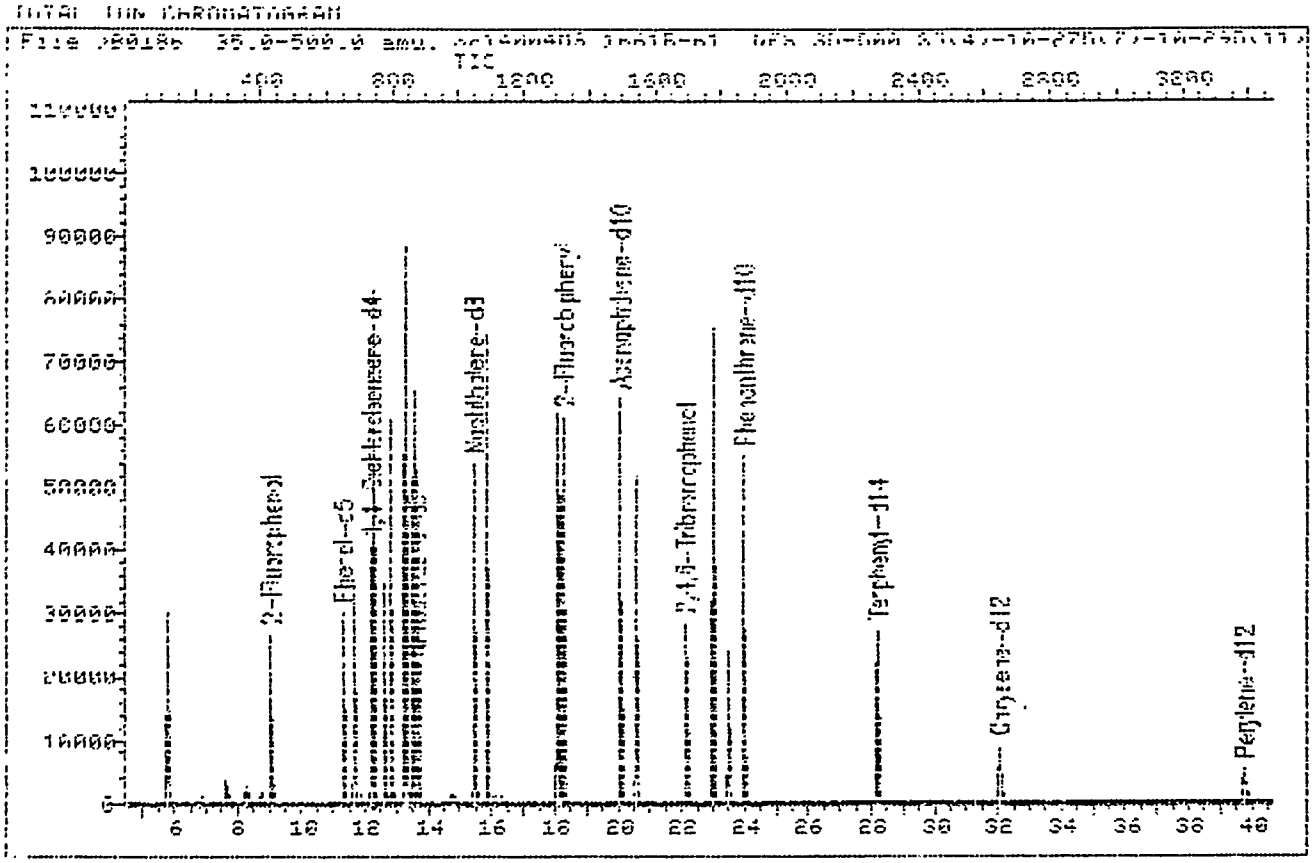
Operator ID: MEI Quant Rev: 2 Quant Time: 940623 20:50
Output File: ^B0171::0B Injected at: 940623 20:08
Data File: >B0171::04 Dilution Factor: 1.00000
Name: 3214009MSD 1661B-135 Instrument ID: 7001
Misc: NPS 35-500 35(4)-10-275(7)-10-295(11) BIL#16

ID File: BIT623::DA
Title: SEMIVOLATILES ID FILE FOR HCLP COMPOUNDS
Last Calibration: 901207 19:50 Last Qcal Time: 940623 08:22

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*1,4-Dichlorobenzene-d4	12.23	152.0	11840	40.00	NG/UL	74
2)	Pyridine	5.81	79.0	18499	77.61	NG/UL	96
3)	1,4-Dichlorobenzene	12.28	146.0	36684	77.33	NG/UL	88
4)	2-Methylphenol	12.85	108.0	15158	58.61	NG/UL	91
5)	4-Methylphenol	13.25	108.0	34571	112.13	NG/UL	81
6)	Hexachloroethane	13.51	117.0	14755	78.88	NG/UL	95
7)	2-Fluorophenol	9.07	112.0	14727	48.41	NG/UL	77
8)	Phenol-d5	11.31	99.0	17165	48.04	NG/UL	100
9)	*Naphthalene-d8	15.47	136.0	41277	40.00	NG/UL	100
10)	Nitrobenzene	13.68	77.0	26596	92.23	NG/UL	89
11)	Hexachlorobutadiene	15.84	225.0	13543	79.93	NG/UL	97
12)	Nitrobenzene-d5	13.62	82.1	13020	47.47	NG/UL	100
13)	*Acenaphthene-d10	20.07	164.1	24144	40.00	NG/UL	96
14)	2,4,6-Trichlorophenol	18.05	196.0	16459	82.41	NG/UL	88
15)	2,4,5-Trichlorophenol	18.15	196.0	19727	93.29	NG/UL	91
16)	2,4-Dinitrotoluene	20.56	165.0	21459	79.30	NG/UL	89
17)	2-Fluorobiphenyl	18.29	172.1	33222	46.89	NG/UL	89
18)	2,4,6-Tribromophenol	22.14	329.9	5918	62.73	NG/UL	74
19)	*Phenanthrene-d10	23.99	188.2	34755	40.00	NG/UL	100
20)	Hexachlorobenzene	22.97	284.0	16545	82.80	NG/UL	82
21)	Pentachlorophenol	23.47	266.0	11621	92.42	NG/UL	85
22)	*Chrysene-d12	32.10	240.0	15904M	40.00	NG/UL	97
23)	Terphenyl-d14	28.20	244.3	23930	56.96	NG/UL	80
24)	*Perylene-d12	39.76	264.0	12424	40.00	NG/UL	95

* Compound is ISTD

M=Manually Quantitated
By: ML
Date 6/28/94



Data File: >BU186::D4 Quant Output File: ^BU186::QH
Name: 3214004MS 1661B-61 Instrument ID: 7001
Misc: NFS 35-500 35(4)-10-275(7)-10-295(11) BTL#15

Id File: BIT623::DA
Title: SEMIVOLATILES ID FILE FOR TCLP COMPOUNDS
Last Calibration: 901207 19:50 Last Qcal Time: 940623 08:22

Operator ID: MKI
Quant Time : 940624 20:00
Injected at: 940624 14:18

Operator ID: MI Quant Meth: 2 Quant Time: 940624 20:00
Output File: ^BU186::UB Injected at: 940624 19:18
File File: ^BU186::D4 Dilution Factor: 1.000000
Name: 3214004MS 1661B-61 Instrument ID: 7001
Disc: NFS 35-500 35(4)-10-275(7)-10-295(11) BIL#15

ID File: BI1623::DA
Title: SEMIVOLATILES ID FILE FOR TOP COMPOUNDS
Last Calibration: 901207 19:50 Last Qcal Time: 940623 08:22

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*1,4-Dichlorobenzene-d4	12.20	152.0	16383	40.00	NG/UL	84
2)	Pyridine	5.72	79.0	21151	64.13	NG/UL	93
3)	1,4-Dichlorobenzene	12.24	146.0	44838	68.31	NG/UL	87
4)	2-Methylphenol	12.82	108.0	26941	75.28	NG/UL	87
5)	4-Methylphenol	13.24	108.0	52174	122.30	NG/UL	79
6)	Hexachloroethane	13.47	117.0	16696	64.51	NG/UL	93
7)	2-Fluorophenol	9.04	112.0	15610	32.09	NG/UL	72
8)	Phenol-d5	11.30	99.0	19214	38.87	NG/UL	100
9)	*Naphthalene-d8	15.43	136.0	59695	40.00	NG/UL	100
10)	Nitrobenzene	13.65	77.0	31478	75.36	NG/UL	89
11)	Hexachlorobutadiene	15.81	225.0	17261	70.44	NG/UL	96
12)	Nitrobenzene-d5	13.60	82.1	16181	40.79	NG/UL	100
13)	*Acenaphthene-d10	20.04	164.1	34996	40.00	NG/UL	87
14)	2,4,6-Trichlorophenol	18.03	196.0	20701	71.50	NG/UL	93
15)	2,4,5-Trichlorophenol	18.13	196.0	21752	78.92	NG/UL	98
16)	2,4-Dinitrotoluene	20.54	165.0	28032	71.46	NG/UL	81
17)	2-Fluorobiphenyl	18.26	172.1	42180	41.02	NG/UL	89
18)	2,4,6-Tribromophenol	22.11	329.9	7175	52.47	NG/UL	70
19)	*Phenanthrene-d10	23.92	188.2	48022	40.00	NG/UL	100
20)	Hexachlorobenzene	22.94	284.0	24940	90.33	NG/UL	90
21)	Pentachlorophenol	23.44	266.0	7214	41.52	NG/UL	82
22)	*Chrysene-d12	32.05	240.0	13882	40.00	NG/UL	94
23)	Terphenyl-d14	28.12	244.3	23596	64.34	NG/UL	79
24)	*Perylene-d12	39.71	264.0	11522	40.00	NG/UL	91

* Compound is ISTD

EcoTek LSI

Semivolatile GC/MS Instrument Logsheet - HP7004

Date	6-19-94	Tune File	ATUNE 1
Operator	KL	Mass Range	35-500
GC Meth File	ADFTPP	E.M. & A/D	1500 / 1
GC Program	100(0)-15-275(1)	Threshold	60
GC Meth File	ABNA	Scan Delay	3.2 minutes
GC Program	35(4)-10-275(20)	Calib. File	AC
GC Meth File		Quant ID File	AI 0619
GC Program		Column ID	DB-5

Cont Cal Std.	Area
Int Std #1	
Int Std #2	
Int Std #3	
Int Std #4	
Int Std #5	
Int Std #6	

Sample IS area limit (-50% to + 100%)

QC Summary

Initial Five-Point Calibration			
Date:	3/90 sow	m8270	
Meets criteria:	Y N	Y N	Y N
DFTPP			
File:	3/90 sow	m8270	
Meets criteria:	Y N	Y N	Y N
Continuing Calibration			
File:	3/90 sow	m8270	
Meets criteria:	Y N	Y N	Y N

Filename	Laboratory Sample ID	Client Sample ID	Df	Comments	IS ok	SU ok	INJ ok
>A 8778	SSVTUNE 4025	DFTPP		RT 9.49 Rcm 98+99 Area 98564 ig 10.22			✓
>A 8779	SSVBNA-4120	SSTD050					✓
>A 8780	SSVBNA-4115	SSTD160					✓
>A 8781	SSBNA-4116	SSTD120					✓
>A 8782	SSBNA-4117	SSTD080		ACT619			✓
>A 8783	SSVBNA-4120	SSTD050					X
>A 8784	SSVBNA-4118	SSTD050					X
>A 8785	SSBNA-4122	SSTD050					X
>A 8786	SSVBNA4119	SSTD020					✓
>A							
>A							
>A							
>A							
>A							
>A							
>A							
>A							
>A							
>A							
>A							

Signatures/Date: [signature] 6/19/94 (with corrections) Approved/Date: [signature] 6/21/94

NRE = Needs Reextraction
NRIN = Needs Reinjection
NDL = Needs Dilution
✓= OK

RE = Reextraction Analysis
RIN = Reinjection Analysis
DL = Dilution Analysis
X = Noncompliant

Surr Notes:
W=Within limits
L=Below lower limit
H=Above limit
D=Dilution
not usable
M=Matrix effect

Notes:

Surrogate (Rec)	NBZ	FBP	TER	PHE	FPH	TBP	CPH	BCD
Water (3/90)	35-114	43-116	33-141	10-110	21-110	10-123	33-110	16-110
Soil (3/90)	23-120	30-115	18-137	24-113	25-121	19-122	20-130	20-130
Water (8270)	35-114	43-116	33-141	10-94	21-100	10-123		
Soil (8270)	23-120	30-115	18-137	24-113	25-121	19-122		

HP700402.XLS Rev2 (1/94)

EcoTek LSI
Semivolatile GC/MS Instrument Logsheet - HP7004

Date	6/24/94	Tune File	ATUNE i
Operator		Mass Range	35-500
GC Meth File	ADFTPP	E.M. & A/D	[illegible]
GC Program	100(0)-15-275(1)	Threshold	60
GC Meth File	ABNA	Scan Delay	5.20 minutes
GC Program	35(4)-10-275(20)	Calib. File	ACT619
GC Meth File		Quant ID File	AIT620
GC Program		Column ID	DB-5

Cont Cal Std	Area
Int Std #1	20,640
Int Std #2	72,217
Int Std #3	41,226
Int Std #4	73,782
Int Std #5	64010
Int Std #6	58216

QC Summary

Sample IS area limit (-50% to + 100%)

Initial Five-Point Calibration			
Date: 6/19/94	3/90 sow	m8270	TCP
Meets criteria:	Y N	Y N	(Y) N
DFTPP			
File: >A8787	3/90 sow	m8270	TCP
Meets criteria:	Y N	Y N	(Y) N
Continuing Calibration			
File: >A8788	3/90 sow	m8270	TCP
Meets criteria:	Y N	Y N	(Y) N

Filename	Laboratory Sample ID	Client Sample ID	Df	Comments	IS ok	SU ok	INJ ok
>A 8787	SSTOIR4026	DFTPP		RT 9.49 AREA 12688 Scan (93) + 94+95 hgj 14:34			✓
>A 8788	SSVBNA4120	SSTD050					✓
>A 8789	Q1453107	SBLKW	1	FOR 32121 / 32140	✓	✓	✓
>A 8790	Q1452426	SBLK WB	1	FOR 32121 / 32140	✓	✓	✓
>A 8791	Q1460215	SBLK W	1	FOR 32168	✓	✓	✓
>A 8792	Q1460619	SBLK W	1	FOR 32168	✓	✓	✓
>A 8793	Q1452123	SBLK LB	1	FOR 32136 / 32168	✓	✓	✓
>A 8794	3212161Y	22340	1		✓	✓	✓
>A 8795	3212102Y	22335	1		✓	✓	✓
>A 8796	3212103Y	22339	1		✓	✓	✓
>A 8797	3212104Y	22336	1	No Acids	✓	X	X
>A 8798	3216801Y	WM51794-01A	1		✓	✓	✓
>A 8799	3216806Y	WM51894-01C	1	Nitrobenzene-d5 low	✓	X	✓
>A 8800	3216809Y	WM51994-01C	1	Nitrobenzene-d5 Missing	✓	X	✓
>A 8803	3206007YR	140A		Tune out ~~[illegible]~~	X	✓	X
>A 8804	3203505YR	RC-05101T		~~[illegible]~~	X	X	✓
>A 8805	3203507YRMS	RC-05150T		[illegible]	✓	✓	✓
>A							
>A							
>A							

Signatures/Date: [illegible] (with corrections) Approved/Date: [illegible] 6/30/94

NRE = Needs Reextraction
NRIN = Needs Reinjection
NDL = Needs Dilution
√= OK

RE = Reextraction Analysis
RIN = Reinjection Analysis
DL = Dilution Analysis
X = Noncompliant

Surr Notes:
W = Within limits
L = Below lower limit
H = Above limit
D = Dilution
not usable
M = Matrix effect

Surrogate (Rec)	NBZ	FBP	TER	PHE	FPH	TBP	CPH	BCD
Water (3/90)	35-114	43-116	33-141	10-110	21-110	10-123	33-110	16-110
Soil (3/90)	23-120	30-115	18-137	24-113	25-121	19-122	20-130	20-130
Water (8270)	35-114	43-116	33-141	10-94	21-100	10-123		
Soil (8270)	23-120	30-115	18-137	24-113	25-121	19-122		

Notes:

HP700402.XLS Rev2 (1/94)

EcoTek LSI
Semivolatile GC/MS Instrument Logsheet - HP7001

070

Date	6-22-94	Tune File	BTUNE 2
Operator	ML	Mass Range	35-500
GC Meth File	BDFTPP	E.M. & A/D	20021
GC Program	100(0)-15-275(1)	Threshold	60
GC Meth File	BBNA	Scan Delay	4.5 minutes
GC Program	35(4)-10-275(20)	Calib. File	BC
GC Meth File		Quant ID File	BI C622, BI 622A
GC Program		Column ID	DB-5

Cont Cal Std	Area
Int Std #1	
Int Std #2	
Int Std #3	
Int Std #4	
Int Std #5	
Int Std #6	

Sample IS area limit (-50% to + 100%)

QC Summary

Initial Five-Point Calibration			
Date:	3/90 sow	m8270	
Meets criteria:	Y N	(Y) N	Y N
DFTPP			
File: B0144	3/90 sow	m8270	
Meets criteria:	Y N	(Y) N	Y N
Continuing Calibration			
File:	3/90 sow	m8270	
Meets criteria:	Y N	(Y) N	Y N

Filename	Laboratory Sample ID	Client Sample ID	Df	Comments	IS ok	SU ok	INJ ok
>B 0144	SSVTUNE4025	DFTPP		RT. 11.03 scan 101 Area 64965 inj 11:27			✓
>B 0145	SSVM8270TD-4027	SSTD050					✓
>B 0146	SSVM8270TD-4028	SSTD160					✓
>B 0147	SSVM8270TD-4029	SSTD120		BC0622			✓
>B 0148	SSVM8270TD-4030	SSTD080					✓
>B 0149	SSVM8270TD-4088	SSTD020					✓
>B 0150	SSVBNA-4124	SSTD160					✓
>B 0151	SSVBNA-4125	SSTD120					✓
>B 0152	SSVBNA-4126	SSTD080		BC622A			✓
>B 0153	SSVBNA-4127	SSTD050					✓
>B 0154	SSVBNA-4129	SSTD050					X
>B 0155	SSVBNA-4129	SSTD020					✓
>B							
>B							
>B							
>B				ML 6/23/94			
>B							
>B							
>B							
>B							

Signatures/Date: ML Lizma 6/23/94 (with corrections) Approved/Date: 6/28/94

NRE = Needs Reextraction
NRIN = Needs Reinjection
NDL = Needs Dilution
√= OK

RE = Reextraction Analysis
RIN = Reinjection Analysis
DL = Dilution Analysis
X = Noncompliant

Surr Notes:
W=Within limits
L=Below lower limit
H=Above limit
D=Dilution
not usable
M=Matrix effect

Surrogate (Rec)	NBZ	FBP	TER	PHE	FPH	TBP	CPH	BCD
Water (3/90)	35-114	43-116	33-141	10-110	21-110	10-123	33-110	16-110
Soil (3/90)	23-120	30-115	18-137	24-113	25-121	19-122	20-130	20-130
Water (8270)	35-114	43-116	33-141	10-94	21-100	10-123		
Soil (8270)	23-120	30-115	18-137	24-113	25-121	19-122		

Notes:

HP700102.XLS Rev2 (1/94)

EcoTek LSI
Semivolatile GC/MS Instrument Logsheet - HP7001

Date	6-23-94
Operator	ML
GC Meth File	BDFTPP
GC Program	100(0)-15-275(1)
GC Meth File	BBNA
GC Program	35(4)-10-275(20)
GC Meth File	
GC Program	

Tune File	BTUNE 2
Mass Range	35-500
E.M. & A/D	2000 1 1
Threshold	60
Scan Delay	4.6 minutes
Calib. File	BC~~623.B~~ BC623A
Quant ID File	BI623 ; BIT623
Column ID	DB-5

Cont Cal Std	Area
Int Std #1	12,834
Int Std #2	46,207
Int Std #3	27,474
Int Std #4	40,200
Int Std #5	23,044
Int Std #6	18,289

Sample IS area limit (-50% to + 100%)

QC Summary

Initial Five-Point Calibration			
Date: 6/22/94	3/90 sow	m8270	TCLP
Meets criteria:	Y N	Y N	(Y) N
DFTPP			
File: B0156	3/90 sow	m8270	TCLP
Meets criteria:	Y N	Y N	(Y) N
Continuing Calibration			
File: B0157	3/90 sow	m8270	TCLP
Meets criteria:	Y N	Y N	(Y) N

Filename	Laboratory Sample ID	Client Sample ID	Df	Comments	IS ok	SU ok	INJ ok
>B 0156	SSTUNE405	DFTPP		RT 11.04 scan 96 Area 70826 inj 8:00			✓
>B 0157	SSVBNA-4129	SSTD010					✓
>B 0158	Q1462201	SBLKW	1	32121 bk	✓	✓	✓
>B 0159	Q14622123	SBLK LB	1		✓	✓	✓
>B 0160	3212104R	22336	1		✓	✓	✓
>B 0161	3209207YR	144A	1	2-Fluorophenol low	X	X	
>B 0162	Q14622221	SBLKW	1	For 32168 / 32243	✓	✓	✓
>B 0163	3216806YR	WH5189401C	1		✓	✓	✓
>B 0164	3216809YR	WH5199401C	1		✓	✓	✓
>B 0165	Q14522809	SBLKW	1	32155 bk	✓	✓	✓
>B 0166	3209008	144B	1	last two IS low	X	✓	✓
>B 0167	Q14516222	LB	1		✓	✓	✓
>B 0168	Q14522103	LB	1		✓	✓	✓
>B 0169	3214009	1661B-135	1		✓	✓	✓
>B 0170	3214009MS	1661B-135	1		✓	✓	✓
>B 0171	3214009MSD	1661B-135	1	20:08 time out	✓	✓	X
>B							
>B							
>B							
>B							

Signatures/Date: Hui Liang (with corrections) Approved/Date:

NRE = Needs Reextraction
NRIN = Needs Reinjection
NDL = Needs Dilution
✓= OK

RE = Reextraction Analysis
RIN = Reinjection Analysis
DL = Dilution Analysis
X = Noncompliant

Surr Notes:
W=Within limits
L=Below lower limit
H=Above limit
D=Dilution
not usable
M=Matrix effect

Surrogate (Rec)	NBZ	FBP	TER	PHE	FPH	TBP	CPH	BCD
Water (3/90)	35-114	43-116	33-141	10-110	21-110	10-123	33-110	16-110
Soil (3/90)	23-120	30-115	18-137	24-113	25-121	19-122	20-130	20-130
Water (8270)	35-114	43-116	33-141	10-94	21-100	10-123		
Soil (8270)	23-120	30-115	18-137	24-113	25-121	19-122		

Notes:

HP700102.XLS Rev2 (1/94)

EcoTek LSI

Semivolatile GC/MS Instrument Logsheet - HP7001

072

Date	6-24-94	Tune File	BTUNE 2
Operator	ML	Mass Range	35-500
GC Meth File	BDFTPP	E.M. & A/D	2021 1
GC Program	100(0)-15-275(1)	Threshold	60
GC Meth File	BBNA	Scan Delay	4.5 minutes
GC Program	35(4)-10-275(20)	Calib. File	BC622A
GC Meth File		Quant ID File	BI 0620 ; BIT624
GC Program		Column ID	DB-5

Cont Cal Std	Area
Int Std #1	17136
Int Std #2	63,244
Int Std #3	39,562
Int Std #4	62,618
Int Std #5	30,788
Int Std #6	21,417

QC Summary

Sample IS area limit (-50% to + 100%)

Initial Five-Point Calibration			
Date:	3/90 sow	m8270	TCLP
Meets criteria:	Y N	(Y) N	(Y) N
DFTPP			
File:	3/90 sow	m8270	TCLP
Meets criteria:	Y N	Y N	(Y) N
Continuing Calibration			
File:	3/90 sow	m8270	TCLP
Meets criteria:	Y N	Y N	(Y) N

Filename	Laboratory Sample ID	Client Sample ID	Df	Comments	IS ok	SU ok	INJ ok
>B 0172	SSVTUNE 4025	DFTPP		RT 11.02 Acum 94 Area 15 1325 inj 7:31			✓
>B 0173	SSVBKA-4129	SSTPC50					✓
>B 0174	3214009MSP	1661B-135	1		✓	✓	✓
>B 0175	Q1453108	SBLKW	1	32193/32186 ; 3214009 BK	✓	✓	✓
>B 0176	3215501Y	B145A	1	2-acid surrogate missing 23 5 low	X	X	
>B 0177	3219401	Waste 5-26-01	1		✓	✓	✓
>B 0178	3215503Y	10047	1		✓	✓	✓
>B 0179	3215504Y	00962	1		✓	✓	✓
>B 0180	3214004Y	1661B-61	1		✓	✓	✓
>B 0181	3214004Ms	1661B-61	1	Chrysene-d12 low	X	✓	
>B 0182	3214004Ymd	1661B-61	1		✓	✓	✓
>B 0183	3215101	C081-05169	1		✓	✓	✓
>B 0184	3215106	C087-051694FD	1		✓	✓	✓
>B 0185	3215502Y	B145B	1		X	X	
>B 0186	3214004Yms	1661B-61	1	inj 19:18 chrysene-d12 low	X	✓	✓
>B							
>B							
>B							
>B							
>B				6/25/94			

Signatures/Date: [illegible] 6/24/94 (with corrections) Approved/Date: [illegible] 6/25/94

NRE = Needs Reextraction
NRIN = Needs Reinjection
NDL = Needs Dilution
√= OK

RE = Reextraction Analysis
RIN = Reinjection Analysis
DL = Dilution Analysis
X = Noncompliant

Surr Notes:
W=Within limits
L=Below lower limit
H=Above limit

D=Dilution not usable
M=Matrix effect

Surrogate (Rec)	NBZ	FBP	TER	PHE	FPH	TBP	CPH	BCD
Water (3/90)	35-114	43-116	33-141	10-110	21-110	10-123	33-110	16-110
Soil (3/90)	23-120	30-115	18-137	24-113	25-121	19-122	20-130	20-130
Water (8270)	35-114	43-116	33-141	10-94	21-100	10-123		
Soil (8270)	23-120	30-115	18-137	24-113	25-121	19-122		

Notes:

HP700102.XLS Rev2 (1/94)

EcoTek LSI
EcoTek Laboratory Services Inc.
3342 International Park Drive, SE
Atlanta, GA 30316
(404)244-0827 Fax (404)243-5355

ROM

Organic Sample Preparation Extraction Worksheet

7689

Re-Extraction YES or NO | Worksheet #: E4632 | OSP Daily Logbook #: 94-072 | Page #: 88 79

Extracted by JA Date 5/31/94
Concentrated by (KD) KH Date 6/3/94
Reduced by (N-Evap) KH Date 6/3/94
Cleanup Method
GPC Cleanup: MR or ABC
Cleanup by Date
Cleanup Conc. by Date
Esterified by Date

CLEANUP CODES
F = Florisil
O = Other

EXTRACTION METHOD
✓ Separatory Funnel
Cont. Liquid/Liquid Extractor
Sonicator
Other:

SOLVENTS USED

Solvent	Exchange	Lot#
CH_2Cl_2		RHM1

Analysis: GC/A
Matrix: H_2O
IQC Batch ID: BW1-630 BC1-003

Lab Sample ID	Sample Amount Used (g or ml)	% Moisture	pH	Spike Code(s)	Final Volume (ml)	Amount of Sample Cleaned (ml)	Final Cleanup Volume (ml)	Effective Final Volume (ml)
32186 01	500		7	-A-	0.5			0.5
32186 03	500		7	-A-	0.5			0.5
32121 01	100		5	B	1.0			1.0
02	100		5	B				
03	100		5	B				
04	100		5	B				
32140 04	100		7	B				
09	100		7	B				
32193 01	1000		7	B				
03	1000		7	B				
01452426	100		5	B				
32140 04 MS	100		7	BD	10.0			
32140 04 MSD	100		7	BD				
32140 09 MS	100		7	BD				
32140 09 MSD	100		7	BD				
32186 01 MS	500		7	-AC-	0.5			0.5
32186 01 MSD	500		7	-AC-	0.5			0.5
01453119 EBS	1000		7	-BC-	1.0			1.0
01453120 EBSD	1000		7	-BC-				
01453107 EB	1000		7	-B-				
01453108 EB	1000		7	-B-				

SURROGATE SPIKE

Solution ID	MLS Added	Spiking Compounds and Concentration (ug/ml)	
A. SOBS4074	0.25	BN=100	A=150
B. ✓	0.5	✗	✗

MATRIX SPIKE

Solution ID	MLS Added	Spiking Compounds and Concentration (ug/ml)	
C. SOBMS 40671	0.25	BN=100	A=150
D. TCLPMS 40731	1.0	BN=100	A=100

REAGENTS USED

Reagent Name	Lot #	Final pH
10N NaoH	R1451807	> or = 12
1:1 H2SO4	R1451603	< or = 2
37% KOH		> or = 12

D.I. Water Conductivity: 7.8
Sodium Sulfate ID #:
Temp of Water Bath: 90°

e. SOBMS 40671 0.5 JC 6/1/94 BN=100 A=150

ADDITIONAL COMMENTS ON BACK

REVIEWED BY: DATE:

APPROVED BY: DATE: 6/1/94

EXTRAC04.XLS Rev5 (2/94)