

APPENDICES

Appendix A
2004 Sample Locations

APPENDIX A

2004 SAMPLE LOCATIONS, CYPRESS CREEK SUB-AREA III

Approximate Location (Feet downstream of Scott St.)	Sample ID	Side of Creek	Location with Respect to Construction Easement	Sample Notes
12,240	1731 Greenview - A	North	A	MEC, hand auger, 9/3/2004, north side, straddled 5-foot wide construction easement, 1731 Greenview Circle
12,240	1731 Greenview - B	North	B	MEC, hand auger, 9/3/2004, north side, front yard and outside construction easement, 1731 Greenview Circle
12,050	1754 Edward - C	South	C	MEC, hand auger, 8/19/2004, south side, remote from Creek, 1754 Edward Ave.
11,880	1769 Greenview - A	North	A	MEC, hand auger, 9/28/2004, north side, within construction easement, 1769 Greenview Circle
11,880	1769 Greenview - B	North	B	MEC, hand auger, 9/28/2004, north side, outside construction easement, 1769 Greenview Circle
11,860	1772 Edward - C	South	C	MEC, hand auger, 8/19/2004, south side, remote from Creek, 1772 Edward Ave.
11,720	1785 Greenview - A	North	A	MEC, hand auger, 8/25/2004, north side, within construction easement, 1785 Greenview Circle
11,720	1785 Greenview - B	North	B	MEC, hand auger, 8/25/2004, north side, outside construction easement, 1785 Greenview Circle
11,555	1804 Edward - A	South	A	MEC, hand auger, 8/19/2004, south side, within construction easement, 1804 Edward Ave.
11,555	1804 Edward - B	South	B	MEC, hand auger, 8/19/2004, south side, outside construction easement, 1804 Edward Ave.
11,335	1822 Edward - A	South	A	MEC, hand auger, 8/19/2004, south side, within construction easement, 1822 Edward Ave.
11,335	1822 Edward - B	South	B	MEC, hand auger, 8/19/2004, south side, outside construction easement, 1822 Edward Ave.
11,020	1827 Edward - C	South	C	MEC, hand auger, 9/28/2004, south side, remote from Creek, 1827 Edward Ave.
10,220	1930 Edward - A2	South	A	MEC, hand auger, 11/1/2004, south side, within garden area, 1930 Edward Ave.
9,745	1978 Edward - A	South	A	MEC, hand auger, 8/19/2004, south side, within construction easement, 1978 Edward Ave.
9,745	1978 Edward - B	South	B	MEC, hand auger, 8/19/2004, south side, outside construction easement, 1978 Edward Ave.
9,530	2021 Hubert - A	North	A	MEC, hand auger, 8/19/2004, north side, within construction easement, 2021 Hubert Ave.
9,530	2021 Hubert - B	North	B	MEC, hand auger, 8/19/2004, north side, outside construction easement, 2021 Hubert Ave.
8,250	1188 Tunica - B2	North	B	MEC, hand auger, 9/28/2004, north side, outside construction easement, apartment complex, 1188 Tunica St.
8,080	1188 Tunica - C	North	C	MEC, hand auger, 9/28/2004, north side, remote from Creek, apartment complex, 1188 Tunica St.
7,670	2172 N. Hubert - A	South	A	MEC, hand auger, 9/3/2004, south side, within construction easement, 2172 N. Hubert Circle
7,670	2172 N. Hubert - B	South	B	MEC, hand auger, 9/3/2004, south side, outside construction easement, 2172 N. Hubert Circle
7,420	1194 Springdale - A	South	A	MEC, hand auger, 9/28/2004, south side, within construction easement, 1194 Springdale St.
7,420	1194 Springdale - B	South	B	MEC, hand auger, 9/28/2004, south side, outside construction easement, 1194 Springdale St.
7,420	1194 Springdale - D	South	B	Duplicate to 1194 Springdale - B, 9/28/2004
6,740	2248 Howell - C	South	C	MEC, hand auger, 9/28/2004, south side, remote from Creek, apartment complex, 2248 Howell Ave.
6,485	2295 Dexter - A	North	A	MEC, hand auger, 9/3/2004, north side, within construction easement, 2295 Dexter Ave.
6,485	2295 Dexter - D	North	A	Duplicate to 2295 Dexter - A, 9/3/2004
6,410	2301 Dexter - C	North	C	MEC, hand auger, 8/18/2004, north side, remote from Creek, 2301 Dexter Ave.
6,235	2320 Vandale - C	North	C	MEC, hand auger, 9/28/2004, north side, remote from Creek, 2320 Vandale Ave.
6,040	2327 Vandale - B	North	B	MEC, hand auger, 8/18/2004, north side, outside construction easement, 2327 Vandale Ave.
5,960	2333 Vandale - C	North	C	MEC, hand auger, 9/28/2004, north side, remote from Creek, 2333 Vandale Ave.
5,760	2351 Vandale - C	North	C	MEC, hand auger, 8/18/2004, north side, remote from Creek, 2351 Vandale Ave.
5,760	2351 Vandale - D	North	C	Duplicate to 2351 Vandale - A, 8/18/2004
5,710	2355 Vandale - C	North	C	MEC, hand auger, 9/28/2004, north side, remote from Creek, 2355 Vandale Ave.
5,540	2391 Gentry - B	North	B	MEC, hand auger, 9/3/2004, north side, outside construction easement, 2391 Gentry Ave.
5,280	2407 Gentry - A	North	A	MEC, hand auger, 11/1/2004, north side, within construction easement, 2407 Gentry Ave.
5,280	2407 Gentry - B	North	B	MEC, hand auger, 11/1/2004, north side, outside construction easement, 2407 Gentry Ave.
5,600	Syed So. - B2	South	B	MEC, hand auger, 8/18/2004, south side, outside construction easement, Parcel ID 042-037-00164, north of Staten Ave.
5,060	Syed So. - C	South	C	MEC, hand auger, 8/18/2004, south side, remote from Creek, Parcel ID 042-037-00164, north of Staten Ave.
4,910	2403 Staten - A	South	A	MEC, hand auger, 8/18/2004, south side, within construction easement, 2403 Staten Ave.

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2004 SAMPLE LOCATIONS, CYPRESS CREEK SUB-AREA III

Approximate Location (Feet downstream of Scott St.)	Sample ID	Side of Creek	Location with Respect to Construction Easement	Sample Notes
4,905	2399 Staten - B	South	B	MEC, hand auger, 8/18/2004, south side, outside construction easement, 2399 Staten Ave.
4,715	1054 Dawes - A	South	A	MEC, hand auger, 8/18/2004, south side, within construction easement, 1054 Dawes St.
4,715	1054 Dawes - B	South	B	MEC, hand auger, 8/18/2004, south side, outside construction easement, 1054 Dawes St.
4,630	1046 Dawes - A	South	A	MEC, hand auger, 8/18/2004, south side, within construction easement, 1046 Dawes St.
4,630	1046 Dawes - B	South	B	MEC, hand auger, 8/18/2004, south side, outside construction easement, 1046 Dawes St.
4,500	1034 Dawes - A	South	A	MEC, hand auger, 8/18/2004, south side, within construction easement, 1034 Dawes St.
4,500	1034 Dawes - B	South	B	MEC, hand auger, 8/18/2004, south side, outside construction easement, 1034 Dawes St.
3,760	2460 Vollintine - A	South	A	MEC, hand auger, 8/12/2004, south side, within construction easement, 2460 Vollintine Cove
3,760	2460 Vollintine - B	South	B	MEC, hand auger, 8/12/2004, south side, outside construction easement, 2460 Vollintine Cove
3,610	2472 Vollintine - A	South	A	MEC, hand auger, 8/12/2004, south side, within construction easement, 2472 Vollintine Cove
3,610	2472 Vollintine - B	South	B	MEC, hand auger, 8/12/2004, south side, outside construction easement, 2472 Vollintine Cove
3,530	2478 Vollintine - A	South	A	MEC, hand auger, 8/12/2004, south side, within construction easement, 2478 Vollintine Cove
3,530	2478 Vollintine - B	South	B	MEC, hand auger, 8/12/2004, south side, outside construction easement, 2478 Vollintine Cove
3,330	2486 Vollintine - A	South	A	MEC, hand auger, 8/12/2004, south side, within construction easement, 2486 Vollintine Cove
3,330	2486 Vollintine - B	South	B	MEC, hand auger, 8/12/2004, south side, outside construction easement, 2486 Vollintine Cove
3,200	2485 Vollintine - C	South	C	MEC, hand auger, 8/12/2004, south side, remote from Creek, 2485 Vollintine Cove
3,050	2486 Dana - C	South	C	MEC, hand auger, 8/12/2004, south side, remote from Creek, 2486 Dana Drive
2,920	973 Meagher - B	North	B	MEC, hand auger, 8/11/2004, north side, outside construction easement, 973 Meagher St.
2,880	967 Meagher - A	North	A	MEC, hand auger, 9/28/2004, north side, within construction easement, 967 Meagher St.
2,880	967 Meagher - B	North	B	MEC, hand auger, 9/28/2004, north side, outside construction easement, 967 Meagher St.
2,840	965 Meagher - A	North	A	MEC, hand auger, 8/12/2004, north side, within construction easement, 965 Meagher St.
2,840	965 Meagher - B	North	B	MEC, hand auger, 8/12/2004, north side, outside construction easement, 965 Meagher St.
2,810	961 Meagher - A	North	A	MEC, hand auger, 8/11/2004, north side, within construction easement, 961 Meagher St.
2,810	961 Meagher - D	North	A	Duplicate to 961 Meagher - A, 8/11/2004
2,550	954 Meagher - C	North	C	MEC, hand auger, 8/11/2004, north side, remote from Creek, 954 Meagher St.
2,545	925 Meagher - C	South	C	MEC, hand auger, 8/12/2004, south side, remote from Creek, 925 Meagher St.
2,310	924 Meagher - A	South	A	MEC, hand auger, 8/12/2004, south side, straddled narrow construction easement, 924 Meagher St.
2,245	914 Meagher - C	South	C	MEC, hand auger, 8/12/2004, south side, remote from Creek, 914 Meagher St.
2,170	909 Bingham - C	South	C	MEC, hand auger, 8/11/2004, south side, remote from Creek, 909 Bingham St.
2,110	909 Bingham - B	South	B	MEC, hand auger, 8/11/2004, south side, outside construction easement, 909 Bingham St.
2,435	945 Bingham - B	North	B	MEC, hand auger, 9/3/2004, north side, outside construction easement, 945 Bingham St.
2,415	943 Bingham - B	North	B	MEC, hand auger, 8/11/2004, north side, outside construction easement, 943 Bingham St.
2,375	937 Bingham - B	North	B	MEC, hand auger, 8/18/2004, north side, outside construction easement, 937 Bingham St.
2,265	929 Bingham - B	North	B	MEC, hand auger, 8/11/2004, north side, outside narrow construction easement, 929 Bingham St.
2,090	920 Bingham B-2	North	B	MEC, hand auger, 8/11/2004, north side, front yard, straddled construction easement, 920 Bingham St.
2,070	920 Bingham A-4	North	A	MEC, hand auger, 8/11/2004, north side, within construction easement, 920 Bingham St.
2,030	920 Bingham A-3	North	A	MEC, hand auger, 8/11/2004, north side, within construction easement, 920 Bingham St.
2,000	920 Bingham A-2	North	A	MEC, hand auger, 8/11/2004, north side, within construction easement, 920 Bingham St.
1,960	920 Bingham A-1	North	A	MEC, hand auger, 8/11/2004, north side, within construction easement, 920 Bingham St.

Appendix B

Data Quality Review Report



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To: Joe Ricker

From: Carol Cummins, Project Scientist

Date: December 1, 2004

Project: Cypress Creek Soil Sampling, Memphis, Tennessee

Re: Data Quality Review

The following details a data quality review of eighty soil samples and five water (rinse blank) samples collected between August 11 and November 1, 2004, from residential locations adjoining Cypress Creek. The samples were analyzed for chlorinated pesticides (pesticides) using EPA SW 846 Method 8081A. The analyses were conducted by GTW Analytical Services, LLC (GTW), located in Memphis, Tennessee. The quality assurance criteria were established by the associated Sampling and Analysis Procedures (SAP) for Velsicol Chemical Corporation – Memphis, Tennessee, as revised in January 2003 (MEC 2003). The following laboratory deliverables were reviewed during the validation process:

- Chain-of-custody (COC) documentation to assess holding times and verify report completeness
- Laboratory quality control (QC) sample results, including method blanks, surrogate spikes, blank spike samples, and matrix spike/matrix spike duplicates (MS/MSDs)
- Analytical results to verify reporting limits
- Field QC samples to assess field blank contamination and field duplicate precision

The sample identification numbers and the associated laboratory reports are listed in Table 1. Field duplicate precision is presented in Table 2 and the qualified data are summarized in Table 3. The QA/QC summaries provided by the laboratory are included in Attachment A. Copies of the chain-of-custody forms are included in Attachment B. Data qualifier flags have been added to the sample results in the original laboratory reports and the Premier data tables. In cases where a result is qualified more than once, the most restrictive qualifier is used.

Sample Custody

All samples were collected, transported, handled, and analyzed maintaining chain-of-custody protocols. Documentation relative to the collection of samples and laboratory analyses was listed on the chain-of-custody forms that accompanied the samples to the laboratory. Upon review of the chain-of-custody forms, it is noted that the samples were received at the laboratory on ice. It is assumed that the samples were cooled to less than 4°C because the laboratory did not document any anomaly with the temperature.

Holding Time Evaluation

The water samples were extracted within the method holding time of seven days from collection and analyzed within the holding time of 40 days from extraction. The soil samples were extracted within the method holding time of 14 days from collection and analyzed within the holding time of 40 days from extraction, except as noted below.

- Due to instrument problems, the holding time was exceeded for analysis of the following sample extracts. All pesticides results for these samples are qualified as estimated or estimated detection limit (J).

1804 Edward A	2301 Dexter-C
1804 Edward B	SYED-SO B-2
1822 Edward A	SYED-SO C
2327 Vandale-B	1034 Dawes A
2351 Vandale-C	1034 Dawes B
2351 Vandale-D	1046 Dawes A
937 Bingham-B	1046 Dawes B
2403 Staten-A	1054 Dawes A
2399 Staten-B	1054 Dawes B

- Sample 1978 Edward A was diluted and reanalyzed for endrin and endrin ketone outside holding time. These two results are qualified as estimated (J).

Laboratory Blank Analyses

Sample contamination contributed by laboratory conditions or procedures was monitored by the concurrent preparation and analysis of method blank samples. Method blank samples were analyzed as required by the SAP. The method blank samples for all analyses yielded non-detected concentrations of analytes of interest, indicating that no laboratory contamination occurred.

Field Blank Analysis

Five rinsate blank samples were collected as required by the SAP and analyzed to document sufficient decontamination of the sampling equipment. With the following exception, no target analytes were detected in the rinsate blanks, indicating the sampling equipment was properly decontaminated.

- hexachloronorborene was detected in the following samples: 8-11-04 RB, 8-12-04 RB, and 8-18-04 RB at 0.66, 0.30, and 0.42 $\mu\text{g/L}$, respectively.

Functional Guidelines prescribes three qualifications schemes for blank contamination: (1) associated sample concentrations greater than the action level (five times the blank concentration) are not qualified, (2) associated sample concentrations less than the action level and greater than the reporting limit are qualified as undetected (U) at the reported value, and (3) associated sample concentrations less than the action level and less than the reporting limit are qualified as undetected (U) at the reporting limit.

No qualifiers are required because the concentration detected in the samples associated with each rinsate blank was either not detected or greater than five times the blank concentration.

Surrogate Compound Percent Recovery

The recoveries of surrogate compounds are used to assess the individual sample performance achieved by the laboratory for organic analyses. Surrogate recovery values are within laboratory control limits for all analyses, with the following exceptions:

- The tetrachlorometaxylene (TCMX) surrogate recovery value for samples 1978 Edward A, 2301 Dexter C, SYED-SO B-2, 920 Bingham A-1, 920 Bingham A-2, 920 Bingham A-3, 920 Bingham A-4, 920 Bingham B-2, 961 Meagher A, and 2472 Vollintine A is unavailable due to dilution of the sample. Data qualifiers are not required because the dilution required for analysis reduced the surrogate concentrations below the detection limit.
- The TCMX surrogate recovery value for samples 1804 Edward B, 1769 Greenview-A, 965 Meagher B, 2351 Vandale-D, and Blank Spike (4766366) is greater than the upper acceptance limit. Recoveries above the acceptance limit suggest a potential high bias and Functional Guidelines requires estimating detected results. Detected pesticide results for samples 1769 Greenview-A, 1804 Edward B, 2351 Vandale-D and 965 Meagher B are qualified as estimated with a high bias (JH), as shown in Table 3. Nondetected results do not require qualification. The Blank Spike sample does not require qualification because it is a QC sample.
- The tetrachlorometaxylene (TCMX) surrogate recovery value for samples 2021 Hubert B and 1731 Greenview A is above the acceptance limit at 166 and 156

percent, respectively. Data qualifiers are not required due to dilution of the samples.

Blank Spike Analyses

The recovery values of blank spike analyses are used to assess the analytical accuracy achieved by the laboratory. As the blank spike analyses are independent of potential matrix effects, they give a true indication of the analytical accuracy achieved by the laboratory for the respective analyses performed. The blank spike recovery values are within the laboratory control limits, indicating that acceptable levels of accuracy were achieved for these analytical methodologies.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses

The recovery values of MS/MSD analyses are used to assess the analytical accuracy on an individual sample basis, while the relative percent difference (RPD) between the MS and the MSD indicates the analytical precision achieved for that sample. MS/MSD samples were analyzed as required by the SAP. The MS/MSD percent recovery data provided are within the laboratory control limits for all analyses with the following exceptions:

- The MS/MSD recovery values for dieldrin in sample 1930 Edward-A2 are not available because the concentration in the sample is significantly higher than the added spike concentration, preventing accurate evaluation of the spike recoveries. Blank spike data for dieldrin is in-control, indicating the analytical system was in-control; therefore, no qualification is required.
- The MS/MSD recovery values for dieldrin and endrin in samples 929 Bingham B, 2327 Vandale B, and 1194 Springdale-A are not available because the concentrations in the samples are significantly higher than the added spike concentrations, preventing accurate evaluation of the spike recoveries. Blank spike recoveries for dieldrin and endrin are in-control, indicating the analytical system was in-control; therefore, no qualification is required.
- The MS/MSD recovery values for 4,4-DDT and endrin in sample 1822 Edward B are not available because the concentrations in the samples are significantly higher than the added spike concentration, preventing accurate evaluation of the spike recoveries. Blank spike recoveries for 4,4-DDT and endrin are in-control, indicating the analytical system was in-control; therefore, no qualification is required.
- The MS/MSD recovery values for 4,4-DDT, dieldrin, and endrin in sample 945 Bingham B are not available because the concentrations in the samples are significantly higher than the added spike concentration, preventing accurate

evaluation of the spike recovery. Blank spike recoveries for 4,4-DDT, dieldrin, and endrin are in-control, indicating the analytical system was in-control; therefore, no qualification is required.

- The MS/MSD recovery values for heptachlor in samples 945 Bingham B and 1822 Edward B are greater than the upper acceptance limit, indicating a potential high bias in the matrix. The blank spike recovery for heptachlor is in-control, indicating the analytical system was in-control; therefore, the interference is likely limited to 945 Bingham B and 1822 Edward B. Data qualifiers are not required because heptachlor was not detected in these samples.
- The MS/MSD recovery values for gamma-BHC (lindane) in sample 1194 Springdale-A are not available due to dilution of the sample. Data qualifiers are not required because the dilution required for analysis reduced the MS/MSD concentrations below the detection limit.
- The MS/MSD recovery values for 4,4-DDT and gamma-BHC (lindane) in sample 2327 Vandale-B are not available due to dilution of the sample. Data qualifiers are not required because the dilution required for analysis reduced the MS/MSD concentrations below the detection limit.
- The MS/MSD recovery values for dieldrin and endrin in sample 925 Meagher C are unavailable due to matrix interferences. Functional Guidelines does not qualify data based on MS/MSD data alone. Blank spike data for dieldrin and endrin are in-control, indicating the matrix interference is likely limited to the spike sample. The low recovery suggests a low bias; therefore, dieldrin and endrin results for 925 Meagher C are qualified as estimated with a low bias (JL).
- The MS/MSD recovery values for dieldrin in sample 1822 Edward B are above control limits. Functional Guidelines does not qualify data based on MS/MSD data alone. Blank spike data for dieldrin are in-control, indicating the matrix interference is likely limited to the spike sample. The low recovery suggests a low bias; therefore, the dieldrin result for 1822 Edward B is qualified as estimated with a low bias (JL).
- The MS recovery value for endrin in sample 1930 Edward-A2 is not available because the concentration in the sample is significantly higher than the added spike concentration, preventing accurate evaluation of the spike recovery. Data qualifiers are not required because the MSD sample is within control limits.
- The MS recovery value for heptachlor is above the upper acceptance limit in 1930 Edward-A2 at 114 percent. Data qualifiers are not required because the MSD sample is within control limits.
- The MS recovery value for aldrin is above the upper acceptance limit in 1822 Edward B at 122 percent. Data qualifiers are not required because the MSD sample is within control limits.

- The MSD recovery value for heptachlor is above the upper acceptance limit in samples 929 Bingham B and 2327 Vandale-B at 136 and 160 percent, respectively. Data qualifiers are not required because the MS samples are within control limits.
- The MS/MSD RPD value for heptachlor in 929 Bingham B is above the 40 percent limit at 52 percent. Heptachlor was not detected; therefore, no qualifier is required.
- The MS/MSD RPD value for gamma-BHC (lindane) in 945 Bingham B is above the 40 percent limit at 110 percent. Gamma-BHC (lindane) was not detected; therefore, no qualifier is required.
- The MS/MSD RPD value for aldrin in 1194 Springdale-A is above the 40 percent limit at 40.2 percent. Aldrin was not detected; therefore, no qualifier is required.

Field Duplicate Analyses

Five field duplicate samples were collected with the samples. Duplicate samples were collected from 961 Meagher A, 2351 Vandale-C, 2295 Dexter A, and 1194 Springdale-B. The duplicate samples are designated with "D". RPD values less than or equal to 50 are considered acceptable for soil samples. As shown in Table 2, RPD values are acceptable with the following exception.

- The RPD value for endrin ketone in samples 2295 Dexter A and 2295 Dexter D is 58. The endrin ketone results for samples 2295 Dexter A and 2295 Dexter D are qualified as estimated (J).

Laboratory Reporting Limits

Project-specific detection limits are given in Tables 2 of the SAP. The reporting limits used by the laboratory are reasonable for the analytical method. Samples not requiring dilution met the required reporting limits with the following exception:

- The detection limit for toxaphene was raised in all samples due to matrix interferences. No qualifiers are required as a result of this action.

Miscellaneous Quality Assurance/Quality Control

The following QC anomalies are not usually addressed in a DQO Level III validation review as defined by the SAP. It is assumed these QC parameters are acceptable, unless noted otherwise in the case narrative. The following items were addressed in the case narratives and are discussed here.

- Five samples analyzed by GTW were reanalyzed using GCMS to confirm the presence of chlorinated pesticides. No data validation was performed on the GCMS results as they are intended for qualitative purposes only.
- Method 8000 requires dual column confirmation comparison of detected compounds using an RPD value of less than or equal to 40. Several analytes did not pass the 40 percent difference requirement. The affected samples and analytes are summarized below. For each sample, detected results for the associated analytes are qualified as estimated (J) as shown in Table 3.

Sample	Analyte	Sample	Analyte
8-11-04 RB	hexachloronorbomadiene	1754 Edward C	alpha chlordane and endrin
929 Bingham B	alpha chlordane and endrin ketone	1978 Edward A	alpha chlordane
920 Bingham A-1	gamma chlordane	1978 Edward B	chlordene
920 Bingham B-2	alpha chlordane	2021 Hubert A	alpha chlordane
943 Bingham B	alpha chlordane	2021 Hubert B	endrin ketone
909 Bingham C	endrin ketone	1731 Greenview A	alpha chlordane
909 Bingham B	alpha chlordane	2172 N. Hubert A	alpha chlordane
973 Meagher B	4,4-DDT and endrin ketone	2295 Dexter D	endrin ketone
961 Meagher A	alpha chlordane	2248 Howell-C	4,4-DDT
965 Meagher A	diethyl-p-nitrophenyl phosphate	1188 Tunica-B2	4,4-DDT and endrin ketone
965 Meagher B	aldrin and heptachlor	967 Meagher-A	alpha chlordane
925 Meagher C	endrin	967 Meagher-B	endrin
914 Meagher C	aldrin, hlordane, and heptachlor	1785 Greenview A	aldrin
2486 Dana C	alpha chlordane and heptachlor	2351 Vandale-C	alpha chlordane
2478 Vollintine A	endrin ketone	937 Bingham-B	heptachlor epoxide
2486 Vollintine A	endrin and heptachlor	2403 Staten-A	alpha chlordane
2486 Vollintine B	4,4-DDD, aldrin, alpha chlordane, endrin ketone, and isodrin	2399 Staten-B	alpha chlordane
2485 Vollintine C	aldrin and alpha chlordane	SYED-SO B-2	gamma chlordane
2472 Vollintine A	gamma chlordane and heptachlor	1034 Dawes B	dieldrin
2472 Vollintine B	heptachlor	1054 Dawes B	4,4-DDT and alpha chlordane
2460 Vollintine A	alpha chlordane, endrin, heptachlor, and heptachlor epoxide	1930 Edward-A2	alpha chlordane
924 Meagher A	4,4-DDT and alpha chlordane	2407 Gentry-A	heptachlor epoxide
1804 Edward B	heptachlor epoxide	2407 Gentry-B	alpha chlordane
1822 Edward A	endrin		

Completeness

Completeness is a measure of the amount of valid data collected for the sampling event, and is expressed as the ratio of valid results to the amount of data expected to be obtained under normal conditions. Valid results are results that are determined to be usable during the data validation review process. The completeness of the Cypress Creek monitoring data reviewed in this report is 100 percent, which achieves the requirement of greater than 85 percent.

Data Qualifier Flags

Organic Data Qualifiers

The following data validation qualifiers were used in the review of this data set. These qualifiers are from the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (USEPA 1999). The bias indicators H and L were used to maintain consistency with historical database usage.

- U The analyte was analyzed for but not detected above the reported sample quantitation limit.
- J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification".
- NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
- R The sample results are rejected due to serious deficiencies in the ability to analyze the samples and meet quality control criteria. The presence or absence of the analyte cannot be verified.

References

Memphis Environmental Center. MEC 2003. Sampling and Analysis Procedures (SAP) for Velsicol Chemical Corporation – Memphis, Tennessee, January 2003.

USEPA. 1999. Contract Laboratory Program National Functional Guidelines for Organic Data Review. United States Environmental Protection Agency Office of Emergency and Remedial Response. EPA540/R-99/008. October 1999.

USEPA. 1996. Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846) Third Edition, Updates I, II, IIA, IIB, and III. United States Environmental Protection Agency Office of Solid Waste. December 1996.

Table 1. Sample Data Reviewed

Lab Report	Sample ID	Matrix	Date Collected	Comments
R-240546	8-11-04 RB	WATER	8/11/2004	
	929 Bingham B	SOIL	8/11/2004	
	920 Bingham A-1	SOIL	8/11/2004	
	920 Bingham A-2	SOIL	8/11/2004	
	920 Bingham A-3	SOIL	8/11/2004	
	920 Bingham A-4	SOIL	8/11/2004	
	920 Bingham B-2	SOIL	8/11/2004	
	943 Bingham B	SOIL	8/11/2004	
	909 Bingham C	SOIL	8/11/2004	
	909 Bingham B	SOIL	8/11/2004	
	973 Meagher B	SOIL	8/11/2004	
	961 Meagher A	SOIL	8/11/2004	
	961 Meagher D	SOIL	8/11/2004	
	954 Meagher C	SOIL	8/11/2004	
R-240546-A	920 Bingham A-1	SOIL	8/11/2004	GC/MS confirmation analysis
	920 Bingham A-2	SOIL	8/11/2004	GC/MS confirmation analysis
	920 Bingham A-3	SOIL	8/11/2004	GC/MS confirmation analysis
	920 Bingham A-4	SOIL	8/11/2004	GC/MS confirmation analysis
	920 Bingham B-2	SOIL	8/11/2004	GC/MS confirmation analysis
R-240551	965 Meagher A	SOIL	8/12/2004	
	965 Meagher B	SOIL	8/12/2004	
	925 Meagher C	SOIL	8/12/2004	
	924 Meagher A	SOIL	8/12/2004	
	914 Meagher C	SOIL	8/12/2004	
	2486 Dana C	SOIL	8/12/2004	
	2478 Vollintine A	SOIL	8/12/2004	
	2478 Vollintine B	SOIL	8/12/2004	
	2486 Vollintine A	SOIL	8/12/2004	
	2486 Vollintine B	SOIL	8/12/2004	
	2485 Vollintine C	SOIL	8/12/2004	
	2460 Vollintine A	SOIL	8/12/2004	
	2460 Vollintine B	SOIL	8/12/2004	
	2472 Vollintine A	SOIL	8/12/2004	
	2472 Vollintine B	SOIL	8/12/2004	
R-240551-A	8-12-04 RB	WATER	8/12/2004	
R-240563	2327 Vandale-B	SOIL	8/18/2004	
	2351 Vandale-C	SOIL	8/18/2004	
	2351 Vandale-D	SOIL	8/18/2004	
	937 Bingham-B	SOIL	8/18/2004	
	2403 Staten-A	SOIL	8/18/2004	
	2399 Staten-B	SOIL	8/18/2004	
	2301 Dexter-C	SOIL	8/18/2004	
	SYED-SO B-2	SOIL	8/18/2004	
	SYED-SO C	SOIL	8/18/2004	

Lab Report	Sample ID	Matrix	Date Collected	Comments
	8-18-04 RB	WATER	8/18/2004	
	1034 Dawes A	SOIL	8/18/2004	
	1034 Dawes B	SOIL	8/18/2004	
	1046 Dawes A	SOIL	8/18/2004	
	1046 Dawes B	SOIL	8/18/2004	
	1054 Dawes A	SOIL	8/18/2004	
	1054 Dawes B	SOIL	8/18/2004	
R-240566	1804 Edward A	SOIL	8/19/2004	
	1804 Edward B	SOIL	8/19/2004	
	1822 Edward A	SOIL	8/19/2004	
	1822 Edward B	SOIL	8/19/2004	
	1754 Edward C	SOIL	8/19/2004	
	1772 Edward C	SOIL	8/19/2004	
	1978 Edward A	SOIL	8/19/2004	
	1978 Edward B	SOIL	8/19/2004	
	2021 Hubert A	SOIL	8/19/2004	
	2021 Hubert B	SOIL	8/19/2004	
R-240583	1785 Greenview A	SOIL	8/25/2004	
	1785 Greenview B	SOIL	8/25/2004	
R-240610	945 Bingham B	SOIL	9/3/2004	
	1731 Greenview A	SOIL	9/3/2004	
	1731 Greenview B	SOIL	9/3/2004	
	2172 N. Hubert A	SOIL	9/3/2004	
	2172 N. Hubert B	SOIL	9/3/2004	
	2295 Dexter A	SOIL	9/3/2004	
	2295 Dexter D	SOIL	9/3/2004	
	2391 Gentry B	SOIL	9/3/2004	
	9-3-04 RB	WATER	9/3/2004	
R-240682	RB 9-28-04	WATER	9/28/2004	
	1194 Springdale-A	SOIL	9/28/2004	
	1194 Springdale-B	SOIL	9/28/2004	
	1194 Springdale-D	SOIL	9/28/2004	
	1769 Greenview-A	SOIL	9/28/2004	
	1769 Greenview-B	SOIL	9/28/2004	
	1827 Edward-C	SOIL	9/28/2004	
	2248 Howell-C	SOIL	9/28/2004	
	1188 Tunica-B2	SOIL	9/28/2004	
	1188 Tunica-C	SOIL	9/28/2004	
	2320 Vandale-C	SOIL	9/28/2004	
	2333 Vandale-C	SOIL	9/28/2004	
	2355 Vandale-C	SOIL	9/28/2004	
	967 Meagher-A	SOIL	9/28/2004	
	967 Meagher-B	SOIL	9/28/2004	
R-240770	1930 Edward-A2	SOIL	11/1/2004	
	2407 Gentry-A	SOIL	11/1/2004	
	2407 Gentry-B	SOIL	11/1/2004	

Table 2. Field Duplicate Precision

Sample ID	Duplicate ID	Analyte	Sample Value ^a	Duplicate Value ^a	RPD ^b
2351 Vandale-C	2351 Vandale-D	alpha chlordane	83.6	<62.5 ^c	NC ^d
		chlordene	69.8	<62.5 ^c	NC ^d
		dieldrin	588	748	24
		endrin	2490	3130	23
		endrin ketone	5030	5460	8.2
		gamma chlordane	117	152	26
		hex VCL	295	365	21
		isodrin	580	519	11
961 Meagher A	961 Meagher D	aldrin	485	<250 ^c	NC ^d
		alpha chlordane	517	401	25
		chlordene	4750	2950	47
		dieldrin	7690	9030	16
		endrin	35400	37100	4.7
		endrin ketone	56000	61400	9.2
		gamma chlordane	1190	1820	42
		heptachlor	893	727	20
		hex VCL	30700	28800	6.4
		hexachloronorbornadiene	5010	3530	35
		isodrin	12200	6580	60
2295 Dexter A	2295 Dexter D	heptachlor epoxide	<250 ^c	393	NC ^d
		alpha chlordane	89.4	85.5	4.5
		chlordene	874	943	8.6
		dieldrin	1490	1400	6.2
		endrin	4930	4290	14
		endrin ketone	12700	23100	58
		gamma chlordane	302	287	5.1
		hex VCL	6210	5750	7.7
		hexachloronorbornadiene	709	652	8.4
		isodrin	1200	1500	22
1194 Springdale-B	1194 Springdale-D	chlordene	90.5	88	2.8
		dieldrin	553	621	12
		endrin	2690	2600	3.4
		endrin ketone	2750	3090	12
		gamma chlordane	90	100	11
		hex VCL	838	980	16
		isodrin	237	341	36
		hexachloronorbornadiene	<62.5 ^c	77.8	NC ^d

^a Results are reported in µg/L

^b Relative percent difference

^c Not detected above practical quantitation limit

^d Not calculable

Table 3—Summary of Qualified Data

Sample ID	Analyte	Qualifier	Quality Control Exceedance
1804 Edward A	All pesticides	J	Analysis holding time exceeded
1804 Edward B	All pesticides	J	Analysis holding time exceeded
1822 Edward A	All pesticides	J	Analysis holding time exceeded
2327 Vandale-B	All pesticides	J	Analysis holding time exceeded
2351 Vandale-C	All pesticides	J	Analysis holding time exceeded
2351 Vandale-D	All pesticides	J	Analysis holding time exceeded
937 Bingham-B	All pesticides	J	Analysis holding time exceeded
2403 Staten-A	All pesticides	J	Analysis holding time exceeded
2399 Staten-B	All pesticides	J	Analysis holding time exceeded
2301 Dexter-C	All pesticides	J	Analysis holding time exceeded
SYED-SO B-2	All pesticides	J	Analysis holding time exceeded
SYED-SO C	All pesticides	J	Analysis holding time exceeded
1034 Dawes A	All pesticides	J	Analysis holding time exceeded
1034 Dawes B	All pesticides	J	Analysis holding time exceeded
1046 Dawes A	All pesticides	J	Analysis holding time exceeded
1046 Dawes B	All pesticides	J	Analysis holding time exceeded
1054 Dawes A	All pesticides	J	Analysis holding time exceeded
1054 Dawes B	All pesticides	J	Analysis holding time exceeded
1978 Edward A	endrin and endrin ketone	J	Analysis holding time exceeded
1769 Greenvew-A	Detected pesticides	JH	Surrogate recovery above acceptance limits
1804 Edward B	Detected pesticides	JH	Surrogate recovery above acceptance limits
2351 Vandale-D	Detected pesticides	JH	Surrogate recovery above acceptance limits
965 Meagher B	Detected pesticides	JH	Surrogate recovery above acceptance limits
925 Meagher C	dieldrin and endrin	JL	MS/MSD recoveries below acceptance limits
1822 Edward B	dieldrin	JL	MS/MSD recoveries below acceptance limits
2295 Dexter A	endrin ketone	J	Field duplicate RPD value greater than 50
2295 Dexter D	endrin ketone	J	Field duplicate RPD value greater than 50
8-11-04 RB	hexachloronorborene	J	Confirmation column difference greater than 40%
929 Bingham B	alpha chlordane and endrin ketone	J	Confirmation column difference greater than 40%
920 Bingham A-1	gamma chlordane	J	Confirmation column difference greater than 40%
920 Bingham B-2	alpha chlordane	J	Confirmation column difference greater than 40%
943 Bingham B	alpha chlordane	J	Confirmation column difference greater than 40%
909 Bingham C	endrin ketone	J	Confirmation column difference greater than 40%
909 Bingham B	alpha chlordane	J	Confirmation column difference greater than 40%
973 Meagher B	4,4-DDT and endrin ketone	J	Confirmation column difference greater than 40%
961 Meagher A	alpha chlordane	J	Confirmation column difference greater than 40%
965 Meagher A	diethyl-p-nitrophenyl phosphate	J	Confirmation column difference greater than 40%

Sample ID	Analyte	Qualifier	Quality Control Exceedance
965 Meagher B	aldrin and heptachlor	J	Confirmation column difference greater than 40%
925 Meagher C	endrin	J	Confirmation column difference greater than 40%
914 Meagher C	aldrin, chlordene, and heptachlor	J	Confirmation column difference greater than 40%
2486 Dana C	alpha chlordane and heptachlor	J	Confirmation column difference greater than 40%
2478 Vollintine A	endrin ketone	J	Confirmation column difference greater than 40%
2486 Vollintine A	endrin and heptachlor	J	Confirmation column difference greater than 40%
2486 Vollintine B	4,4-DDD, aldrin, alpha chlordane, endrin ketone, and isodrin	J	Confirmation column difference greater than 40%
2485 Vollintine C	aldrin and alpha chlordane	J	Confirmation column difference greater than 40%
2460 Vollintine A	alpha chlordane, endrin, heptachlor, and heptachlor epoxide	J	Confirmation column difference greater than 40%
2472 Vollintine A	gamma chlordane and heptachlor	J	Confirmation column difference greater than 40%
2472 Vollintine B	heptachlor	J	Confirmation column difference greater than 40%
924 Meagher A	4,4-DDT and alpha chlordane	J	Confirmation column difference greater than 40%
1804 Edward B	heptachlor epoxide	J	Confirmation column difference greater than 40%
1822 Edward A	endrin	J	Confirmation column difference greater than 40%
1754 Edward C	alpha chlordane and endrin	J	Confirmation column difference greater than 40%
1978 Edward A	alpha chlordane	J	Confirmation column difference greater than 40%
1978 Edward B	chlordene	J	Confirmation column difference greater than 40%
2021 Hubert A	alpha chlordane	J	Confirmation column difference greater than 40%
2021 Hubert B	endrin ketone	J	Confirmation column difference greater than 40%
1731 Greenview A	alpha chlordane	J	Confirmation column difference greater than 40%
2172 N. Hubert A	alpha chlordane	J	Confirmation column difference greater than 40%
2295 Dexter D	endrin ketone	J	Confirmation column difference greater than 40%
2248 Howell-C	4,4-DDT	J	Confirmation column difference greater than 40%
1188 Tunica-B2	4,4-DDT and endrin ketone	J	Confirmation column difference greater than 40%
967 Meagher-A	alpha chlordane	J	Confirmation column difference greater than 40%

Sample ID	Analyte	Qualifier	Quality Control Exceedance
967 Meagher-B	endrin	J	Confirmation column difference greater than 40%
1785 Greenview A	aldrin	J	Confirmation column difference greater than 40%
2351 Vandale-C	alpha chlordane	J	Confirmation column difference greater than 40%
937 Bingham-B	heptachlor epoxide	J	Confirmation column difference greater than 40%
2403 Staten-A	alpha chlordane	J	Confirmation column difference greater than 40%
2399 Staten-B	alpha chlordane	J	Confirmation column difference greater than 40%
SYED-SO B-2	gamma chlordane	J	Confirmation column difference greater than 40%
1034 Dawes B	dieldrin	J	Confirmation column difference greater than 40%
1054 Dawes B	4,4-DDT and alpha chlordane	J	Confirmation column difference greater than 40%
1930 Edward-A2	alpha chlordane	J	Confirmation column difference greater than 40%
2407 Gentry-A	heptachlor epoxide	J	Confirmation column difference greater than 40%
2407 Gentry-B	alpha chlordane	J	Confirmation column difference greater than 40%

ATTACHMENT A LABORATORY QA/QC SUMMARIES

GTW ANALYTICAL SERVICES, LLC

3715 S. Perkins, Suite 7
Memphis, Tennessee 38118
(901) 323-5554

FILE COPY

LABORATORY REPORT

Client Contact: Gary Hermann
Project: MEC
Cypress Creek Sub-Area III I.M.
Sample(s) Type: Water

Report Date: 09/17/04
Report No: R-240546

All sample results reported on an "as-received" basis unless otherwise indicated.

Quality Assurance Summary (Page 1 of 2):

<u>Type of Analysis</u>	<u>Method</u>	<u>Holding Time</u>	<u>Surrogate Recoveries</u>	<u>Matrix Spike Recoveries</u>	<u>Blanks</u>	<u>Overall Summary</u>
PESTICIDES	SW-846 3510C/8081A	A	A	N-1	A	A

N-1: A blank spike was analyzed that had an acceptable recovery.

A = Requirements by method were met
NA = Not applicable

Keith Hoover

QA Officer

Terri C. Gray

Technical Manager

GTW ANALYTICAL SERVICES, LLC

3715 S. Perkins, Suite 7
Memphis, Tennessee 38118
(901) 323-5554

LABORATORY REPORT

Client Contact: Gary Hermann
Project: MEC
Cypress Creek Sub-Area III I.M.
Sample(s) Type: Soil

Report Date: 09/17/04
Report No: R-240546

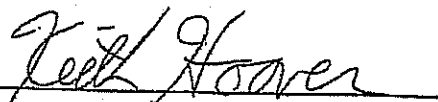
All sample results reported on an "as-received" basis unless otherwise indicated.

Quality Assurance Summary (Page 2 of 2):

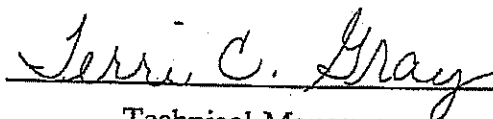
<u>Type of Analysis</u>	<u>Method</u>	<u>Holding Time</u>	<u>Surrogate Recoveries</u>	<u>Matrix Spike Recoveries</u>	<u>Blanks</u>	<u>Overall Summary</u>
PESTICIDES (N-2)	SW-846 3550B/8081A	A	A (N-3)	N-4	A	A (See N-2, N-3 and N-4)
MOISTURE CONTENT	SW-846 3550B	NA	NA	NA	NA	A

- N-2: As requested by the client, samples #2401484-2401488 were analyzed by GC/MS to confirm compound identifications.
- N-3: The recoveries for samples #2401484-2401488 and #2401493 were unavailable due to dilution of the extract.
- N-4: Due to the level of contamination that was present in the sample that was spiked, no valid recoveries could be determined for Dieldrin and Endrin. The matrix spike duplicate recovery for Heptachlor was unacceptable. However, the blank spike had acceptable recoveries.

A = Requirements by method were met
NA = Not applicable



QA Officer



Technical Manager

GTW ANALYTICAL SERVICES, LLC

3715 S. Perkins, Suite 7
Memphis, Tennessee 38118
(901) 323-5554

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LABORATORY REPORT

Client Contact: Gary Hermann
Project: MEC
Cypress Creek Sub-Area III I.M.
Sample(s) Type: Soil

Report Date: 10/08/04
Report No: R-240546-A

All sample results reported on an "as-received" basis unless otherwise indicated.

Quality Assurance Summary:

<u>Type of Analysis</u>	<u>Method</u>	<u>Holding Time</u>	<u>Surrogate Recoveries</u>	<u>Matrix Spike Recoveries</u>	<u>Blanks</u>	<u>Overall Summary</u>
PESTICIDES (GC/MS Confirmation)	SW-846 3550B/8270C	A	NA	NA	NA	A

A = Requirements by method were met
NA = Not applicable

Keith Hoover

QA Officer

Terri C. Gray

Technical Manager

GTW ANALYTICAL SERVICES, LLC

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Memphis, Tennessee 38118
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LABORATORY REPORT

Client Contact: Gary Hermann
Project: MEC
Cypress Creek Sub-Area III I.M.
Sample(s) Type: Soil

Report Date: 08/31/04
Report No: R-240551

All sample results reported on an "as-received" basis unless otherwise indicated.

Quality Assurance Summary:

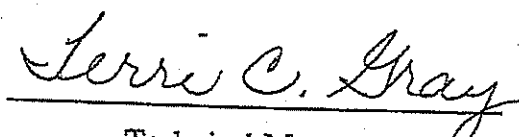
Type of Analysis	Method	Holding Time	Surrogate Recoveries	Matrix Spike Recoveries	Blanks	Overall Summary
PESTICIDES	SW-846 3550B/8081A	A	A (N-1)	A (N-2)	A	A (See N-1 and N-2)
MOISTURE CONTENT	SW-846 3550B	NA	NA	NA	NA	A

N-1: The recovery for sample #2401505 was unacceptable due to matrix interferences, and the recovery for #2401518 was unavailable due to dilution.

N-2: Recoveries for Dieldrin and Endrin were unavailable due to matrix interferences; however, a blank spike was analyzed that had acceptable recoveries.

A = Requirements by method were met
NA = Not applicable


QA Officer


Technical Manager

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Memphis, Tennessee 38118
(901) 323-5554

LABORATORY REPORT

FILE COPY

Client Contact: Gary Hermann
Project: MEC
Cypress Creek Sub-Area III I.M.
Sample(s) Type: Water

Report Date: 09/01/04
Report No: R-240551-A

All sample results reported on an "as-received" basis unless otherwise indicated.

Quality Assurance Summary:

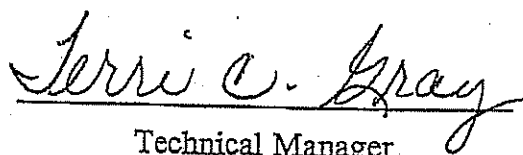
<u>Type of Analysis</u>	<u>Method</u>	<u>Holding Time</u>	<u>Surrogate Recoveries</u>	<u>Matrix Spike Recoveries</u>	<u>Blanks</u>	<u>Overall Summary</u>
PESTICIDES	SW-846 3510C/8081A	A	A	N-1	A	A (See N-1)

N-1: A blank spike was analyzed that had acceptable recoveries.

A = Requirements by method were met
NA = Not applicable



QA Officer



Technical Manager

GTW ANALYTICAL SERVICES, LLC

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Memphis, Tennessee 38118
(901) 323-5554

LABORATORY REPORT

Client Contact: Gary Hermann
Project: MEC
Cypress Creek Sub-Area III I.M.
Sample(s) Type: Soil

Report Date: 10/26/04
Report No: R-240563

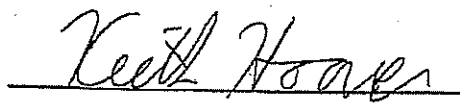
All sample results reported on an "as-received" basis unless otherwise indicated.

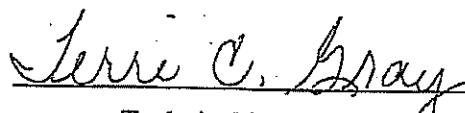
Quality Assurance Summary (Page 1 of 2):

<u>Type of Analysis</u>	<u>Method</u>	<u>Holding Time</u>	<u>Surrogate Recoveries</u>	<u>Matrix Spike Recoveries</u>	<u>Blanks</u>	<u>Overall Summary</u>
PESTICIDES	SW-846 3550B/8081A	N-1	A (N-2)	A (N-3)	A	See N-1, N-2 and N-3
MOISTURE CONTENT	SW-846 3550B	NA	NA	NA	NA	A

- N-1: Due to instrument problems, the holding time was exceeded for the analysis of the sample extracts. Results are considered to be minimum values only. Analysis was originally attempted within the holding time for samples #2401549-2401557 and #2401559, but there was no usable data due to the instrument problems. All extracts were properly stored until analysis.
- N-2: The recovery for sample #2401551 was unacceptable due to dilution. The recoveries for samples #2401553 and #2401556 were unavailable due to dilution.
- N-3: Due to the level of contamination that was present in the sample that was spiked, no valid recoveries could be determined for Dieldrin and Endrin. The recoveries for 4,4'-DDT and Gamina-BHC (Lindane) were unavailable due to dilution. The matrix spike duplicate recovery for Heptachlor was unacceptable due to dilution. However, the blank spike had acceptable recoveries.

A = Requirements by method, were met
NA = Not applicable


QA Officer


Technical Manager

GTW ANALYTICAL SERVICES, LLC

3715 S. Perkins, Suite 7
Memphis, Tennessee 38118
(901) 323-5554

LABORATORY REPORT

Client Contact: Gary Hermann
Project: MEC
Cypress Creek Sub-Area III I.M.
Sample(s) Type: Water

Report Date: 10/26/04
Report No: R-240563

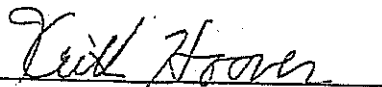
All sample results reported on an "as-received" basis unless otherwise indicated.

Quality Assurance Summary (Page 2 of 2):

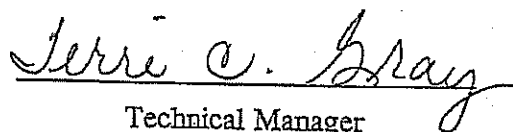
<u>Type of Analysis</u>	<u>Method</u>	<u>Holding Time</u>	<u>Surrogate Recoveries</u>	<u>Matrix Spike Recoveries</u>	<u>Blanks</u>	<u>Overall Summary</u>
PESTICIDES	SW-846 3510C/8081A	A	A	N-4	A	A (See N-4)

N-4: A blank spike was analyzed that had an acceptable recovery.

A = Requirements by method were met
NA = Not applicable



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Technical Manager

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Memphis, Tennessee 38118
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LABORATORY REPORT

Client Contact: Gary Hermann
Project: MEC
Cypress Creek Sub-Area III I.M.
Sample(s) Type: Soil

Report Date: 10/28/04
Report No: R-240566

All sample results reported on an "as-received" basis unless otherwise indicated.

Quality Assurance Summary:

Type of Analysis	Method	Holding Time	Surrogate Recoveries	Matrix Spike Recoveries	Blanks	Overall Summary
PESTICIDES	SW-846 3550B/8081A	A (N-1)	A (N-2)	A (N-3)	A	A (See N-1, N-2 and N-3)
MOISTURE CONTENT	SW-846 3550B	NA	NA	NA	NA	A

- N-1: Due to instrument problems, the holding time was exceeded for the analysis of the sample extracts for samples #2401567-2401568; results are considered to be minimum values only. All extracts were properly stored until analysis.
- N-2: The recovery for sample #2401568 was unacceptable due to matrix interferences. The recovery for sample #2401574 was unavailable due to dilution. The recovery for sample #2401576 was unacceptable due to dilution.
- N-3: Due to the level of contamination that was present in the sample that was spiked, no valid recoveries could be determined for 4,4'-DDT and Endrin. The recoveries for Dieldrin were unavailable due to matrix interferences. The recoveries for Heptachlor were unacceptable. The matrix spike recovery for Aldrin was unacceptable due to dilution. However, the blank spike had acceptable recoveries.

A = Requirements by method were met
NA = Not applicable

Keith Hoover

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Terri C. Gray

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~~DRAFT~~ *ok*

LABORATORY REPORT

Client Contact: Gary Hermann
Project: MEC
Cypress Creek Sub-Area III I.M.
Sample(s) Type: Soil

Report Date: 09/27/04
Report No: R-240583

All sample results reported on an "as-received" basis unless otherwise indicated.

Quality Assurance Summary:

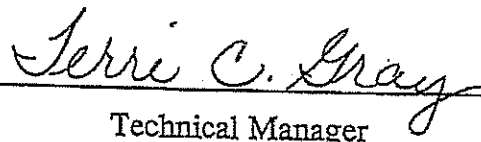
Type of Analysis	Method	Holding Time	Surrogate Recoveries	Matrix Spike Recoveries	Blanks	Overall Summary
PESTICIDES	SW-846 3550B/8081A	A	A	A (N-1)	A	A (See N-1)
MOISTURE CONTENT	SW-846 3550B	NA	NA	NA	NA	A

N-1: These samples were analyzed as part of a larger set which included matrix spikes. Recoveries were acceptable except for the following: recoveries for 4,4'-DDT and Endrin were unavailable due to the level of contamination that was present in the sample that was spiked; recoveries for Dieldrin were unavailable due to matrix interferences; and, recoveries for Heptachlor were unacceptable; however, the blank spike had acceptable recoveries.

A = Requirements by method were met
NA = Not applicable



QA Officer



Technical Manager

GTW ANALYTICAL SERVICES, LLC

3715 S. Perkins, Suite 7
Memphis, Tennessee 38118
(901) 323-5554

FILE COPY

LABORATORY REPORT

Client Contact: Gary Hermann
Project: MEC
Cypress Creek Sub-Area III I.M.
Sample(s) Type: Soil

Report Date: 10/28/04
Report No: R-240610

All sample results reported on an "as-received" basis unless otherwise indicated.

Quality Assurance Summary (Page 1 of 2):

Type of Analysis	Method	Holding Time	Surrogate Recoveries	Matrix Spike Recoveries	Blanks	Overall Summary
PESTICIDES	SW-846 3550B/8081A	A	A (N-1)	A (N-2)	A	A (See N-1 and N-2)
MOISTURE CONTENT	SW-846 3550B	NA	NA	NA	NA	A

N-1: The recovery for sample #2401645 was unacceptable due to dilution of the extract.

N-2: Due to the level of contamination that was present in the sample that was spiked, no valid recoveries could be determined for 4,4'-DDT, Dieldrin, and Endrin. Recoveries for Heptachlor were unacceptable due to matrix interferences; however, the blank spike had acceptable recoveries.

A = Requirements by method were met
NA = Not applicable

Keith Homer

QA Officer

Terri C. Gray

Technical Manager

GTW ANALYTICAL SERVICES, LLC

3715 S. Perkins, Suite 7
Memphis, Tennessee 38118
(901) 323-5554

LABORATORY REPORT

Client Contact: Gary Hermann
Project: MEC
Cypress Creek Sub-Area III I.M.
Sample(s) Type: Water

Report Date: 10/28/04
Report No: R-240610

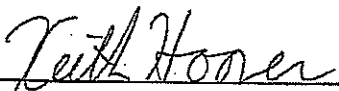
All sample results reported on an "as-received" basis unless otherwise indicated.

Quality Assurance Summary (Page 2 of 2):

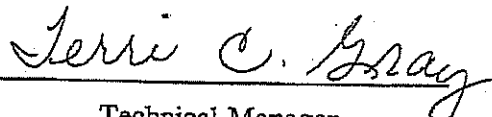
<u>Type of Analysis</u>	<u>Method</u>	<u>Holding Time</u>	<u>Surrogate Recoveries</u>	<u>Matrix Spike Recoveries</u>	<u>Blanks</u>	<u>Overall Summary</u>
PESTICIDES	SW-846 3510C/8081A	A	A	N-3	A	A (See N-3)

N-2: A blank spike was analyzed that had an acceptable recovery.

A = Requirements by method were met
NA = Not applicable



QA Officer



Technical Manager

GTW ANALYTICAL SERVICES, LLC

3715 S. Perkins, Suite 7
Memphis, Tennessee 38118
(901) 323-5554

LABORATORY REPORT

Client Contact: Gary Hermann
Project: MEC
Cypress Creek Sub-Area III I.M.
Sample(s) Type: Water

Report Date: 11/08/04
Report No: R-240682

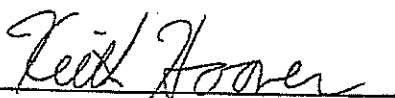
All sample results reported on an "as-received" basis unless otherwise indicated.

Quality Assurance Summary (Page 1 of 2):

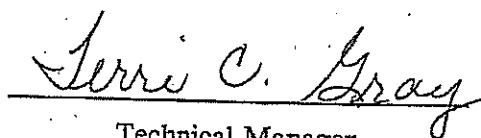
<u>Type of Analysis</u>	<u>Method</u>	<u>Holding Time</u>	<u>Surrogate Recoveries</u>	<u>Matrix Spike Recoveries</u>	<u>Blanks</u>	<u>Overall Summary</u>
PESTICIDES	SW-846 3510C/8081A	A	A	N-1	A	A

N-1: A blank spike was analyzed that had an acceptable recovery.

A = Requirements by method were met
NA = Not applicable



QA Officer



Technical Manager

GTW ANALYTICAL SERVICES, LLC

3715 S. Perkins, Suite 7
Memphis, Tennessee 38118
(901) 323-5554

LABORATORY REPORT

Client Contact: Gary Hermann
Project: MEC
Cypress Creek Sub-Area III I.M.
Sample(s) Type: Soil

Report Date: 11/08/04
Report No: R-240682

All sample results reported on an "as-received" basis unless otherwise indicated.

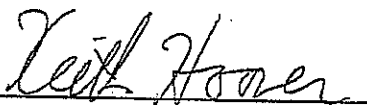
Quality Assurance Summary (Page 2 of 2):

<u>Type of Analysis</u>	<u>Method</u>	<u>Holding Time</u>	<u>Surrogate Recoveries</u>	<u>Matrix Spike Recoveries</u>	<u>Blanks</u>	<u>Overall Summary</u>
PESTICIDES	SW-846 3550B/8081A	A	A (N-2)	A (N-3)	A	A (See N-2 and N-3)
MOISTURE CONTENT	SW-846 3550B	NA	NA	NA	NA	A

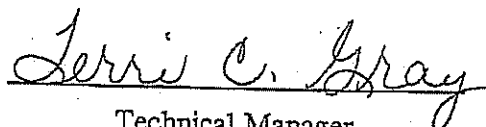
N-2: The recovery for sample #2401983 was unacceptable due to matrix interferences.

N-3: Due to the level of contamination that was present in the sample that was spiked, no valid recoveries could be determined for Dieldrin and Endrin. The recoveries for Gamma-BHC (Lindane) were unacceptable due to dilution of the extracts. However, the blank spike had acceptable recoveries.

A = Requirements by method were met
NA = Not applicable



QA Officer



Technical Manager

GTW ANALYTICAL SERVICES, LLC

3715 S. Perkins, Suite 7
Memphis, Tennessee 38118
(901) 323-5554

LABORATORY REPORT

Client Contact: Gary Hermann
Project: MEC
Cypress Creek Sub-Area III I.M.
Sample(s) Type: Soil

Report Date: 11/12/04
Report No: R-240770

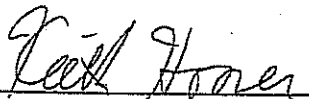
All sample results reported on an "as-received" basis unless otherwise indicated.

Quality Assurance Summary:

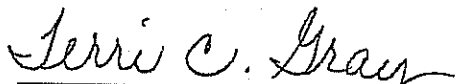
<u>Type of Analysis</u>	<u>Method</u>	<u>Holding Time</u>	<u>Surrogate Recoveries</u>	<u>Matrix Spike Recoveries</u>	<u>Blanks</u>	<u>Overall Summary</u>
PESTICIDES	SW-846 3550B/8081A	A	A	A (N-1)	A	A (Sec N-1)
MOISTURE CONTENT	SW-846 3550B	NA	NA	NA	NA	A

N-1: The matrix spike recovery was unacceptable due to matrix interferences for Heptachlor. Due to the level of contamination that was present in the sample that was spiked, no valid recoveries could be determined for Dieldrin and Endrin. However, the blank spike had acceptable recoveries.

A. = Requirements by method were met
NA = Not applicable



QA Officer



Technical Manager

ATTACHMENT B

CHAIN OF CUSTODY FORM

SUBMIT REPORT TO
COMPANY: Gary Hermann
CONTACT: MEC / FCC

PROJECT NAME: CYPRESS CREEK
SUB-AREA III I.M.

Dary Hermann
(sign)

MATRIX

NO. OF
CONTAINERS

REMARKS

8-11-04 RB	8-11-04	9:00 am	Reine Blaub.	W	2	8081 A	pH @ 9.6 =
929 Bingham B	8-11-04	9:45 am	929 Bingham St	S	1	8081 A	7.4
920 Bingham A-1	8-11-04	10:40 am	920 Bingham	S	1	8081 A	8.270
920 Bingham A-2	"	10:45 am		S	1	"	"
920 Bingham A-3	"	11:00 am		S	1	"	"
920 Bingham A-4	"	11:05 am		S	1	"	"
920 Bingham B-2	"	11:25 am		S	1	"	"
943 Bingham B	"	1:25 pm	943 Bingham St.	S	1	8081 A	
909 Bingham C	"	1:55 pm	909 Bingham St.	S	1	8081 A	
909 Bingham B	"	2:00 pm	"	S	1	8081 A	
973 Meagher B	"	2:35 pm	973 Meagher St	S	1	8081 A	
961 Meagher A	"	2:55 pm	961 Meagher St	S	1	8081 A	
961 Meagher D	"	3:05 pm	961 Meagher St	S	1	8081 A	
954 Meagher C	"	3:50 pm	954 Meagher St	S	1	8081 A	

TOTAL NO. OF CONTAINERS —

Y: Kary Hermann
1 (sign)

8-11-04 4:35pm

2

(sign)

2 _____
(sign)

52

{sign}

SHIPPED BY:

(sign) Teresa K. Winter

8/11/04 4:35#

COOLER OPENED BY:

(sign) Keith Hoyer

GENERAL CONDITION OF COOLER: *On Ice*

8-12-04 BLSA

SUBMIT REPORT TO
COMPANY: Gary Hermann
CONTACT: MEC / FCC

PROJECT NO: 003-10-03-00

PROJECT NAME: CYPRESS CREEK
SUB-AREA III I.M.

David Hermann
(sign)

MATRIX	NO. OF CONTAINERS
1	1
2	1
3	1
4	1
5	1
6	1
7	1
8	1
9	1
10	1
11	1
12	1
13	1
14	1
15	1
16	1
17	1
18	1
19	1
20	1
21	1
22	1
23	1
24	1
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90	1
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96	1
97	1
98	1
99	1
100	1

REMARKS

SEQ. NO.	SAMPLE NO.	DATE	TIME	SAMPLE LOCATION
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965	Meagher - A	8-12-24	8:30am	965 Meagher St	S	1	808/A	2401504
965	Meagher - B		8:35am	"	C	1		1505
924	Meagher - A		9:30am	924 Meagher St		1		1507
914	Meagher - C		10:10am	914 Meagher St.		1		1508
496	Dana - C		10:38am	2496 Dana Dr.		1		1509
	8-12-04 RB		11:40am	Reno - Blank	W	2	pt held = 6 788	1510
73	Vallintine A		1:10pm	2473 Vallintine Cr.	S	1		1511
78	Vallintine B		1:15pm	"	C	1		1512
86	Vallintine A		1:45pm	2486 Vallintine Cr.		1		1513
86	Vallintine B		1:50pm	"		1		1514
85	Vallintine C		2:45pm	2485 Vallintine Cove		1		1515
60	Vallintine A		3:05pm	2460 Vallintine Cove		1		1516
60	Vallintine B		3:10pm	"		1		1517
72	Vallintine A		3:48pm	2472 Vallintine Cove		1		1518
72	Vallintine B		3:50pm	"		1		1519
925	Meagher C		9:05am	925 Meagher	S	1		1506

TOTAL NO. OF CONTAINERS —

RELINQUISHED BY: C
1. Darry Herman
(sign)

DATE/TIME
-04 9:07am

RECEIVED BY: _____
2 _____
(sign)

RELINQUISHED BY: _____
2 _____ (sign)

DATE/TIME

RECEIVED BY: _____
3 _____
(sign)

METHOD OF SHIPMENT:

SHIPPED BY:

RECEIVED FOR LABORATORY BY:
(sign) Lee H. Hoover

DATE/TIME
13-04/8:07 AM

CONDITION OF SEAL UPON RECEIPT:

COOLER OPENED BY:

DATE/TIME /

GENERAL CONDITION OF COOLER: On Ice

(cinn)

GTW ANALYTICAL SERVICES, LLC 3715 S. Perkins, Suite 7, Memphis, TN 38118 Telephone (901) 323-5554; FAX (901) 323-5573					SUBMIT REPORT TO COMPANY: Gary Hermann CONTACT: MEC / FCC 240563				
CHAIN OF CUSTODY RECORD			PROJECT NO: 003-10-03-60		PROJECT NAME: CYPRESS CREEK SUB-AREA III I.M.				
SAMPLER'S SIGNATURE <u>Gary Hermann</u> (sign)					M A T R I X	NO. OF CONTAINERS	REMARKS <u>62W#</u>		
SEQ. NO.	SAMPLE NO.	DATE	TIME	SAMPLE LOCATION					
327	Vandale-B	8-18-04	8:25 am	2327 Vandale St.	S	1	1559	8081 A & moisture content	
51	Vandale-C	"	8:45 am	2351 Vandale	S	1	1560	}	
51	Vandale-D	"	8:47 am	"	S	1	1557		
37	Bingham-B	"	9:20 am	937 Bingham	S	1	1552		
03	Staten-A	"	9:50 am	2403 Staten	S	1	1553		
99	Staten-B	"	9:57 am	2399 Staten	S	1	1554		
01	Defton-C	"	10:35 am	2301 Defton Dr.	S	1	1555	}	
	ed-Se. B-2	"	11:50 am	Cyed on Staten	S	1	1556		
	ed-Se C	"	11:55 am	"	S	1	1557		
	8-18-04 RB	"	11:18 am	Rinse Blank	W	2	1558	8081 A pH lab = 6.72	
034	Dawes A	"	1:10 pm	1034 Dawes			1559	8081 A & moisture content	
34	Dawes B	"	1:15 pm	"			1560	}	
46	Dawes A	"	1:35 pm	1046 Dawes			1561		
46	Dawes B	"	1:40 pm	"			1562		
54	Dawes A	"	2:10 pm	1054 Dawes			1563		
54	Dawes B	8-18-04	2:15 pm	"			1564		
TOTAL NO. OF CONTAINERS -									
RELINQUISHED BY: 1 <u>Gary Hermann</u> (sign)			DATE/TIME 8-18-04 4:25 PM		RECEIVED BY: 2 _____ (sign)				
RELINQUISHED BY: 2 _____ (sign)			DATE/TIME _____		RECEIVED BY: 3 _____ (sign)				
METHOD OF SHIPMENT:		SHIPPED BY:		RECEIVED FOR LABORATORY BY: <u>Jerric C. Gray</u> (sign)		DATE/TIME 8-18-04 4:25 PM			
CONDITION OF SEAL UPON RECEIPT:				COOLER OPENED BY: <u>Keith Hoover</u> (sign)		DATE/TIME 8-18-04 4:30 PM			
GENERAL CONDITION OF COOLER: <u>On Ice</u>									

GTW ANALYTICAL SERVICES, LLC
3715 S. Perkins, Suite 7, Memphis, TN 38118
Telephone (901) 323-5554; FAX (901) 323-5573

SUBMIT REPORT TO

COMPANY: Gary Hermann

CONTACT: MEC / FCC

240566

CHAIN OF CUSTODY
RECORD

PROJECT NO:

003-10-03-00

PROJECT NAME:

CYPRESS CREEK

SUB-AREA III I.M.

SAMPLER'S SIGNATURE

Gary Hermann
(sign)

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REMARKS

SEQ. NO.	SAMPLE NO.	DATE	TIME	SAMPLE LOCATION
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1567	1804	Edward A	8-19-04 8:45am	1804 Edward	S	1	8051 A & moisture content
1568	1804	Edward B	8:48am	"	S		
1569	1822	Edward A	9:20am	1822 Edward			
1570	1822	Edward B	9:25am	"			
1571	1754	Edward C	9:50am	1754 Edward			
1572	1772	Edward C	10:25am	1772 Edward			
1573	1978	Edward A	11:00am	1978 Edward			
1574	1978	Edward B	11:05am	"			
1575	2021	Habitat A	11:35am	2021 Habitat			
1576	2021	Habitat B	11:40am	"	S	1	8051 A & moisture content

TOTAL NO. OF CONTAINERS —

RELINQUISHED BY:

1 Gary Hermann
(sign)

DATE/TIME

8-19-04 4:26pm

RECEIVED BY:

2 _____
(sign)

RELINQUISHED BY:

2 _____
(sign)

DATE/TIME

RECEIVED BY:

3 _____
(sign)

METHOD OF SHIPMENT:

SHIPPED BY:

RECEIVED FOR LABORATORY BY:

(sign) Terrell K. Hinton

DATE/TIME 4:30
8-19-04 PM

CONDITION OF SEAL UPON RECEIPT:

COOLER OPENED BY:

(sign) Terrell K. Hinton

DATE/TIME

8-19-04/4:30PM

GENERAL CONDITION OF COOLER:

on ice

GTW ANALYTICAL SERVICES, LLC
3715 S. Perkins, Suite 7, Memphis, TN 38118
Telephone (901) 323-5554; FAX (901) 323-5573

SUBMIT REPORT TO
COMPANY: Gary Hermann
CONTACT: MEC / VCC

24058

CHAIN OF CUSTODY
RECORD

PROJECT NO:
003-10-03-00

PROJECT NAME:
CYPRESS CREEK
SUB-AREA III I.M.

SAMPLER'S SIGNATURE

Gary Hermann
(sign)

M
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NO. OF
CONTAINERS

REMARKS

GTW#
578
1599

SEQ.
NO.

SAMPLE
NO.

DATE

TIME

SAMPLE LOCATION

S

1

808/A 2 mountain carts

S

1

"

TOTAL NO. OF CONTAINERS —

RELINQUISHED BY:

1. Gary Hermann
(sign)

DATE/TIME

8-26-04 8:03am

RECEIVED BY:

2

(sign)

RELINQUISHED BY:

2

(sign)

DATE/TIME

RECEIVED BY:

3

(sign)

METHOD OF SHIPMENT:

SHIPPED BY:

RECEIVED FOR LABORATORY BY:

(sign) Teresa L. Winters

DATE/TIME

8/26/04 8:03

CONDITION OF SEAL UPON RECEIPT:

COOLER OPENED BY:

(sign) Keith Hoover

DATE/TIME

8-26-04/8:25A

GENERAL CONDITION OF COOLER:

on ice

GTW ANALYTICAL SERVICES, LLC 3715 S. Perkins, Suite 7, Memphis, TN 38118 Telephone (901) 323-5554; FAX (901) 323-5573				SUBMIT REPORT TO COMPANY: Gary Hermann CONTACT: MEC / FCC 240610			
CHAIN OF CUSTODY RECORD			PROJECT NO: 003-10-03-00		PROJECT NAME: CYPRESS CREEK SUB-AREA III I.M.		
SAMPLER'S SIGNATURE <u>Gary Hermann</u> (sign)					MATRIX NO. OF CONTAINERS	REMARKS	
SEQ. NO.	SAMPLE NO.	DATE	TIME	SAMPLE LOCATION			
5	Bingham B	9-3-04	9:50 am	945 Bingham St.	1	GTW# 1644808/A & Monitor Content	
	Greenview A		9:20 am	1731 Greenview CL		1645	
	Greenview B		9:25 am			1646	
	N. Hubert A		9:58 am	2172 N. Hubert CL		1647	
	N. Hubert B		10:00 am			1648	
5	Dexter A		10:30 am	2295 Dexter		1649	
5	Dexter D		10:35 am			1650	
1	Gentry B		11:03 am	2391 Gentry		1651	
	9-3-04 RB	9-3-04	8:20 am	Run Blank	2	1652 808/A pH@lab=6 7X	
TOTAL NO. OF CONTAINERS —							
RELINQUISHED BY: 1 <u>Gary Hermann</u> (sign)		DATE/TIME 9-3-04 11:15 am		RECEIVED BY: 2 <u>Michael Haggerty</u> (sign)			
RELINQUISHED BY: 2 <u>Michael Haggerty</u> (sign)		DATE/TIME 9-3-04 1:05		RECEIVED BY: 3 _____ (sign)			
METHOD OF SHIPMENT:		SHIPPED BY:		RECEIVED FOR LABORATORY BY: (sign) <u>Verdell Hoover</u>		DATE/TIME 9-3-04/1:05 PM	
CONDITION OF SEAL UPON RECEIPT:				COOLER OPENED BY: 11		DATE/TIME 11	
GENERAL CONDITION OF COOLER: <u>On Ice</u>				COOLER OPENED BY: _____ (sign)			

[illegible]