HALLIBURTON NUS
Environmental Corporation

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May 1, 1992

Project Number 4367

Naval Facilities Engineering Command
Northern Division Code 0232
Building 77-L, United States Navy Yard
Philadelphia, PA 19112-5094

Attention: Gerald Hoover, Remedial Project Manager

Reference: CLEAN Contract No. N62472-90-1298
Contract Task Order (CTO) 55

Subject: Transmittal of Data Validation Report
Soil Sampling and Analysis
NWS Earle
Colts Neck, New Jersey

Dear Mr. Hoover:

HALLIBURTON NUS Environmental Corporation is pleased to submit the enclosed Data Validation Report for the soil sampling and analysis conducted at NWS Earle on March 10, 1992.

Do not hesitate to contact me (215-971-0900) if you have any questions regarding this submission.

Sincerely,

Richard J. Gorrell

Richard J. Gorrell
Project Manager

cc: J. Trepanowski, P.E. (HALLIBURTON NUS), W/O Attachments
D. Scheib, (HALLIBURTON NUS)

HALLIBURTON NUS
Environmental Corporation

INTERNAL CORRESPONDENCE

C-51-4-2-131

TO: RICHARD GORRELL **DATE:** MAY 1, 1992

FROM: ROY COHEN **COPIES:** D. A. SCHEIB

SUBJECT: ORGANIC DATA VALIDATION - FULL TCL ORGANICS
NWS-EARLE, EARLE, NEW JERSEY
CASE NOs. NUS001 AND NUS002, SDG E-RB-0310

SAMPLES: 2/AQUEOUS/

E-RB-0310 E-TB-0310

19/SOIL/

E-S10-0006	E-S11-0006	E-S12-0006
E-S13-0006	E-SS10-0612	E-SS11-0612
E-SS12-0612	E-SS12D-0612	E-SS13-0612
E-SS1-0612	E-SS2-0612	E-SS3-0612
E-SS4-0612	E-SS5-0612	E-SS6-0612
E-SS7-0612	E-SS8-0612	E-SS9-0612

Introduction

Two (2) aqueous samples and ten (10) soil samples were analyzed for Target Compound List Organics (TCL) volatile organics. One of the aqueous samples and nine of the soil samples were analyzed for TCL semivolatile organic compounds; these nine soil samples also received TCL pesticide/PCB analyses. In addition, nine (9) other soil samples were analyzed for PCBs only.

The data from these organic analyses were evaluated using the following parameters:

* o Data completeness
* o Holding times
* o Gas chromatography/mass spectrometry (GC/MS) tuning and mass calibration
  o Initial and continuing calibrations
  o Laboratory and field blanks
  o Surrogate spike recoveries
  o Matrix spike/matrix spike duplicate (MS/MSD) recoveries
  o Internal standards performance
* o Field duplicate precision
  o Detection limits
* o Compound identification
* o Compound quantitation
  o Tentatively Identified Compounds (TICs)

Th symbol (*) indicates that all quality control criteria were met for this parameter. Documentation of compliance for these parameters is provided in Appendix C (Regional Worksheets).

Problems affecting data quality are listed below, and the data spreadsheets presented in Appendix A (Qualified Analytical Results) summarize the validation qualifications.

Overview

One rinsate quality control blank (sample E-RB-0310) and one trip blank were submitted as part of the analytical data set. One field duplicate pair (samples E-SS12-0612 and E-SS12D-0612) was also included.

The samples were collected by HALLIBURTON NUS Environmental Corporation on March 10, 1992, and analyzed by ORTEK Environmental Laboratories under Naval Energy and Environmental Support Activity (NEESA) Level D Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using Contract Laboratory Program (CLP) Statement of Work (SOW) 1/91 analytical and reporting protocols.

Summary

Methylene chloride, acetone, 1,1,1-trichloroethane (1,1,1-TCEA), toluene, total xylenes, bis (2-ethylhexyl)phthalate (BEHP), and di-n-butyl phthalate (DNBP) were detected in the laboratory method blanks. All results for methylene chloride, acetone, BEHP and DNBP that were within ten times the highest associated blank value, and sample results for 1,1,1- TCEA, toluene, and total xylenes that were within five times the highest associated blank value have been qualified as false positives (artifacts of blank contamination). Affected results that are below the Contract Required Quantitation Limit (CRQL) have been replaced with the CRQL and coded [U(b)]; affected sample results above the CRQL have been coded [U(b)] when the values were within the validation action level range.

Benzene was detected in the rinsate blank. Several sample results were within the validation action level for this compound (which is set at five times this blank value), and are considered artifacts of blank contamination. Sample results below the CRQL were replaced with the CRQL, and coded [U(b)]; affected results above the CRQL have been coded [U(b)].

Methylene chloride was detected in the trip blank; all results have already been qualified on the basis of contamination noted in the method and rinsate blanks.

High percent differences (greater than 50 percent) were noted between the initial calibration average relative response factor (RRF) and the continuing calibration RRFs for carbon disulfide, 2-butanone, 4-chloroaniline, and hexachlorocyclopentadiene. Associated results and detection limits have been qualified as estimated [J(c)] and [UJ(c)]. The bias for these results cannot be determined.

High toluene surrogate recoveries occurred in two samples; these samples were re-analyzed with similar results. In the validator's professional opinion, the data from both analyses are of similar quality; the data presented on the attached spreadsheets for this sampling location represents the results and detection limits considered the most usable. To minimize the impacts from blank contamination, the lowest results of the initial and re-analysis results were reported for compounds that are within the validation action level range for blank contamination. Because QC data were similar, the higher of the initial and re-analysis results were reported for other compounds to present the user with the highest potential levels of contamination. All results and detection limits have been qualified [J(s)] and [UJ(s)]. A high recovery for the bromofluorobenzene surrogate occurred for one additional sample. The sample was not re-analyzed because the laboratory believed that a re-analysis would show the same matrix effect. All results and detection limits have been qualified as estimated [J(s)] and [UJ(s)]. A reliable direction of bias cannot be determined.

Several single-peak pesticide results have been qualified as questionable, [Y]. Because of the lack of specificity of the electron capture detector, which can detect more than just halogenated compounds, results are often attributable to co-eluting interferences, which happen to possess retention times nearly identical with the components of interest. Hence, false positive results for target compounds can occur. In addition, there was no corroboration for the suspect compounds, i.e., no related or breakdown products were present, and there was no GC/MS confirmation. Further information would be necessary to determine if the results qualified with [Y] are actually present in the affected samples.

There was no recovery for the decachlorobiphenyl (DCB) surrogate in two samples; all PCB detection limits are qualified as unreliable [R(s)], and may be biased very low..

No recovery was obtained for the tetrachloro-meta-xylene (TCX) surrogate in one sample; positive results for pesticides are qualified as estimated [J(s)], detection limits for non-detected pesticide compounds have been qualified [UJ(s)]. The results and detection limits may be biased low.

For nearly all other pesticide analyses, the recoveries for both TCX and DCB were outside of the advisory quality control limits. The recoveries for TCX were generally above the QC limits, and the DCB recoveries were below the advisory QC limits. Positive results have been qualified as [J(s)], and not-detected results as [UJ(s)]. Detection limits for PCB compounds in particular may be biased low. In addition, detection limits for pesticides may be biased low in two of these samples where both TCX and DCB exhibited low recoveries.

All three volatile internal standard (IS) areas were below quality control limits in two samples; upon re-analysis, two IS areas were still below these limits. As discussed previously, the attached spreadsheets contain the most useful data; detection limits for compounds eluting before 2-butanone have been reported from the re-analysis because the area for the first IS was within acceptable limits. Consequently, all results and detection limits for compounds eluting after (and including) 2-butanone have been flagged [J(i])/[UJ(i)]. Because target compounds respond to possible matrix effects in a similar manner as the internal standards, no direction of bias can be inferred for positive results. (The internal standard method of calculation incorporates a recovery correction for associated target compounds.) However, detection limits may be biased low.

The laboratory claims that no semivolatile surrogate compounds were added to the initial analysis of one sample. The sample was re-analyzed with acceptable surrogate recoveries. Only the re-analysis results should be used for this sample (E-SS12D-0612RE), and these results are presented in the attached data summary spreadsheets.

Positive results for several compounds are qualified as estimated [J] since they are reported at concentrations below the CRQL.

No other problems were noted

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Data Validation" (2/88), as amended for use within USEPA Region III, and the NEESA document entitled "Sampling and Chemical Analysis Quality Assurance requirements for the Navy Installation Restoration Program". **The text of this report has been formulated to address only those problem areas affecting data quality.**

"I attest that the data referenced herein was validated according to the agreed upon validation criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

Roy Cohen

Roy Cohen

HALLIBURTON NUS Environmental Corporation
Data Validator

John Prepanowski, for

Debra. A. Scheib

HALLIBURTON NUS Environmental Corporation
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results.
2. Appendix B - Results as Reported by the Laboratory.
3. Appendix C - Results of all Tentatively Identified Compounds (TICs) which have been corrected to exclude analytical artifacts.
4. Appendix D - Regional Worksheets.
6. Appendix E - Support Documentation.

cc: D. Scheib

APPENDIX A

Qualified Analytical Results

Data Qualifier Key:

J(s)	-	Positive result is considered to be approximate because of an out-of-control surrogate recovery
J(i)	-	Positive result is considered to be approximate because of low internal standard areas
J(c)	-	Positive result estimated because of a high percent difference between initial and continuing calibration RRFs.
U(b)	-	Result is considered not-detected because sample concentration was not greater than the level observed in blank(s) by the (5 X/10 X) factor required to consider the result confident.
UJ(s)	-	Detection limit is considered to be estimated because of an out-of-control surrogate recovery.
UJ(i)	-	Detection limit is considered estimated because of low areas for the associated internal standard
R(s)	-	Nondetected result is considered to be unreliable, possibly biased very low because of poor surrogate performance.
UJ(c)	-	Nondetected result is considered to be estimated because of high percent differences between initial and continuing calibration RRFs.
Y	-	Single-peak pesticide result could be a false positive. Further information required to verify presence.

SITE: NWS EARLE
CASE NO: NUS001
LABORATORY: ORTEK

SOLID PCB ANALYSES (ug/kg)

CLIENT ID:		E-SS1-0612	E-SS2-0612	E-SS3-0612	E-SS5-0612	E-SS4-0612	E-SS6-0612	E-SS7-0612	E-SS8-0612
LAB ID:		123282	123283	123284	123285	123286	123287	123288	123289
ANALYTE	CRQL								
aroclor-1016	16	18 UJ (s)	18 UJ (s)	19 UJ (s)	18 UJ (s)	19 UJ (s)	18 UJ (s)	18 UJ (s)	18 UJ (s)
aroclor-1221	34	37 UJ (s)	37 UJ (s)	37 UJ (s)	37 UJ (s)	39 UJ (s)	37 UJ (s)	36 UJ (s)	36 UJ (s)
aroclor-1232	16	18 UJ (s)	18 UJ (s)	19 UJ (s)	18 UJ (s)	19 UJ (s)	18 UJ (s)	18 UJ (s)	18 UJ (s)
aroclor-1242	16	18 UJ (s)	18 UJ (s)	19 UJ (s)	18 UJ (s)	19 UJ (s)	18 UJ (s)	18 UJ (s)	18 UJ (s)
aroclor-1248	16	18 UJ (s)	18 UJ (s)	19 UJ (s)	18 UJ (s)	19 UJ (s)	18 UJ (s)	18 UJ (s)	18 UJ (s)
aroclor-1254	16	18 UJ (s)	18 UJ (s)	19 UJ (s)	18 UJ (s)	19 UJ (s)	18 UJ (s)	18 UJ (s)	18 UJ (s)
aroclor-1260	16	18 UJ (s)	18 UJ (s)	19 UJ (s)	18 UJ (s)	19 UJ (s)	18 UJ (s)	18 UJ (s)	18 UJ (s)
DILUTION FACTOR:		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DATE SAMPLED:		3/10/92	3/10/92	3/10/92	3/10/92	3/10/92	3/10/92	3/10/92	3/10/92
DATE ANALYZED:		3/20/92	3/20/92	3/20/92	3/20/92	3/20/92	3/20/92	3/20/92	3/20/92
PERCENT MOISTURE:		9.00	9.00	11.00	10.00	13.00	9.00	8.00	6.00

SITE: NWS EARLE
CASE NO: NUS001
LABORATORY: ORTEK

SOLID PCB ANALYSES (ug/kg)

CLIENT ID:		E-SS9-0612	E-SS4-0612
LAB ID:		123290	123285
ANALYTE	CRQL		
aroclor-1016	16	19 UJ (s)	18 UJ (s)
aroclor-1221	34	38 UJ (s)	37 UJ (s)
aroclor-1232	16	19 UJ (s)	18 UJ (s)
aroclor-1242	16	19 UJ (s)	18 UJ (s)
aroclor-1248	16	19 UJ (s)	18 UJ (s)
aroclor-1254	16	19 UJ (s)	18 UJ (s)
aroclor-1260	16	19 UJ (s)	18 UJ (s)
DILUTION FACTOR:		1.00	1.00
DATE SAMPLED:		3/10/92	3/10/92
DATE ANALYZED:		3/20/92	3/20/92
PERCENT MOISTURE:		11.00	13.00

SITE: NWS EARLE
CASE NO: NUS002
LABORATORY: ORTEK

PESTICIDE/PCB SOLID (ug/kg)

CLIENT ID:		E-S10-0006	E-SS10-0612	E-S-11-0006	E-SS11-0612	E-S12-0006	E-SS12-0612	E-SS12D-0612
LAB ID:		123291	123292	123293	123294	123295	123296	123297
ANALYTE	CRQL							
alpha-BHC	1.70	1.90 UJ (s)	1.90 U	R (s)	1.80 UJ (s)	2.00 UJ (s)	1.90 UJ (s)	1.90 UJ (s)
beta-BHC	1.70	1.90 UJ (s)	1.90 U	R (s)	1.80 UJ (s)	2.00 UJ (s)	1.90 UJ (s)	1.90 UJ (s)
delta-BHC	1.70	1.90 UJ (s)	1.90 U	R (s)	1.80 UJ (s)	2.00 UJ (s)	1.90 UJ (s)	0.27 Y J (s)
gamma-BHC (lindane)	1.70	1.90 UJ (s)	1.90 U	R (s)	1.80 UJ (s)	2.00 UJ (s)	1.90 UJ (s)	1.90 UJ (s)
heptachlor	1.70	1.90 UJ (s)	1.90 U	R (s)	1.80 UJ (s)	1.40 J (s)	1.90 UJ (s)	1.90 UJ (s)
aldrin	1.70	1.90 UJ (s)	1.90 U	R (s)	0.86 Y J (s)	2.00 UJ (s)	1.90 UJ (s)	1.90 UJ (s)
heptachlor epoxide	1.70	1.90 UJ (s)	1.90 U	R (s)	1.80 UJ (s)	1.60 J (s)	1.90 UJ (s)	1.90 UJ (s)
endosulfan I	1.70	1.90 UJ (s)	1.90 U	R (s)	1.80 UJ (s)	2.00 UJ (s)	1.90 UJ (s)	1.90 UJ (s)
dieldrin	3.30	3.70 U (s)	3.60 U	R (s)	3.50 UJ (s)	3.90 UJ (s)	3.70 UJ (s)	3.70 UJ (s)
4,4'-DDE	3.30	2.10 J (s)	3.60 U	R (s)	3.50 UJ (s)	33.00 J (s)	3.70 UJ (s)	3.70 UJ (s)
endrin	3.30	3.70 UJ (s)	3.60 U	R (s)	3.50 UJ (s)	13.00 Y J (s)	3.70 UJ (s)	3.70 UJ (s)
endrosulfan II	3.30	0.42 Y J (s)	2.20 Y	R (s)	3.50 UJ (s)	3.90 UJ (s)	3.70 UJ (s)	3.70 UJ (s)
4,4'-DDD	3.30	3.90 J (s)	3.60 U	R (s)	3.50 UJ (s)	47.00 J (s)	3.70 UJ (s)	3.70 UJ (s)
endosulfan sulfate	3.30	3.70 UJ (s)	3.60 U	R (s)	3.50 UJ (s)	3.90 UJ (s)	0.30 Y J (s)	3.70 UJ (s)
4,4'-DDT	3.30	1.40 Y J (s)	3.60 U	R (s)	3.50 UJ (s)	12.00 J (s)	0.38 Y J (s)	3.70 UJ (s)
methoxychlor	17.00	19.00 U (s)	19.00 U	0.22 Y J (s)	18.00 UJ (s)	20.00 UJ (s)	19.00 UJ (s)	19.00 UJ (s)
endrin ketone	3.30	3.70 UJ (s)	3.60 U	R (s)	3.50 UJ (s)	3.90 UJ (s)	3.70 UJ (s)	3.70 UJ (s)
alpha chlordane	1.70	0.39 Y J (s)	1.90 U	R (s)	1.80 UJ (s)	2.80 J (s)	1.90 UJ (s)	1.90 UJ (s)
gamma chlordane	1.70	1.90 UJ (s)	1.90 U	R (s)	1.80 UJ (s)	3.10 J (s)	1.90 UJ (s)	1.90 UJ (s)
endrin aldehyde	3.30	3.70 UJ (s)	3.60 U	R (s)	3.50 UJ (s)	3.90 UJ (s)	3.70 UJ (s)	3.70 UJ (s)
aroclor-1016	33.00	37.00 UJ (s)	36.00 UJ (s)	R (s)	35.00 UJ (s)	39.00 UJ (s)	37.00 UJ (s)	37.00 UJ (s)
aroclor-1221	67.00	74.00 UJ (s)	74.00 UJ (s)	R (s)	72.00 UJ (s)	79.00 UJ (s)	74.00 UJ (s)	74.00 UJ (s)
aroclor-1232	33.00	37.00 UJ (s)	36.00 UJ (s)	R (s)	35.00 UJ (s)	39.00 UJ (s)	37.00 UJ (s)	37.00 UJ (s)
aroclor-1242	33.00	37.00 UJ (s)	36.00 UJ (s)	R (s)	35.00 UJ (s)	39.00 UJ (s)	37.00 UJ (s)	37.00 UJ (s)
aroclor-1248	33.00	37.00 UJ (s)	36.00 UJ (s)	R (s)	35.00 UJ (s)	39.00 UJ (s)	37.00 UJ (s)	37.00 UJ (s)
aroclor-1254	33.00	37.00 UJ (s)	36.00 UJ (s)	R (s)	35.00 UJ (s)	39.00 UJ (s)	37.00 UJ (s)	37.00 UJ (s)
aroclor-1260	33.00	37.00 UJ (s)	36.00 UJ (s)	R (s)	35.00 UJ (s)	39.00 UJ (s)	37.00 UJ (s)	37.00 UJ (s)
toxaphene	170.00	190.00 UJ (s)	190.00 UJ (s)	R (s)	180.00 UJ (s)	200.00 UJ (s)	190.00 UJ (s)	190.00 UJ (s)
DILUTION FACTOR:		1.00	1.00	1.00	1.00	1.00	1.00	1.00
DATE SAMPLED:		3/10/92	3/10/92	3/10/92	3/10/92	3/10/92	3/10/92	3/10/92
DATE ANALYZED:		3/25/92	3/26/92	3/26/92	3/26/92	3/26/92	3/26/92	3/26/92
PERCENT MOISTURE:		10.00	9.00	7.00	7.00	15.00	10.00	10.00

SITE: NWS EARLE
CASE NO: NUS002
LABORATORY: ORTEK

PESTICIDE/PCB AQUEOUS (ug/l)

CLIENT ID:		E-RB-0310
LAB ID:		123300
ANALYTE	CRQL	
alpha-BHC	0.005	0.005 U
beta-BHC	0.005	0.005 U
delta-BHC	0.005	0.005 U
gamma-BHC (lindane)	0.005	0.005 U
heptachlor	0.005	0.005 U
endosulfan I	0.005	0.005 U
dieldrin	0.010	0.010 U
4,4'-DDE	0.010	0.010 U
endrin	0.010	0.010 U
endrosulfan II	0.010	0.010 U
4,4'-DDD	0.010	0.010 U
endosulfan sulfate	0.010	0.010 U
4,4'-DDT	0.010	0.010 U
methoxychlor	0.050	0.050 U
endrin ketone	0.010	0.010 U
alpha chlordane	0.005	0.005 U
gamma chlordane	0.005	0.005 U
endrin aldehyde	0.010	0.010 U
aroclor-1016	0.500	0.500 U
aroclor-1221	0.100	0.100 U
aroclor-1232	0.200	0.200 U
aroclor-1242	0.100	0.100 U
aroclor-1248	0.100	0.100 U
aroclor-1254	0.100	0.100 U
aroclor-1260	0.100	0.100 U
toxaphene	0.100	0.100 U
DILUTION FACTOR:		1.00
DATE SAMPLED:		3/10/92
DATE ANALYZED:		3/26/92
PERCENT MOISTURE:		-

CASE: NWS EARLE
CASE NO.: NUS0102
LABORATORY: ORTEK

VOLATILE SOLID ANALYSES (ug/kg)

CLIENT ID:		E-SS12-0612	E-SS12D-0612	E-SS13-0612	E-SS4-0612
LAB ID:		123296	123297	123299	123285
ANALYTE	CRQL				
chloromethane	10	11 U	11 U	11 UJ (s)	11 UJ (s)
bromomethane	10	11 U	11 U	11 UJ (s)	11 UJ (s)
vinyl chloride	10	11 U	11 U	11 UJ (s)	11 UJ (s)
chloroethane	10	11 U	11 U	11 UJ (s)	11 UJ (s)
methylene chloride	10	11 U (b)	11 U (b)	26 UJ (s)(b)(r)	11 UJ (s) (b)
acetone	10	11 U	11 U	11 UJ (s)	73 UJ (s)
carbon disulfide	10	11 UJ (c)	11 UJ (c)	11 UJ (s)	11 UJ (s)
1,1-dichloroethene	10	11 U	11 U	11 UJ (s)	11 UJ (s)
1,1-dichloroethane	10	11 U	11 U	11 UJ (s)	11 UJ (s)
1,2-dichloroethene (total)	10	11 U	11 U	11 UJ (s)	11 UJ (s)
chloroform	10	11 U	11 U	11 UJ (s)	11 UJ (s)
1,2-dichloroethane	10	11 U	11 U	11 UJ (s)	11 UJ (s)
2-butanone	10	11 U	11 U	11 UJ (s)	11 UJ (s)
1,1,1-trichloroethane	10	11 U	11 U	16 J (s,i) (b)(r)	11 UJ (s)
carbon tetrachloride	10	11 U	11 U	11 UJ (s,i)	11 UJ (s)
vinyl acetate	10	11 U	11 U	11 UJ (s,i)	11 UJ (s)
bromodichloromethane	10	11 U	11 U	11 UJ (s,i)	11 UJ (s)
1,2-dichloropropane	10	11 U	11 U	11 UJ (s,i)	11 UJ (s)
cis-1,3-dichloropropene	10	11 U	11 U	11 UJ (s,i)	11 UJ (s)
trichloroethene	10	11 U	11 U	11 UJ (s,i)	11 UJ (s)
dibromochloromethane	10	11 U	11 U	11 UJ (s,i)	11 UJ (s)
1,1,2-trichloroethane	10	11 U	11 U	11 UJ (s,i)	11 UJ (s)
benzene	10	11 U (b)	11 U (b)	11 UJ (s,i)	11 UJ (s)
trans-1,3-dichloropropene	10	11 U	11 U	11 UJ (s,i)	11 UJ (s)
bromoform	10	11 U	11 U	11 UJ (s,i)	11 UJ (s)
4-methyl-2-pentanone	10	11 U	11 U	11 UJ (s,i)	11 UJ (s)
2-hexanone	10	11 U	11 U	11 UJ (s,i)	11 UJ (s)
tetrachloroethene	10	11 U	11 U	13 J (s,i)(r)	11 UJ (s)
1,1,2,2-tetrachloroethane	10	11 U	11 U	11 UJ (s,i)	11 UJ (s)
toluene	10	11 U	11 U	11 UJ (s,i)	11 UJ (s)
chlorobenzene	10	11 U	11 U	11 UJ (s,i)	11 UJ (s)
ethylbenzene	10	11 U	11 U	5 J (s,i)(r)	130 J (s)
styrene	10	11 U	11 U	11 UJ (s,i)	11 UJ (s)
total xylenes	10	11 U	11 U	16 UJ (s,i) (b)	250 J (s)
DILUTION FACTOR:		1.00	1.00	1.00	1.00
DATE SAMPLED:		3/10/92	3/10/92	3/10/92	3/10/92
DATE ANALYZED:		3/17/92	3/17/92	3/17/92	3/17/92
PERCENT MOISTURE:		10.00	10.00	13.00	10.00

CASE: NWS EARLE
CASE NO.: NUS0102
LABORATORY: ORTEK

VOLATILE SOLID ANALYSES (ug/kg)

CLIENT ID:		E-S10-0006	E-S11-0006	E-S12-0006	E-S13-0006	E-SS10-0612	E-SS11-0612
LAB ID:		123291	123293	123295	123298	123292	123294
ANALYTE	CRQL						
chloromethane	10	11 U	11 UJ (s)	12 U	11 U	11 U	11 U
bromomethane	10	11 U	11 UJ (s)	12 U	11 U	11 U	11 U
vinyl chloride	10	11 U	11 UJ (s)	12 U	11 U	11 U	11 U
chloroethane	10	11 U	11 UJ (s)	12 U	11 U	11 U	11 U
methylene chloride	10	11 U (b)	25 UJ (s) (b)	12 U (b)	11 U (b)	11 U (b)	11 U (b)
acetone	10	11 U	11 UJ (s)	12 U	11 U	11 U	11 U
carbon disulfide	10	11 UJ (c)	11 UJ (s)	12 UJ (c)	11 UJ (c)	11 UJ (c)	11 UJ (c)
1,1-dichloroethene	10	11 U	11 UJ (s)	12 U	11 U	11 U	11 U
1,1-dichloroethane	10	11 U	11 UJ (s)	12 U	11 U	11 U	11 U
1,2-dichloroethene (total)	10	11 U	11 UJ (s)	12 U	11 U	11 U	11 U
chloroform	10	11 U	11 UJ (s)	12 U	11 U	11 U	11 U
1,2-dichloroethane	10	11 U	11 UJ (s)	12 U	11 U	11 U	11 U
2-butanone	10	11 UJ (c)	11 UJ (s,i)	12 UJ (c)	11 UJ (c)	11 U	11 U
1,1,1-trichloroethane	10	11 U (b)	28 J (s,i)	12 U (b)	11 U (b)	11 U (b)	11 U (b)
carbon tetrachloride	10	11 U	11 UJ (s,i)	12 U	11 U	11 U	11 U
vinyl acetate	10	11 U	11 UJ (s,i)	12 U	11 U	11 U	11 U
bromodichloromethane	10	11 U	11 UJ (s,i)	12 U	11 U	11 U	11 U
1,2-dichloropropane	10	11 U	11 UJ (s,i)	12 U	11 U	11 U	11 U
cis-1,3-dichloropropene	10	11 U	11 UJ (s,i)	12 U	11 U	11 U	11 U
trichloroethene	10	11 U	11 UJ (s,i)	12 U	11 U	11 U	11 U
dibromochloromethane	10	11 U	11 UJ (s,i)	12 U	11 U	11 U	11 U
1,1,2-trichloroethane	10	11 U	11 UJ (s,i)	12 U	11 U	11 U	11 U
benzene	10	11 U	11 UJ (s,i) (b)	12 U	11 U	11 U (b)	11 U (b)
trans-1,3-dichloropropene	10	11 U	11 UJ (s,i)	12 U	11 U	11 U	11 U
bromoform	10	11 U	11 UJ (s,i)	12 U	11 U	11 U	11 U
4-methyl-2-pentanone	10	11 U	11 UJ (s,i)	12 U	11 U	11 U	11 U
2-hexanone	10	11 U	11 UJ (s,i)	12 U	11 U	11 U	11 U
tetrachloroethene	10	2 J	16 J (s,i)	12 U	3 J	11 U	11 U
1,1,2,2-tetrachloroethane	10	11 U	11 UJ (s,i)	12 U	11 U	11 U	11 U
toluene	10	13 U (b)	11 UJ (s,i) (b)	12 U (b)	15 U (b)	11 U	11 U
chlorobenzene	10	11 U	11 UJ (s,i)	12 U	11 U	11 U	11 U
ethylbenzene	10	1 J	4 J (s,i)	12 U	2 J	11 U	11 U
styrene	10	11 U	11 UJ (s,i)	12 U	11 U	11 U	11 U
total xylenes	10	11 U (b)	22 J (s,i)	12 U (b)	11 U (b)	11 U	11 U
DILUTION FACTOR:		1.00	1.00	1.00	1.00	1.00	1.00
DATE SAMPLED:		3/10/92	3/10/92	3/10/92	3/10/92	3/10/92	3/10/92
DATE ANALYZED:		3/17/92	3/20/92	3/20/92	3/20/92	3/20/92	3/17/92
PERCENT MOISTURE:		7.00	7.00	15.00	13.00	8.00	6.00

SITE: NWS EARLE
CASE NO: NUS002
LABORATORY: ORTEK

SEMIVOLATILE AQUEOUS ANALYSES (ug/l)

CLIENT ID:		E-RB-0310
LAB ID:		123300
ANALYTE	CRQL	
phenol		
bis(2-chloroethyl) ether	10	22 U
2-chlorophenol	10	22 U
1,3-dichlorobenzene	10	22 U
1,4-dichlorobenzene	10	22 U
benzyl alcohol	10	22 U
1,2-dichlorobenzene	10	22 U
2-methylphenol	10	22 U
bis(2-chloroisopropyl) ether	10	22 U
4-methylphenol	10	22 U
n-nitroso-di-n-propylamine	10	22 U
hexachloroethane	10	22 U
nitrobenzene	10	22 U
isophorone	10	22 U
2-nitrophenol	10	22 U
2,4-dimethylphenol	10	22 U
benzoic acid	10	22 U
bis(2-chloroethoxy) methane	10	22 U
2,4-dichlorophenol	10	22 U
1,2,4-trichlorobenzene	10	22 U
naphthalene	10	22 U
4-chloroaniline	10	22 U
hexachlorobutadiene	10	22 U
4-chloro-3-methylphenol	10	22 U
2-methylnaphthalene	10	22 U
hexachlorocyclopentadiene	10	22 UJ (c)
DILUTION FACTOR:		2.20
DATE SAMPLED:		3/10/92
DATE ANALYZED:		3/19/92
PERCENT MOISTURE:		100.00

SITE: NWS EARLE
CASE NO: NUS002
LABORATORY: ORTEK

SEMIVOLATILE AQUEOUS ANALYSES (ug/l)

CLIENT ID:		E-RB-0310
LAB ID:		123300
ANALYTE	CRQL	
2,4,6-trichlorophenol	10	22 U
2,4,5-trichlorophenol	25	54 U
2-chloronaphthalene	10	22 U
2-nitroaniline	25	54 U
dimethyl phthalate	10	22 U
acenaphthylene	10	22 U
3-nitroaniline	10	22 U
2,4-dinitrophenol	25	54 U
acenaphthene	10	22 U
4-nitrophenol	25	54 U
dibenzofuran	10	22 U
2,4-dinitrotoluene	10	22 U
2,6-dinitrotoluene	10	22 U
diethylphthalate	10	2 J
4-chlorophenyl-phenylether	10	22 U
fluorene	10	22 U
4-nitroanaline	25	54 U
4,6-dinitro-2-methylphenol	25	54 U
n-nitrosdiphenylamine	10	22 U
4-bromophenyl-phenylether	10	22 U
hexachlorobenzene	10	22 U
pentachlorophenol	25	54 U
phenathrene	10	22 U
anthracene	10	22 U
di-n-butylphthalate	10	22 U
fluoranthene	10	22 U
pyrene	10	22 U
butylbenzylphthalate	10	22 U
carbazole	10	22 U
DILUTION FACTOR:		2.20
DATE SAMPLED:		3/10/92
DATE ANALYZED:		3/19/92
PERCENT MOISTURE:		100.00

SITE: NWS EARLE
CASE NO: NUS002
LABORATORY: ORTEK

SEMIVOLATILE AQUEOUS ANALYSES (ug/l)

CLIENT ID:		E-RB-0310
LAB ID:		123300
ANALYTE	CRQL	
benzo(a)anthracene	10	22 U
chrysene	10	22 U
bis(2-ethylhexyl)phthalate	10	22 UJ (c)
di-n-octyl phthalate	10	22 U
benzo(b)fluoranthene	10	22 U
benzo(k)fluoranthene	10	22 U
benzo(a)pyrene	10	22 U
indeno(1,2,3-cd)pyrene	10	22 U
benzo(g,h,i)perylene	10	22 U

DILUTION FACTOR:	2.20
DATE SAMPLED:	3/10/92
DATE ANALYZED:	3/19/92
PERCENT MOISTURE:	100.00

SITE: NWS EARLE
CASE NO: NUS002
LABORATORY: ORTEK

SEMIVOLATILE SOLID ANALYSES (ug/kg)

CLIENT ID:		E-S10-0006	E-S11-0006	E-S12-0006	E-S13-0006	E-SS10-0612	E-SS11-0612	E-SS12-0612
LAB ID:		123291	123293	123295	123298	123292	123294	123296
ANALYTE	CRQL							
phenol								
bis(2-chloroethyl) ether	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
2-chlorophenol	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
1,3-dichlorobenzene	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
1,4-dichlorobenzene	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
benzyl alcohol	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
1,2-dichlorobenzene	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
2-methylphenol	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
bis(2-chloroisopropyl) ether	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
4-methylphenol	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
n-nitroso-di-n-propylamine	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
hexachloroethane	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
nitrobenzene	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
isophorone	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
2-nitrophenol	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
2,4-dimethylphenol	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
benzoic acid	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
bis(2-chloroethoxy) methane	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
2,4-dichlorophenol	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
1,2,4-trichlorobenzene	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
naphthalene	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
4-chloroaniline	330	370 UJ (c)	350 UJ (c)	390 UJ (c)	380 U	360 U	350 UJ (c)	370 UJ (c)
hexachlorobutadiene	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
4-chloro-3-methylphenol	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
2-methylnaphthalene	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
hexachlorocylclopentadiene	330	370 UJ (c)	350 UJ (c)	390 UJ (c)	380 UJ (c)	360 UJ (c)	350 UJ (c)	370 UJ (c)
DILUTION FACTOR:		1.00	1.00	1.00	1.00	1.00	1.00	1.00
DATE SAMPLED:		3/10/92	3/10/92	3/10/92	3/10/92	3/10/92	3/10/92	3/10/92
DATE ANALYZED:		3/16/92	3/16/92	3/16/92	3/16/92	3/19/92	3/16/92	3/16/92
PERCENT MOISTURE:		100.00	6.00	15.00	13.00	8.00	6.00	10.00

SITE: NWS EARLE
CASE NO: NUS002
LABORATORY: ORTEK

SEMIVOLATILE SOLID ANALYSES (ug/kg

CLIENT ID:		E-SS12D-0612	E-SS13-0612
LAB ID:		123297	123299
ANALYTE	CRQL		
phenol			
bis(2-chloroethyl) ether	330	370 U	380 U
2-chlorophenol	330	370 U	380 U
1,3-dichlorobenzene	330	370 U	380 U
1,4-dichlorobenzene	330	370 U	380 U
benzyl alcohol	330	370 U	380 U
1,2-dichlorobenzene	330	370 U	380 U
2-methylphenol	330	370 U	380 U
bis(2-chloroisopropyl) ether	330	370 U	380 U
4-methylphenol	330	370 U	380 U
n-nitroso-di-n-propylamine	330	370 U	380 U
hexachloroethane	330	370 U	380 U
nitrobenzene	330	370 U	380 U
isophorone	330	370 U	380 U
2-nitrophenol	330	370 U	380 U
2,4-dimethylphenol	330	370 U	380 U
benzoic acid	330	370 U	380 U
bis(2-chloroethoxy) methane	330	370 U	380 U
2,4-dichlorophenol	330	370 U	380 U
1,2,4-trichlorobenzene	330	370 U	380 U
naphthalene	330	370 U	380 U
4-chloroaniline	330	370 U	380 U
hexachlorobutadiene	330	370 U	380 U
4-chloro-3-methylphenol	330	370 U	380 U
2-methylnaphthalene	330	370 U	380 U
hexachlorocylclopentadiene	330	370 UJ (c)	380 UJ (c)
DILUTION FACTOR:		1.00	1.00
DATE SAMPLED:		3/10/92	3/10/92
DATE ANALYZED:		3/19/92	3/20/92
PERCENT MOISTURE:		10.00	13.00

SITE: NWS EARLE
CASE NO: NUS002
LABORATORY: ORTEK

SEMIVOLATILE SOLID ANALYSES (ug/kg)

CLIENT ID:		E-S10-0006	E-S11-0006	E-S12-0006	E-S13-0006	E-SS10-0612	E-SS11-0612	E-SS12-0612
LAB ID:		123291	123293	123295	123298	123292	123294	123296
ANALYTE	CRQL							
2,4,6-trichlorophenol	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
2,4,5-trichlorophenol	830	830 U	860 U	940 U	920 U	870 U	890 U	890 U
2-chloronaphthalene	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
2-nitroaniline	830	830 U	860 U	940 U	920 U	870 U	850 U	890 U
dimethyl phthalate	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
acenaphthylene	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
3-nitroaniline	830	890 U	860 U	940 U	920 U	870 U	850 U	890 U
2,4-dinitrophenol	830	890 U	860 U	940 U	920 U	870 U	850 U	890 U
acenaphthene	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
4-nitrophenol	830	890 U	860 U	940 U	920 U	870 U	850 U	890 U
dibenzofuran	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
2,4-dinitrotoluene	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
2,6-dinitrotoluene	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
diethylphthalate	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
4-chlorophenyl-phenylether	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
fluorene	330	370 U	350 U	390 U	48 J	360 U	350 U	370 U
4-nitroanaline	830	890 U	860 U	940 U	920 U	870 U	850 U	890 U
4,6-dinitro-2-methylphenol	830	890 U	860 U	940 U	920 U	870 U	850 U	890 U
n-nitrosdiphenylamine	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
4-bromophenyl-phenylether	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
hexachlorobenzene	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
pentachlorophenol	830	890 U	860 U	940 U	920 U	870 U	830 U	890 U
phenathrene	330	370 U	350 U	390 U	580	360 U	350 U	370 U
anthracene	330	370 U	350 U	390 U	83 J	360 U	350 U	370 U
di-n-butylphthalate	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
fluoranthene	330	370 U	49 J	390 U	1700	360 U	350 U	370 U
pyrene	330	370 U	350 U	51 J	1800	360 U	350 U	370 U
butylbenzylphthalate	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
carbazole	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
DILUTION FACTOR:		1.00	1.00	1.00	1.00	1.00	1.00	1.00
DATE SAMPLED:		3/10/92	3/10/92	3/10/92	3/10/92	3/10/92	3/10/92	3/10/92
DATE ANALYZED:		3/16/92	3/16/92	3/16/92	3/16/92	3/19/92	3/16/92	3/16/92
PERCENT MOISTURE:		100.00	6.00	15.00	13.00	8.00	6.00	10.00

SITE: NWS EARLE
CASE NO: NUS002
LABORATORY: ORTEK

SEMIVOLATILE SOLID ANALYSES (ug/kg

CLIENT ID:		E-SS12D-0612	E-SS13-0612
LAB ID:		123297	123299
ANALYTE	CRQL		
2,4,6-trichlorophenol	330	370 U	380 U
2,4,5-trichlorophenol	830	890 U	920 U
2-chloronaphthalene	330	370 U	380 U
2-nitroaniline	830	890 U	920 U
dimethyl phthalate	330	370 U	380 U
acenaphthylene	330	370 U	380 U
3-nitroaniline	830	890 U	920 U
2,4-dinitrophenol	830	890 U	920 U
acenaphthene	330	370 U	380 U
4-nitrophenol	830	890 U	920 U
dibenzofuran	330	370 U	380 U
2,4-dinitrotoluene	330	370 U	380 U
2,6-dinitrotoluene	330	370 U	380 U
diethylphthalate	330	370 U	380 U
4-chlorophenyl-phenylether	330	370 U	380 U
fluorene	330	370 U	380 U
4-nitroanaline	830	890 U	920 U
4,6-dinitro-2-methylphenol	830	890 U	920 U
n-nitrosdiphenylamine	330	370 U	380 U
4-bromophenyl-phenylether	330	370 U	380 U
hexachlorobenzene	330	370 U	380 U
pentachlorophenol	830	890 U	920 U
phenathrene	330	370 U	380 U
anthracene	330	370 U	380 U
di-n-butylphthalate	330	370 U	380 U
fluoranthene	330	370 U	380 U
pyrene	330	370 U	110 J
butylbenzylphthalate	330	370 U	380 U
carbazole	330	370 U	380 U
DILUTION FACTOR:		1.00	1.00
DATE SAMPLED:		3/10/92	3/10/92
DATE ANALYZED:		3/19/92	3/20/92
PERCENT MOISTURE:		10.00	13.00

SITE: NWS EARLE
CASE NO: NUS002
LABORATORY: ORTEK

SEMIVOLATILE SOLID ANALYSES (ug/kg)

CLIENT ID:		E-S10-0006	E-S11-0006	E-S12-0006	E-S13-0006	E-SS10-0612	E-SS11-0612	E-SS12-0612
LAB ID:		123291	123293	123295	123298	123292	123294	123296
ANALYTE	CRQL							
benzo(a)anthracene	330	370 U	350 U	390 U	730	360 U	350 U	370 U
chrysene	330	370 U	350 U	390 U	600 (b)	360 U	350 U	370 U
bis(2-ethylhexyl)phthalate	330	370 U	350 U	390 U (b)	380 U(b), J(c)	360 UJ (c)	350 U (b)	370 U
di-n-octyl phthalate	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
benzo(b)fluoranthene	330	370 U	350 U	42 J	1000	360 U	350 U	370 U
benzo(k)fluoranthene	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
benzo(a)pyrene	330	370 U	350 U	390 U	450	360 U	350 U	370 U
indeno(1,2,3-cd)pyrene	330	370 U	350 U	390 U	140 J	360 U	350 U	370 U
dibenz(a,h)anthracene	330	370 U	350 U	390 U	380 U	360 U	350 U	370 U
benzo(g,h,i)perylene	330	370 U	350 U	390 U	71 J	360 U	350 U	370 U
DILUTION FACTOR:		1.00	1.00	1.00	1.00	1.00	1.00	1.00
DATE SAMPLED:		3/10/92	3/10/92	3/10/92	3/10/92	3/10/92	3/10/92	3/10/92
DATE ANALYZED:		3/16/92	3/16/92	3/16/92	3/16/92	3/19/92	3/16/92	3/16/92
PERCENT MOISTURE:		100.00	6.00	15.00	13.00	8.00	6.00	10.00

SITE: NWS EARLE
CASE NO: NUS002
LABORATORY: ORTEK

SEMIVOLATILE SOLID ANALYSES (ug/kg

CLIENT ID:		E-SS12D-0612	E-SS13-0612
LAB ID:		123297	123299
ANALYTE	CRQL		
benzo(a)anthracene	330	370 U	380 U
chrysene	330	370 U	380 U
bis(2-ethylhexyl)phthalate	330	370 U(b), J (c)	380 U (b)
di-n-octyl phthalate	330	370 U	380 U
benzo(b)fluoranthene	330	370 U	380 U
benzo(k)fluoranthene	330	370 U	380 U
benzo(a)pyrene	330	370 U	380 U
indeno(1,2,3-cd)pyrene	330	370 U	380 U
dibenz(a,h)anthracene	330	370 U	380 U
benzo(g,h,i)perylene	330	370 U	380 U
DILUTION FACTOR:		1.00	1.00
DATE SAMPLED:		3/10/92	3/10/92
DATE ANALYZED:		3/19/92	3/20/92
PERCENT MOISTURE:		10.00	13.00

CASE: NWS EARLE
CASE NO.: NUS0102
LABORATORY: ORTEK

VOLATILE AQUEOUS ANALYSES (ug/l)

CLIENT ID:		E-RB-0310	E-TB-0310
LAB ID:		123300	123301
ANALYTE	CRQL		
chloromethane	10	10 U	10 U
bromomethane	10	10 U	10 U
vinyl chloride	10	10 U	10 U
chloroethane	10	10 U	10 U
methylene chloride	10	7 J	170 J
acetone	10	26	8 J
carbon disulfide	10	17 J	10 UJ (c)
1,1-dichloroethene	10	10 U	10 U
1,1-dichloroethane	10	10 U	10 U
1,2-dichloroethene (total)	10	10 U	10 U
chloroform	10	10 U	10 U
1,2-dichloroethane	10	10 U	10 U
2-butanone	10	10 U	10 U
1,1,1-trichloroethane	10	10 U	2 J
carbon tetrachloride	10	10 U	10 U
vinyl acetate	10	10 U	10 U
bromodichloromethane	10	10 U	10 U
1,2-dichloropropane	10	10 U	10 U
cis-1,3-dichloropropene	10	10 U	10 U
trichloroethene	10	10 U	10 U
dibromochloromethane	10	10 U	10 U
1,1,2-trichloroethane	10	10 U	10 U
benzene	10	5 J	5 J
trans-1,3-dichloropropene	10	10 U	10 U
bromoform	10	10 U	10 U
4-methyl-2-pentanone	10	10 U	10 U
2-hexanone	10	10 U	10 U
tetrachloroethene	10	10 U	10 U
1,1,2,2-tetrachloroethane	10	10 U	10 U
toluene	10	10 U	10 U
chlorobenzene	10	10 U	10 U
ethylbenzene	10	10 U	10 U
styrene	10	10 U	10 U
total xylenes	10	10 U	10 U
DILUTION FACTOR:		1.00	1.00
DATE SAMPLED:		3/10/92	3/10/92
DATE ANALYZED:		3/17/92	3/17/92

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-TB-0310

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: E-RB-0

Matrix: (soil/water) WATER Lab Sample ID: 123301

Sampl wt/vol: 5.0 (g/mL) ML Lab File ID: 203CV061

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec. ____ Date Analyzed: 03/17/92

GC Column: WIDE DB624 ID: 0.530 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	170	B
67-64-1	Acetone	8	BJ
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	2	J
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-RB-0310

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: E-RB-0

Matrix: (soil/water) WATER Lab Sample ID: 123300

Sampl wt/vol: 5.0 (g/mL) ML Lab File ID: 203CV062

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec. ____ Date Analyzed: 03/17/92

GC Column: WIDE DB624 ID: 0.530 (mm) Dilution Factor: 1.0

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

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

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	7	BJ
67-64-1	Acetone	26	B
75-15-0	Carbon Disulfide	17	
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	5	J
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-SS13-0612RE

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: E-RB-0

Matrix: (soil/water) SOIL Lab Sample ID: 123299RE

Sample wt/vol: 5.1 (g/mL) G Lab File ID: 203CV084

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec. 13 Date Analyzed: 03/20/92

GC Column: WIDE DB624 ID: 0.530 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	26	B
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	16	
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	13	
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	53	B
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	5	J
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	28	B

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-SS13-0612

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: E-RB-0

Matrix: (soil/water) SOIL Lab Sample ID: 123299

Sample wt/vol: 4.9 (g/mL) G Lab File ID: 203CV074

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec. 13 Date Analyzed: 03/17/92

GC Column: WIDE DB624 ID: 0.530 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	28	B
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	36	
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	10	J
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	10	J
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	4	J
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	16	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-S13-0006

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: E-RB-0

Matrix: (soil/water) SOIL Lab Sample ID: 123298

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 203CV083

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec. 13 Date Analyzed: 03/20/92

GC Column: WIDE DB624 ID: 0.530 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	10	BJ
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	4	J
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	3	J
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	15	B
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylb nzene	2	J
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	11	BJ

00013

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-SS12D-0612

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: E-RB-0

Matrix: (soil/water) SOIL Lab Sample ID: 123297

Sample wt/vol: 4.9 (g/mL) G Lab File ID: 203CV072

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec. 10 Date Analyzed: 03/17/92

GC Column: WIDE DB624 ID: 0.530 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	7	BJ
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	4	J
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	11	U

00021

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-SS12-0612

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: E-RB-0

Matrix: (soil/water) SOIL Lab Sample ID: 123296

Sample wt/vol: 4.9 (g/mL) G Lab File ID: 203CV071

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec. 10 Date Analyzed: 03/17/92

GC Column: WIDE DB624 ID: 0.530 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	6	BJ
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	3	J
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	11	U

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-S12-0006

Lab Name: ORTEK Contract: 459872

Lab Cod : ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: E-RB-0

Matrix: (soil/water) SOIL Lab Sample ID: 123295

Sample wt/vol: 4.9 (g/mL) G Lab File ID: 203CV082

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec. 15 Date Analyzed: 03/20/92

GC Column: WIDE DB624 ID: 0.530 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	8	BJ
67-64-1	Acetone	12	U
75-15-0	Carbon Disulfide	12	U
75-35-4	1,1-Dichloroethene	12	U
75-34-3	1,1-Dichloroethane	12	U
540-59-0	1,2-Dichloroethene (total)	12	U
67-66-3	Chloroform	12	U
107-06-2	1,2-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	6	J
56-23-5	Carbon Tetrachloride	12	U
75-27-4	Bromodichloromethane	12	U
78-87-5	1,2-Dichloropropane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
79-01-6	Trichloroethene	12	U
124-48-1	Dibromochloromethane	12	U
79-00-5	1,1,2-Trichloroethane	12	U
71-43-2	Benzene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
75-25-2	Bromoform	12	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-88-3	Toluene	10	BJ
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U
100-42-5	Styrene	12	U
1330-20-7	Xylene (total)	6	BJ

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-SS11-0612

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: E-RB-0

Matrix: (soil/water) SOIL Lab Sample ID: 123294

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 203CV067

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec. 6 Date Analyzed: 03/17/92

GC Column: WIDE DB624 ID: 0.530 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	7	BJ
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	2	J
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	5	J
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	11	U

00017

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-S11-0006RE

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: E-RB-0

Matrix: (soil/water) SOIL Lab Sample ID: 123293RE

Sampl wt/vol: 4.9 (g/mL) G Lab File ID: 203CV081

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec. 7 Date Analyzed: 03/20/92

GC Column: WIDE DB624 ID: 0.530 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	25	B
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	13	
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	12	
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	29	B
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	2	J
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	17	B

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-S11-0006

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: E-RB-0

Matrix: (soil/water) SOIL Lab Sample ID: 123293

Sample wt/vol: 4.9 (g/mL) G Lab File ID: 203CV066

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec. 7 Date Analyzed: 03/17/92

GC Column: WIDE DB624 ID: 0.530 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	36	B
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	28	
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	21	
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	16	
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	10	J
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	4	J
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	22	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-SS10-0612

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: E-RB-0

Matrix: (soil/water) SOIL Lab Sample ID: 123292

Sampl wt/vol: 4.9 (g/mL) G Lab File ID: 203CV065

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec. 8 Date Analyzed: 03/17/92

GC Column: WIDE DB624 ID: 0.530 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	7	BJ
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	3	J
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	3	J
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	11	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-S10-0006

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: E-RB-0

Matrix: (soil/water) SOIL Lab Sample ID: 123291

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 203CV080

Level: (low/med) LOW Date Received: 03/11/92

% Moistur : not dec. 10 Date Analyzed: 03/20/92

GC Column: WIDE DB624 ID: 0.530 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	8	BJ
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	6	J
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	2	J
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	13	B
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	1	J
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	7	BJ

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-S10-0006

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS010 SAS No.: _____ SDG No.: E-S10-

Matrix: (soil/water) SOIL Lab Sample ID: 123291

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 203BB063

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: 10 decanted: (Y/N) N Date Extracted: 03/11/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/16/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)Ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
39638-32-9	2,2'-Oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-Di-n-Propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
111-91-1	bis(2-Chloroethoxy)Methane	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-Methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	890	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	890	U
131-11-3	Dimethyl Phthalate	370	U
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotoluene	370	U
99-09-2	3-Nitroaniline	890	U
83-32-9	Acenaphthene	370	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-S10-0006

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS010 SAS No.: _____ SDG No.: E-S10-

Matrix: (soil/water) SOIL Lab Sample ID: 123291

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 203BB063

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: 10 decanted: (Y/N) N Date Extracted: 03/11/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/16/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	890	U
100-02-7	4-Nitrophenol	890	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
86-73-7	Fluorene	370	U
100-10-6	4-Nitroaniline	890	U
534-52-1	4,6-Dinitro-2-Methylphenol	890	U
86-30-6	N-Nitrosodiphenylamine (1)	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	890	U
85-01-8	Phenanthrene	370	U
120-12-7	Anthracene	370	U
86-74-8	Carbazole	370	U
84-74-2	Di-n-Butylphthalate	370	U
206-44-0	Fluoranthene	370	U
129-00-0	Pyrene	370	U
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)Anthracene	370	U
218-01-9	Chrysene	370	U
117-81-7	bis(2-Ethylhexyl)Phthalate	370	U
117-84-0	Di-n-Octyl Phthalate	370	U
205-99-2	Benzo(b)Fluoranthene	370	U
207-08-9	Benzo(k)Fluoranthene	370	U
50-32-8	Benzo(a)Pyrene	370	U
193-39-5	Indeno(1,2,3-cd)Pyrene	370	U
53-70-3	Dibenz(a,h)Anthracene	370	U
191-24-2	Benzo(g,h,i)Perylene	370	U

(1) - Cannot be separated from Diphenylamine

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-SS10-0612

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS010 SAS No.: _____ SDG No.: E-S10-

Matrix: (soil/water) SOIL Lab Sample ID: 123292

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 203BB071

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: 8 decanted: (Y/N) N Date Extracted: 03/11/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/19/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
39638-32-9	2,2'-Oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-Di-n-Propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
111-91-1	bis(2-Chloroethoxy)Methane	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	870	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	870	U
131-11-3	Dimethyl Phthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	870	U
83-32-9	Acenaphthene	360	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-SS10-0612

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS010 SAS No.: _____ SDG No.: E-S10-

Matrix: (soil/water) SOIL Lab Sample ID: 123292

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 203BB071

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: 8 decanted: (Y/N) N Date Extracted: 03/11/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/19/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	870	U
100-02-7	4-Nitrophenol	870	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-10-6	4-Nitroaniline	870	U
534-52-1	4,6-Dinitro-2-Methylphenol	870	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	870	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-Butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)Anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)Phthalate	360	U
117-84-0	Di-n-Octyl Phthalate	360	U
205-99-2	Benzo(b)Fluoranthene	360	U
207-08-9	Benzo(k)Fluoranthene	360	U
50-32-8	Benzo(a)Pyrene	360	U
193-39-5	Indeno(1,2,3-cd)Pyrene	360	U
53-70-3	Dibenz(a,h)Anthracene	360	U
191-24-2	Benzo(g,h,i)Perylene	360	U

(1) - Cannot be separated from Diphenylamine

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-S11-0006

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS010 SAS No.: _____ SDG No.: E-S10-

Matrix: (soil/water) SOIL Lab Sample ID: 123293

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 203BB060

Level: (low/med) LOW Date Received: 03/11/92

% Moistur : 7 decanted: (Y/N) N Date Extracted: 03/11/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/16/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	350	U
39638-32-9	2,2'-Oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-Di-n-Propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
111-91-1	bis(2-Chloroethoxy)Methane	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-Methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	860	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	860	U
131-11-3	Dimethyl Phthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	860	U
83-32-9	Acenaphthene	350	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-S11-0006

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS010 SAS No.: _____ SDG No.: E-S10-

Matrix: (soil/water) SOIL Lab Sample ID: 123293

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 203BB060

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: 7 decanted: (Y/N) N Date Extracted: 03/11/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/16/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	860	U
100-02-7	4-Nitrophenol	860	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-10-6	4-Nitroaniline	860	U
534-52-1	4,6-Dinitro-2-Methylphenol	860	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	860	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	350	U
84-74-2	Di-n-Butylphthalate	350	U
206-44-0	Fluoranthene	49	J
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)Anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)Phthalate	350	U
117-84-0	Di-n-Octyl Phthalate	350	U
205-99-2	Benzo(b)Fluoranthene	350	U
207-08-9	Benzo(k)Fluoranthene	350	U
50-32-8	Benzo(a)Pyrene	350	U
193-39-5	Indeno(1,2,3-cd)Pyrene	350	U
53-70-3	Dibenz(a,h)Anthracene	350	U
191-24-2	Benzo(g,h,i)Perylene	350	U

(1) - Cannot be separated from Diphenylamine

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-SS11-0612

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS010 SAS No.: _____ SDG No.: E-S10-

Matrix: (soil/water) SOIL Lab Sample ID: 123294

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 203BB055

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: 6 decanted: (Y/N) N Date Extracted: 03/11/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/16/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	350	U
39638-32-9	2,2'-Oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-Di-n-Propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
111-91-1	bis(2-Chloroethoxy)Methane	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-Methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	850	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	850	U
131-11-3	Dimethyl Phthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	850	U
83-32-9	Acenaphthene	350	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-SS11-0612

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS010 SAS No.: _____ SDG No.: E-S10-

Matrix: (soil/water) SOIL Lab Sample ID: 123294

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 203BB055

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: 6 decanted: (Y/N) N Date Extracted: 03/11/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/16/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	850	U
100-02-7	4-Nitrophenol	850	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-10-6	4-Nitroaniline	850	U
534-52-1	4,6-Dinitro-2-Methylphenol	850	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	850	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	350	U
84-74-2	Di-n-Butylphthalate	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)Anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)Phthalate	160	J
117-84-0	Di-n-Octyl Phthalate	350	U
205-99-2	Benzo(b)Fluoranthene	350	U
207-08-9	Benzo(k)Fluoranthene	350	U
50-32-8	Benzo(a)Pyrene	350	U
193-39-5	Indeno(1,2,3-cd)Pyrene	350	U
53-70-3	Dibenz(a,h)Anthracene	350	U
191-24-2	Benzo(g,h,i)Peryl ne	350	U

(1) - Cannot be separated from Diphenylamine

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-S12-0006

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS010 SAS No.: _____ SDG No.: E-S10-

Matrix: (soil/water) SOIL Lab Sample ID: 123295

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 203BB061

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: 15 decanted: (Y/N) N Date Extracted: 03/11/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/16/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	390	U
111-44-4	bis(2-Chloroethyl)Ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	2-Methylphenol	390	U
39638-32-9	2,2'-Oxybis(1-Chloropropane)	390	U
106-44-5	4-Methylphenol	390	U
621-64-7	N-Nitroso-Di-n-Propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
111-91-1	bis(2-Chloroethoxy)Methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-Methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	940	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	940	U
131-11-3	Dimethyl Phthalate	390	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	390	U
99-09-2	3-Nitroaniline	940	U
83-32-9	Acenaphthene	390	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-S12-0006

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS010 SAS No.: _____ SDG No.: E-S10-

Matrix: (soil/water) SOIL Lab Sample ID: 123295

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 203BB061

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: 15 decanted: (Y/N) N Date Extracted: 03/11/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/16/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	940	U
100-02-7	4-Nitrophenol	940	U
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenyl-phenylether	390	U
86-73-7	Fluorene	390	U
100-10-6	4-Nitroaniline	940	U
534-52-1	4,6-Dinitro-2-Methylphenol	940	U
86-30-6	N-Nitrosodiphenylamine (1)	390	U
101-55-3	4-Bromophenyl-phenylether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	940	U
85-01-8	Phenanthrene	390	U
120-12-7	Anthracene	390	U
86-74-8	Carbazole	390	U
84-74-2	Di-n-Butylphthalate	390	U
206-44-0	Fluoranthene	390	U
129-00-0	Pyrene	51	J
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	390	U
56-55-3	Benzo(a)Anthracene	390	U
218-01-9	Chrysene	390	U
117-81-7	bis(2-Ethylhexyl)Phthalate	120	J
117-84-0	Di-n-Octyl Phthalate	390	U
205-99-2	Benzo(b)Fluoranthene	42	J
207-08-9	Benzo(k)Fluoranthene	390	U
50-32-8	Benzo(a)Pyrene	390	U
193-39-5	Indeno(1,2,3-cd)Pyrene	390	U
53-70-3	Dibenz(a,h)Anthracene	390	U
191-24-2	Benzo(g,h,i)Perylene	390	U

(1) - Cannot be s parated from Diphenylamine

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-SS12-0612

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS010 SAS No.: _____ SDG No.: E-S10-

Matrix: (soil/water) SOIL Lab Sample ID: 123296

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 203BB059

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: 10 decanted: (Y/N) N Date Extracted: 03/11/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/16/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)Ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
39638-32-9	2,2'-Oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-Di-n-Propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
111-91-1	bis(2-Chloroethoxy)Methane	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-Methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	890	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	890	U
131-11-3	Dimethyl Phthalate	370	U
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotolu ne	370	U
99-09-2	3-Nitroaniline	890	U
83-32-9	Acenaphthene	370	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-SS12-0612

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS010 SAS No.: _____ SDG No.: E-S10-

Matrix: (soil/water) SOIL Lab Sample ID: 123296

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 203BB059

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: 10 decanted: (Y/N) N Date Extracted: 03/11/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/16/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	890	U
100-02-7	4-Nitrophenol	890	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
86-73-7	Fluorene	370	U
100-10-6	4-Nitroaniline	890	U
534-52-1	4,6-Dinitro-2-Methylphenol	890	U
86-30-6	N-Nitrosodiphenylamine (1)	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	890	U
85-01-8	Phenanthrene	370	U
120-12-7	Anthracene	370	U
86-74-8	Carbazole	370	U
84-74-2	Di-n-Butylphthalate	370	U
206-44-0	Fluoranthene	370	U
129-00-0	Pyrene	370	U
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)Anthracene	370	U
218-01-9	Chrysene	370	U
117-81-7	bis(2-Ethylhexyl)Phthalate	370	U
117-84-0	Di-n-Octyl Phthalate	370	U
205-99-2	Benzo(b)Fluoranthene	370	U
207-08-9	Benzo(k)Fluoranthene	370	U
50-32-8	Benzo(a)Pyrene	370	U
193-39-5	Indeno(1,2,3-cd)Pyrene	370	U
53-70-3	Dibenz(a,h)Anthracene	370	U
191-24-2	Benzo(g,h,i)Perylene	370	U

(1) - Cannot b separated from Diphenylamine

no surrogates added

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-SS12D-0612

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS010 SAS No.: _____ SDG No.: E-S10-

Matrix: (soil/water) SOIL Lab Sample ID: 123297

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 203BB058

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: 10 decanted: (Y/N) N Date Extracted: 03/11/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/16/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)Ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
39638-32-9	2,2'-Oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-Di-n-Propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
111-91-1	bis(2-Chloroethoxy)Methane	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-Methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	890	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	890	U
131-11-3	Dimethyl Phthalate	370	U
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotoluene	370	U
99-09-2	3-Nitroaniline	890	U
83-32-9	Acenaphthene	370	U

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-SS12D-0612R

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS010 SAS No.: _____ SDG No.: E-S10-

Matrix: (soil/water) SOIL Lab Sample ID: 123297RE

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 203BB070

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: 10 decanted: (Y/N) N Date Extracted: 03/17/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/19/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)Ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
39638-32-9	2,2'-Oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-Di-n-Propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
111-91-1	bis(2-Chloroethoxy)Methane	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-Methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	890	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	890	U
131-11-3	Dimethyl Phthalate	370	U
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotoluene	370	U
99-09-2	3-Nitroaniline	890	U
83-32-9	Acenaphthene	370	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-SS12D-0612

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS010 SAS No.: _____ SDG No.: E-S10-

Matrix: (soil/water) SOIL Lab Sample ID: 123297

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 203BB058

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: 10 decanted: (Y/N) N Date Extracted: 03/11/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/16/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	890	U
100-02-7	4-Nitrophenol	890	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
86-73-7	Fluorene	370	U
100-10-6	4-Nitroaniline	890	U
534-52-1	4,6-Dinitro-2-Methylphenol	890	U
86-30-6	N-Nitrosodiphenylamine (1)	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	890	U
85-01-8	Phenanthrene	370	U
120-12-7	Anthracene	370	U
86-74-8	Carbazole	370	U
84-74-2	Di-n-Butylphthalate	370	U
206-44-0	Fluoranthene	370	U
129-00-0	Pyrene	370	U
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)Anthracene	370	U
218-01-9	Chrysene	370	U
117-81-7	bis(2-Ethylhexyl)Phthalate	370	U
117-84-0	Di-n-Octyl Phthalate	370	U
205-99-2	Benzo(b)Fluoranthene	370	U
207-08-9	Benzo(k)Fluoranthene	370	U
50-32-8	Benzo(a)Pyrene	370	U
193-39-5	Indeno(1,2,3-cd)Pyrene	370	U
53-70-3	Dibenz(a,h)Anthracene	370	U
191-24-2	Benzo(g,h,i)Perylene	370	U

(1) - Cannot be separated from Diphenylamine

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-SS12D-0612R

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS010 SAS No.: _____ SDG No.: E-S10-

Matrix: (soil/water) SOIL Lab Sample ID: 123297RE

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 203BB070

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: 10 decanted: (Y/N) N Date Extracted: 03/17/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/19/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	890	U
100-02-7	4-Nitrophenol	890	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
86-73-7	Fluorene	370	U
100-10-6	4-Nitroaniline	890	U
534-52-1	4,6-Dinitro-2-Methylphenol	890	U
86-30-6	N-Nitrosodiphenylamine (1)	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	890	U
85-01-8	Phenanthrene	370	U
120-12-7	Anthracene	370	U
86-74-8	Carbazole	370	U
84-74-2	Di-n-Butylphthalate	370	U
206-44-0	Fluoranthene	370	U
129-00-0	Pyrene	370	U
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)Anthracene	370	U
218-01-9	Chrysene	370	U
117-81-7	bis(2-Ethylhexyl)Phthalate	100	BJ
117-84-0	Di-n-Octyl Phthalate	370	U
205-99-2	Benzo(b)Fluoranthene	370	U
207-08-9	Benzo(k)Fluoranthene	370	U
50-32-8	Benzo(a)Pyrene	370	U
193-39-5	Indeno(1,2,3-cd)Pyrene	370	U
53-70-3	Dibenz(a,h)Anthracene	370	U
191-24-2	Benzo(g,h,i)Perylene	370	U

(1) - Cannot be separated from Diphenylamine

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-S13-0006

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS010 SAS No.: _____ SDG No.: E-S10-

Matrix: (soil/water) SOIL Lab Sample ID: 123298

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 203BB073

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: 13 decanted: (Y/N) N Date Extracted: 03/11/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/20/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl)Ether	380	U
95-57-8	2-Chlorophenol	380	U
541-73-1	1,3-Dichlorobenzene	380	U
106-46-7	1,4-Dichlorobenzene	380	U
95-50-1	1,2-Dichlorobenzene	380	U
95-48-7	2-Methylphenol	380	U
39638-32-9	2,2'-Oxybis(1-Chloropropane)	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-Di-n-Propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
111-91-1	bis(2-Chloroethoxy)Methane	380	U
120-83-2	2,4-Dichlorophenol	380	U
120-82-1	1,2,4-Trichlorobenzene	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-Methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	920	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	920	U
131-11-3	Dimethyl Phthalate	380	U
208-96-8	Acenaphthylene	380	U
606-20-2	2,6-Dinitrotoluene	380	U
99-09-2	3-Nitroaniline	920	U
83-32-9	Acenaphthene	380	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-S13-0006

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS010 SAS No.: _____ SDG No.: E-S10-

Matrix: (soil/water) SOIL Lab Sample ID: 123298

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 203BB073

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: 13 decanted: (Y/N) N Date Extracted: 03/11/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/20/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	920	U
100-02-7	4-Nitrophenol	920	U
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenyl-phenylether	380	U
86-73-7	Fluorene	48	J
100-10-6	4-Nitroaniline	920	U
534-52-1	4,6-Dinitro-2-Methylphenol	920	U
86-30-6	N-Nitrosodiphenylamine (1)	380	U
101-55-3	4-Bromophenyl-phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	920	U
85-01-8	Phenanthrene	580	
120-12-7	Anthracene	83	J
86-74-8	Carbazole	380	U
84-74-2	Di-n-Butylphthalate	380	U
206-44-0	Fluoranthene	1700	
129-00-0	Pyrene	1800	
85-68-7	Butylbenzylphthalate	380	U
91-94-1	3,3'-Dichlorobenzidine	380	U
56-55-3	Benzo(a)Anthracene	730	
218-01-9	Chrysene	600	
117-81-7	bis(2-Ethylhexyl)Phthalate	170	J
117-84-0	Di-n-Octyl Phthalate	380	U
205-99-2	Benzo(b)Fluoranthene	1000	
207-08-9	Benzo(k)Fluoranthene	380	U
50-32-8	Benzo(a)Pyrene	450	
193-39-5	Indeno(1,2,3-cd)Pyrene	140	J
53-70-3	Dibenz(a,h)Anthracene	380	U
191-24-2	Benzo(g,h,i)Perylene	71	J

(1) - Cannot be separated from Diphenylamine

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-SS13-0612

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS010 SAS No.: _____ SDG No.: E-S10-

Matrix: (soil/water) SOIL Lab Sample ID: 123299

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 203BB062

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: 13 decanted: (Y/N) N Date Extracted: 03/11/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/16/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl)Ether	380	U
95-57-8	2-Chlorophenol	380	U
541-73-1	1,3-Dichlorobenzene	380	U
106-46-7	1,4-Dichlorobenzene	380	U
95-50-1	1,2-Dichlorobenzene	380	U
95-48-7	2-Methylphenol	380	U
39638-32-9	2,2'-Oxybis(1-Chloropropane)	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-Di-n-Propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
111-91-1	bis(2-Chloroethoxy)Methane	380	U
120-83-2	2,4-Dichlorophenol	380	U
120-82-1	1,2,4-Trichlorobenzene	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-Methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	920	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	920	U
131-11-3	Dimethyl Phthalate	380	U
208-96-8	Acenaphthylene	380	U
606-20-2	2,6-Dinitrotoluene	380	U
99-09-2	3-Nitroaniline	920	U
83-32-9	Acenaphthene	380	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-SS13-0612

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS010 SAS No.: _____ SDG No.: E-S10-

Matrix: (soil/water) SOIL Lab Sample ID: 123299

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 203BB062

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: 13 decanted: (Y/N) N Date Extracted: 03/11/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/16/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	920	U
100-02-7	4-Nitrophenol	920	U
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenyl-phenylether	380	U
86-73-7	Fluorene	380	U
100-10-6	4-Nitroaniline	920	U
534-52-1	4,6-Dinitro-2-Methylphenol	920	U
86-30-6	N-Nitrosodiphenylamine (1)	380	U
101-55-3	4-Bromophenyl-phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	920	U
85-01-8	Phenanthrene	380	U
120-12-7	Anthracene	380	U
86-74-8	Carbazole	380	U
84-74-2	Di-n-Butylphthalate	380	U
206-44-0	Fluoranthene	110	J
129-00-0	Pyrene	380	U
85-68-7	Butylbenzylphthalate	380	U
91-94-1	3,3'-Dichlorobenzidine	380	U
56-55-3	Benzo(a)Anthracene	380	U
218-01-9	Chrysene	380	U
117-81-7	bis(2-Ethylhexyl)Phthalate	87	J
117-84-0	Di-n-Octyl Phthalate	380	U
205-99-2	Benzo(b)Fluoranthene	380	U
207-08-9	Benzo(k)Fluoranthene	380	U
50-32-8	Benzo(a)Pyrene	380	U
193-39-5	Indeno(1,2,3-cd)Pyrene	380	U
53-70-3	Dibenz(a,h)Anthracene	380	U
191-24-2	Benzo(g,h,i)Peryl ne	380	U

(1) - Cannot be separated from Diphenylamine

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-RB-0310

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS010 SAS No.: _____ SDG No.: E-S10-

Matrix: (soil/water) WATER Lab Sample ID: 123300

Sample wt/vol: 930 (g/mL) ML Lab File ID: 203BB069

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 03/12/92

Concentrated Extract Volume: 2000 (uL) Date Analyzed: 03/19/92

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	22	U
111-44-4	bis(2-Chloroethyl)Ether	22	U
95-57-8	2-Chlorophenol	22	U
541-73-1	1,3-Dichlorobenzene	22	U
106-46-7	1,4-Dichlorobenzene	22	U
95-50-1	1,2-Dichlorobenzene	22	U
95-48-7	2-Methylphenol	22	U
39638-32-9	2,2'-Oxybis(1-Chloropropane)	22	U
106-44-5	4-Methylphenol	22	U
621-64-7	N-Nitroso-Di-n-Propylamine	22	U
67-72-1	Hexachloroethane	22	U
98-95-3	Nitrobenzene	22	U
78-59-1	Isophorone	22	U
88-75-5	2-Nitrophenol	22	U
105-67-9	2,4-Dimethylphenol	22	U
111-91-1	bis(2-Chloroethoxy)Methane	22	U
120-83-2	2,4-Dichlorophenol	22	U
120-82-1	1,2,4-Trichlorobenzene	22	U
91-20-3	Naphthalene	22	U
106-47-8	4-Chloroaniline	22	U
87-68-3	Hexachlorobutadiene	22	U
59-50-7	4-Chloro-3-Methylphenol	22	U
91-57-6	2-Methylnaphthalene	22	U
77-47-4	Hexachlorocyclopentadiene	22	U
88-06-2	2,4,6-Trichlorophenol	22	U
95-95-4	2,4,5-Trichlorophenol	54	U
91-58-7	2-Chloronaphthalene	22	U
88-74-4	2-Nitroaniline	54	U
131-11-3	Dimethyl Phthalate	22	U
208-96-8	Acenaphthylene	22	U
606-20-2	2,6-Dinitrotoluene	22	U
99-09-2	3-Nitroaniline	54	U
83-32-9	Acenaphthene	22	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-RB-0310

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS010 SAS No.: _____ SDG No.: E-S10-

Matrix: (soil/water) WATER Lab Sample ID: 123300

Sample wt/vol: 930 (g/mL) ML Lab File ID: 203BB069

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 03/12/92

Concentrated Extract Volume: 2000 (uL) Date Analyzed: 03/19/92

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cl anup: (Y/N) N pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	54	U
100-02-7	4-Nitrophenol	54	U
132-64-9	Dibenzofuran	22	U
121-14-2	2,4-Dinitrotoluene	22	U
84-66-2	Diethylphthalate	2	J
7005-72-3	4-Chlorophenyl-phenylether	22	U
86-73-7	Fluorene	22	U
100-10-6	4-Nitroaniline	54	U
534-52-1	4,6-Dinitro-2-Methylphenol	54	U
86-30-6	N-Nitrosodiphenylamine (1)	22	U
101-55-3	4-Bromophenyl-phenylether	22	U
118-74-1	Hexachlorobenzene	22	U
87-86-5	Pentachlorophenol	54	U
85-01-8	Phenanthrene	22	U
120-12-7	Anthracene	22	U
86-74-8	Carbazole	22	U
84-74-2	Di-n-Butylphthalate	22	U
206-44-0	Fluoranthene	22	U
129-00-0	Pyrene	22	U
85-68-7	Butylbenzylphthalate	22	U
91-94-1	3,3'-Dichlorobenzidine	22	U
56-55-3	Benzo(a)Anthracene	22	U
218-01-9	Chrysene	22	U
117-81-7	bis(2-Ethylhexyl)Phthalate	22	U
117-84-0	Di-n-Octyl Phthalate	22	U
205-99-2	Benzo(b)Fluoranthene	22	U
207-08-9	Benzo(k)Fluoranthene	22	U
50-32-8	Benzo(a)Pyrene	22	U
193-39-5	Indeno(1,2,3-cd)Pyrene	22	U
53-70-3	Dibenz(a,h)Anthracene	22	U
191-24-2	Benzo(g,h,i)Perylen	22	U

(1) - Cannot be separated from Diphenylamine

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-SS9-0612

Lab Name: ORTEK Contract: 459872

Lab Cod : ORTEK Case No.: NUS001 SAS No.: _____ SDG No.: ESS106

Matrix: (soil/water) SOIL Lab Sample ID: 123290

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

% Moisture: 11 decanted: (Y/N) ___ Date Received: 03/11/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/11/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 03/20/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
12674-11-2	Aroclor-1016	19	U
11104-28-2	Aroclor-1221	38	U
11141-16-5	Aroclor-1232	19	U
53469-21-9	Aroclor-1242	19	U
12672-29-6	Aroclor-1248	19	U
11097-69-1	Aroclor-1254	19	U
11096-82-5	Aroclor-1260	19	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-SS8-0612

Lab Nam : ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS001 SAS No.: _____ SDG No.: ESS106

Matrix: (soil/water) SOIL Lab Sample ID: 123289

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

% Moisture: 6 decanted: (Y/N) ___ Date Received: 03/11/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/11/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 03/20/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 4.8 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
12674-11-2	Aroclor-1016	18	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	18	U
53469-21-9	Aroclor-1242	18	U
12672-29-6	Aroclor-1248	18	U
11097-69-1	Aroclor-1254	18	U
11096-82-5	Aroclor-1260	18	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-SS7-0612

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS001 SAS No.: _____ SDG No.: ESS106

Matrix: (soil/water) SOIL Lab Sample ID: 123288

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

% Moisture: 8 decanted: (Y/N) ___ Date Received: 03/11/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/11/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 03/20/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 4.9 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
12674-11-2------	Aroclor-1016	18	U
11104-28-2------	Aroclor-1221	36	U
11141-16-5------	Aroclor-1232	18	U
53469-21-9------	Aroclor-1242	18	U
12672-29-6------	Aroclor-1248	18	U
11097-69-1------	Aroclor-1254	18	U
11096-82-5------	Aroclor-1260	18	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-SS6-0612

Lab Nam : ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS001 SAS No.: _____ SDG No.: ESS106

Matrix: (soil/water) SOIL Lab Sample ID: 123287

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

% Moisture: 9 decanted: (Y/N) ___ Date Received: 03/11/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/11/92

Conc ntrat d Extract Volume: 5000 (uL) Date Analyzed: 03/20/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 4.5 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
12674-11-2------	Aroclor-1016	18	U
11104-28-2------	Aroclor-1221	37	U
11141-16-5------	Aroclor-1232	18	U
53469-21-9------	Aroclor-1242	18	U
12672-29-6------	Aroclor-1248	18	U
11097-69-1------	Aroclor-1254	18	U
11096-82-5------	Aroclor-1260	18	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-SS5-0612

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS001 SAS No.: _____ SDG No.: ESS106

Matrix: (soil/water) SOIL Lab Sample ID: 123286

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

% Moisture: 13 decanted: (Y/N) ___ Date Received: 03/11/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/11/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 03/20/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 4.9 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
12674-11-2------	Aroclor-1016	19	U
11104-28-2------	Aroclor-1221	39	U
11141-16-5------	Aroclor-1232	19	U
53469-21-9------	Aroclor-1242	19	U
12672-29-6------	Aroclor-1248	19	U
11097-69-1------	Aroclor-1254	19	U
11096-82-5------	Aroclor-1260	19	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-SS4-0612

Lab Nam : ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS001 SAS No.: _____ SDG No.: ESS106

Matrix: (soil/water) SOIL Lab Sample ID: 123285

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

% Moisture: 10 decanted: (Y/N) ___ Date Received: 03/11/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/11/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 03/20/92

Inj ction Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 5.2 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
12674-11-2	Aroclor-1016	18	U
11104-28-2	Aroclor-1221	37	U
11141-16-5	Aroclor-1232	18	U
53469-21-9	Aroclor-1242	18	U
12672-29-6	Aroclor-1248	18	U
11097-69-1	Aroclor-1254	18	U
11096-82-5	Aroclor-1260	18	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-SS4-0612

Lab Nam : ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: E-RB-0

Matrix: (soil/water) SOIL Lab Sample ID: 123285

Sample wt/vol: 4.9 (g/mL) G Lab File ID: 203CV063

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec. 10 Date Analyzed: 03/17/92

GC Column: WIDE DB624 ID: 0.530 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	8	BJ
67-64-1	Acetone	73	B
75-15-0	Carbon Disulfide	9	J
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	7	J
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	5	J
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	J
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	130	
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	250	E

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-SS3-0612

Lab Nam : ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS001 SAS No.: _____ SDG No.: ESS106

Matrix: (soil/water) SOIL Lab Sample ID: 123284

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

% Moisture: 11 decanted: (Y/N) ___ Date Received: 03/11/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/11/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 03/20/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 4.6 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
		19	U
12674-11-2	Aroclor-1016	19	U
11104-28-2	Aroclor-1221	38	U
11141-16-5	Aroclor-1232	19	U
53469-21-9	Aroclor-1242	19	U
12672-29-6	Aroclor-1248	19	U
11097-69-1	Aroclor-1254	19	U
11096-82-5	Aroclor-1260	19	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-SS2-0612

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS001 SAS No.: _____ SDG No.: ESS106

Matrix: (soil/water) SOIL Lab Sample ID: 123283

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

% Moisture: 7 decanted: (Y/N) ___ Date Received: 03/11/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/11/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 03/20/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cl anup: (Y/N) Y pH: 4.7 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
		18	U
12674-11-2------	Aroclor-1016	18	U
11104-28-2------	Aroclor-1221	36	U
11141-16-5------	Aroclor-1232	18	U
53469-21-9------	Aroclor-1242	18	U
12672-29-6------	Aroclor-1248	18	U
11097-69-1------	Aroclor-1254	18	U
11096-82-5------	Aroclor-1260	18	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-SS1-0612

Lab Name: ORTEK Contract: 459872

Lab Cod : ORTEK Case No.: NUS001 SAS No.: _____ SDG No.: ESS106

Matrix: (soil/water) SOIL Lab Sample ID: 123282

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

% Moisture: 9 decanted: (Y/N) ___ Date Received: 03/11/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/11/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 03/20/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 4.7 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
		0	U
		0	U
		0	U
		0	U
		0	U
		0	U
		0	U
		0	U
		0	U
		0	U
		0	U
		0	U
		0	U
		0	U
		0	U
		0	U
		0	U
		0	U
		0	U
		0	U
12674-11-2	Aroclor-1016	18	U
11104-28-2	Aroclor-1221	37	U
11141-16-5	Aroclor-1232	18	U
53469-21-9	Aroclor-1242	18	U
12672-29-6	Aroclor-1248	18	U
11097-69-1	Aroclor-1254	18	U
11096-82-5	Aroclor-1260	18	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-RB-0310

Lab Nam : ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: ERB031

Matrix: (soil/water) WATER Lab Sample ID: 123300

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

% Moisture: _____ decanted: (Y/N) ___ Date Received: 03/11/92

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 03/11/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/26/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 5.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.0050	U
319-85-7	beta-BHC	0.0050	U
319-86-8	delta-BHC	0.0050	U
58-89-9	gamma-BHC (Lindane)	0.0050	U
76-44-8	Heptachlor	0.0050	U
309-00-2	Aldrin	0.0050	U
1024-57-3	Heptachlor epoxide	0.0050	U
959-98-8	Endosulfan I	0.0050	U
60-57-1	Dieldrin	0.010	U
72-55-9	4,4'-DDE	0.010	U
72-20-8	Endrin	0.010	U
33213-65-9	Endosulfan II	0.010	U
72-54-8	4,4'-DDD	0.010	U
1031-07-8	Endosulfan sulfate	0.010	U
50-29-3	4,4'-DDT	0.010	U
72-43-5	Methoxychlor	0.050	U
53494-70-5	Endrin ketone	0.010	U
7421-36-3	Endrin aldehyde	0.010	U
5103-71-9	alpha-Chlordane	0.0050	U
5103-74-2	gamma-Chlordane	0.0050	U
8001-35-2	Toxaphene	0.50	U
12674-11-2	Aroclor-1016	0.10	U
11104-28-2	Aroclor-1221	0.20	U
11141-16-5	Aroclor-1232	0.10	U
53469-21-9	Aroclor-1242	0.10	U
12672-29-6	Aroclor-1248	0.10	U
11097-69-1	Aroclor-1254	0.10	U
11096-82-5	Aroclor-1260	0.10	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-S10-0006

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: ERB031

Matrix: (soil/water) SOIL Lab Sample ID: 123291

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

% Moisture: 10 decanted: (Y/N) ___ Date Received: 03/11/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/11/92

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 03/25/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.3 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.9	U
319-85-7	beta-BHC	1.9	U
319-86-8	delta-BHC	1.9	U
58-89-9	gamma-BHC (Lindane)	1.9	U
76-44-8	Heptachlor	1.9	U
309-00-2	Aldrin	1.9	U
1024-57-3	Heptachlor epoxide	1.9	U
959-98-8	Endosulfan I	1.9	U
60-57-1	Dieldrin	3.7	U
72-55-9	4,4'-DDE	2.1	JP
72-20-8	Endrin	3.7	U
33213-65-9	Endosulfan II	0.42	J
72-54-8	4,4'-DDD	3.9	
1031-07-8	Endosulfan sulfate	3.7	U
50-29-3	4,4'-DDT	1.4	JP
72-43-5	Methoxychlor	19	U
53494-70-5	Endrin ketone	3.7	U
7421-36-3	Endrin aldehyde	3.7	U
5103-71-9	alpha-Chlordane	0.39	JP
5103-74-2	gamma-Chlordane	1.9	U
8001-35-2	Toxaphene	190	U
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	74	U
11141-16-5	Aroclor-1232	37	U
53469-21-9	Aroclor-1242	37	U
12672-29-6	Aroclor-1248	37	U
11097-69-1	Aroclor-1254	37	U
11096-82-5	Aroclor-1260	37	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-S11-0006

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: ERB031

Matrix: (soil/water) SOIL Lab Sample ID: 123293

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

% Moisture: 7 decanted: (Y/N) ___ Date Received: 03/11/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/11/92

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 03/26/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cl anup: (Y/N) Y pH: 5.3 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.8	U
319-85-7	beta-BHC	1.8	U
319-86-8	delta-BHC	1.8	U
58-89-9	gamma-BHC (Lindane)	1.8	U
76-44-8	Heptachlor	1.8	U
309-00-2	Aldrin	1.8	U
1024-57-3	Heptachlor epoxide	1.8	U
959-98-8	Endosulfan I	1.8	U
60-57-1	Dieldrin	3.5	U
72-55-9	4,4'-DDE	3.5	U
72-20-8	Endrin	3.5	U
33213-65-9	Endosulfan II	3.5	U
72-54-8	4,4'-DDD	3.5	U
1031-07-8	Endosulfan sulfate	3.5	U
50-29-3	4,4'-DDT	3.5	U
72-43-5	Methoxychlor	0.22	J
53494-70-5	Endrin ketone	3.5	U
7421-36-3	Endrin aldehyde	3.5	U
5103-71-9	alpha-Chlordane	1.8	U
5103-74-2	gamma-Chlordane	1.8	U
8001-35-2	Toxaphene	180	U
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	72	U
11141-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	35	U
11096-82-5	Aroclor-1260	35	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-S12-0006

Lab Nam : ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: ERB031

Matrix: (soil/water) SOIL Lab Sample ID: 123295

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

% Moisture: 15 decanted: (Y/N) ___ Date Received: 03/11/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/11/92

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 03/26/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.8 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.0	U
319-85-7	beta-BHC	2.0	U
319-86-8	delta-BHC	2.0	U
58-89-9	gamma-BHC (Lindane)	2.0	U
76-44-8	Heptachlor	1.4	J
309-00-2	Aldrin	2.0	U
1024-57-3	Heptachlor epoxide	1.6	J
959-98-8	Endosulfan I	2.0	U
60-57-1	Dieldrin	3.9	U
72-55-9	4,4'-DDE	33	P
72-20-8	Endrin	13	P
33213-65-9	Endosulfan II	3.9	U
72-54-8	4,4'-DDD	47	P
1031-07-8	Endosulfan sulfate	3.9	U
50-29-3	4,4'-DDT	12	P
72-43-5	Methoxychlor	20	U
53494-70-5	Endrin ketone	3.9	U
7421-36-3	Endrin aldehyde	3.9	U
5103-71-9	alpha-Chlordane	2.8	
5103-74-2	gamma-Chlordane	3.1	
8001-35-2	Toxaphene	200	U
12674-11-2	Aroclor-1016	39	U
11104-28-2	Aroclor-1221	79	U
11141-16-5	Aroclor-1232	39	U
53469-21-9	Aroclor-1242	39	U
12672-29-6	Aroclor-1248	39	U
11097-69-1	Aroclor-1254	39	U
11096-82-5	Aroclor-1260	39	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-S13-0006

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: ERB031

Matrix: (soil/water) SOIL Lab Sample ID: 123298

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

% Moisture: 13 decanted: (Y/N) ___ Date Received: 03/11/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/11/92

Concentrat d Extract Volume: 10000 (uL) Date Analyzed: 03/26/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 8.2 Sulfur Cleanup: (Y/N) N

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

CAS NO.	COMPOUND		Q
319-84-6	alpha-BHC	2.0	U
319-85-7	beta-BHC	2.0	U
319-86-8	delta-BHC	2.0	U
58-89-9	gamma-BHC (Lindane)	2.0	U
76-44-8	Heptachlor	1.4	J
309-00-2	Aldrin	2.0	U
1024-57-3	Heptachlor epoxide	2.0	U
959-98-8	Endosulfan I	0.60	J
60-57-1	Dieldrin	3.8	U
72-55-9	4,4'-DDE	0.46	JP
72-20-8	Endrin	3.8	U
33213-65-9	Endosulfan II	3.8	U
72-54-8	4,4'-DDD	0.96	J
1031-07-8	Endosulfan sulfate	3.8	U
50-29-3	4,4'-DDT	0.32	JP
72-43-5	Methoxychlor	20	U
53494-70-5	Endrin ketone	3.8	U
7421-36-3	Endrin aldehyde	3.8	U
5103-71-9	alpha-Chlordane	0.60	JP
5103-74-2	gamma-Chlordane	0.91	J
8001-35-2	Toxaphene	200	U
12674-11-2	Aroclor-1016	38	U
11104-28-2	Aroclor-1221	77	U
11141-16-5	Aroclor-1232	38	U
53469-21-9	Aroclor-1242	38	U
12672-29-6	Aroclor-1248	38	U
11097-69-1	Aroclor-1254	38	U
11096-82-5	Aroclor-1260	38	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-SS10-0612

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: ERB031

Matrix: (soil/water) SOIL Lab Sample ID: 123292

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

% Moisture: 9 decanted: (Y/N) ___ Date Received: 03/11/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/11/92

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 03/26/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 5.7 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.9	U
319-85-7	beta-BHC	1.9	U
319-86-8	delta-BHC	1.9	U
58-89-9	gamma-BHC (Lindane)	1.9	U
76-44-8	Heptachlor	1.9	U
309-00-2	Aldrin	1.9	U
1024-57-3	Heptachlor epoxide	1.9	U
959-98-8	Endosulfan I	1.9	U
60-57-1	Dieldrin	3.6	U
72-55-9	4,4'-DDE	3.6	U
72-20-8	Endrin	3.6	U
33213-65-9	Endosulfan II	2.2	J
72-54-8	4,4'-DDD	3.6	U
1031-07-8	Endosulfan sulfate	3.6	U
50-29-3	4,4'-DDT	3.6	U
72-43-5	Methoxychlor	19	U
53494-70-5	Endrin ketone	3.6	U
7421-36-3	Endrin aldehyde	3.6	U
5103-71-9	alpha-Chlordane	1.9	U
5103-74-2	gamma-Chlordane	1.9	U
8001-35-2	Toxaphene	190	U
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	74	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-SS11-0612

Lab Name: ORTEK Contract: 459872

Lab Cod : ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: ERB031

Matrix: (soil/water) SOIL Lab Sample ID: 123294

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

% Moisture: 7 decanted: (Y/N) ___ Date Received: 03/11/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/11/92

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 03/26/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 4.7 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.8	U
319-85-7	beta-BHC	1.8	U
319-86-8	delta-BHC	1.8	U
58-89-9	gamma-BHC (Lindane)	1.8	U
76-44-8	Heptachlor	1.8	U
309-00-2	Aldrin	0.86	J
1024-57-3	Heptachlor epoxide	1.8	U
959-98-8	Endosulfan I	1.8	U
60-57-1	Dieldrin	3.5	U
72-55-9	4,4'-DDE	3.5	U
72-20-8	Endrin	3.5	U
33213-65-9	Endosulfan II	3.5	U
72-54-8	4,4'-DDD	3.5	U
1031-07-8	Endosulfan sulfate	3.5	U
50-29-3	4,4'-DDT	3.5	U
72-43-5	Methoxychlor	18	U
53494-70-5	Endrin ketone	3.5	U
7421-36-3	Endrin aldehyde	3.5	U
5103-71-9	alpha-Chlordane	1.8	U
5103-74-2	gamma-Chlordane	1.8	U
8001-35-2	Toxaphene	180	U
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	72	U
11141-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	35	U
11096-82-5	Aroclor-1260	35	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ESS110612MS

Lab Nam : ORTEK Contract: 459872

Lab Cod : ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: ERB031

Matrix: (soil/water) SOIL Lab Sample ID: 123294MS

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

% Moisture: 7 decanted: (Y/N) ___ Date Received: 03/11/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/11/92

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 03/25/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 4.7 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.8	U
319-85-7	beta-BHC	1.8	U
319-86-8	delta-BHC	1.8	U
58-89-9	gamma-BHC (Lindane)	1.8	U
76-44-8	Heptachlor	1.8	U
309-00-2	Aldrin	1.8	U
1024-57-3	Heptachlor epoxide	1.8	U
959-98-8	Endosulfan I	1.8	U
60-57-1	Dieldrin	3.5	U
72-55-9	4,4'-DDE	3.5	U
72-20-8	Endrin	3.5	U
33213-65-9	Endosulfan II	3.5	U
72-54-8	4,4'-DDD	3.5	U
1031-07-8	Endosulfan sulfate	3.5	U
50-29-3	4,4'-DDT	3.5	U
72-43-5	Methoxychlor	18	U
53494-70-5	Endrin ketone	3.5	U
7421-36-3	Endrin aldehyde	3.5	U
5103-71-9	alpha-Chlordane	1.8	U
5103-74-2	gamma-Chlordane	1.8	U
8001-35-2	Toxaphene	180	U
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	72	U
11141-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	35	U
11096-82-5	Aroclor-1260	35	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ESS110612MSD

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: ERB031

Matrix: (soil/water) SOIL Lab Sample ID: 123294MSD

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

% Moisture: 7 decanted: (Y/N) ___ Date Received: 03/11/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/11/92

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 03/25/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 4.7 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.8	U
319-85-7	beta-BHC	1.8	U
319-86-8	delta-BHC	1.8	U
58-89-9	gamma-BHC (Lindane)	1.8	U
76-44-8	Heptachlor	1.8	U
309-00-2	Aldrin	1.8	U
1024-57-3	Heptachlor epoxide	1.8	U
959-98-8	Endosulfan I	1.8	U
60-57-1	Dieldrin	3.5	U
72-55-9	4,4'-DDE	3.5	U
72-20-8	Endrin	3.5	U
33213-65-9	Endosulfan II	3.5	U
72-54-8	4,4'-DDD	3.5	U
1031-07-8	Endosulfan sulfate	3.5	U
50-29-3	4,4'-DDT	3.5	U
72-43-5	Methoxychlor	18	U
53494-70-5	Endrin ketone	3.5	U
7421-36-3	Endrin aldehyde	3.5	U
5103-71-9	alpha-Chlordane	1.8	U
5103-74-2	gamma-Chlordane	1.8	U
8001-35-2	Toxaphene	180	U
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	72	U
11141-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	35	U
11096-82-5	Aroclor-1260	35	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-SS12-0612

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: ERB031

Matrix: (soil/water) SOIL Lab Sample ID: 123296

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

% Moisture: 10 decanted: (Y/N) ___ Date Received: 03/11/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/11/92

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 03/26/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 6.5 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.9	U
319-85-7	beta-BHC	1.9	U
319-86-8	delta-BHC	1.9	U
58-89-9	gamma-BHC (Lindane)	1.9	U
76-44-8	Heptachlor	1.9	U
309-00-2	Aldrin	1.9	U
1024-57-3	Heptachlor epoxide	1.9	U
959-98-8	Endosulfan I	1.9	U
60-57-1	Dieldrin	3.7	U
72-55-9	4,4'-DDE	3.7	U
72-20-8	Endrin	3.7	U
33213-65-9	Endosulfan II	3.7	U
72-54-8	4,4'-DDD	3.7	U
1031-07-8	Endosulfan sulfate	0.30	J
50-29-3	4,4'-DDT	0.38	JP
72-43-5	Methoxychlor	19	U
53494-70-5	Endrin ketone	3.7	U
7421-36-3	Endrin aldehyde	3.7	U
5103-71-9	alpha-Chlordane	1.9	U
5103-74-2	gamma-Chlordane	1.9	U
8001-35-2	Toxaphene	190	U
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	74	U
11141-16-5	Aroclor-1232	37	U
53469-21-9	Aroclor-1242	37	U
12672-29-6	Aroclor-1248	37	U
11097-69-1	Aroclor-1254	37	U
11096-82-5	Aroclor-1260	37	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-SS12D-0612

Lab Nam : ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: ERB031

Matrix: (soil/water) SOIL Lab Sample ID: 123297

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

% Moisture: 10 decanted: (Y/N) ___ Date Received: 03/11/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/11/92

Conc ntrated Extract Volume: 10000 (uL) Date Analyzed: 03/26/92

Injection Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.7 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.9	U
319-85-7	beta-BHC	1.9	U
319-86-8	delta-BHC	0.27	J
58-89-9	gamma-BHC (Lindane)	1.9	U
76-44-8	Heptachlor	1.9	U
309-00-2	Aldrin	1.9	U
1024-57-3	Heptachlor epoxide	1.9	U
959-98-8	Endosulfan I	1.9	U
60-57-1	Dieldrin	3.7	U
72-55-9	4,4'-DDE	3.7	U
72-20-8	Endrin	3.7	U
33213-65-9	Endosulfan II	3.7	U
72-54-8	4,4'-DDD	3.7	U
1031-07-8	Endosulfan sulfate	3.7	U
50-29-3	4,4'-DDT	3.7	U
72-43-5	Methoxychlor	19	U
53494-70-5	Endrin ketone	3.7	U
7421-36-3	Endrin aldehyde	3.7	U
5103-71-9	alpha-Chlordane	1.9	U
5103-74-2	gamma-Chlordane	1.9	U
8001-35-2	Toxaphene	190	U
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	74	U
11141-16-5	Aroclor-1232	37	U
53469-21-9	Aroclor-1242	37	U
12672-29-6	Aroclor-1248	37	U
11097-69-1	Aroclor-1254	37	U
11096-82-5	Aroclor-1260	37	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

E-SS13-0612

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: ERB031

Matrix: (soil/water) SOIL Lab Sample ID: 123299

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

% Moisture: 13 decanted: (Y/N) ___ Date Received: 03/11/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/11/92

Conc ntrated Extract Volume: 10000 (uL) Date Analyzed: 03/26/92

Inj ction Volume: 1.00 (uL) Dilution Factor: 1.00

GPC Cl anup: (Y/N) Y pH: 7.9 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.0	U
319-85-7	beta-BHC	2.0	U
319-86-8	delta-BHC	1.3	JP
58-89-9	gamma-BHC (Lindane)	2.0	U
76-44-8	Heptachlor	2.0	U
309-00-2	Aldrin	2.0	U
1024-57-3	Heptachlor epoxide	2.0	U
959-98-8	Endosulfan I	2.0	U
60-57-1	Dieldrin	3.8	U
72-55-9	4,4'-DDE	33	
72-20-8	Endrin	3.8	U
33213-65-9	Endosulfan II	3.8	U
72-54-8	4,4'-DDD	9.5	P
1031-07-8	Endosulfan sulfate	3.8	U
50-29-3	4,4'-DDT	12	P
72-43-5	Methoxychlor	20	U
53494-70-5	Endrin ketone	3.8	U
7421-36-3	Endrin aldehyde	3.8	U
5103-71-9	alpha-Chlordane	0.31	JP
5103-74-2	gamma-Chlordane	0.58	J
8001-35-2	Toxaphene	200	U
12674-11-2	Aroclor-1016	38	U
11104-28-2	Aroclor-1221	77	U
11141-16-5	Aroclor-1232	38	U
53469-21-9	Aroclor-1242	38	U
12672-29-6	Aroclor-1248	38	U
11097-69-1	Aroclor-1254	38	U
11096-82-5	Aroclor-1260	38	U

APPENDIX C

TENTATIVELY IDENTIFIED COMPOUNDS (TICs)

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

E-RB-0310

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: E-RB-0

Matrix: (soil/water) WATER Lab Sample ID: 123300

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 203CV062

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec. ____ Date Analyzed: 03/17/92

GC Column: WIDE DB624 ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

E-S10-0006

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: E-RB-0

Matrix: (soil/water) SOIL Lab Sample ID: 123291

Sampl wt/vol: 5.0 (g/mL) G Lab File ID: 203CV080

Level: (low/med) LOW Date Received: 03/11/92

% Moistur : not dec. 10 Date Analyzed: 03/20/92

GC Column: WIDE DB624 ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 110-54-3	~~HEXANE (DOT)~~	4.85	~~24~~	~~JN~~ R

FORM I VOA-TIC

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

E-S11-0006

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: E-RB-0

Matrix: (s il/water) SOIL Lab Sample ID: 123293

Sample wt/vol: 4.9 (g/mL) G Lab File ID: 203CV066

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec. 7 Date Analyzed: 03/17/92

GC Column: WIDE DB624 ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

E-S11-0006RE

Lab Name: ORTEK Contract: 459872

Lab Cod : ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: E-RB-0

Matrix: (soil/water) SOIL Lab Sample ID: 123293RE

Sample wt/vol: 4.9 (g/mL) G Lab File ID: 203CV081

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec. 7 Date Analyzed: 03/20/92

GC Column: WIDE DB624 ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 110-54-3	~~HEXANE (DOT)~~	~~4.85~~	~~25~~	~~JN~~ R

00010

FORM I VOA-TIC

3/90

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

E-S12-0006

Lab Name: ORTEK Contract: 459872

Lab Cod : ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: E-RB-0

Matrix: (soil/water) SOIL Lab Sample ID: 123295

Sample wt/vol: 4.9 (g/mL) G Lab File ID: 203CV082

Lev 1: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec. 15 Date Analyzed: 03/20/92

GC Column: WIDE DB624 ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 110-54-3	~~HEXANE (DOT)~~	~~4.85~~	~~10~~	~~JN~~ R

00012

FORM I VOA-TIC

3/90

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

E-SS10-0612

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: E-RB-0

Matrix: (soil/water) SOIL Lab Sample ID: 123292

Sample wt/vol: 4.9 (g/mL) G Lab File ID: 203CV065

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec. 8 Date Analyzed: 03/17/92

GC Column: WIDE DB624 ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

00016

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

E-SS11-0612

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: E-RB-0

Matrix: (soil/water) SOIL Lab Sample ID: 123294

Sampl wt/vol: 5.0 (g/mL) G Lab File ID: 203CV067

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec. 6 Date Analyzed: 03/17/92

GC Column: WIDE DB624 ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

00018

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

E-SS12-0612

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: E-RB-0

Matrix: (soil/water) SOIL Lab Sample ID: 123296

Sampl wt/vol: 4.9 (g/mL) G Lab File ID: 203CV071

Level: (low/med) LOW Date Received: 03/11/92

% Moistur : not dec. 10 Date Analyzed: 03/17/92

GC Column: WIDE DB624 ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

E-SS12D-0612

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: E-RB-0

Matrix: (soil/water) SOIL Lab Sample ID: 123297

Sample wt/vol: 4.9 (g/mL) G Lab File ID: 203CV072

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec. 10 Date Analyzed: 03/17/92

GC Column: WIDE DB624 ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 110-54-3	~~HEXANE (DOT)~~	~~4.85~~	~~15~~	~~JN~~ R

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

E-SS13-0612RE

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: E-RB-0

Matrix: (soil/water) SOIL Lab Sample ID: 123299RE

Sample wt/vol: 5.1 (g/mL) G Lab File ID: 203CV084

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec. 13 Date Analyzed: 03/20/92

GC Column: WIDE DB624 ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

E-SS4-0612

Lab Name: ORTEK Contract: 459872

Lab Cod : ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: E-RB-0

Matrix: (soil/water) SOIL Lab Sample ID: 123285

Sample wt/vol: 4.9 (g/mL) G Lab File ID: 203CV063

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec. 10 Date Analyzed: 03/17/92

GC Column: WIDE DB624 ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 10

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 6876-23-9 ISO	CYCLOHEXANE, 1,2-DIMETHYL-,	12.64	3800	JN
2.	UNKNOWN HYDROCARBON, cyclic	14.85	3100	J N
3.	UNKNOWN HYDROCARBON "	15.05	3900	J N
4.	UNKNOWN HYDROCARBON (SATURATED)	16.47	3000	J N
5. 111-84-2	NONANE "	17.52	3900	JN
6.	UNKNOWN HYDROCARBON ✓	17.72	2900	JN
7.	UNKNOWN HYDROCARBON ✓	18.20	4400	JN
8.	UNKNOWN ✓ (UNSATURATED HC)	18.59	5700	J N
9.	UNKNOWN + C_3-ALKYL benzene isomer	18.99	4200	J N
10.	UNKNOWN HYDROCARBON (UNSATURATED HC)	19.50	3700	J N

1) C_8H_{16}

ISO = Or isomer

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

E-SS13-0612

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: E-RB-0

Matrix: (soil/water) SOIL Lab Sample ID: 123299

Sample wt/vol: 4.9 (g/mL) G Lab File ID: 203CV074

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec. 13 Date Analyzed: 03/17/92

GC Column: WIDE DB624 ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 110-54-3	~~HEXANE~~ (DOT)	~~4.88~~	~~23~~	~~JN~~ R

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

E-S13-0006

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: E-RB-0

Matrix: (soil/water) SOIL Lab Sample ID: 123298

Sampl wt/vol: 5.0 (g/mL) G Lab File ID: 203CV083

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec. 13 Date Analyzed: 03/20/92

GC Column: WIDE DB624 ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

E-TB-0310

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: E-RB-0

Matrix: (soil/water) WATER Lab Sample ID: 123301

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: 203CV061

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: not dec. ____ Date Analyzed: 03/17/92

GC Column: WIDE DB624 ID: 0.530 (mm) Dilution Factor: 1.0

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

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 110-54-3	HEXANE (DOT)	4.88	14	JN

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

E-RB-0310

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS010 SAS No.: _____ SDG No.: E-S10-

Matrix: (soil/water) WATER Lab Sample ID: 123300

Sample wt/vol: 930 (g/mL) ML Lab File ID: 203BB069

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 03/12/92

Concentrated Extract Volume: 2000 (uL) Date Analyzed: 03/19/92

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	5.95	44	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

E-S10-0006

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS010 SAS No.: _____ SDG No.: E-S10-

Matrix: (soil/water) SOIL Lab Sample ID: 123291

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 203BB063

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: 10 decanted: (Y/N) N Date Extracted: 03/11/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/16/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.3

Number TICs found: 17

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 694-87-1 (ISO)	BICYCLO[4.2.0]OCTA-1,3,5-TRIene	5.18	410	J N
2. 79-34-5	~~ETHANE, 1,1,2,2-TETRACHLORO-~~	~~5.67~~	~~400~~	~~J~~ R
3. 5921-82-4	~~2-HEPTANOL, ACETATE~~	~~5.80~~	~~970~~	~~J~~ R
4. 104-76-7	~~1-HEXANOL, 2-ETHYL-~~	~~8.37~~	~~8600~~	~~BJ~~ R
5. 103-09-3 (ISO)	ACETIC ACID, 2-ETHYLHEXYL ESTER	10.80	550	J N
6. 4584-63-8	~~2,5-CYCLOHEXADIENE-1,4-DIONE~~	~~19.52~~	~~990~~	~~BJ~~ R
7. 112-53-8	1-DODECANOL	19.97	620	J N
8. 62185-55-1	NONANE, 4-METHYL-5-PROPYL-	21.40	2400	J N
9. 1632-70-8	UNDECANE, 5-METHYL-	23.35	2700	J N
10. 2801-84-5	DECANE, 2,4-DIMETHYL-	23.72	2000	J N
11. 112-95-8	EICOSANE	24.07	780	J N
12. 5090-41-5	9-OCTADECENAL ✓	26.12	1200	J N
13. 54105-67-8	HEPTADECANE, 2,6-DIMETHYL-	30.72	230	J N
14. 593-49-7	HEPTACOSANE	31.69	390	J N
15. 1928-30-9	TRICOSANE, 2-METHYL-	32.62	340	J N
16. 123-28-4	PROPANOIC ACID, 3,3'-THIOBIS	32.74	470	J N
17. 629-99-2	PENTACOSANE	35.29	700	J N

694 → 3021

1) C_8H_8

8 – 11 → saturated hydrocarbons
13 – 15 + 17 → saturated hydrocarbons

ISO = or Bomar

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

E-S11-0006

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS010 SAS No.: _____ SDG No.: E-S10-

Matrix: (soil/water) SOIL Lab Sample ID: 123293

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 203BB060

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: 7 decanted: (Y/N) N Date Extracted: 03/11/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/16/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.3

Number TICs found: 6

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 104-76-7	~~1-HEXANOL, 2-ETHYL-~~	~~8.34~~	~~1100~~	~~BJ~~ R
2. 4584-63-8	~~2,5-CYCLOHEXADIENE-1,4-DIONE~~	~~19.45~~	~~180~~	~~BJ~~ R
3. 10544-50-0	~~SULFUR, MOL. (S8)~~	~~24.54~~	~~320~~	~~BJ~~ R
4. 629-99-2	PENTACOSANE	31.52	150	J N
5. 112-95-8	EICOSANE	32.44	210	J N
6. ~~123-38-4~~	~~PROPANOIC ACID, 3,3'-THIOBIS~~ Unknown	32.54	420	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

E-S12-0006

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS010 SAS No.: _____ SDG No.: E-S10-

Matrix: (soil/water) SOIL Lab Sample ID: 123295

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 203BB061

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: 15 decanted: (Y/N) N Date Extracted: 03/11/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/16/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.1

Number TICs found: 10

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 115-95-7	1,6-OCTADIEN-3-OL, 3,7-DIMETHYL	6.07	560	J N
2. 57-15-8	~~2-PROPANOL, 1,1,1-TRICHLORO-~~	~~7.05~~	~~580~~	~~J~~ R
3. 104-76-7	~~1-HEXANOL, 2-ETHYL-~~	~~8.27~~	~~1700~~	~~BJ~~ R
4. 2039-93-2	BENZENE, (1-METHYLENEPROPYL)	28.74	1700	J N
5.	~~UNKNOWN~~	~~31.02~~	~~2900~~	~~J~~ R
6. 630-02-4	OCTACOSANE	32.41	350	J N
7. 7683-64-9	SQUALENE, isomer $C_{30}H_{50}$	32.72	360	J N
8. 629-99-2	PENTACOSANE	35.04	2900	J N
9. ~~7320-37-8~~	~~OXIRANE, TETRADECYL-~~ unknown	35.26	380	J
10. 1058-61-3	STIGMAST-4-EN-3-ONE ✓	39.41	510	J N

643
1
2994

1) -acetate - $C_{12}H_{20}O_2$, isomer

4) isomer - $C_{10}H_{12}$

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

E-S10-0006

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS010 SAS No.: _____ SDG No.: E-S10-

Matrix: (soil/water) SOIL Lab Sample ID: 123298

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 203BB073

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: 13 decanted: (Y/N) N Date Extracted: 03/11/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/20/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

Number TICs found: 14

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 104-76-7	~~1-HEXANOL, 2-ETHYL-~~	~~8.13~~	~~1300~~	~~BJ~~ R
2. 54105-67-8	HEPTADECANE, 2,6-DIMETHYL-	18.34	430	J
3. 1889-67-4	BENZENE, 1,1'-(1,1,2,2-TETRA	21.14	1400	J
4. 23586-64-3	BENZENE, 1,1'-(3,3-DIMETHYL-	21.72	420	J
5. 599-64-4 (50)	PHENOL, 4-(1-METHYL-1-PHENYL ethyl)	22.15	340	J
6.	~~6H-CYCLOBUTA[JK]PHENANTHRENE~~	22.89	260	J
7. 2381-21-7	PYRENE, 1-METHYL- isomer, $C_{17}H_{12}$	26.56	360	J
8. 195-19-7	BENZO[C]PHENANTHRENE, iso, $C_{18}H_{12}$	28.57	240	J
9. ~~55334-42-4~~	~~DODECANE, 1,2-DIBROMO-~~	31.44	330	J
10. ~~25377-73-5~~	~~2,5-FURANDIONE, 3-(DODECENYL~~	32.67	420	J
11. 55334-01-5	PHENANTHRENE, 9-DODECYLTETRA decahydro	33.69	460	J
12. ~~56401-65-5~~	~~PENTALENE, OCTAHYDRO-1-(2-OC~~	34.81	300	J
13. ~~54022-82-5~~	~~TRICYCLO[4.3.0.07,9]NONANE,~~	35.66	600	J
14. ~~3724-42-3~~	~~1H-3a,7-METHANOAZULENE, OCTA~~	36.67	320	J

678
1
2997

3) $C_{18}H_{22}$ - (tetramethyl-ethanediyl) bis benzene, isomer
4) $C_{18}H_{20}$ - (dimethylbutenylidene) bis benzene, isomer
6) cyclopentaphenanthrene; $C_{15}H_{10}$, isomer
9) saturated hydrocarbon
10) unsaturated hydrocarbon
12) unsaturated hydrocarbon
13) $C_{26}H_{48}$ - dodecatetrahydro phenanthrene, or isomer
14) unsaturated hydrocarbon

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

E-SS10-0612

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS010 SAS No.: _____ SDG No.: E-S10-

Matrix: (soil/water) SOIL Lab Sample ID: 123292

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 203BB071

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: 8 decanted: (Y/N) N Date Extracted: 03/11/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/19/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.2

Number TICs found: 12

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 17302-32-8	NONANE, 3,7-DIMETHYL-	15.65	5400	J N
2. ~~19757-51-8~~	~~3-BUTENE 1,2 DIOL, 1-(2-FURY-~~	16.64	2600	J N
3. ~~89812-79-1~~	~~HYDROXYLAMINE, O-DECYL-~~	17.40	15000	J N
4. 56292-65-0	DODECANE, 2,5-DIMETHYL-	19.72	10000	J N
5. 629-78-7	HEPTADECANE	20.50	14000	J N
6. 25117-32-2	TETRADECANE, 5-METHYL-	21.07	2800	J N
7. 593-45-3	OCTADECANE	21.89	7900	J N
8. 18344-37-1	HEPTADECANE, 2,6,10,14-TETRA	23.19	6100	J N
9. 112-95-8	EICOSANE	24.40	2900	J N
10. 629-97-0	DOCOSANE	26.62	8000	J N
11. 629-99-2	PENTACOSANE	27.64	4600	J N
12. 646-31-1	TETRACOSANE	28.62	4200	J N

2/3) Saturated hydrocarbons TOTAL: 83,500

(large unresolved hydrocarbon matrix): approx 30,000,000 ug/kg

FORM I SV-TIC 3/90

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

E-SS11-0612

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS010 SAS No.: _____ SDG No.: E-S10-

Matrix: (soil/water) SOIL Lab Sample ID: 123294

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 203BB055

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: 6 decanted: (Y/N) N Date Extracted: 03/11/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/16/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.5

Number TICs found: 7

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 104-76-7	~~1-HEXANOL, 2-ETHYL~~	~~8.34~~	~~1700~~	~~BJ~~ R
2. 2884-06-2	NONANE, 2,3-DIMETHYL-	15.97	960	J N
3. 4584-63-8	~~2,5-CYCLOHEXADIENE-1,4-DIONE~~	~~19.54~~	~~270~~	~~BJ~~ R
4. 629-97-0	DOCOSANE	28.69	180	J N
5.	~~UNKNOWN~~	~~31.24~~	~~2000~~	~~J~~ R
6. 629-62-9	PENTADECANE	32.64	330	J N
7. 122-62-3	~~DECANEDIOIC ACID, BIS(2-ETHY~~	~~32.76~~	~~260~~	~~J~~ R

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

E-SS12-0612

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS010 SAS No.: _____ SDG No.: E-S10-

Matrix: (soil/water) SOIL Lab Sample ID: 123296

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 203BB059

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: 10 decanted: (Y/N) N Date Extracted: 03/11/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/16/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.1

Number TICs found: 13

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 5921-82-4	~~2-HEPTANOL, ACETATE~~	~~5.82~~	~~1300~~	~~J~~ R
2. 104-76-7	~~1-HEXANOL, 2-ETHYL-~~	~~8.30~~	~~1600~~	~~BJ~~ R
3. 74381-40-1	~~PROPANOIC ACID, 2-METHYL , 1~~	~~18.49~~	~~170~~	~~J~~ R
4. 4584-63-8	~~2,5-CYCLOHEXADIENE-1,4-DIONE~~	~~19.42~~	~~300~~	~~BJ~~ R
5. 2884-06-2	NONANE, 2,3-DIMETHYL-	21.30	520	J N
6. 17851-53-5	~~1,2-BENZENEDICARBOXYLIC ACID~~	~~22.32~~	~~160~~	~~J~~ R
7. 62016-33-5	OCTANE, 2,3,6-TRIMETHYL-	23.27	180	J N
8. 629-74-3	1-HEXADECYNE, or other unsat. HC	24.74	450	J N
9. 112-95-8	EICOSANE	27.42	200	J N
10. 629-99-2	PENTACOSANE	29.54	700	J N
11. 629-97-0	DOCOSANE	32.42	410	J N
12. 122-62-3	~~DECANEDIOIC ACID, BIS(2-ETHY~~	~~32.54~~	~~650~~	~~J~~ R
13. ~~6946-85-6~~	~~ORTHOBENZOIC ACID, TRIPROPYL~~ unknown	37.67	240	J

6 PS
1
3 ~~[illegible]~~

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

E-SS12D-0612

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS010 SAS No.: _____ SDG No.: E-S10-

Matrix: (soil/water) SOIL Lab Sample ID: 123297

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 203BB058

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: 10 decanted: (Y/N) N Date Extracted: 03/11/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/16/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.3

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	31.01	160	J
2. 122-62-3	DECANEDIOIC ACID, BIS(2-ETHY	32.49	210	J

no surrogates added - not used.

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

E-SS12D-0612R

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS010 SAS No.: _____ SDG No.: E-S10-

Matrix: (soil/water) SOIL Lab Sample ID: 123297RE

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 203BB070

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: 10 decanted: (Y/N) N Date Extracted: 03/17/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/19/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.3

Number TICs found: 10

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 57-15-8	~~2-PROPANOL, 1,1,1-TRICHL~~ORO-	6.88	~~300~~	~~BJ~~ R
2. 1653-40-3	~~1-HEPTANOL, 6-METHYL-~~	7.37	~~360~~	~~BJ~~ R
3. 104-76-7	~~1-HEXANOL, 2-ETHYL-~~	8.15	~~2700~~	~~BJ~~ R
4. 5026-76-6	~~1-HEPTENE, 6-METHYL-~~	~~8.34~~	~~220~~	~~J~~ R
5. 26730-14-3	TRIDECANE, 7-METHYL-	15.44	290	J N
6. 5881-17-4	~~OCTANE, 3-ETHYL-~~	~~15.75~~	~~1800~~	~~BJ~~ R
7. 4584-63-8	~~2,5-CYCLOHEXADIENE-1,4-DIONE~~	~~19.27~~	~~400~~	~~BJ~~ R
8. 54833-23-7	EICOSANE, 10-METHYL-	29.41	160	J N
9.	~~UNKNOWN~~	~~90.91~~	~~1600~~	~~J~~ R
10. ~~21626-89-1~~	~~DIPTALONE~~ IS #6 (internal standard)	~~33.36~~	~~1600~~	~~J~~

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

E-SS13-0612

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS010 SAS No.: _____ SDG No.: E-S10-

Matrix: (soil/water) SOIL Lab Sample ID: 123299

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 203BB062

Level: (low/med) LOW Date Received: 03/11/92

% Moisture: 13 decanted: (Y/N) N Date Extracted: 03/11/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 03/16/92

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9

Number TICs found: 8

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 79081-64-4	~~3-METHYL-4-HYDROXYOCTANOIC A~~	7.52	510	J
2. 104-76-7	~~1-HEXANOL, 2-ETHYL~~	8.28	~~1800~~	~~BJ~~ R
3. 646-31-1	TETRACOSANE	28.49	350	J N
4.	~~UNKNOWN~~	~~31.02~~	~~2100~~	~~J~~ R
5. 54105-67-8	HEPTADECANE, 2,6-DIMETHYL-	31.79	380	J N
6. 122-62-3	~~DECANEDIOIC ACID, BIS(2-ETHY~~	~~32.52~~	~~700~~	~~J~~ R
7. 629-99-2	PENTACOSANE	33.31	610	J N
8. 14021-23-9	D-FRIEDOOLEAN-14-ENE, 3-METHOXY	36.74	860	J N

APPENDIX D

DATA VALIDATION WORKSHEETS

DATA ASSESSMENT:

9. MATRIX SPIKE/SPIKE DUPLICATE, MS/MSD:

The MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD may be used in conjunction with other QC criteria for some additional qualification of the data.

VOA - high recoveries (≈190%) were obtained for 1,1DCE.
— possible that lab mis-spiked with this compound because it is very unusual to obtain such high recoveries for a VOA compound. No data affected

BNA - all within QC limits

PESTS - All recoveries within QC limits, high RPDs have no impact

INTRODUCTION TO DATA VALIDATION

1.0 Scope

1.1 This procedure is applicable to organic data obtained from contractor laboratories working for the Contract Laboratory Program (CLP).

1.2 The data validation is based upon analytical and quality assurance requirements specified in the Statement of Work (SOW).

2.0 Responsibilities

Data reviewers will complete the following tasks as assigned by the Data Review Coordinator:

2.1 Data Assessment - The reviewer must answer every question on the checklist. All response shall be in ink.

2.2 Data Assessment Narrative (Attachment 1) - Data reviewer is required to use these forms and must match the action in the narrative with the action taken on the Form I(s).

2.3 Rejection Summary Form (Attachment 2) - Fill in the total number of analytes measured by different analyses and the number of analytes rejected or flagged as estimated due to corresponding quality control criteria. Place an "X" in the boxes where analyses were not performed or criteria do not apply.

2.4 Organic Regional Data Assessment - Data reviewer is also required to fill out Organic Regional Data Assessment Form (Attachment 3).

2.5 Telephone Record Log - The data reviewer should enter the bare facts of inquiry before initiating any authorized telephone conversation with a CLP laboratory. After the case review has been completed, mail the white copy of the Telephone Record Log to the laboratory and the pink copy to SMO. File the yellow copy in the Telephone Record Log folder and attach a photocopy of the Telephone Record Log to the completed Data Assessment Narrative.

2.6 Forwarded Paperwork - Upon completion of the review, the following are to be forwarded to the Regional Sample Control Center (RSCC) located in the Surveillance and Monitoring Branch:

a. data package
b. completed assessment checklist
c. SMO Contract Compliance Screening (CCS)

Forward four (4) copies of the completed Data Assessment Narrative along with four (4) copies of the Organic Data Assessment Form: one each for the appropriate Regional DPO, the Sample Management Office (SMO), and to the last two addresses of the Data Reviewers Mailing List.

2.7 Filed Paperwork - Upon completion of the review, the following are to be filed within the Monitoring and Management Branch (MMB) files:

a. Telephone record Log (copy)
b. Record of Communication (original)
c. Rejection Summary Form

DATA ASSESSMENT:

7. INTERNAL STANDARDS PERFORMANCE:

Internal standard (IS) performance criteria ensure that th GC/MS sensitivity and response are stable during every experimental run. The internal standard area count must not vary by more than a factor of 2 (-50% to +100%) from the associated continuing calibration standard. The retention time of the internal standard must not vary more than ±30 seconds from the associated continuing calibration standard. If the area count is outside the (-50% to +100%) range of the associated standard, all of the positive results for compounds quantitated using that IS are qualifi d as estimated, "J", and all non-detects as "UJ", or "R" if there is a severe loss of sensitivity.

If an internal standard retention time varies by more than 30 seconds, the reviewer will use professional judgment to determine either partial or total rejection of the data for that sampl fraction.

VOA: all 3 ISs were low for ES110006 + ES512D0612. The last 2 ISs were low for the re-analyses of these spls. ∴ All results/detection limits considered further estimated in the initial analyses of both samples; Results/detection limits further estimated for all compounds eluting after 2-butanone in re-analyses of both spls. (coded J/UJ (1))

BNA - all OK

3.0 Rejection of Data - All values determined to be unacceptable on the Organic Analysis Data Sheet (Form I) must be flagged with an "R". As soon as review criteria causes data to be rejected, that data can be eliminated from any further review or consideration.

4.0 Acceptance Criteria - In order that the reviews be consistent among reviewers, this Standard Operating Procedure (SOP) should be used. Additional guidance can be found in the Functional Guidelines.

5.0 SMO Contract Compliance Screening (CCS) - This is intended to aid the reviewer in locating any problems, both corrected and uncorrected. However, the validation should be carried out even if CCS is not present. Resubmittals received from the laboratory in response to CCS must be used by the reviewer.

DATA ASSESSMENT:

5. CALIBRATION:

A) PERCENT RELATIVE STANDARD DEVIATION (%RSD) AND PERCENT DIFFERENCE (%D):

Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor of the continuing calibration check to the mean response factor (RRF) from the initial calibration. Percent D is a measure of the instrument's daily performance. Percent RSD must be <30% and %D must be <25%. A value outside of these limits indicates potential detection and quantitation errors. For thes reasons, all positive results are flagged as estimated, "J" and non-detects are flagged "UJ" (if %D or RSD >50%). If there is a gross deviation of %RSD and %D, the non-detects may be rejected ("R").

For the PCB/PESTICIDE fraction, %RSD for aldrin, endrin, DDT, and dibutylchlorendate must not exceed 10%. Percent D must be within 15% on the quantitation column and 20% on the confirmation column.

VOA: CS_2 exhibited high %D on 3/17 + 3/20 - all results J(c) all detection limits UJ(c)

2-butanone exhibited high %D on 3/20 - associated results flagged J(c) associated det. limits UJ(c)

BNA: 4-Chloroaniline had a high %D on 3/16, all associated detection limits UJ(c)

hexachlorocyclopentadiene had high %Ds on both analysis days: ∴ all detection limits UJ(c)

Dehp exhibited a high %D on one day - all associated detection limits are UJ(c)

Pest/PCBs - ok

	YES	NO	N/A
PART A: VOA ANALYSES			
1.0 Traffic Reports and Laboratory Narrative			
1.1 Are the ~~Traffic Report~~ Chain-of-Custody Forms present for all samples?	[✓]	___	___
ACTION: If no, contact lab for replacement of missing or illegible copies.			
1.2 Do the Traffic Reports or Lab Narrative indicate any problems with sample receipt, condition of samples, analytical problems or special notations affecting the quality of the data?	[✓]	[ ]	___
ACTION: Use professional judgement to evaluate the effect on the quality of the data.			
ACTION: If any sample analyzed as a soil contains more than 50% water, all data should be flagged as estimated (J).			
ACTION: If both VOA vials for a sample have air bubbles, flag all positive results "J" and all non-detects "R".			
2.0 Holding Times			
2.1 Have any VOA holding times, determined from date of collection to date of analysis, been exceeded?	___	[✓]	___

If unpreserved, aqueous aromatic volatiles must be analyzed within 7 days of collection and non-aromatic volatiles must be analyzed within 14 days. If preserved with hydrochloric acid and stored at 4°C, then both aromatic and non-aromatic volatiles must be analyzed within 14 days. If uncertain about preservation, contact the sampler to determine whether the samples were preserved.

A ten-day holding time for soil samples is recommended.

Table of Holding Time Violations

Sampl	Sample Matrix	Preserved ?	(See Traffic Report) Date Sampled	Date Lab Received	Date Analyzed
___	___	___	___	___	___
___	___	___	___	___	___
___	___	___	___	___	___
___	___	___	___	___	___

ACTION: If holding times are exceeded, flag all positive results as estimated ("J") and sample quantitation limits as estimated ("UJ"), and document in the narrative that holding times were exceeded.

ATTACHMENT 1
SOP NO. HW-6

DATA ASSESSMENT:

3. MASS SPECTROMETER TUNING:

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds, and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances. The tuning standard for volatile organics is bromofluorobenzene (BFB) and for semi-volatiles is decafluorotriphenyl- phosphine (DFTPP).

If the mass calibration is in error, all associated data will be classified as unusable, "R".

VOA - OK
BNA - OK

	YES	NO	N/A
If any surrogate has a recovery of <10% : 1. Flag all positive results as estimated ("J"). 2. Flag all non-detects as unusable ("R"). Professional judgement should be used to qualify data that have method blank surrogate recoveries out of specification in both original and re-analyses. Check the internal standard areas.			
3.5 Are there any transcription/calculation errors between raw data and Form II? ACTION: If large errors exist, call lab for explanation / resubmittal, make any necessary corrections and note errors under "Conclusions".	___	[✓]	___
4.0 Matrix Spikes (Form III)			
4.1 Is the Matrix Spike Duplicate/Recovery Form (Form III) present?	[✓]	___	___
4.2 Were matrix spikes analyzed at the required frequency for each of the following matrices:			
a. Low Water	[ ]	___	✓
b. Med Water	[ ]	___	✓
c. Low Soil	[✓]	___	___
d. Med Soil	[ ]	___	✓
ACTION: If any matrix spike data are missing, take the action specified in 3.2 above.			

4.3 How many VOA spike recoveries are outside QC limits?

Water	Soils
X out of 10	2 out of 10

4.4 How many RPD's for matrix spike and matrix spike duplicate recoveries are outside QC limits?

Water	Soils
X out of 5	0 out of 5

ACTION: If MS and MSD both have less than 10% recovery for an analyte, negative results for that analyte should be rejected, and positive results should be flagged "J". The above applies only to the sample used for the MS/MSD analysis. Use professional judgement in applying this criterion to other samples in the package.

NW$ Earle

BLANK ANALYSIS RESULTS FOR TARGET COMPOUNDS

FRACTION	TYPE	CONC	MATRIX	SAMPLE #	SOURCE OF H_2O	CONTAMINANTS (CONCENTRATION / DETECTION LIMIT)	
VOA	low solid lab blank			VB1K08	lab	147 MeCl2	2.74 ug/l
						126 Acetone	23.7 ug/l
						516 4M 2Pent.	1.10 ug/l
						301 111TCEa	0.90 ug/l
VOA	low solid lab blank			VB1X10	lab	147 MeCl2	2.3 ug/l
						381 2-butanone	1.11 ug/l
						514 toluene	4.77 ug/l
						676 xylenes	2.8 ug/l
VOA	low rinsate blank			ERB 0310	HNUS	147 MeCl2	7.0 ug/l
						128 acetone	26.5
						334 benzene	4.8
						116 CS2	16.8
						301 111TCEa	1.1 ug/l (1)
VOA	low trip blk			ETB 0310	HNUS	146 MeCl2	167 ug/l
						136 acetone	8.32
						300 111TCEa	1.73
BNA	low solid lab blk			SB1K09	lab	1667 DIETPhth	0.90 ug/l
						2698 Dehp	0.25 ug/l
						2861 DNOP	0.11 ug/l
				SB1K10		2701 Dehp	3.10 ug/l
						1455 DMP	0.60
						1652 DEP	1.1
						2108 DNBP	0.53
	acq. lab blk			SB1K11		2680 Dehp	0.20 ug/l
						1444 DMP	0.32 ug/l
						1639 DEP	0.90 ug/l
						~~DNBP~~	
	Rinsate blank			ERB 0310	HNUS	1649 DEP	1.04 ug/l
						1447 DMP	0.40 ug/l
						2682 Dehp	0.26 ug/l
Aroclor	SOLID blank			PB1K07	Lab	ND	
Pesticide	solid blk			PB1K02	lab	ND	
	rinsate blank			RB0310	HNUS	ND	

LABORATORY REPORTED FIELD BLANK DATA IS COMPARED WITH THE SAMPLE DATA IN A TABULATION FORM WITHIN THE SAMPLE ANALYTICAL DATA SUMMARY. TENTATIVELY IDENTIFIED COMPOUNDS IN BLANKS ARE LISTED ON A SEPARATE FORM.

COMMENTS:

(1) RESULT REPORTED BY LABORATORY AND CONFIRMED BY REVIEWER.

(2) RESULT INFERRED FROM QUANTITATION LIST, DIAGNOSTICS, CHROMATOGRAM AND/OR SPECTRA.

ND = none detected

* Validation action levels: MeCl2 - 1670 ug/l; acetone - 26.5 ug/l; 4M2P - 5.5 ug/l; 2-butanone - 11.1 ug/l; 111TCEa - 8.65 ug/l; CS2 - 84 ug/l; benzene - 24 ug/l; toluene - 47.7 ug/l; xylenes - 14.0 ug/l

YES NO N/A

ACTION: Follow the directions in the table below to qualify TCL results due to contamination. Use the largest value from all the associated blanks.

	Sample conc > CRQL but < 10x blank	Sample conc < CRQL & is < 10x blank value	Sample conc > CRQL value & >10x blank value
Methylene chloride Acetone Toluene 2-butanone	Flag sample result with a 'U'; cross out 'B' flag	Reject sample result and report CRQL; cross out 'B' flag	No qualification is needed

	Sample conc > CRQL but < 5x blank	Sample conc < CRQL & is < 5x blank value	Sample conc > CRQL value & > 5 blank value
Other Contaminants	Flag sample result with a 'U'; cross out 'B' flag	Reject sample result and report CRQL; cross out 'B' flag	No qualification is needed

ACTION: For TIC compounds, if the concentration in the sample is less than five times the concentration in the most contaminated associated blank, flag the sample data "R" (unusable).

6.3 Are there field/rinse/equipment blanks associated with every sample? ✓ [ ] ___ ___

ACTION: For low level samples, note in data assessment that there is no associated field/rinse/equipment blank. Exception: samples taken from a drinking water tap do not have associated field blanks.

7.0 GC/MS Tuning and Mass Calibration (Form V)

7.1 Are the GC/MS Tuning and Mass Calibration Forms (Form V) present for Bromofluorobenzene (BFB)? ✓ [ ] ___ ___

7.2 Are the enhanced bar graph spectrum and mass/charge (m/z) listing for the BFB provided for each twelve hour shift? ✓ [ ] ___ ___

7.3 Has a tuning performance compound been analyzed for every twelve hours of sample analysis per instrument? ✓ [ ] ___ ___

ACTION: If any tuning data are missing, take action specified in 3.2 above.

ACTION: List date, time, instrument ID, and sample analyses for which no associated GC/MS tuning data are available.

DATA ASSESSMENT:

1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as estimated, "J", or unusable, "R", if the holding times are grossly exceeded.

The following action was taken in the samples and analytes shown due to excessive holding time.

VOAs- no problems
BNAs- no problems
PEST/PCBs- no problems

	YES	NO	N/A
8.2 Are the VOA Reconstructed Ion Chromatograms, the mass spectra for the identified compounds, and the data system printouts (Quant Reports) included in the sample package for each of the following?			
a. Samples and/or fractions as appropriate	[✓]	___	___
b. Matrix spikes and matrix spike duplicates (Mass spectra not required)	[✓]	___	___
c. Blanks	[✓]	___	___
ACTION: If any data are missing, take action specified in 3.2 above.			
8.3 Are the response factors shown in the Quant Report?	[✓]	___	___
8.4 Is chromatographic performance acceptable with respect to:			
Baseline stability	[✓]	___	___
Resolution	[✓]	___	___
Peak shape	[✓]	___	___
Full-scale graph (attenuation)	[✓]	___	___
Other:_____	[ ]	___	___
ACTION: Use professional judgement to determine the acceptability of the data.			
8.5 Are the lab-generated standard mass spectra of the identified VOA compounds present for each sample?	[✓]	___	___
ACTION: If any mass spectra are missing, take action specified in 3.2 above. If Lab does not generate their own standard spectra, make note in "Contract Problems/Non-compliance".			
8.6 Is the RRT of each reported compound within 0.06 RRT units of the standard RRT in the continuing calibration?	[✓]	___	___
8.7 Are all ions present in the standard mass spectrum at a relative intensity greater than 10% also present in the sample mass spectrum?	[✓]	___	___
8.8 Do sample and standard relative ion intensities agree within 20%?	[✓]	___	___
ACTION: Use professional judgement to determine acceptability of data. If it is determined that incorrect identifications were made, all such data should be rejected, flagged "N" (presumptive evidence of the presence of the compound) or changed to not detected (at the calculated detection limit).			

	YES	NO	N/A
12.0 Field Duplicates			
12.1 Were any field duplicates submitted for PEST/PCB analysis?	✓		

ACTION: Compare the reported results for field duplicates and calculate the relative percent difference.

ACTION: Any gross variation between field duplicate results must be addressed in the reviewer narrative. However, if large differences exist, identification of field duplicates should be confirmed by contacting the sampler.

	ESS120612	ESS12D0612	RPD (%)
delta BHC	1.9 U	0.27 Y	—
endosulfan sulfate	0.30 Y	3.7 U	—
DDT	0.38 Y	3.7 U	—

Y: single-peak pest; probable false positive.

	YES	NO	N/A
ACTION: If errors are large, call lab for explanation / resubmittal, make any necessary corrections and note errors under "Conclusions".			
ACTION: When a sample is analyzed at more than one dilution, the lowest CRQLs are used (unless a QC exceedance dictates the use of the higher CRQL data from the diluted sample analysis). Replace concentrations that exceed the calibration range in the original analysis by crossing out the "E" value on the original Form I and substituting it with data from the analysis of diluted sample. Specify which Form I is to be used, then draw a red "X" across the entire page of all Form I's that should not be used, including any in the summary package.			
11.0 Standards Data (GC/MS)			
11.1 Are the Reconstructed Ion Chromatograms, and data system printouts (Quant. Reports) present for initial and continuing calibration?	✓		
ACTION: If any calibration standard data are missing, take action specified in 3.2 above.			
12.0 GC/MS Initial Calibration (Form VI)			
12.1 Are the Initial Calibration Forms (Form VI) present and complete for the volatile fraction?	✓		
ACTION: If any calibration standard forms are missing, take action specified in 3.2 above.			
12.2 Are response factors stable for volatiles over the concentration range of the calibration (RSD <30%)?	✓		
ACTION: Circle all outliers in red.			
ACTION: When RSD >30%, non-detects may be qualified using professional judgement. Flag all positive results "J". When RSD >90%, flag all non-detects as unusable ("R"). (Region II policy.)			
12.3 Do any compounds have an average RRF < 0.05?		✓	
ACTION: Circle all outliers in red.			
ACTION: If any volatil compound has an average RRF < 0.05, flag positive results for that compound as estimated ("J"), and flag non-detects for that compound as unusabl ("R").			

	YES	NO	N/A
ACTION: Beginning with the samples following the last in control standard, check to see if the chromatograms contain peaks within an expanded window surrounding the expected retention times. If no peaks are found and, DBC is visible non-detects are valid. If peaks are present and cannot be identified through "pattern recognition" or a consistent shift in standard retention times, flag all affected compound results "R".			
8.5 Are the continuing calibration standard calibration factors within 15% (for quantitation column) or 20% (for confirmation column) of the initial (at beginning of 72 hr sequence) calibration factors?	✓		
ACTION: If no, flag all associated positive results "J". Use professional judgement to determine whether or not to flag non-detects.			
9.0 Pesticide/PCB Identification			
9.1 Is Form X complete for every sample in which a pesticide or PCB was detected?	✓		
ACTION: If no, take action specified in 3.2 above.			
9.2 Are there any transcription errors between raw data and Form X?		✓	
ACTION: If large errors exist, call lab for explanation / resubmittal, make any necessary corrections and note errors under "Conclusions".			
9.3 Are retention times of sample compounds within the calculated retention time windows for both quantitation and confirmation analyses?	✓		
~~Was GC/MS confirmation provided when required (when compound concentration is > 10 ug/ml in final extract)?~~			✓
ACTION: Reject ("R") all positive results (meeting quantitation column criteria, but missing confirmation by a second column or GC/MS (if appropriate). Also, reject ("R") all positive results not meeting retention time window criteria unless associated standard compounds are similarly biased (i.e. base on RRT to DBC).			
9.4 Check chromatograms for false negatives, especially for the multiple peak components toxaphene and PCB's. Were there any false negatives?		✓	
ACTION: If appropriate PCB standards were not analyzed, or if the lab performed no confirmation analysis, flag the appropriate data with an "R".			

YES NO N/A

% DIFFERENCE

25-50	50-90	>90
'J' positive results, no action for non detects	'J' positive results, 'UJ' non detects	'J' positive results, "R" non detects

13.5 Are there any transcription / calculation errors in the reporting of average response factors (RRF) or difference (%D) between initial and continuing RRFs? (Check at least two values but if errors are found, check more.) [ ] [✓] [ ]

ACTION: Circle errors in red.

ACTION: If errors are large, call lab for explanation / resubmittal, make any necessary corrections and note errors under "Conclusions".

14.0 Internal Standards (Form VIII)

14.1 Are the internal standard areas (Form VIII) of every sample and blank within the upper and lower limits for each continuing calibration? [ ] [✓] [ ]

ACTION: List all the outliers below.

Sample #	Internal Std*	Area $\times 10^3$	Lower Limit $\times 10^3$	Upper Limit $\times 10^3$
ES110006	BCM	24.8	25.0	100.
	DFB	69.8	117.5	470.
	CBZ	40.	115.4	461.6
ES110006 RE	DFB	83.8	87.6	350.5
	CBZ	51.8	83.3	333.
ES513-0612	BCM	18.7	25.0	100.
	DFB	64.0	117.5	470.
	CBZ	41.3	115.4	461.6
ES513-0612 RE	DFB	58.4	87.6	350.
	CBZ	37.9	83.3	333.

(Attach additional sheets if necessary.)

ACTION: If the internal standard area count is outside the upper or lower limit, flag with "J" all positive results and non-detects (U values) quantitated with this internal standard. If extremely low area counts are reported, or if performance exhibits a major abrupt drop off, flag all associated non-detects as unusable ("R").

(IS 3 - both std
IS 2 - SS13 0612
already J because of high surrogates)

14.2 Are the retention times of the internal standards within 30 seconds of the associated calibration standard? [✓] [ ] [ ]

ACTION: Professional judgement should be used to qualify data if the retention times differ by more than 30 seconds.

	YES	NO	N/A
7.2 Is Form VIII Pest-1 present and complete for each GC column (primary and confirmation) and each 72 hour sequence of analyses?	[✓]		
ACTION: If no, take action specified in 3.2 above.			
7.3 Are there any transcription/calculation errors between raw data and Form VIII?		[✓]	
ACTION: If large errors exist, call lab for explanation / resubmittal, make any necessary corrections and note errors under "Conclusions".			
7.4 Has the total breakdown on quantitation or confirmation column exceeded 20% for DDT?		[✓]	
- for Endrin?		[✓]	
or if Endrin aldehyde <u>and</u> 4,4'-DDD co-elute and there is a peak at their retention time, has the combined DDT and Endrin breakdown exceeded 20%?		[✓]	

ACTION:

a. If DDT breakdown is greater than 20% on quantitation column beginning with the samples following the last <u>in control</u> standard:

1. Flag all positive DDT results "J".
2. If DDT was not detected but DDD and/or DDE are positive, flag the DDT non-detect "R".
3. Flag positive DDD and DDE results "JN".
4. If DDT breakdown is > 20% on confirmation column <u>and</u> DDT is identified on quantitation column but not on confirmation column, use professional judgement to determine whether DDT should be reported on Form I (if reported, flag result "N").

b. If Endrin breakdown is > 20% on quantitation column, beginning with the samples following the last <u>in control</u> standard:

1. Flag all positive Endrin results "J".
2. If Endrin was not detected, but Endrin Aldehyde and/or Endrin Ketone are positive, flag the Endrin non-detect "R".
3. Flag Endrin Ketone positive results "JN".
4. If Endrin breakdown is > 20% on confirmation column <u>and</u> Endrin is identified on quantitation column but not on confirmation column, use professional judgement to determine whether Endrin should be reported on Form I (if reported, flag result "N").

c. If the combined breakdown is used (it can only be used if the conditions in 7.4 above are met) and is > 20% on quantitation column beginning with the last <u>in control</u> standard, take the actions specified in 7.4 a and b above. If the combined breakdown is >20% on confirmation column <u>and</u> Endrin or DDT is identified on quantitation column but not on confirmation column, use professional judgement to determine whether Endrin or DDT should be reported on Form I (if reported, flag result "N").

	YES	NO	N/A
PART B: BNA ANALYSES			
1.0 Traffic Reports and Laboratory Narrative			
1.1 Are the ~~Traffic Report Forms~~ Chain-of-Custody present for all samples?	[✓]		
ACTION: If no, contact lab for replacement of missing or illegible copies.			
1.2 Do the Traffic Reports or Lab Narrative indicate any problems with sample receipt, condition of samples, analytical problems or special notations affecting the quality of the data?		[✓]	
ACTION: Use professional judgement to evaluate the effect on the quality of the data.			
ACTION: If any sample analyzed as a soil contains more than 50% water, all data should be flagged as estimated (J).			
2.0 Holding Times			
2.1 Have any BNA holding times, determined from date of collection to date of extraction, been exceeded?		[✓]	
Samples for BNA analysis, both soils and waters, must be extracted within seven days of the date of collection. Extracts must be analyzed within 40 days of the date of extraction.			

Table of Holding Time Violations

Sampl	Sample Matrix	Date Sampled	(See Traffic Report) Date Lab Received	Date Extracted	Date Analyzed

ACTION: If holding times are exceeded, flag all positive results as estimated ("J") and sampl quantitation limits as estimated ("UJ"), and document in the narrative that holding times were exceeded.

	YES	NO	N/A
4.4 How many RPD's for matrix spike and matrix spike duplicate recoveries are outside QC limits?			

Water: Ø out of 6 Soils: 6 out of 6

ACTION: If MS and MSD both have less than zero recovery for an analyte, negative results for that analyte should be rejected, and positive results should be flagged "J". The above applies only to the sample used for MS/MSD analysis. Use professional judgement in applying this criterion to other samples.

5.0 Blanks (Form IV)

	YES	NO	N/A
5.1 Is the Method Blank Summary (Form IV) present?	✓		
5.2 Frequency of Analysis: for the analysis of Pesticide TCL compounds, has a reagent/method blank been analyzed for each set of samples or every 20 samples of similar matrix (low water, med water, low soil, medium soil), whichever is more frequent?	✓		
5.3 Chromatography: review the blank raw data - chromatograms, quant reports or data system printouts.			
Is the chromatographic performance (baseline stability) for each instrument acceptable for PEST/PCBs?	✓		

ACTION: Use professional judgement to determine the effect on the data.

6.0 Contamination

NOTE: "Water blanks" and "distilled water blanks" are validated like any other sample and are not used to qualify data. Do not confuse them with the other QC blanks discussed below.

	YES	NO	N/A
6.1 Do any method/instrument/reagent blanks have positive results for PEST/PCBs? When applied as described below, the contaminant concentration in these blanks are multiplied by the sample Dilution Factor.		✓	
6.2 Do any field/rinse blanks have positive PEST/PCB results?		✓	

ACTION: Prepare a list of the samples associated with each of the contaminated blanks. (Attach a separate sheet.)

	YES	NO	N/A
If any base-neutral or acid surrogate has a recovery of <10% : 1. Flag all positive results for that fraction (i.e. all acid or base-neutral compounds) "J". 2. Flag all non-detects for that fraction "R".			
Professional judgement should be used to qualify data that have method blank surrogate recoveries out of specification in both original and re-analyses. Check the internal standard areas.			
3.5 Are there any transcription/calculation errors between raw data and Form II?		✓	
ACTION: If large errors exist, call lab for explanation / resubmittal, make any necessary corrections and note errors under "Conclusions".			
4.0 Matrix Spikes (Form III)			
4.1 Is the Matrix Spike Duplicate/Recovery Form (Form III) present?	✓		
4.2 Were matrix spikes analyzed at the required frequency for each of the following matrices:			
a. Low Water (field blank-NR)			✓
b. Med Water			✓
c. Low Soil	✓		
d. Med Soil			✓
ACTION: If any matrix spike data are missing, take the action specified in 3.2 above.			

4.3 How many BNA spike recoveries are outside QC limits?

Water	Soils
X out of 22	0 out of 22

4.4 How many RPD's for matrix spike and matrix spike duplicate recoveries are outside QC limits?

Water	Soils
X out of 11	0 out of 11

ACTION: If MS and MSD both have less than 10% recovery for an analyte, negative results for that analyte should be rejected, and positive results should be flagged "J". The above applies only to the sample used for MS/MSD analysis. Use professional judgement in applying this criterion to other samples.

	YES	NO	N/A
PART C: PESTICIDE/PCB ANALYSES			
1.0 Traffic Reports and Laboratory Narrative			
1.1 Are the ~~Traffic Report Forms~~ Chain-of-Custodies present for all samples?	[✓]		
ACTION: If no, contact lab for replacement of missing or illegible copies.			
1.2 Do the Traffic Reports or Lab Narrative indicate any problems with sample receipt, condition of samples, analytical problems or special notations affecting the quality of the data?		[✓]	
ACTION: Use professional judgement to evaluate the effect on the quality of the data.			
ACTION: If any sample analyzed as a soil contains more than 50% water, all data should be flagged as estimated (J).			
2.0 Holding Times			
2.1 Have any PEST/PCB holding times, determined from date of collection to date of extraction, been exceeded?		[✓]	
Samples for PEST/PCB analysis, both soils and waters, must be extracted within seven days of the date of collection. Extracts must be analyzed within 40 days of the date of extraction.			
3.0 Surrogate Recovery (Form II)			
3.1 Are the PEST/PCB Surrogate Recovery Summaries (Form II) present for each of the following matrices:			
a. Low Water	[✓]		
b. Med Water	[ ]		✓
c. Low Soil	[✓]		
d. Med Soil	[ ]		✓
3.2 Are all the PEST/PCB samples listed on the appropriate Surrogate Recovery Summaries for each of the following matrices:			
a. Low Water	[✓]		
b. Med Water	[ ]		✓
c. Low Soil	[✓]		
d. Med Soil	[ ]		✓

YES NO N/A

ACTION: Follow the directions in the table below to qualify TCL results due to contamination. Use the largest value from all the associated blanks.

	Sample conc > CRQL but < 10x blank	Sample conc < CRQL & is < 10x blank value	Sample conc > CRQL value & >10x blank value
Common Phthalate Esters	Flag sample result with a 'U'; cross out 'B' flag	Reject sample result and report CRQL; cross out 'B' flag	No qualification is needed

	Sample conc > CRQL but < 5x blank	Sample conc < CRQL & is < 5x blank value	Sample conc > CRQL value & > 5 blank value
Other Contaminants	Flag sample result with a 'U'; cross out 'B' flag	Reject sample result and report CRQL; cross out 'B' flag	No qualification is needed

ACTION: For TIC compounds, if the concentration in the sample is less than five times the concentration in the most contaminated associated blank, flag the sample data "R" (unusable).

6.3 Are there field/rinse/equipment blanks associated with every sample? [✓] ___ ___

ACTION: For low level samples, note in data assessment that there is no associated field/rinse/equipment blank. Exception: samples taken from a drinking water tap do not have associated field blanks.

7.0 GC/MS Tuning and Mass Calibration (Form V)

7.1 Are the GC/MS Tuning and Mass Calibration Forms (Form V) present for Decafluorotriphenylphosphine (DFTPP)? [✓] ___ ___

7.2 Are the enhanced bar graph spectrum and mass/charge (m/z) listing for the DFTPP provided for each twelve hour shift? [✓] ___ ___

7.3 Has a tuning performance compound been analyzed for every twelve hours of sample analysis per instrument? [✓] ___ ___

ACTION: If any tuning data are missing, take action specified in 3.2 above.

ACTION: List date, time, instrument ID, and sample analyses for which no associated GC/MS tuning data are available.

YES NO N/A

% DIFFERENCE

25-50	50-90	>90
'J' positive results, no action for non detects	'J' positive results, 'UJ' non detects	'J' positive results, "R" non detects

13.5 Are there any transcription / calculation errors in the reporting of average response factors (RRF) or difference (%D) between initial and continuing RRFs? (Check at least two values but if errors are found, check more.) ___ [✓] ___

ACTION: Circle errors in red.

ACTION: If errors are large, call lab for explanation / resubmittal, make any necessary corrections and note errors under "Conclusions".

14.0 Internal Standards (Form VIII)

14.1 Are the internal standard areas (Form VIII) of every sample and blank within the upper and lower limits for each continuing calibration? [✓] ___ ___

ACTION: List all the outliers below.

Sample #	Internal Std	Area	Lower Limit	Upper Limit

(Attach additional sheets if necessary.)

ACTION: If the internal standard area count is outside the upper or lower limit, flag with "J" all positive results and non-detects (U values) quantitated with this internal standard. If extremely low area counts are reported, or if performance exhibits a major abrupt drop off, flag all associated non-detects as unusable ("R").

14.2 Are the retention times of the internal standards within 30 seconds of the associated calibration standard? [✓] ___ ___

ACTION: Professional judgement should be used to qualify data if the retention times differ by more than 30 seconds.

	YES	NO	N/A
8.2 Are the BNA Reconstructed Ion Chromatograms, the mass spectra for the identified compounds, and the data system printouts (Quant Reports) included in the sample package for each of the following?			
a. Samples and/or fractions as appropriate	[✓]	___	___
b. Matrix spikes and matrix spike duplicates (Mass spectra not required)	[✓]	___	___
c. Blanks	[✓]	___	___
ACTION: If any data are missing, take action specified in 3.2 above.			
8.3 Are the response factors shown in the Quant Report?	[✓]	___	___
8.4 Is chromatographic performance acceptable with respect to:			
Baseline stability	[✓]	___	___
Resolution	[✓]	___	___
Peak shape	[✓]	___	___
Full-scale graph (attenuation)	[✓]	___	___
Other:_____	[ ]	___	___
ACTION: Use professional judgement to determine the acceptability of the data.			
8.5 Are the lab-generated standard mass spectra of the identified BNA compounds present for each sample?	[✓]	___	___
ACTION: If any mass spectra are missing, take action specified in 3.2 above. If Lab does not generate their own standard spectra, make note in "Contract Problems/Non-compliance".			
8.6 Is the RRT of each reported compound within 0.06 RRT units of the standard RRT in the continuing calibration?	[✓]	___	___
8.7 Are all ions present in the standard mass spectrum at a relative intensity greater than 10% also present in the sample mass spectrum?	[✓]	___	___
8.8 Do sample and standard relative ion intensities agree within 20%?	[✓]	___	___
ACTION: Use professional judgement to determine acceptability of data. If it is determined that incorrect identifications were made, all such data should be rejected, flagged "N" (presumptive evidence of the presence of the compound) or changed to not detected (at the calculated detection limit).			

	YES	NO	N/A
ACTION: If errors are large, call lab for explanation / resubmittal, make any necessary corrections and note errors under "Conclusions".			
ACTION: When a sample is analyzed at more than one dilution, the lowest CRQLs are used (unless a QC exceedance dictates the use of the higher CRQL data from the diluted sample analysis). Replace concentrations that exceed the calibration range in the original analysis by crossing out the "E" value on the original Form I and substituting it with data from the analysis of diluted sample. Specify which Form I is to be used, then draw a red "X" across the entire page of all Form I's that should not be used, including any in the summary package.			
11.0 Standards Data (GC/MS)			
11.1 Are the Reconstructed Ion Chromatograms, and data system printouts (Quant. Reports) present for initial and continuing calibration?	[✓]	___	___
ACTION: If any calibration standard data are missing, take action specified in 3.2 above.			
12.0 GC/MS Initial Calibration (Form VI)			
12.1 Are the Initial Calibration Forms (Form VI) present and complete for the BNA fraction?	[✓]	___	___
ACTION: If any calibration standard forms are missing, take action specified in 3.2 above.			
12.2 Are response factors stable for BNAs over the concentration range of the calibration (RSD <30%)?	[✓]	___	___
ACTION: Circle all outliers in red.			
ACTION: When RSD >30%, non-detects may be qualified using professional judgement. Flag all positive results "J". When RSD >90%, flag all non-detects as unusable ("R"). (Region II policy.)			
12.3 Do any compounds have a RRF < 0.05?	___	[✓]	___
ACTION: Circle all outliers in red.			
ACTION: If any BNA compound has an average RRF < 0.05, flag positive results for that compound as estimated ("J"), and flag non-detects for that compound as unusable ("R").			

	YES	NO	N/A
ACTION: If errors are large, call lab for explanation / resubmittal, make any necessary corrections and note errors under "Conclusions".			
ACTION: When a sample is analyzed at more than one dilution, the lowest CRQLs are used (unless a QC exceedance dictates the use of the higher CRQL data from the diluted sample analysis). Replace concentrations that exceed the calibration range in the original analysis by crossing out the "E" value on the original Form I and substituting it with data from the analysis of diluted sample. Specify which Form I is to be used, then draw a red "X" across the entire page of all Form I's that should not be used, including any in the summary package.			
11.0 Standards Data (GC/MS)			
11.1 Are the Reconstructed Ion Chromatograms, and data system printouts (Quant. Reports) present for initial and continuing calibration?	[✓]	___	___
ACTION: If any calibration standard data are missing, take action specified in 3.2 above.			
12.0 GC/MS Initial Calibration (Form VI)			
12.1 Are the Initial Calibration Forms (Form VI) present and complete for the BNA fraction?	[✓]	___	___
ACTION: If any calibration standard forms are missing, take action specified in 3.2 above.			
12.2 Are response factors stable for BNAs over the concentration range of the calibration (RSD <30%)?	[✓]	___	___
ACTION: Circle all outliers in red.			
ACTION: When RSD >30%, non-detects may be qualified using professional judgement. Flag all positive results "J". When RSD >90%, flag all non-detects as unusable ("R"). (Region II policy.)			
12.3 Do any compounds have a RRF < 0.05?	___	[✓]	___
ACTION: Circle all outliers in red.			
ACTION: If any BNA compound has an average RRF < 0.05, flag positive results for that compound as estimated ("J"), and flag non-detects for that compound as unusable ("R").			

	YES	NO	N/A
8.2 Are the BNA Reconstructed Ion Chromatograms, the mass spectra for the identified compounds, and the data system printouts (Quant Reports) included in the sample package for each of the following?			
a. Samples and/or fractions as appropriate	[✓]	___	___
b. Matrix spikes and matrix spike duplicates (Mass spectra not required)	[✓]	___	___
c. Blanks	[✓]	___	___
ACTION: If any data are missing, take action specified in 3.2 above.			
8.3 Are the response factors shown in the Quant Report?	[✓]	___	___
8.4 Is chromatographic performance acceptable with respect to:			
Baseline stability	[✓]	___	___
Resolution	[✓]	___	___
Peak shape	[✓]	___	___
Full-scale graph (attenuation)	[✓]	___	___
Other:_____	[ ]	___	___
ACTION: Use professional judgement to determine the acceptability of the data.			
8.5 Are the lab-generated standard mass spectra of the identified BNA compounds present for each sample?	[✓]	___	___
ACTION: If any mass spectra are missing, take action specified in 3.2 above. If Lab does not generate their own standard spectra, make note in "Contract Problems/Non-compliance".			
8.6 Is the RRT of each reported compound within 0.06 RRT units of the standard RRT in the continuing calibration?	[✓]	___	___
8.7 Are all ions present in the standard mass spectrum at a relative intensity greater than 10% also present in the sample mass spectrum?	[✓]	___	___
8.8 Do sample and standard relative ion intensities agree within 20%?	[✓]	___	___
ACTION: Use professional judgement to determine acceptability of data. If it is determined that incorrect identifications were made, all such data should be rejected, flagged "N" (presumptive evidence of the presence of the compound) or changed to not detected (at the calculated detection limit).			

YES NO N/A

% DIFFERENCE

25-50	50-90	>90
'J' positive results, no action for non detects	'J' positive results, 'UJ' non detects	'J' positive results, "R" non detects

13.5 Are there any transcription / calculation errors in the reporting of average response factors (RRF) or difference (%D) between initial and continuing RRFs? (Check at least two values but if errors are found, check more.) ___ [✓] ___

ACTION: Circle errors in red.

ACTION: If errors are large, call lab for explanation / resubmittal, make any necessary corrections and note errors under "Conclusions".

14.0 Internal Standards (Form VIII)

14.1 Are the internal standard areas (Form VIII) of every sample and blank within the upper and lower limits for each continuing calibration? [✓] ___ ___

ACTION: List all the outliers below.

Sample #	Internal Std	Area	Lower Limit	Upper Limit

(Attach additional sheets if necessary.)

ACTION: If the internal standard area count is outside the upper or lower limit, flag with "J" all positive results and non-detects (U values) quantitated with this internal standard. If extremely low area counts are reported, or if performance exhibits a major abrupt drop off, flag all associated non-detects as unusable ("R").

14.2 Are the retention times of the internal standards within 30 seconds of the associated calibration standard? [✓] ___ ___

ACTION: Professional judgement should be used to qualify data if the retention times differ by more than 30 seconds.

YES NO N/A

ACTION: Follow the directions in the table below to qualify TCL results due to contamination. Use the largest value from all the associated blanks.

	Sample conc > CRQL but < 10x blank	Sample conc < CRQL & is < 10x blank value	Sample conc > CRQL value & >10x blank value
Common Phthalate Esters	Flag sample result with a 'U'; cross out 'B' flag	Reject sample result and report CRQL; cross out 'B' flag	No qualification is needed

	Sample conc > CRQL but < 5x blank	Sample conc < CRQL & is < 5x blank value	Sample conc > CRQL value & > 5 blank value
Other Contaminants	Flag sample result with a 'U'; cross out 'B' flag	Reject sample result and report CRQL; cross out 'B' flag	No qualification is needed

ACTION: For TIC compounds, if the concentration in the sample is less than five times the concentration in the most contaminated associated blank, flag the sample data "R" (unusable).

6.3 Are there field/rinse/equipment blanks associated with every sample? [✓] ___ ___

ACTION: For low level samples, note in data assessment that there is no associated field/rinse/equipment blank. Exception: samples taken from a drinking water tap do not have associated field blanks.

7.0 GC/MS Tuning and Mass Calibration (Form V)

7.1 Are the GC/MS Tuning and Mass Calibration Forms (Form V) present for Decafluorotriphenylphosphine (DFTPP)? [✓] ___ ___

7.2 Are the enhanced bar graph spectrum and mass/charge (m/z) listing for the DFTPP provided for each twelve hour shift? [✓] ___ ___

7.3 Has a tuning performance compound been analyzed for every twelve hours of sample analysis per instrument? [✓] ___ ___

ACTION: If any tuning data are missing, take action specified in 3.2 above.

ACTION: List date, time, instrument ID, and sample analyses for which no associated GC/MS tuning data are availabl .

PART C: PESTICIDE/PCB ANALYSES

	YES	NO	N/A
1.0 Traffic Reports and Laboratory Narrative			
1.1 Are the ~~Traffic Report Forms~~ Chain-of-Custodies present for all samples?	✓		
ACTION: If no, contact lab for replacement of missing or illegible copies.			
1.2 Do the Traffic Reports or Lab Narrative indicate any problems with sample receipt, condition of samples, analytical problems or special notations affecting the quality of the data?		✓	
ACTION: Use professional judgement to evaluate the effect on the quality of the data.			
ACTION: If any sample analyzed as a soil contains more than 50% water, all data should be flagged as estimated (J).			
2.0 Holding Times			
2.1 Have any PEST/PCB holding times, determined from date of collection to date of extraction, been exceeded?		✓	
Samples for PEST/PCB analysis, both soils and waters, must be extracted within seven days of the date of collection. Extracts must be analyzed within 40 days of the date of extraction.			
3.0 Surrogate Recovery (Form II)			
3.1 Are the PEST/PCB Surrogate Recovery Summaries (Form II) present for each of the following matrices:			
a. Low Water	✓		
b. Med Water			✓
c. Low Soil	✓		
d. Med Soil			✓
3.2 Are all the PEST/PCB samples listed on the appropriate Surrogate Recovery Summaries for each of the following matrices:			
a. Low Water	✓		
b. Med Water			✓
c. Low Soil	✓		
d. Med Soil			✓

	YES	NO	N/A
If any base-neutral or acid surrogate has a recovery of <10% : 1. Flag all positive results for that fraction (i.e. all acid or base-neutral compounds) "J". 2. Flag all non-detects for that fraction "R".			
Professional judgement should be used to qualify data that have method blank surrogate recoveries out of specification in both original and re-analyses. Check the internal standard areas.			
3.5 Are there any transcription/calculation errors between raw data and Form II?	___	[✓]	___
ACTION: If large errors exist, call lab for explanation / resubmittal, make any necessary corrections and note errors under "Conclusions".			
4.0 Matrix Spikes (Form III)			
4.1 Is the Matrix Spike Duplicate/Recovery Form (Form III) present?	[✓]	___	___
4.2 Were matrix spikes analyzed at the required frequency for each of the following matrices:			
a. Low Water (field blank-NR)	[ ]	___	✓
b. Med Water	[ ]	___	✓
c. Low Soil	[✓]	___	___
d. Med Soil	[ ]	___	✓
ACTION: If any matrix spike data are missing, take the action specified in 3.2 above.			

4.3 How many BNA spike recoveries are outside QC limits?

Water	Soils
X out of 22	0 out of 22

4.4 How many RPD's for matrix spike and matrix spike duplicate recoveries are outside QC limits?

Water	Soils
X out of 11	0 out of 11

ACTION: If MS and MSD both have less than 10% recovery for an analyte, negative results for that analyte should be rejected, and positive results should be flagged "J". The above applies only to the sample used for MS/MSD analysis. Use professional judgement in applying this criterion to other samples.

	YES	NO	N/A
4.4 How many RPD's for matrix spike and matrix spike duplicate recoveries are outside QC limits?			

Water: Ø out of 6 Soils: 6 out of 6

ACTION: If MS and MSD both have less than zero recovery for an analyte, negative results for that analyte should be rejected, and positive results should be flagged "J". The above applies only to the sample used for MS/MSD analysis. Use professional judgement in applying this criterion to other samples.

5.0 Blanks (Form IV)

	YES	NO	N/A
5.1 Is the Method Blank Summary (Form IV) present?	✓		
5.2 Frequency of Analysis: for the analysis of Pesticide TCL compounds, has a reagent/method blank been analyzed for each set of samples or every 20 samples of similar matrix (low water, med water, low soil, medium soil), whichever is more frequent?	✓		
5.3 Chromatography: review the blank raw data - chromatograms, quant reports or data system printouts.			
Is the chromatographic performance (baseline stability) for each instrument acceptable for PEST/PCBs?	✓		

ACTION: Use professional judgement to determine the effect on the data.

6.0 Contamination

NOTE: "Water blanks" and "distilled water blanks" are validated like any other sample and are not used to qualify data. Do not confuse them with the other QC blanks discussed below.

	YES	NO	N/A
6.1 Do any method/instrument/reagent blanks have positive results for PEST/PCBs? When applied as described below, the contaminant concentration in these blanks are multiplied by the sample Dilution Factor.		✓	
6.2 Do any field/rinse blanks have positive PEST/PCB results?		✓	

ACTION: Prepare a list of the samples associated with each of the contaminated blanks. (Attach a separate sheet.)

	YES	NO	N/A
PART B: BNA ANALYSES			
1.0 Traffic Reports and Laboratory Narrative			
1.1 Are the ~~Traffic Report Forms~~ Chain-of-Custody present for all samples?	[✓]		
ACTION: If no, contact lab for replacement of missing or illegible copies.			
1.2 Do the Traffic Reports or Lab Narrative indicate any problems with sample receipt, condition of samples, analytical problems or special notations affecting the quality of the data?		[✓]	
ACTION: Use professional judgement to evaluate the effect on the quality of the data.			
ACTION: If any sample analyzed as a soil contains more than 50% water, all data should be flagged as estimated (J).			
2.0 Holding Times			
2.1 Have any BNA holding times, determined from date of collection to date of extraction, been exceeded?		[✓]	
Samples for BNA analysis, both soils and waters, must be extracted within seven days of the date of collection. Extracts must be analyzed within 40 days of the date of extraction.			

Table of Holding Time Violations

Sample	Sample Matrix	Date Sampled	(See Traffic Report) Date Lab Received	Date Extracted	Date Analyzed

ACTION: If holding times are exceeded, flag all positive results as estimated ("J") and sampl quantitation limits as estimated ("UJ"), and document in the narrative that holding times were exceeded.

	YES	NO	N/A
7.2 Is Form VIII Pest-1 present and complete for each GC column (primary and confirmation) and each 72 hour sequence of analyses?	[✓]		
ACTION: If no, take action specified in 3.2 above.			
7.3 Are there any transcription/calculation errors between raw data and Form VIII?		[✓]	
ACTION: If large errors exist, call lab for explanation / resubmittal, make any necessary corrections and note errors under "Conclusions".			
7.4 Has the total breakdown on quantitation or confirmation column exceeded 20% for DDT?		[✓]	
- for Endrin?		[✓]	
or if Endrin aldehyde <u>and</u> 4,4'-DDD co-elute and there is a peak at their retention time, has the combined DDT and Endrin breakdown exceeded 20%?		[✓]	

ACTION:

a. If DDT breakdown is greater than 20% on quantitation column beginning with the samples following the last <u>in control</u> standard:

1. Flag all positive DDT results "J".
2. If DDT was not detected but DDD and/or DDE are positive, flag the DDT non-detect "R".
3. Flag positive DDD and DDE results "JN".
4. If DDT breakdown is > 20% on confirmation column <u>and</u> DDT is identified on quantitation column but not on confirmation column, use professional judgement to determine whether DDT should be reported on Form I (if reported, flag result "N").

b. If Endrin breakdown is > 20% on quantitation column, beginning with the samples following the last <u>in control</u> standard:

1. Flag all positive Endrin results "J".
2. If Endrin was not detected, but Endrin Aldehyde and/or Endrin Ketone are positive, flag the Endrin non-detect "R".
3. Flag Endrin Ketone positive results "JN".
4. If Endrin breakdown is > 20% on confirmation column <u>and</u> Endrin is identified on quantitation column but not on confirmation column, use professional judgement to determine whether Endrin should be reported on Form I (if reported, flag result "N").

c. If the combined breakdown is used (it can only be used if the conditions in 7.4 above are met) and is > 20% on quantitation column beginning with the last <u>in control</u> standard, take the actions specified in 7.4 a and b above. If the combined breakdown is >20% on confirmation column <u>and</u> Endrin or DDT is identified on quantitation column but not on confirmation column, use professional judgement to determine whether Endrin or DDT should be reported on Form I (if reported, flag result "N").

YES NO N/A

% DIFFERENCE

25-50	50-90	>90
'J' positive results, no action for non detects	'J' positive results, 'UJ' non detects	'J' positive results, "R" non detects

13.5 Are there any transcription / calculation errors in the reporting of average response factors (RRF) or difference (%D) between initial and continuing RRFs? (Check at least two values but if errors are found, check more.) ___ [✓] ___

ACTION: Circle errors in red.

ACTION: If errors are large, call lab for explanation / resubmittal, make any necessary corrections and note errors under "Conclusions".

14.0 Internal Standards (Form VIII)

14.1 Are the internal standard areas (Form VIII) of every sample and blank within the upper and lower limits for each continuing calibration? [___] [✓] ___

ACTION: List all the outliers below.

Sample #	Internal Std	Area $\times 10^3$	Lower Limit $\times 10^3$	Upper Limit $\times 10^3$
ES110006	BCM	24.8	25.0	100.
	DFB	69.8	117.5	470.
	CBZ	40.	115.4	461.6
ES110006 RE	DFB	83.8	87.6	350.5
	CBZ	51.8	83.3	333.
ES513-0612	BCM	18.7	26.0	100.
	DFB	64.0	117.5	470.
	CBZ	41.3	115.4	461.6
ES513-0612 RE	DFB	58.4	87.6	350.
	CBZ	37.9	83.3	333.

(Attach additional sheets if necessary.)

ACTION: If the internal standard area count is outside the upper or lower limit, flag with "J" all positive results and non-detects (U values) quantitated with this internal standard. If extremely low area counts are reported, or if performance exhibits a major abrupt drop off, flag all associated non-detects as unusable ("R").

(IS 3 - both spl
IS 2 - SS13 0612)
(already J because of high surrogates)

14.2 Are the retention times of the internal standards within 30 seconds of the associated calibration standard? [✓] ___ ___

ACTION: Professional judgement should be used to qualify data if the retention times differ by more than 30 seconds.

	YES	NO	N/A
ACTION: Beginning with the samples following the last in control standard, check to see if the chromatograms contain peaks within an expanded window surrounding the expected retention times. If no peaks are found and, DBC is visible non-detects are valid. If peaks are present and cannot be identified through "pattern recognition" or a consistent shift in standard retention times, flag all affected compound results "R".			
8.5 Are the continuing calibration standard calibration factors within 15% (for quantitation column) or 20% (for confirmation column) of the initial (at beginning of 72 hr sequence) calibration factors?	✓		
ACTION: If no, flag all associated positive results "J". Use professional judgement to determine whether or not to flag non-detects.			
9.0 Pesticide/PCB Identification			
9.1 Is Form X complete for every sample in which a pesticide or PCB was detected?	✓		
ACTION: If no, take action specified in 3.2 above.			
9.2 Are there any transcription errors between raw data and Form X?		✓	
ACTION: If large errors exist, call lab for explanation / resubmittal, make any necessary corrections and note errors under "Conclusions".			
9.3 Are retention times of sample compounds within the calculated retention time windows for both quantitation and confirmation analyses?	✓		
~~Was GC/MS confirmation provided when required (when compound concentration is > 10 ug/ml in final extract)?~~			✓
ACTION: Reject ("R") all positive results (meeting quantitation column criteria, but missing confirmation by a second column or GC/MS (if appropriate). Also, reject ("R") all positive results not meeting retention time window criteria unless associated standard compounds are similarly biased (i.e. base on RRT to DBC).			
9.4 Check chromatograms for false negatives, especially for the multiple peak components toxaphene and PCB's. Were there any false negatives?		✓	
ACTION: If appropriate PCB standards were not analyzed, or if the lab performed no confirmation analysis, flag the appropriate data with an "R".			

	YES	NO	N/A
ACTION: If errors are large, call lab for explanation / resubmittal, make any necessary corrections and note errors under "Conclusions".			
ACTION: When a sample is analyzed at more than one dilution, the lowest CRQLs are used (unless a QC exceedance dictates the use of the higher CRQL data from the diluted sample analysis). Replace concentrations that exceed the calibration range in the original analysis by crossing out the "E" value on the original Form I and substituting it with data from the analysis of diluted sample. Specify which Form I is to be used, then draw a red "X" across the entire page of all Form I's that should not be used, including any in the summary package.			
11.0 Standards Data (GC/MS)			
11.1 Are the Reconstructed Ion Chromatograms, and data system printouts (Quant. Reports) present for initial and continuing calibration?	[✓]	___	___
ACTION: If any calibration standard data are missing, take action specified in 3.2 above.			
12.0 GC/MS Initial Calibration (Form VI)			
12.1 Are the Initial Calibration Forms (Form VI) present and complete for the volatile fraction?	[✓]	___	___
ACTION: If any calibration standard forms are missing, take action specified in 3.2 above.			
12.2 Are response factors stable for volatiles over the concentration range of the calibration (RSD <30%)?	[✓]	___	___
ACTION: Circle all outliers in red.			
ACTION: When RSD >30%, non-detects may be qualified using professional judgement. Flag all positive results "J". When RSD >90%, flag all non-detects as unusable ("R"). (Region II policy.)			
12.3 Do any compounds have an average RRF < 0.05?	___	[✓]	___
ACTION: Circle all outliers in red.			
ACTION: If any volatile compound has an average RRF < 0.05, flag positive results for that compound as estimated ("J"), and flag non-detects for that compound as unusabl ("R").			

	YES	NO	N/A
12.0 Field Duplicates			
12.1 Were any field duplicates submitted for PEST/PCB analysis?	[✓]	___	___

ACTION: Compare the reported results for field duplicates and calculate the relative percent difference.

ACTION: Any gross variation between field duplicate results must be addressed in the reviewer narrative. However, if large differences exist, identification of field duplicates should be confirmed by contacting the sampler.

	ESS120612	ESS12D0612	RPD (%)
delta BHC	1.9 U	0.27 Y	—
endosulfan sulfate	0.30 Y	3.7 U	—
DDT	0.38 Y	3.7 U	—

Y: single-peak pest; probable false positive.

	YES	NO	N/A
8.2 Are the VOA Reconstructed Ion Chromatograms, the mass spectra for the identified compounds, and the data system printouts (Quant Reports) included in the sample package for each of the following?			
a. Samples and/or fractions as appropriate	[✓]	___	___
b. Matrix spikes and matrix spike duplicates (Mass spectra not required)	[✓]	___	___
c. Blanks	[✓]	___	___
ACTION: If any data are missing, take action specified in 3.2 above.			
8.3 Are the response factors shown in the Quant Report?	[✓]	___	___
8.4 Is chromatographic performance acceptable with respect to:			
Baseline stability	[✓]	___	___
Resolution	[✓]	___	___
Peak shape	[✓]	___	___
Full-scale graph (attenuation)	[✓]	___	___
Other:_____	[ ]	___	___
ACTION: Use professional judgement to determine the acceptability of the data.			
8.5 Are the lab-generated standard mass spectra of the identified VOA compounds present for each sample?	[✓]	___	___
ACTION: If any mass spectra are missing, take action specified in 3.2 above. If Lab does not generate their own standard spectra, make note in "Contract Problems/Non-compliance".			
8.6 Is the RRT of each reported compound within 0.06 RRT units of the standard RRT in the continuing calibration?	[✓]	___	___
8.7 Are all ions present in the standard mass spectrum at a relative intensity greater than 10% also present in the sample mass spectrum?	[✓]	___	___
8.8 Do sample and standard relative ion intensities agree within 20%?	[✓]	___	___
ACTION: Use professional judgement to determine acceptability of data. If it is determined that incorrect identifications were made, all such data should be rejected, flagged "N" (presumptive evidence of the presence f the compound) or changed to not detected (at the calculated detection limit).			

DATA ASSESSMENT:

1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as estimated, "J", or unusable, "R", if the holding times are grossly exceeded.

The following action was taken in the samples and analytes shown due to excessive holding time.

VOAs- no problems
BNAs- no problems
PEST/PCBs- no problems

YES NO N/A

ACTION: Follow the directions in the table below to qualify TCL results due to contamination. Use the largest value from all the associated blanks.

	Sample conc > CRQL but < 10x blank	Sample conc < CRQL & is < 10x blank value	Sample conc > CRQL value & >10x blank value
Methylene chloride Acetone Toluene 2-butanone	Flag sample result with a 'U'; cross out 'B' flag	Reject sample result and report CRQL; cross out 'B' flag	No qualification is needed

	Sample conc > CRQL but < 5x blank	Sample conc < CRQL & is < 5x blank value	Sample conc > CRQL value & > 5 blank value
Other Contaminants	Flag sample result with a 'U'; cross out 'B' flag	Reject sample result and report CRQL; cross out 'B' flag	No qualification is needed

ACTION: For TIC compounds, if the concentration in the sample is less than five times the concentration in the most contaminated associated blank, flag the sample data "R" (unusable).

6.3 Are there field/rinse/equipment blanks associated with every sample? [✓] ___ ___

ACTION: For low level samples, note in data assessment that there is no associated field/rinse/equipment blank. Exception: samples taken from a drinking water tap do not have associated field blanks.

7.0 <u>GC/MS Tuning and Mass Calibration (Form V)</u>

7.1 Are the GC/MS Tuning and Mass Calibration Forms (Form V) present for Bromofluorobenzene (BFB)? [✓] ___ ___

7.2 Are the enhanced bar graph spectrum and mass/charge (m/z) listing for the BFB provided for each twelve hour shift? [✓] ___ ___

7.3 Has a tuning performance compound been analyzed for every twelve hours of sample analysis per instrument? [✓] ___ ___

ACTION: If any tuning data are missing, take action specified in 3.2 above.

ACTION: List date, time, instrument ID, and sample analyses for which no associated GC/MS tuning data are available.

NW&Carle

BLANK ANALYSIS RESULTS FOR TARGET COMPOUNDS

FRACTION	TYPE	CONC	MATRIX	SAMPLE #	SOURCE OF H_2O	CONTAMINANTS (CONCENTRATION / DETECTION LIMIT)
VOA	low solid lab blank			VB1K08	lab	147 MeCl2 2.74 ug/l 126 Acetone 23.7 ug/l 516 4M 2Pent. 1.10 ug/l 301 111TCEa 0.90 ug/l
VOA	low solid lab blank			VB1X10	lab	147 MeCl2 2.3 ug/l 281 2-butanone 1.11 ug/l 514 toluene 4.77 ug/l 676 xylenes 2.8 ug/l
VOA	low rinsate blank			ERB 0310	HNUS	147 MeCl2 7.0 ug/l 128 acetone 26.5 334 benzene 4.8 116 CS2 16.8 301 111TCEa 1.1 ug/l (2)
VOA	low trip blk			ETB 0310	HNUS	146 MeCl2 167 ug/l 126 acetone 8.32 300 111TCEa 1.73
BNA	low solid lab blk			SB1K09	lab	1667 DiEtPhth 0.90 ug/l 2698 DEHP 0.25 ug/l 2861 DNOP 0.11 ug/l
				SB1K10		2701 DEHP 3.10 ug/l 1455 DMP 0.60 1652 DEP 1.1 2108 DNBP 0.53
	acq lab blk			SB1K11		2680 DEHP 0.20 ug/l 1447 DMP 0.32 ug/l 1639 DEP 0.90 ug/l ~~DNBP~~
	Rinsate blank			ERB 0310	HNUS	1649 DEP 1.04 ug/l 1447 DMP 0.40 ug/l 2681 DEHP 0.26 ug/l
Aroclor	SOLID blank			PB1K07	Lab	ND
Pesticide PCB	solid blk			PB1K02	lab	ND
	rinsate blank			RB0310	HNUS	ND

LABORATORY REPORTED FIELD BLANK DATA IS COMPARED WITH THE SAMPLE DATA IN A TABULATION FORM WITHIN THE SAMPLE ANALYTICAL DATA SUMMARY. TENTATIVELY IDENTIFIED COMPOUNDS IN BLANKS ARE LISTED ON A SEPARATE FORM.

COMMENTS:

(1) RESULT REPORTED BY LABORATORY AND CONFIRMED BY REVIEWER.

(2) RESULT INFERRED FROM QUANTITATION LIST, DIAGNOSTICS, CHROMATOGRAM AND/OR SPECTRA.

ND = none detected

* Validation action limits: MeCl2 - 1670 ug/l; acetone - 265 ug/l; 4M2P - 5.5 ug/l; 2-butanone - 11.1 ug/l; 111TCEa - 8.65 ug/l; CS2 - 84 ug/l; benzene - 24 ug/l; toluene - 47.7 ug/l; xylenes - 14.0 ug/l

	YES	NO	N/A
If any surrogate has a recovery of <10% : 1. Flag all positive results as estimated ("J"). 2. Flag all non-detects as unusable ("R"). Professional judgement should be used to qualify data that have method blank surrogate recoveries out of specification in both original and re-analyses. Check the internal standard areas.			
3.5 Are there any transcription/calculation errors between raw data and Form II? ACTION: If large errors exist, call lab for explanation / resubmittal, make any necessary corrections and note errors under "Conclusions".	___	[✓]	___
4.0 Matrix Spikes (Form III)			
4.1 Is the Matrix Spike Duplicate/Recovery Form (Form III) present?	[✓]	___	___
4.2 Were matrix spikes analyzed at the required frequency for each of the following matrices:			
a. Low Water	[ ]	___	✓
b. Med Water	[ ]	___	✓
c. Low Soil	[✓]	___	___
d. Med Soil	[ ]	___	✓
ACTION: If any matrix spike data are missing, take the action specified in 3.2 above.			

4.3 How many VOA spike recoveries are outside QC limits?

Water	Soils
X out of 10	2 out of 10

4.4 How many RPD's for matrix spike and matrix spike duplicate recoveries are outside QC limits?

Water	Soils
X out of 5	0 out of 5

ACTION: If MS and MSD both have less than 10% recovery for an analyte, negative results for that analyte should be rejected, and positive results should be flagged "J". The above applies only to the sampl used for the MS/MSD analysis. Use professional judgement in applying this criterion to other samples in the package.

ATTACHMENT 1
SOP NO. HW-6

DATA ASSESSMENT:

3. MASS SPECTROMETER TUNING:

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds, and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances. The tuning standard for volatile organics is bromofluorobenzene (BFB) and for semi-volatiles is decafluorotriphenyl- phosphine (DFTPP).

If the mass calibration is in error, all associated data will be classified as unusable, "R".

VOA - OK
BNA - OK

	YES	NO	N/A
PART A: VOA ANALYSES			
1.0 Traffic Reports and Laboratory Narrative			
1.1 Are the ~~Traffic Report~~ Chain-of-Custody Forms present for all samples?	[✓]	___	___
ACTION: If no, contact lab for replacement of missing or illegible copies.			
1.2 Do the Traffic Reports or Lab Narrative indicate any problems with sample receipt, condition of samples, analytical problems or special notations affecting the quality of the data?	✓	[ ]	___
ACTION: Use professional judgement to evaluate the effect on the quality of the data.			
ACTION: If any sample analyzed as a soil contains more than 50% water, all data should be flagged as estimated (J).			
ACTION: If both VOA vials for a sample have air bubbles, flag all positive results "J" and all non-detects "R".			
2.0 Holding Times			
2.1 Have any VOA holding times, determined from date of collection to date of analysis, been exceeded?	___	[✓]	___

If unpreserved, aqueous aromatic volatiles must be analyzed within 7 days of collection and non-aromatic volatiles must be analyzed within 14 days. If preserved with hydrochloric acid and stored at 4°C, then both aromatic and non-aromatic volatiles must be analyzed within 14 days. If uncertain about preservation, contact the sampler to determine whether the samples were preserved.

A ten-day holding time for soil samples is recommended.

Table of Holding Time Violations

Sample	Sample Matrix	Preserved ?	(See Traffic Report) Date Sampled	Date Lab Received	Date Analyzed
___	___	___	___	___	___
___	___	___	___	___	___
___	___	___	___	___	___
___	___	___	___	___	___

ACTION: If holding times are exceeded, flag all positive results as estimated ("J") and sample quantitation limits as estimated ("UJ"), and document in the narrative that holding times were exceeded.

DATA ASSESSMENT:

5. CALIBRATION:

A) PERCENT RELATIVE STANDARD DEVIATION (%RSD) AND PERCENT DIFFERENCE (%D):

Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor of the continuing calibration check to the mean response factor (RRF) from the initial calibration. Percent D is a measure of the instrument's daily performance. Percent RSD must be <30% and %D must be <25%. A value outside of these limits indicates potential detection and quantitation errors. For these reasons, all positive results are flagged as estimated, "J" and non-detects are flagged "UJ" (if %D or RSD >50%). If there is a gross deviation of %RSD and %D, the non-detects may be rejected ("R").

For the PCB/PESTICIDE fraction, %RSD for aldrin, endrin, DDT, and dibutylchlorendate must not exceed 10%. Percent D must be within 15% on the quantitation column and 20% on the confirmation column.

VOA: CS_2 exhibited high %D on 3/17 + 3/20 – all results J(c) all detection limits UJ(c)

2-butanone exhibited high %D on 3/20 – associated results flagged J(c) associated det. limits UJ(c)

BNA: 4-Chloroaniline had a high %D on 3/16, all associated detection limits UJ(c)

hexachlorocyclopentadiene had high %Ds on both analysis days: ∴ all detection limits UJ(c)

Dehp exhibited a high %D on one day – all associated detection limits are UJ(c)

Pest/PCBs – ok

3.0 Rejection of Data - All values determined to be unacceptable on the Organic Analysis Data Sheet (Form I) must be flagged with an "R". As soon as review criteria causes data to be rejected, that data can be eliminated from any further review or consideration.

4.0 Acceptance Criteria - In order that the reviews be consistent among reviewers, this Standard Operating Procedure (SOP) should be used. Additional guidance can be found in the Functional Guidelines.

5.0 SMO Contract Compliance Screening (CCS) - This is intended to aid the reviewer in locating any problems, both corrected and uncorrected. However, the validation should be carried out even if CCS is not present. Resubmittals received from the laboratory in response to CCS must be used by the reviewer.

DATA ASSESSMENT:

7. INTERNAL STANDARDS PERFORMANCE:

Internal standard (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during every experimental run. The internal standard area count must not vary by more than a factor of 2 (-50% to +100%) from the associated continuing calibration standard. The retention time of the internal standard must not vary more than ±30 seconds from the associated continuing calibration standard. If the area count is outside the (-50% to +100%) range of the associated standard, all of the positive results for compounds quantitated using that IS are qualified as estimated, "J", and all non-detects as "UJ", or "R" if there is a severe loss of sensitivity.

If an internal standard retention time varies by more than 30 seconds, the reviewer will use professional judgment to determine either partial or total rejection of the data for that sample fraction.

VOA: all 3 ISs were low for ES110006 + ES512D0612. The last 2 ISs were low for the re-analyses of these spls. ∴ All results/detection limits considered further estimated in the initial analyses of both samples; Results/detection limits further estimated for all compounds eluting after 2-butanone in re-analyses of both spls. (coded J/UJ Q)

BNA - all OK

INTRODUCTION TO DATA VALIDATION

1.0 Scope

1.1 This procedure is applicable to organic data obtained from contractor laboratories working for the Contract Laboratory Program (CLP).

1.2 The data validation is based upon analytical and quality assurance requirements specified in the Statement of Work (SOW).

2.0 Responsibilities

Data reviewers will complete the following tasks as assigned by the Data Review Coordinator:

2.1 Data Assessment - The reviewer must answer every question on the checklist. All response shall be in ink.

2.2 Data Assessment Narrative (Attachment 1) - Data reviewer is required to use these forms and must match the action in the narrative with the action taken on the Form I(s).

2.3 Rejection Summary Form (Attachment 2) - Fill in the total number of analytes measured by different analyses and the number of analytes rejected or flagged as estimated due to corresponding quality control criteria. Place an "X" in the boxes where analyses were not performed or criteria do not apply.

2.4 Organic Regional Data Assessment - Data reviewer is also required to fill out Organic Regional Data Assessment Form (Attachment 3).

2.5 Telephone Record Log - The data reviewer should enter the bare facts of inquiry before initiating any authorized telephone conversation with a CLP laboratory. After the case review has been completed, mail the white copy of the Telephone Record Log to the laboratory and the pink copy to SMO. File the yellow copy in the Telephone Record Log folder and attach a photocopy of the Telephone Record Log to the completed Data Assessment Narrative.

2.6 Forwarded Paperwork - Upon completion of the review, the following are to be forwarded to the Regional Sample Control Center (RSCC) located in the Surveillance and Monitoring Branch:

a. data package
b. completed assessment checklist
c. SMO Contract Compliance Screening (CCS)

Forward four (4) copies of the completed Data Assessment Narrative along with four (4) copies of the Organic Data Assessment Form: one each for the appropriate Regional DPO, the Sample Management Office (SMO), and to the last two addresses of the Data Reviewers Mailing List.

2.7 Filed Paperwork - Upon completion of the review, the following are to be filed within the Monitoring and Management Branch (MMB) files:

a. Telephone record Log (copy)
b. Record of Communication (original)
c. Rejection Summary Form

DATA ASSESSMENT:

9. MATRIX SPIKE/SPIKE DUPLICATE, MS/MSD:

The MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD may be used in conjunction with other QC criteria for some additional qualification of the data.

VOA - high recoveries (≈190%) were obtained for 1,1DCE.
— possible that lab mis-spiked with this compound because it is very unusual to obtain such high recoveries for a VOA compound. No data affected

BNA - all within QC limits

PESTS - All recoveries within QC limits, high RPDs have no impact

APPENDIX D

DATA VALIDATION WORKSHEETS

APPENDIX E

SUPPORT DOCUMENTATION

Transcribe

BLANK ANALYSIS RESULTS FOR TENTATIVELY IDENTIFIED COMPOUNDS

ALL TENTATIVELY IDENTIFIED COMPOUNDS FOUND IN BLANK ANALYSES ARE LISTED BELOW:

SAMPLE #	FRACTION	SCAN #(S) R R.T	ESTIMATED CONCENTRATION	COMPOUND NAME	COMMENTS
VBLK08	VOA	592	<1% IS@642		
		678	4%	NLS (poss xylenes)	
		833	2%		
		937	3%		
		965	25%		artifact: [redacted]
		986	3%		
VBLK10	VOA	833	2% IS@642	NLS	
		937	5%		
		965	2%		
		986	2%		
RB0310	VOA	592	<1% IS@642	NLS	
		715	1%		
		830	<1%		
		936	<1%		
		965	4%		
TB0310	VOA	194	14 ug/l	hexane	
		677	2% IS@642		
		833	2%		
		937	<1%		
		965	12%	artifact	
SBLK09	BNA	522	1850 (ug/l)	58, 59, 87, 98	IS: 696
		554	880	49, 51, 55, 71, 76, 84, 86	1018
		675	570	71, 99	1495
		720	550	87	1896
		745	1900	57, 70, 83, 98	2632
		1425	2000	57, 71, 83, 112	3002
		1742	280	149, 163, 177, 191, 205, 219, 232, 249	
		2199	200	sulfur	
		2783	4700	squalene	
		2856	150	phthalate (poss DNOP)	
		2987	170	57, 71, 113, 149...	
		972	49% IS@1018	NLS	
		1660	49% IS@1495		
		1838	69% IS@1896		
		2459	39% IS@2632		
		2553	19%		
		2588	"		
		2822	89% IS@3002		
		2878	6%		
		2900	7%		
		2912	8%		

ND = none detected

NLS = no library search conducted

(...) = primary ions

IS = internal standards

BLANK ANALYSIS RESULTS FOR TENTATIVELY IDENTIFIED COMPOUNDS

ALL TENTATIVELY IDENTIFIED COMPOUNDS FOUND IN BLANK ANALYSES ARE LISTED BELOW:

SAMPLE #	FRACTION	SCAN #(S) OR R.T	ESTIMATED CONCENTRATION	COMPOUND NAME	COMMENTS
SB3410	BNA	619	300 ug/kg	59, 87, 97, 125	IS
		663	430	55, 57, 69, 70, 84, 99	
		733	310	57, 70, 83, 98	682
		750	270	55, 56, 57, 69, 70, 84, 86, 97	1004
		1377	470	43, 57, 71, 97, 112, 113	1486
		1419	4200	43, 57, 71, 112	1890
		1448	710	55, 57, 71, 84	2633
		1737	430	butanpane ite	3008
		2011	180	55, 69, 83, 97, 111, 125	
		2241	230	same as 2011	
		2773	200	57, 71, 113, 119, 164, 181, 276	
		2787	1150	57, 71, 136, 174, 182, 276	
		2809	190	same as 2787	
		2820	466	" "	
		2856	140	" " "	
		2941	310	69, 81, 95, 109	
SB6311	BNA	531	30 ug/l	71, 76, 78, 83	IS: 675
		2863	78 ug/l	89, 132, 142, 164, 179.....	997
		1244	390 IS@1474	NLS	1474
		1500	290 "		2338
		2442	190 IS@2338		2613
		2539	490 IS@2613		2984
		651	490 IS@675		
E-R6030	BNA	533	40 ug/l	71, 76, 83	IS: 677
		520	390 IS@677	NLS	994
		660	490 "		1477
		1248	290 IS@1477		1878
		1370	290 "		2616
		1507	390		2987
		1642	490		
		1712	790 IS@1878		
		1739	390 "		
		2006	290	poss phthalate	
		2445	890 IS@2616		
		2542	990		
		2632	990		
		2722	590		
		2810	490 IS@2987		
		2840	490		
		2921	490		

ND = none detected
NLS = no library search conducted
( ) = primary ions

IS = internal standards

2B
SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

ab Name: ORTEK Contract: 459872

ab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: E-RB-0

evel:(low/med) LOW

	EPA SAMPLE NO.	SMC1 (TOL) #	SMC2 (BFB) #	SMC3 (DCE) #	OTHER	TOT OUT
01	E-RB-0310	100	104	86	0	0
02	E-S10-0006	116	95	98	0	0
03	E-S11-0006	154 *	64	81	0	1
04	E-S11-0006RE	150 *	71	99	0	1
05	E-S12-0006	106	99	97	0	0
06	E-S13-0006	105	91	88	0	0
07	E-SS10-0612	112	83	88	0	0
08	E-SS11-0612	99	97	87	0	0
09	E-SS12-0612	105	112	93	0	0
10	E-SS12D-0612	101	104	90	0	0
11	E-SS13-0612	155 *	69	95	0	1
12	E-SS13-0612RE	142 *	74	81	0	1
13	E-SS4-0612	132	332 *	85	0	1
14	E-TB-0310	111	113	96	0	0
15	E-SS110612MS	107	98	102	0	0
16	E-SS110612MSD	111	99	105	0	0
17	VBLK08	109	111	99	0	0
18	VBLK10	99	98	96	0	0

not RE due to high levels of interferencing compounds (see case narrative)

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

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

ORTEK
ENVIRONMENTAL LABORATORY
414-498-2222
FAX: 414-498-4067
2496 West Mason Street P.O. Box 12435 Green Bay, WI 54307-2435

4.) Due to large concentrations of late eluting hydrocarbons in EPA Sample No. E-SS4-612, the surrogate 4-Bromofluorobenzene exhibited a high recovery. Based on experience, a reanalysis would have confirmed that this deficiency was, in fact, due to a matrix affect; consequently, no reanalysis was performed in order to maintain the integrity of the instrument.

5.) Column anomalies and Carbon Dioxide peaks were not included as TIC's.

6.) The Data Summary and Data Package were collated in accordance with CLP-SOW 1/91 section B9-21.

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature."

Signature: Dave Schumacher Name: Dave Schumacher

Date: 3-25-92 Title: Assistant Lab Director

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: E-RB-0

Matrix Spike - EPA Sample No.: E-SS11-0612 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	52.3	0	98.6	188 *	59-172
Trichloroethene	52.3	0	70.0	134	62-137
Benzene	52.3	5.18	74.4	132	66-142
Toluene	52.3	0	66.6	127	59-139
Chlorobenzene	52.3	0	59.4	114	60-133

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	53.7	95.7	178 *	5	22	59-172
Trichloroethene	53.7	68.3	127	5	24	62-137
Benzene	53.7	71.9	124	6	21	66-142
Toluene	53.7	65.5	122	4	21	59-139
Chlorobenzene	53.7	60.8	113	1	21	60-133

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

* Values outside of QC limits

RPD: 0 out of 5 outside limits
Spike Recovery: 2 out of 10 outside limits

COMMENTS: 123294 TCL-S 1/91
-10-10,10,10-10,3,10-90,5,90-110,10,34-300U,1.51S/S,1254EV,50CV

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: E-RB-0

Lab File ID (Standard): 203CV059 Date Analyzed: 03/17/92

Instrument ID: 50CV Time Analyzed: 1006

GC Column: WIDE DB624 ID: 0.530(mm) Heated Purge: (Y/N) Y

		IS1(BCM) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CBZ) AREA #	RT #
	12 HOUR STD	49791	7.05	235054	9.62	230796	16.17
	UPPER LIMIT	99582	7.55	470108	10.12	461592	16.67
	LOWER LIMIT	24896	6.55	117527	9.12	115398	15.67
	EPA SAMPLE NO.						
01	E-RB-0310	40349	7.07	179736	9.62	173104	16.17
02	E-S11-0006	50% 24848 *	7.02	30% 69815 *	9.59	17% 39951 *	16.14
03	E-SS10-0612	47315	7.05	213078	9.62	138396	16.17
04	E-SS11-0612	34273	7.05	181015	9.59	163270	16.14
05	E-SS12-0612	29894	7.00	154818	9.57	137270	16.12
06	E-SS12D-0612	27403	7.02	149703	9.59	143251	16.14
07	E-SS13-0612	38% 18774 *	7.05	27% 64081 *	9.62	18% 41265 *	16.17
08	E-SS4-0612	33732	7.05	169582	9.62	293763	16.17
09	E-TB-0310	40491	7.05	184546	9.62	178656	16.17
10	E-SS110612MS	34056	7.05	170869	9.62	170997	16.17
11	E-SS110612MS	34837	7.05	179771	9.59	173256	16.14
12	VBLK08	41358	7.07	198678	9.62	178320	16.17

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

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

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

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: E-RB-0

Lab File ID (Standard): 203CV078 Date Analyzed: 03/20/92

Instrument ID: 50CV Time Analyzed: 1743

GC Column: WIDE DB624 ID: 0.530(mm) Heated Purge: (Y/N) Y

		IS1(BCM) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CBZ) AREA #	RT #
	12 HOUR STD	35865	7.00	175253	9.59	166618	16.14
	UPPER LIMIT	71730	7.50	350506	10.09	333236	16.64
	LOWER LIMIT	17932	6.50	87626	9.09	83309	15.64
	EPA SAMPLE NO.						
01	E-S10-0006	27772	7.02	128806	9.59	102802	16.14
02	E-S11-0006RE	63% 22727	7.02	48% 83812 *	9.57	31% 51827 *	16.12
03	E-S12-0006	23947	7.02	121830	9.59	97191	16.14
04	E-S13-0006	20284	7.02	106675	9.59	84148	16.14
05	E-SS13-0612RE	20322	7.02	33% 58416 *	9.59	23% 37936 *	16.14
06	VBLK10	27104	7.05	141426	9.59	134581	16.14

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

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

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

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: E-RB-0

Instrument ID: 50CV Calibration date: 03/20/92 Time: 1743

Lab Fil ID: 203CV078 Init. Calib. Date(s): 01/07/92 01/07/92

Heated Purge: (Y/N) Y Init. Calib. Times: 1904 2137

GC Column: WIDE DB624 ID: 0.530(mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Chloromethane	0.831	0.735		11.6		
Bromomethane	1.081	0.889	0.100	17.8	25.0	
Vinyl Chloride	0.827	0.699	0.100	15.5	25.0	
Chloroethane	0.830	0.733		11.7		
Methylene Chloride	1.657	1.396		15.8		
Acetone	0.431	0.337		21.8		
Carbon Disulfide	2.289	1.051		54.1		no hits; UJ on Det. Lim.
1,1-Dichloroethene	1.360	1.153	0.100	15.2	25.0	
1,1-Dichloroethane	2.222	2.402	0.200	-8.1	25.0	
1,2-Dichloroethene (total)	0.431	0.400		7.2		
Chloroform	3.717	4.145	0.200	-11.5	25.0	
1,2-Dichloroethane	2.001	2.060	0.100	-2.9	25.0	
2-Butanone	0.061	0.028		54.1		J(hits); UJ(det Lim's)
1,1,1-Trichloroethane	0.907	0.935	0.100	-3.1	25.0	
Carbon Tetrachloride	0.959	1.038	0.100	-8.2	25.0	
Bromodichloromethane	0.804	0.867	0.200	-7.8	25.0	
1,2-Dichloropropane	0.349	0.328		6.0	25.0	
cis-1,3-Dichloropropene	0.373	0.321	0.200	13.9	25.0	
Trichloroethene	0.444	0.406	0.300	8.6	25.0	
Dibromochloromethane	0.872	0.861	0.100	1.3	25.0	
1,1,2-Trichloroethane	0.441	0.354	0.100	19.7	25.0	
Benzene	0.851	0.710	0.500	16.6	25.0	
trans-1,3-Dichloropropene	0.296	0.222	0.100	25.0	25.0	
Bromoform	0.778	0.655	0.100	15.8	25.0	
4-Methyl-2-Pentanone	0.344	0.241		29.9		
2-Hexanone	0.162	0.112		30.9		no impact
Tetrachloroethene	0.554	0.516	0.200	6.9	25.0	
1,1,2,2-Tetrachloroethane	0.783	0.677	0.500	13.5	25.0	
Toluene	0.753	0.628	0.400	16.6	25.0	
Chlorobenzene	0.861	0.952	0.500	-10.6	25.0	
Ethylbenzene	0.325	0.365	0.100	-12.3	25.0	
Styrene	0.743	0.795	0.300	-7.0	25.0	
Xylene (total)	0.627	0.695	0.300	-10.8	25.0	
Toluene-d8	0.913	1.044		-14.4		
Bromofluorobenzene	0.569	0.665	0.200	-16.9	25.0	
1,2-Dichloroethane-d4	1.931	2.132		-10.4		

All other compounds must meet a minimum RRF of 0.010.

FORM VII VOA

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: E-RB-0

Instrument ID: 50CV Calibration date: 03/17/92 Time: 1006

Lab File ID: 203CV059 Init. Calib. Date(s): 01/07/92 01/07/92

Heated Purge: (Y/N) Y Init. Calib. Times: 1904 2137

GC Column: WIDE DB624 ID: 0.530(mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Chloromethane	0.831	0.624		24.9		
Bromomethane	1.081	0.840	0.100	22.3	25.0	
Vinyl Chloride	0.827	0.652	0.100	21.2	25.0	
Chloroethane	0.830	0.744		10.4		
Methylene Chloride	1.657	1.178		28.9		hits J
Acetone	0.431	0.337		21.8		
Carbon Disulfide	2.289	0.970		57.6		DLS UJ, J-hits
1,1-Dichloroethene	1.360	1.074	0.100	21.0	25.0	
1,1-Dichloroethane	2.222	2.369	0.200	-6.6	25.0	
1,2-Dichloroethene (total)	0.431	0.386		10.4		
Chloroform	3.717	3.805	0.200	-2.4	25.0	
1,2-Dichloroethane	2.001	2.089	0.100	-4.4	25.0	
2-Butanone	0.061	0.055		9.8		
1,1,1-Trichloroethane	0.907	0.850	0.100	6.3	25.0	
Carbon Tetrachloride	0.959	0.928	0.100	3.2	25.0	
Bromodichloromethane	0.804	0.817	0.200	-1.6	25.0	
1,2-Dichloropropane	0.349	0.335		4.0	25.0	
cis-1,3-Dichloropropene	0.373	0.367	0.200	1.6	25.0	
Trichloroethene	0.444	0.375	0.300	15.5	25.0	
Dibromochloromethane	0.872	0.850	0.100	2.5	25.0	
1,1,2-Trichloroethane	0.441	0.358	0.100	18.8	25.0	
Benzene	0.851	0.694	0.500	18.4	25.0	
trans-1,3-Dichloropropene	0.296	0.243	0.100	17.9	25.0	
Bromoform	0.778	0.655	0.100	15.8	25.0	
4-Methyl-2-Pentanone	0.344	0.310		9.9		
2-Hexanone	0.162	0.186		-14.8		
Tetrachloroethene	0.554	0.489	0.200	11.7	25.0	
1,1,2,2-Tetrachloroethane	0.783	0.721	0.500	7.9	25.0	
Toluene	0.753	0.574	0.400	23.8	25.0	
Chlorobenzene	0.861	0.884	0.500	-2.7	25.0	
Ethylbenzene	0.325	0.351	0.100	-8.0	25.0	
Styrene	0.743	0.738	0.300	0.7	25.0	
Xylene (total)	0.627	0.634	0.300	-1.1	25.0	
Toluene-d8	0.913	0.968		-6.0		
Bromofluorobenzene	0.569	0.671	0.200	-17.9	25.0	
1,2-Dichloroethane-d4	1.931	2.311		-19.7		

All other compounds must meet a minimum RRF of 0.010.

2D
SOIL SEMIVOLATILE SURROGATE RECOVERY

ab Name: ORTEK Contract: 459872

ab Code: ORTEK Case No.: NUS010 SAS No.: _____ SDG No.: E-S10-

evel:(low/med) LOW

	EPA SAMPLE NO.	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 (PHL) #	S5 (2FP) #	S6 (TBP) #	S7 (2CP) #	S8 (DCB) #	TOT OUT
01	E-S10-0006	46	56	59	38	43	27	0	0	0
02	E-S11-0006	40	48	49	33	56	34	0	0	0
03	E-S12-0006	51	67	68	38	36	22	0	0	0
04	E-S13-0006	51	53	91	39	50	57	0	0	0
05	E-SS10-0612	46	74	126	35	43	80	0	0	0
06	E-SS11-0612	42	50	76	33	53	43	0	0	0
07	E-SS12-0612	41	59	63	34	58	31	0	0	0
08	E-SS12D-0612	0 *	0 *	0 *	0 *	0 *	0 *	0	0	6
09	E-SS12D-0612	48	49	61	42	54	38	0	0	0
10	E-SS13-0612	46	54	55	34	44	21	0	0	0
11	E-SS110612MS	44	49	63	42	46	43	0	0	0
12	E-SS110612MS	48	54	66	44	55	45	0	0	0
13	SBLK09	48	54	73	43	51	35	0	0	0
14	SBLK10	51	53	68	45	61	47	0	0	0

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

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

2C
WATER SEMIVOLATILE SURROGATE RECOVERY

ab Name: ORTEK Contract: 459872

ab Code: ORTEK Case No.: NUS010 SAS No.: _____ SDG No.: E-S10-

	EPA SAMPLE NO.	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 (PHL) #	S5 (2FP) #	S6 (TBP) #	S7 (2CP) #	S8 (DCB) #	TOT OUT
01	E-RB-0310	88	86	95	29	68	19	0	0	0
02	SBLK11	78	80	99	20	69	11	0	0	0

		QC LIMITS	
S1 (NBZ)	= Nitrobenzene-d5	(35-114)	
S2 (FBP)	= 2-Fluorobiphenyl	(43-116)	
S3 (TPH)	= Terphenyl-d14	(33-141)	
S4 (PHL)	= Phenol-d5	(10-110)	
S5 (2FP)	= 2-Fluorophenol	(21-110)	
S6 (TBP)	= 2,4,6-Tribromophenol	(10-123)	
S7 (2CP)	= 2-Chlorophenol-d4	(-)	(advisory)
S8 (DCB)	= 1,2-Dichlorobenzene-d4	(-)	(advisory)

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

FORM II SV-1 3/90

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

ab Name: ORTEK Contract: 459872

ab Code: ORTEK Case No.: NUS010 SAS No.: _____ SDG No.: E-S10-

atrix Spike - EPA Sample No.: E-SS11-0612 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
Phenol	2660	0	985	37	26- 90
2-Chlorophenol	2660	0	992	37	25-102
1,4-Dichlorobenzene	1770	0	957	54	28-104
N-Nitroso-di-n-prop.(1)	1770	0	719	41	41-126
1,2,4-Trichlorobenzene	1770	0	1060	60	38-107
4-Chloro-3-methylphenol	2660	0	1010	38	26-103
Acenaphthene	1770	0	992	56	31-137
4-Nitrophenol	2660	0	680	26	11-114
2,4-Dinitrotoluene	1770	0	592	33	28- 89
Pentachlorophenol	2660	0	921	35	17-109
Pyrene	1770	0	1070	60	35-142

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	2660	1100	41	10	35	26- 90
2-Chlorophenol	2660	1610	61	49	50	25-102
1,4-Dichlorobenzene	1770	1060	60	11	27	28-104
N-Nitroso-di-n-prop.(1)	1770	744	42	2	38	41-126
1,2,4-Trichlorobenzene	1770	1130	64	6	23	38-107
4-Chloro-3-methylphenol	2660	999	38	0	33	26-103
Acenaphthene	1770	1040	59	5	19	31-137
4-Nitrophenol	2660	670	25	4	50	11-114
2,4-Dinitrotoluene	1770	712	40	19	47	28- 89
Pentachlorophenol	2660	797	30	15	47	17-109
Pyrene	1770	1160	66	10	36	35-142

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
Values outside of QC limits

PD: 0 out of 11 outside limits
pike Recovery: 0 out of 22 outside limits

OMMENTS: 123294 LOW SOIL 03/11/92
GC DESC BN: EM 1008 EV

F-5/3-00026

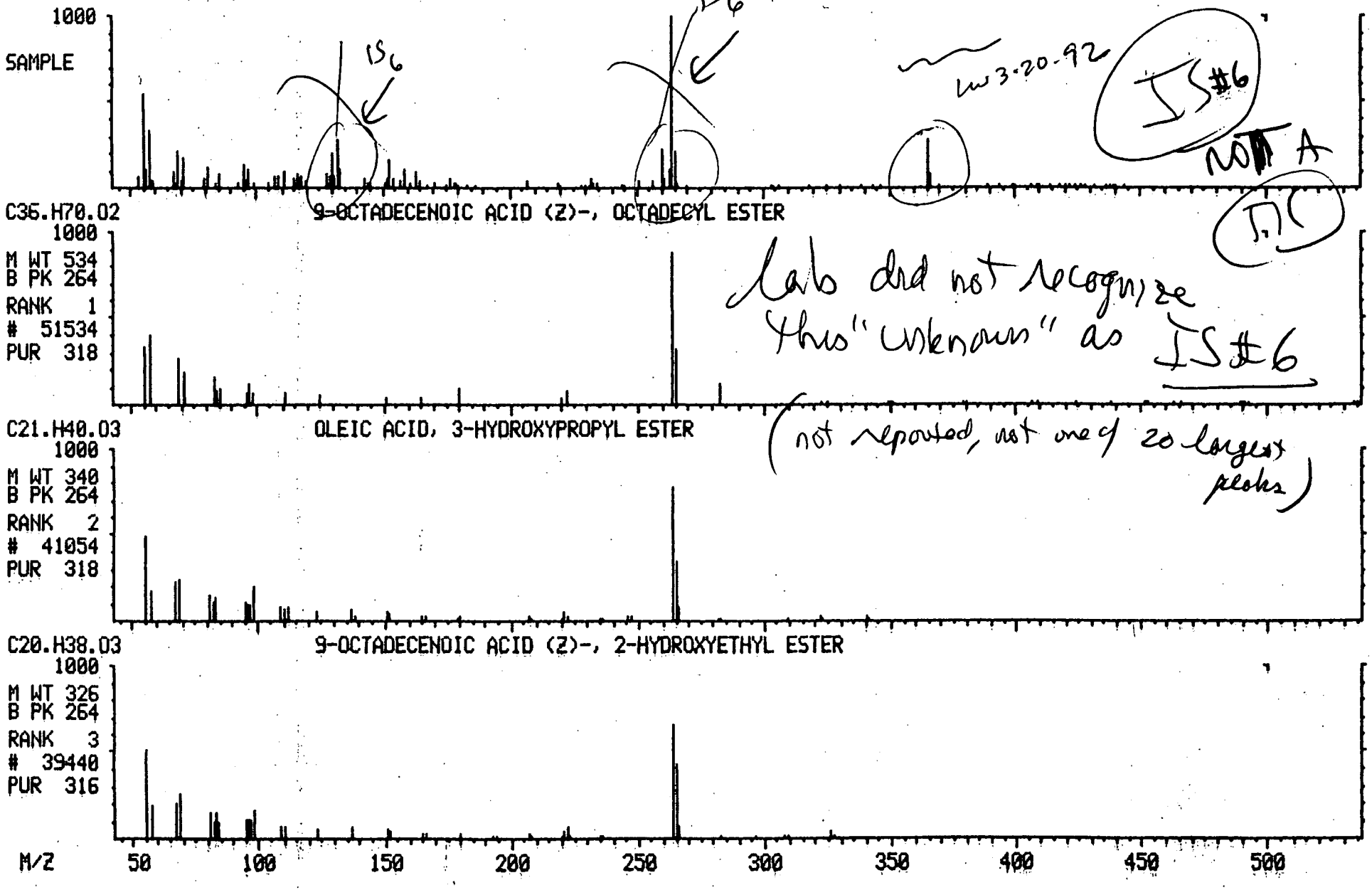
RT of IS6

MID LIBRARY SEARCH (LIBRARYNB)
03/20/92 0:02:00 + 33:27
SAMPLE: 123298 LOW SOIL 03/11/92
CONDS.: GC DESC BN: EM 1476 EV
ENHANCED (S 15B 2N 0T)

DATA: 203BB073 #2997
CALI: 203BB073 # 3

BASE M/Z: 264
RIC: 53440.

00234



Lab did not recognize this "unknown" as IS#6

(not reported, not one of 20 largest peaks)

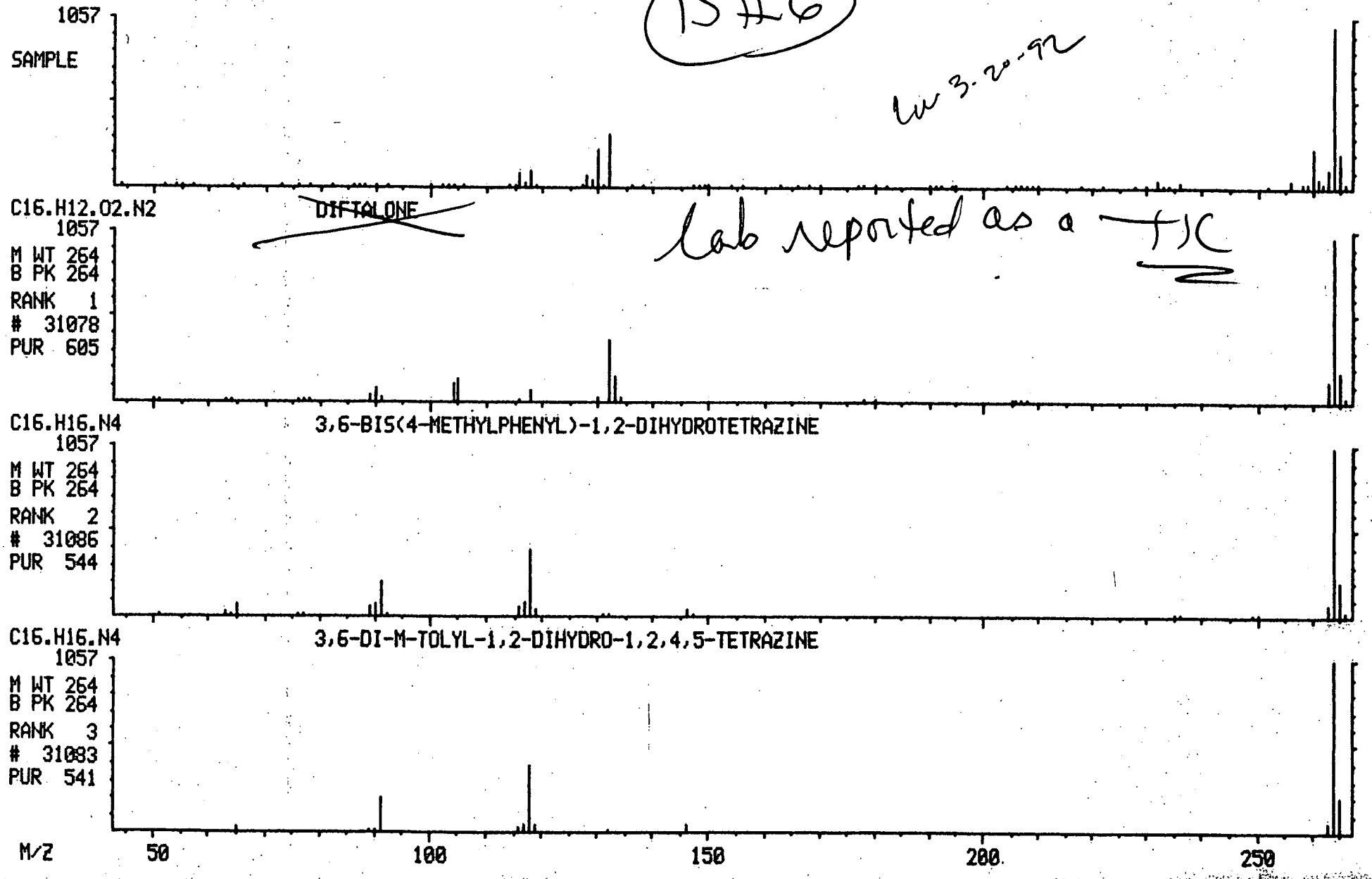
MID LIBRARY SEARCH (LIBRARYNB)
03/19/92 21:42:00 + 33:21
SAMPLE: 123297RE LOW SOIL 03/17/92
CONDS.: GC DESC BN: EM 1476 EV
ENHANCED (S 15B 2N 0T)

DATA: 203BB070 #2988
CALI: 203BB070 # 3

BASE M/Z: 264
RIC: 52800.

IS #6

lw 3-20-92



lab reported as a TIC

7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS010 SAS No.: _____ SDG No.: E-S10-

Instrument ID: 50BB Calibration date: 03/16/92 Time: 1237

Lab File ID: 203BB053 Init. Calib. Date(s): 02/11/92 02/11/92

Init. Calib. Times: 1753 2053

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Phenol	2.043	1.894	0.800	7.3	25.0	
bis(2-Chloroethyl)Ether	1.657	1.577	0.700	4.8	25.0	
2-Chlorophenol	1.508	1.338	0.800	11.3	25.0	
1,3-Dichlorobenzene	1.753	1.458	0.600	16.8	25.0	
1,4-Dichlorobenzene	1.830	1.539	0.500	15.9	25.0	
1,2-Dichlorobenzene	1.734	1.465	0.400	15.5	25.0	
2-Methylphenol	0.710	0.702	0.700	1.1	25.0	
2,2'-Oxybis(1-Chloropropane)	2.551	3.050		-19.6		
4-Methylphenol	1.330	1.111	0.600	16.5	25.0	
N-Nitroso-Di-n-Propylamine	1.226	1.349	0.500	-10.0	25.0	
Hexachloroethane	0.730	0.792	0.300	-8.5	25.0	
Nitrobenzene	0.440	0.466	0.200	-5.9	25.0	
Isophorone	0.782	0.850	0.400	-8.7	25.0	
2-Nitrophenol	0.148	0.144	0.100	2.7	25.0	
2,4-Dimethylphenol	0.298	0.324	0.200	-8.7	25.0	
bis(2-Chloroethoxy)Methane	0.417	0.474	0.300	-13.7	25.0	
2,4-Dichlorophenol	0.207	0.240	0.200	-15.9	25.0	
1,2,4-Trichlorobenzene	0.319	0.352	0.200	-10.3	25.0	
Naphthalene	1.052	1.008	0.700	4.2	25.0	
4-Chloroaniline	0.281	0.140		50.2		no hits PQL's UJ
Hexachlorobutadiene	0.182	0.250		-37.4		
4-Chloro-3-Methylphenol	0.263	0.272	0.200	-3.4	25.0	
2-Methylnaphthalene	0.730	0.689	0.400	5.6	25.0	
Hexachlorocyclopentadiene	0.274	0.432		-57.7		no hits PQL's UJ
2,4,6-Trichlorophenol	0.337	0.322	0.200	4.5	25.0	
2,4,5-Trichlorophenol	0.274	0.316	0.200	-15.3	25.0	
2-Chloronaphthalene	1.081	0.991	0.800	8.3	25.0	
2-Nitroaniline	0.304	0.299		1.6		
Dimethyl Phthalate	1.274	1.126		11.6		
Acenaphthylene	1.726	1.559	1.300	9.7	25.0	
2,6-Dinitrotoluene	0.282	0.261	0.200	7.4	25.0	
3-Nitroaniline	0.204	0.128		37.2		no hits
Acenaphthene	1.087	1.009		7.2	25.0	
2,4-Dinitrophenol	0.092	0.113		-22.8		
4-Nitrophenol	0.063	0.070		-11.1		
Dibenzofuran	1.605	1.440	0.800	10.3	25.0	
2,4-Dinitrotoluene	0.344	0.322	0.200	6.4	25.0	

All other compounds must meet a minimum RRF of 0.010.

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS010 SAS No.: _____ SDG No.: E-S10-

Instrument ID: 50BB Calibration date: 03/19/92 Time: 1841

Lab File ID: 203BB066 Init. Calib. Date(s): 02/11/92 02/11/92

Init. Calib. Times: 1753 2053

COMPOUND	RRF	RRF50	MIN RRF	%D	MAX %D	
Phenol	2.043	1.537	0.800	24.8	25.0	
bis(2-Chloroethyl)Ether	1.657	1.353	0.700	18.4	25.0	
2-Chlorophenol	1.508	1.303	0.800	13.6	25.0	
1,3-Dichlorobenzene	1.753	1.517	0.600	13.5	25.0	
1,4-Dichlorobenzene	1.830	1.647	0.500	10.0	25.0	
1,2-Dichlorobenzene	1.734	1.479	0.400	14.7	25.0	
2-Methylphenol	0.710	0.657	0.700	7.5	25.0	
2,2'-Oxybis(1-Chloropropane)	2.551	2.646		-3.7		
4-Methylphenol	1.330	1.043	0.600	21.6	25.0	
N-Nitroso-Di-n-Propylamine	1.226	1.362	0.500	-11.1	25.0	
Hexachloroethane	0.730	0.732	0.300	-0.3	25.0	
Nitrobenzene	0.440	0.469	0.200	-6.6	25.0	
Isophorone	0.782	0.751	0.400	4.0	25.0	
2-Nitrophenol	0.148	0.130	0.100	12.2	25.0	
2,4-Dimethylphenol	0.298	0.299	0.200	-0.3	25.0	
bis(2-Chloroethoxy)Methane	0.417	0.411	0.300	1.4	25.0	
2,4-Dichlorophenol	0.207	0.259	0.200	-25.1	25.0	ok
1,2,4-Trichlorobenzene	0.319	0.358	0.200	-12.2	25.0	
Naphthalene	1.052	1.010	0.700	4.0	25.0	
4-Chloroaniline	0.281	0.262		6.8		
Hexachlorobutadiene	0.182	0.237		-30.2		no hits
4-Chloro-3-Methylphenol	0.263	0.226	0.200	14.1	25.0	
2-Methylnaphthalene	0.730	0.756	0.400	-3.6	25.0	
Hexachlorocyclopentadiene	0.274	0.456		-66.4		DLs~ UJ
2,4,6-Trichlorophenol	0.337	0.354	0.200	-5.0	25.0	
2,4,5-Trichlorophenol	0.274	0.261	0.200	4.7	25.0	
2-Chloronaphthalene	1.081	1.167	0.800	-8.0	25.0	
2-Nitroaniline	0.304	0.265		12.8		
Dimethyl Phthalate	1.274	1.260		1.1		
Acenaphthylene	1.726	1.737	1.300	-0.6	25.0	
2,6-Dinitrotoluene	0.282	0.246	0.200	12.8	25.0	
3-Nitroaniline	0.204	0.192		5.9		
Acenaphthene	1.087	1.128		-3.8	25.0	
2,4-Dinitrophenol	0.092	0.128		-39.1		no hits
4-Nitrophenol	0.063	0.070		-11.1		
Dibenzofuran	1.605	1.517	0.800	5.5	25.0	
2,4-Dinitrotoluene	0.344	0.287	0.200	16.6	25.0	

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

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS010 SAS No.: _____ SDG No.: E-S10-

Instrument ID: 50BB Calibration date: 03/19/92 Time: 1841

Lab File ID: 203BB066 Init. Calib. Date(s): 02/11/92 02/11/92

Init. Calib. Times: 1753 2053

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Diethylphthalate	1.463	1.396		4.6		
4-Chlorophenyl-phenylether	0.687	0.644	0.400	6.3	25.0	
Fluorene	1.309	1.210	0.900	7.6	25.0	
4-Nitroaniline	0.150	0.161		-7.3		
4,6-Dinitro-2-Methylphenol	0.114	0.108		5.3		
N-Nitrosodiphenylamine (1)	0.534	0.489		8.4		
4-Bromophenyl-phenylether	0.250	0.226	0.100	9.6	25.0	
Hexachlorobenzene	0.304	0.277	0.100	8.9	25.0	
Pentachlorophenol	0.111	0.131	0.050	-18.0	25.0	
Phenanthrene	1.064	1.034	0.700	2.8	25.0	
Anthracene	1.022	0.971	0.700	5.0	25.0	
Carbazole	0.670	0.686		-2.4		
Di-n-Butylphthalate	1.143	1.426		-24.8		
Fluoranthene	0.929	1.091	0.600	-17.4	25.0	
Pyrene	1.451	1.260	0.600	13.2	25.0	
Butylbenzylphthalate	0.535	0.715		-33.6		no hits
3,3'-Dichlorobenzidine	0.293	0.412		-40.6		no hits
Benzo(a)Anthracene	1.047	1.279	0.800	-22.2	25.0	
Chrysene	1.077	1.157	0.700	-7.4	25.0	
bis(2-Ethylhexyl)Phthalate	0.728	1.100		-51.1		no hits; Dks UJ
Di-n-Octyl Phthalate	2.232	2.914		-30.6		no hits
Benzo(b)Fluoranthene	2.096	2.080	0.700	0.8	25.0	
Benzo(k)Fluoranthene	1.857	1.665	0.700	10.3	25.0	
Benzo(a)Pyrene	1.884	1.794	0.700	4.8	25.0	
Indeno(1,2,3-cd)Pyrene	2.339	2.159	0.500	7.7	25.0	
Dibenz(a,h)Anthracene	1.842	1.685	0.400	8.5	25.0	
Benzo(g,h,i)Perylene	2.155	1.711	0.500	20.6	25.0	
Nitrobenzene-d5	0.414	0.418	0.200	-1.0	25.0	
2-Fluorobiphenyl	1.271	1.484	0.700	-16.8	25.0	
Terphenyl-d14	1.000	0.896	0.500	10.4	25.0	
Phenol-d5	2.000	1.690	0.800	15.5	25.0	
2-Fluorophenol	1.113	0.882	0.600	20.8	25.0	
2,4,6-Tribromophenol	0.197	0.159		19.3		

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

2F
SOIL PESTICIDE SURROGATE RECOVERY

PCBs only

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS001 SAS No.: _____ SDG No.: ESS106

GC Column(1): PTE-5 ID: 0.25(mm) GC Column(2): SPB-608 ID: 0.25(mm)

	EPA SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	PBLK07	196 *	192 *	47 *	47 *			4
02	E-SS1-0612	188 *	183 *	46 *	45 *			4
03	E-SS2-0612	226 *	221 *	52 *	52 *			4
04	E-SS3-0612	166 *	162 *	44 *	43 *			4
05	E-SS4-0612	247 *	236 *	56 *	61			3
06	E-SS5-0612	12 *	10 *	4 *	3 *			4
07	E-SS6-0612	198 *	193 *	46 *	47 *			4
08	E-SS7-0612	175 *	173 *	39 *	40 *			4
09	E-SS8-0612	179 *	174 *	47 *	46 *			4
10	E-SS9-0612	191 *	186 *	44 *	44 *			4
11	E-SS90612MS	177 *	172 *	42 *	41 *			4
12	E-SS90612MSD	180 *	175 *	47 *	47 *			4

	ADVISORY QC LIMITS
TCX = Tetrachloro-m-xylene	(60-150)
DCB = Decachlorobiphenyl	(60-150)

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

all out; very low for SS50612

FORM II PEST-2 3/90

3F

SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name:ORTEK Contract:
Lab Code:ORTEK Case No.:NUS001 SDG No.:E-SS1-0612 SAS No.:

Matrix Spike - EPA Sample No.:E-SS9-0612

COMPOUND	SPIKE ADDED (ug/Kg	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC	QC. LIMITS REC.
AR1254	10.00	0.00	6.89 -	68.90	NONE

COMPOUND	SPIKE ADDED (ug/Kg	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
AR1254	10.00	7.68	76.80	10.84	NONE	NONE

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

Valu s outside of QC limits

RPD: __0_ out of __1_ outside limits
Spike Recovery: __0_ out of __2_ outside limits

COMMENTS: _____

FORM III PEST-2

2E
WATER PESTICIDE SURROGATE RECOVERY

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: ERB031

GC Column(1): PTE-5 ID: 0.25(mm) GC Column(2): SPB-608 ID: 0.25(mm)

	EPA SAMPLE NO.	TCX 1 %REC	#	TCX 2 %REC	#	DCB 1 %REC	#	DCB 2 %REC	#	OTHER (1)	OTHER (2)	TOT OUT
01	[redacted]BLK03	115		113		[redacted]		1	*			2
02	[redacted]	116		114		[redacted]		[redacted]				2

	ADVISORY QC LIMITS
TCX = Tetrachloro-m-xylene	(60-150)
DCB = Decachlorobiphenyl	(60-150)

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

Very low DCB

2F
SOIL PESTICIDE SURROGATE RECOVERY

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: ERB031

GC Column(1): PTE-5 ID: 0.25(mm) GC Column(2): SPB-608 ID: 0.25(mm)

	EPA SAMPLE NO.	TCX 1 %REC	#	TCX 2 %REC	#	DCB 1 %REC	#	DCB 2 %REC	#	OTHER (1)	OTHER (2)	TOT OUT
01	PBLK02	146		138		15	*	13	*			2
02	E-S10-0006	161	*	135		1	*	3	*			3
03	E-S11-0006	0	*	0	*	0	*	0	*			4
04	E-S12-0006	260	*	204	*	13	*	18	*			4
05	E-S13-0006	17	*	17	*	0	*	0	*			4
06	E-SS10-0612	111		107		7	*	6	*			2
07	E-SS11-0612	224	*	204	*	25	*	23	*			4
08	E-SS12-0612	217	*	184	*	30	*	58	*			4
09	E-SS12D-0612	154	*	139		22	*	19	*			3
10	E-SS13-0612	185	*	178	*	14	*	14	*			4
11	ESS110612MS	268	*	252	*	21	*	20	*			4
12	ESS110612MSD	143		134		16	*	12	*			2

	ADVISORY QC LIMITS
TCX = Tetrachloro-m-xylene	(60-150)
DCB = Decachlorobiphenyl	(60-150)

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

3F

SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ORTEK Contract: 459872

Lab Code: ORTEK Case No.: NUS002 SAS No.: _____ SDG No.: ERB031

Matrix Spike - EPA Sample No.: E-SS11-0612

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
gamma-BHC (Lindane)	17.9	0	16.0	89	46-127
Heptachlor	17.9	0	17.0	95	35-130
Aldrin	17.9	0.862	19.6	105	34-132
Dieldrin	35.8	0	29.6	83	31-134
Endrin	35.8	0	35.2	98	42-139
4,4'-DDT	35.8	0	16.0	45	23-134

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
gamma-BHC (Lindane)	17.9	8.42	47	62 *	50	46-127
Heptachlor	17.9	9.72	54	55 *	31	35-130
Aldrin	17.9	10.6	54	64 *	43	34-132
Dieldrin	35.8	15.7	44	61 *	38	31-134
Endrin	35.8	18.7	52	61 *	45	42-139
4,4'-DDT	35.8	9.24	26	54 *	50	23-134

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

* Values outside of QC limits

RPD: 6 out of 6 outside limits
Spike Recovery: 0 out of 12 outside limits

COMMENTS: